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# PROMOTING THE DEVELOPMENT OF FOOD VALUE CHAINS IN AFRICA 2015 - KENYA

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March 22, 2016

Prepared by Promar Consulting



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## FOREWORD

This report reflects the findings of Promar Consulting's research on Sub Saharan African food value chains conducted under the Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF) project "Promoting the Development of Food Value Chains 2015", part of its Bilateral Business Development Assistance program for Africa. This report focuses on Kenya and Promar Consulting's work on Ghana and South Africa's food value chains can be found in separate reports.

While there is a continued need for assistance focused in the fields of agriculture, forestry and fisheries, MAFF also recognizes that the markets of Sub-Saharan Africa, with their increasing populations and growing economies, are promising markets with high future potential. MAFF believes that information and analysis of the present situation and future challenges in food value chains in Sub-Saharan African countries is essential for helping Japanese companies successfully enter these markets and integrate Sub Saharan Africa into global food chains. It was against this background that this project was launched.

This 2015 project also included a business mission to Kenya with public and private sector participants, a workshop conducted in Nairobi and support for bilateral policy dialogues. A summary of these activities as well as the findings on Ghana and South Africa are all outlined in separate reports and are available for your reference.

Kenya has enjoyed continued economic growth in recent years and is the major logistics hub for East Africa. It is the largest recipient of Japanese ODA in Sub-Saharan Africa, and the Government of Japan plans to increase support for the development of Mombasa Port and East Africa's Northern Corridor in terms of both infrastructure and technical know-how. Thus, a favorable environment is developing in Kenya for Japanese businesses. While other Sub-Saharan countries with relatively high standards of living often rely on resource production such as oil, Kenya's economy is based mainly on service industries and agriculture. Therefore significant business opportunities are expected in agriculture, livestock, fisheries, and the capital and intermediary support for these industries, as well as in IT, finance, logistics, hotel/catering and other service industries.

This report is intended to make useful information on Kenya's FVC widely available to Japanese businesses and international organizations interested in Kenya. This report gives an overall picture of Kenya's food value chains, covering the agriculture, livestock and fisheries industries, as well as the systems which support them: inputs, food processing, export, domestic distribution, physical distribution, IT, finance, and pertinent machinery and equipment. In addition, major players acting in the FVCs and relevant government policies are described.

We recognize that it is extremely difficult to assess the full complexities of Kenya's agriculture, livestock and fisheries industries and the various food value chains within the constraints of this project. We will be grateful if readers will point out any shortcomings or errors which may be found in this report. Promar Consulting is solely responsible for the content of this report, which in no way represents the official views of the Ministry of Agriculture, Forestry and Fisheries of Japan.

The core of this research is based on interviews we conducted with numerous experts and industry professionals both in Japan and in Kenya, including private companies, research institutes, farmers and others. Although it is not possible to list all the names, we are deeply appreciative of their input and cooperation.

We hope that those interested in Kenya's food value chains find this report to be a useful tool to deepen their understanding of Kenya's agriculture, livestock and fisheries industries, its food industries and relevant government policies, and ultimately benefit Japan-Kenya relations and contribute to promote cooperation for Sub-Saharan Africa development.

Rie Yoshida  
Administrator, Corporate Director  
Promar Consulting



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## Notes :

This project was commissioned by the Japanese Ministry of Agriculture, Forestry and Fisheries and conducted by Promar Consulting. Promar Consulting takes full responsibility for the wording and content of the report.

### [Exchange rate]

	Yen/USD	KSH/USD
2014	105.94	87.92
2013	97.60	86.12
2012	79.79	84.53
2011	79.81	88.81
2010	87.78	79.23
2009	93.57	77.35
2008	103.36	69.18
2007	117.75	67.32
2006	116.30	72.10
2005	110.22	75.55

Source) World Bank

**[Abbreviations]**

正式名称	略語
African Development Bank	AfDB
Association of Southeast Asian Nations	ASEAN
Cereal Millers Association	CMA
China Overseas Agricultural Development Alliance	COADA
Development Assistance Committee	DAC
East African Community	EAC
East African Grains Council	EAGC
East African Tea Trade Association	EATTA
Export Processing Zones	EPZ
European Union	EU
Food and Agriculture Organization of the United Nations	FAO
Foreign Direct Investment	FDI
Food Value Chain	FVC
Code of Good Agricultural Practice	GAP
Gross Domestic Products	GDP
Global Food Value Chain	GFVC
Deutsche Gesellschaft für Technische Zusammenarbeit	GTZ
International Trade Center	ITC
Japan International Cooperation Agency	JICA
Kenya Agricultural Research Institute	KARI/KALRI
Kenya Dairy Board	KDB
Kenya Bureau of Standards	KEBS
Kenya Railways Cooperation	KRC
Lamu Port Southern Sudan-Ethiopia Transport	LAPSSET
Low-Income Food-Deficit Countries	LIFDC
National Cereals and Produce Board	NCPB
National Irrigation Board	NIB
Official Development Assistance	ODA
Organisation for Economic Co-operation and Development	OECD
Pest Control Product Board	PCPB
Point of Sales System	POS
Rice-based and Market-oriented Agriculture Promotion Project	Rice MAPP
Special Economic Zones	SEZ
Smallholder Horticulture Empowerment Project	SHEP
Smallholder Horticulture Empowerment and Promotion Unit Project	SHEP UP
Strategy for Revitalizing Agriculture	SRA
Tokyo International Conference on African Development	TICAD
United Nations Conference on Trade and Development	UNCTAD
Value Added Tax	VAT

## [Map of Kenya]

Map of Local Administrative Districts (Counties)



Source) Geocurrent

Map of Former State Boundaries (pre-2010)



Source) Wikimedia Commons

# 1 OBJECTIVES AND PROJECT BACKGROUND

This research on Kenya's food value chains was conducted under the Japanese Ministry of Agriculture, Forestry and Fisheries (MAFF) project "Promoting the Development of Food Value Chains 2015", part of its Bilateral Business Development Assistance program for Africa. Kenya has enjoyed continued economic growth in recent years and is the major logistics hub for East Africa. It is the largest recipient of Japanese ODA in Sub-Saharan Africa, and the Government of Japan plans to increase support for the development of Mombasa Port and East Africa's Northern Corridor in terms of both infrastructure and technical know-how. Thus, a favorable environment is developing in Kenya for Japanese businesses. This chapter will outline the objectives and scope of the project as well as provide background on Kenya's investment environment and Japan's support of food value chain development in Kenya.

## 1.1 Objectives of the Project

### 1.1.1 Objectives of the project

In light of the expected doubling of the size of the world food market from 340 trillion yen in 2009 to 680 trillion yen in 2020, MAFF established its Global Food Value Chain (GFVC) Strategy in 2014 with a view to understanding the rapidly growing world food market and encouraging Japan's agricultural and food industries to expand their businesses overseas. The strategy has identified seven regions of the world that have a strong need for private sector investment and offer opportunities for public-private joint efforts. These regions are: (1) ASEAN, (2) China, (3) India, (4) Middle East, (5) Latin America, (6) Africa, and (7) Russia and Central Asia.

With respect to (6) Africa, the strategy calls for the development of high value-added food value chains through agricultural development aid under the TICAD framework and support for food and nutrition security as well as working with private sector investment to increase farm production and reduce production costs through introduction of improved seeds and farm machinery, irrigation systems and fertilizer application. The strategy aims to promote of high valued-added agriculture, diversification into processing and distribution from primary production (sixth sector industrialization), and development of distribution networks which connect farms with domestic consumer and export markets.

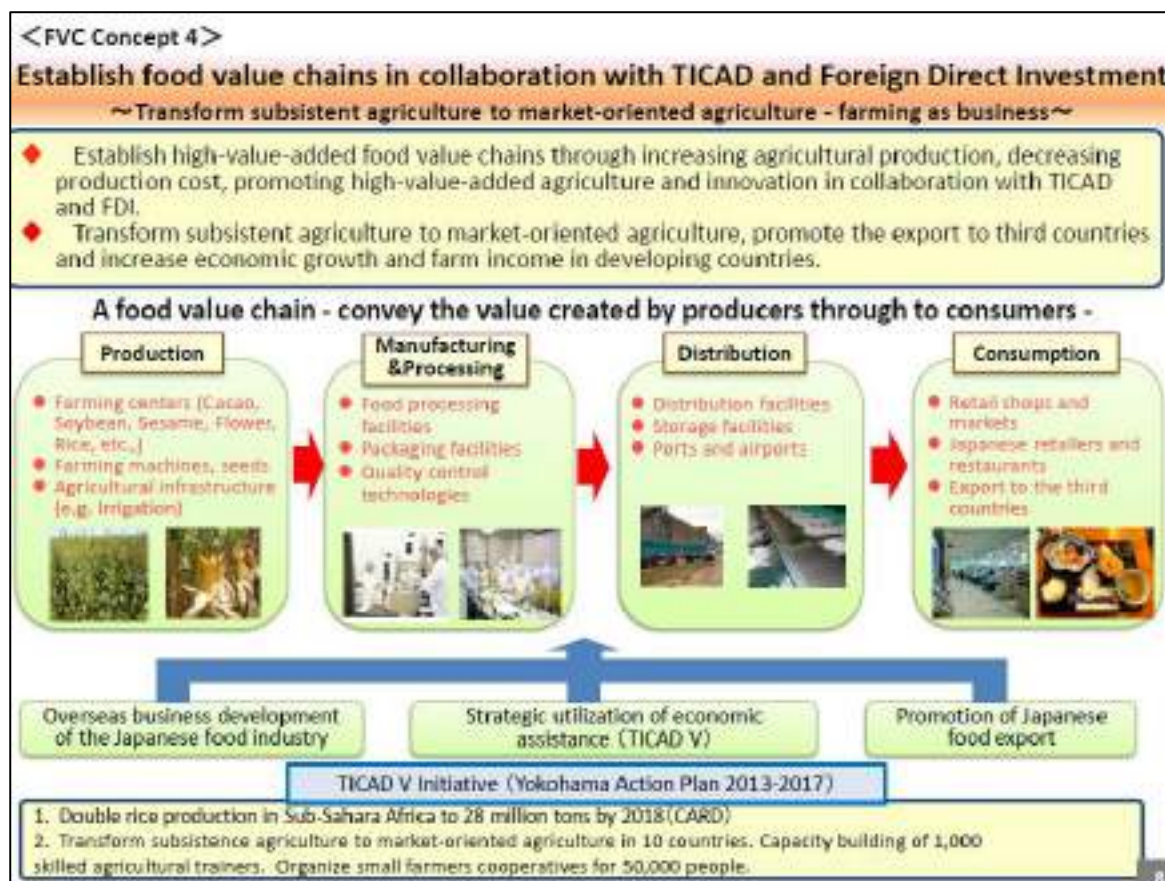
Most Japanese companies involved in FVC activities in Africa have traditionally been based in Southern Africa, especially the Republic of South Africa, a G20 member country. There is however an increasing interest in Kenya and other East African countries and in Ghana and other West African countries, where the middle class population is expanding. This research project focused on these three countries (Kenya, Ghana, RSA) and examined the opportunities for Japanese agriculture and food industries to develop businesses linked to the food value chains in these countries.

More specifically, we conducted the following activities:

- Support for bilateral project development in Kenya (a research study on FVC development, support for bilateral policy dialogue, support for organization of workshops)

- Support for bilateral project development in Ghana (a research study on FVC development)
- Support for bilateral project development in South Africa (a research study on FVC development)

This report is the results of the research study on Kenyan FVC development.



**Figure 1 Overview of Food Value Chains in Africa**

Source) Ministry of Agriculture, Forestry and Fisheries "The Global Food Value Chain Strategy" March 2015  
[http://www.maff.go.jp/e/gfvc/pdf/20150313\\_overview\\_of\\_the\\_gfvc\\_strategy.pdf](http://www.maff.go.jp/e/gfvc/pdf/20150313_overview_of_the_gfvc_strategy.pdf)

### 1.1.2 Scope of the study

The methodologies used for the study include a desktop literature review, a questionnaire survey of the member companies of Japan's Public-Private Council for Promoting the Global Food Value Chain, with follow-up interviews, as well as field research in Kenya (August 3 – 14).

The scope of the study covered:

- ① An overview of Kenya's food value chains, its consumer market and major investments (domestic and foreign) in FVCs  
 and
- ② Analysis of major Kenyan FVCs (both by product and cross-sectional) in which opportunities exist for Japanese companies

On the first point (① overview), we present a comprehensive picture of the food value chain in Kenya

encompassing agriculture, livestock and fisheries, inputs, downstream processing, exports, domestic distribution as well as logistics, IT, financing, and machinery and equipment. In addition, information and data on major players in the FVC and related government policies have been collected and summarized.

On the second point (② sectoral study), we present market entry opportunities that, on the basis of our field research we believe exist in Kenya's FVC. These opportunities are discussed by major product category as well as by cross-sectoral (functional) category such as cold chain, agricultural inputs, machinery and food processing.

Besides food products, farm products such as flowers, pyrethrum, sisal hemp, jatropha and tobacco occupy a major position in Kenya's agriculture. Among these non-food crops, we included flowers in our study, because one of the member companies of the Public-Private Council for Promoting the Global Food Value Chain showed particular interest in this sector.



## 1.2 Kenya's Economic Situation and Investment Climate

### 1.2.1 Population and Economic trends

#### Population, GDP, employment

Kenya had an estimated population of 46 million in 2015, ranking 6<sup>th</sup> among Sub Saharan countries after Nigeria, Ethiopia, Democratic Republic of Congo, RSA and Tanzania. It is a multi-ethnic nation and the official languages are Swahili and English. The population is growing at 2.6% per annum and is projected to reach 96 million by 2050. Kenya is located in East Africa, a region which had a population of 400 million in 2015 and is projected to hit 900 million by 2050. Kenya is considered a gateway to densely-populated East Africa

Kenya leads East Africa in industrialization and its macroeconomic policy has helped achieve an annual growth of 6-7% on average. In 2008, however, the growth rate dropped to 0.2% because of ethnic violence, triggered by the 2007 presidential election, which killed about 1,000 people and brought about inflation. However, the 2008 agreement on the formation of a coalition government calmed the political situation, and in the same year Vision 2030, a medium to long-term economic policy for Kenya, was announced. In 2010 a new constitution was promulgated following a national referendum, and the 2013 presidential election put Uhuru Kenyatta into office (incumbent). While terror incidents committed by the Islamic radical group Al-Shabaab, including the horrific 2013 Westgate shopping mall attack, have adversely affected the economy, the Kenyan economy is resilient and is projected to continue growing at an annual rate of around 6%.

The Kenyan GDP was 60.9 billion dollars in 2014, and the per capita GDP was 1,338 dollars. Kenya's GDP is the fifth highest among Sub Saharan countries after Nigeria, South Africa, Angola and Sudan. It is worth noting that Kenya's economy is mainly based on services and agriculture, while all of the top four countries depend on exploitation of natural resources for their high GDP. Kenya's annual GDP growth rate was recorded at over 8% in 2010 and was constant at around 5-6% from 2012 to 2014. Kenya's economic growth rate since 2009 is above the average of Sub Saharan Africa. While Kenya's per capita GDP is slightly below the Sub Saharan Africa's average of 1,769 dollars, it is the highest among East African countries. According to the 2013 data (Fig.3), real GDP consists of service industries (63%), agriculture (21%), and secondary industries (16% - manufacturing 10%). The agriculture, forestry and fisheries sector is a major driving force of GDP growth. Its contributions in this respect were 21% and 15% in 2013 and 2014, respectively (Table 1). Oil was discovered in the northwestern part of Kenya in 2012 and expectation are rising that Kenya may be able to develop these resources in the future.

Kenya's formal sector employment is just over 2 million, but about five times as many people are estimated to be employed in the informal sector. Agriculture accounts for 14% of salaried employment, manufacturing 14% and wholesale and retail trade 9%.<sup>1</sup>

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<sup>1</sup> Kenya National Bureau of Statistics, Facts and Figures 2015

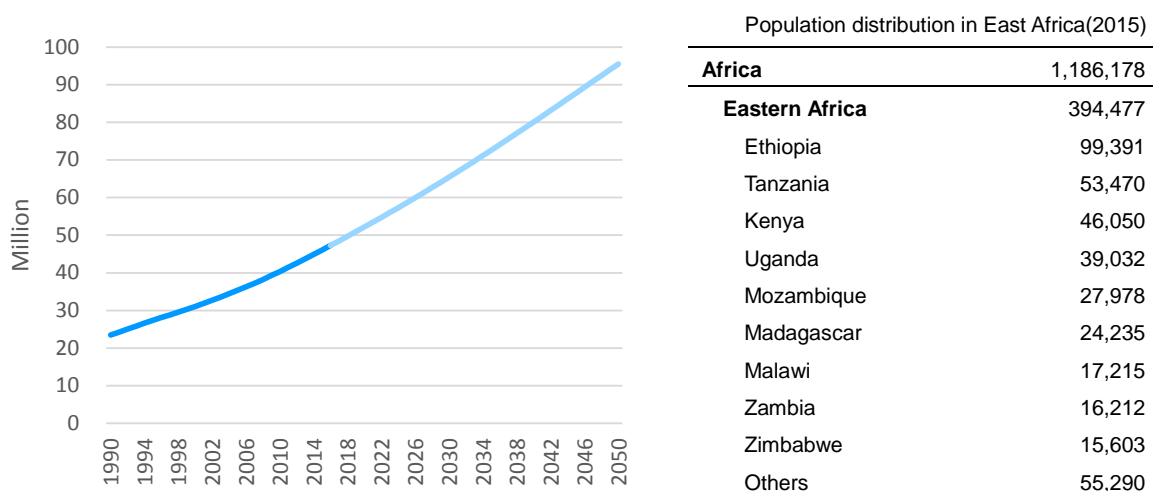
## **Administrative divisions and local government**

Kenya is a republic with a parliamentary democracy. The parliament is bicameral. The President, who is elected by popular direct voting, exercises executive power together with the Deputy President and cabinet ministers. State agencies related to the FVC include the Ministry of Agriculture, Livestock and Fisheries, the Ministry of Water and Irrigation and the Ministry of Industry, Investment and Trade.

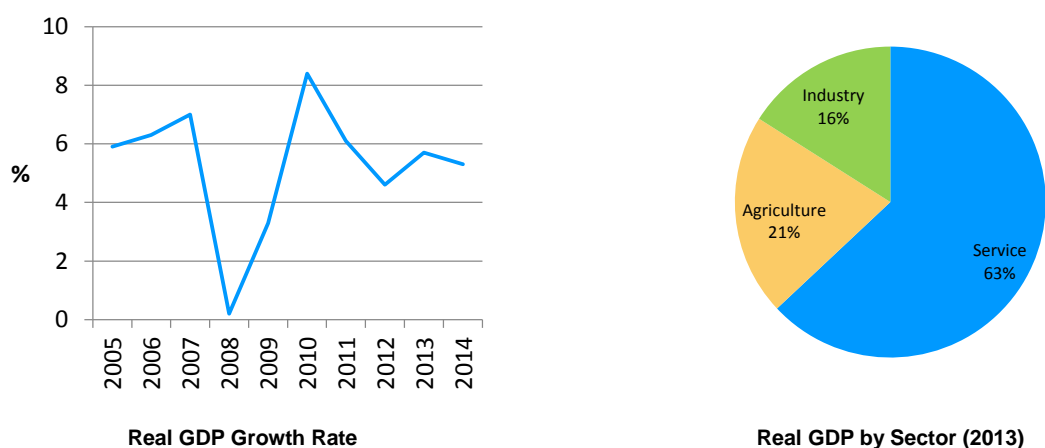
The 2010 Constitution abandoned Kenya's old system of 8 states and created 47 counties. Decentralization, from central to local control, has been progressing since 2013. The Government of Japan has been assisting Kenya in the decentralization effort by implementing JICA's In-Country Training Programme on Devolved System of Government and its Implications on Public Service Delivery.<sup>2</sup> Local governments are expected to play greater roles in agricultural development and FVC strengthening in Kenya.

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<sup>2</sup> January 14, 2013 through March 31, 2013

**Figure 2 Kenya population estimates and forecasts**

Source) UN World Population Prospects :2015 Revision

**Figure 3 GDP growth and GDP by sector**

Source) Kenya National Bureau of Statistics, AfDB

**Table 1 GDP growth rate of major sectors and contribution to GDP growth**

Contribution to GDP growth rate by major sectors (%- Sources of growth)			Growth rate of the major sectors (%- Growth rates)		
	2013	2014		2013	2014
AGRICULTURE, FORESTRY AND FISHING (AGRICULTURE)	20.8	14.5	AGRICULTURE, FORESTRY AND FISHING (AGRICULTURE)	5.2	3.5
CONSTRUCTION (INDUSTRY)	4.6	11.1	MINING AND QUARRYING (INDUSTRY)	-8.9	14.2
WHOLESALE AND RETAIL TRADE, REPAIR (SERVICE)	11.0	9.8	WHOLESALE AND RETAIL TRADE (SERVICE)	8.5	6.9
FINANCIAL AND INSURANCE ACTIVITIES (SERVICE)	8.1	9.1	MANUFACTURING (INDUSTRY)	5.6	3.4
REAL ESTATE (SERVICE)	6.0	8.5	FINANCE / INSURANCE (SERVICE)	8.1	8.3
INFORMATION AND COMMUNICATION (SERVICE)	6.8	8.4	CONSTRUCTION (INDUSTRY)	5.8	13.1
MANUFACTURING (INDUSTRY)	10.9	7.1	ELECTRICITY (INDUSTRY)	9.8	6.8

Source) Kenya National Bureau of Statistics

## Trade in Goods and Services

Kenya continues to have a trade deficit in goods, because the country depends on imports for its petroleum and machinery needs. In the five-year period from 2008 to 2012, imports corresponded to an average of 46% of the GDP, while exports corresponded to only 27%. Imports in 2014 increased by 15% from the previous year to 1.6 trillion Kenyan shillings, while exports increased by around 7% to 530 billion Ksh. The trade deficit in goods is a risk for the Kenyan economy, but it is balanced by its surplus in service exports.

Agricultural products comprise more than 50% of exports, led by Kenya's top export products: horticultural crops (particularly cut flowers) and tea. Other major exports include textiles and accessories, coffee beans, tobacco and tobacco products and iron and steel. Major imports are petroleum products, industrial machinery and aircraft, pharmaceuticals, animal or vegetable oils and fats, and fertilizers.

In 2014, 45% of Kenya's exports were shipped to other African countries (over half of which were within the East African Community: EAC), 26% to Europe and 19% to Asia. The EAC is comprised of Kenya, Tanzania, Uganda, Rwanda and Burundi, and one of its functions is as a customs union to promote regional processing by imposing common external tariffs of 0% for raw materials, 10% for intermediate and 25% for finished goods, except for some sensitive products. More than 60% of Kenya's imports were from UAE, India and other Asian countries; imports from African countries were only 9% of the total

Kenya has a trade surplus in services. In 2014 the estimated value of service exports was 4.9 billion dollars while the estimated import value was 2.9 billion dollars. Major service exports include transportation, government procurement, tourism and travel, and communications and information. Among notable service exports is the mobile money transfer service "M-PESA" which is provided by communications company Safaricom, Kenya's largest enterprise. M-PESA can be used for sending money home from abroad and is an important tool for stimulating the domestic economy. Safaricom is also provides money transfer services in Tanzania, South Africa, India and Afghanistan.

## Foreign investment and Aid

Kenya's economic stagnation from the 1980s to the early 2000s resulted in a decrease in direct investment. To counter this trend, the Government of Kenya created the Kenya Investment Authority in 2004, which was given the authority in 2007 to promote national investment opportunities and extend assistance to investors. Vision 2030, mentioned earlier in this report, aims to attract foreign investment into key sectors.

Foreign direct investment (FDI) to Kenya in 2013 was around 370 million dollars, with the major investors being China, India, Middle East countries and South Africa. This amount corresponds to less than 1% of the country's GDP. Impact of FDI on the Kenyan economy is thus limited and it is lower than in neighboring countries. Reasons behind this low level of FDI may include concerns over electrical power supply shortages and poor logistic infrastructure, and customs procedure difficulties, especially the corruption often found at lower levels of government. In recent years, however, India and China are increasing investment in resource exploration in Kenya. Kenya also has the second largest number of Japanese companies in Sub Saharan Africa.<sup>3</sup> Even though there are still challenges, Kenya as a whole is watched eagerly by the business community, due to its vibrant private sector, which contributes 97% of GDP, its

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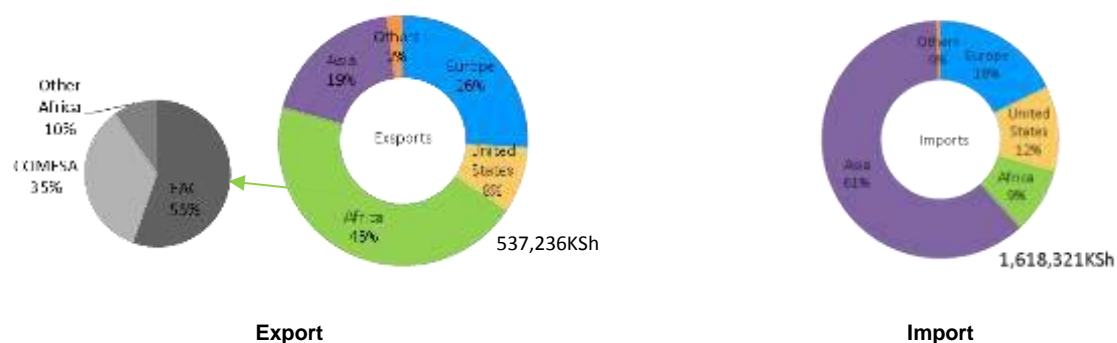
<sup>3</sup> MOFA, 2015, Annual Report of Statistics on Japanese Nationals Overseas, 2015 Abridged edition  
<http://www.mofa.go.jp/mofaj/files/000086464.pdf>

growing markets, and the geographic advantage it offers as the gateway to East Africa. Another reason for the recent upturn in foreign investment is the discovery of petroleum, gas and other mineral resources. In addition, though still small in scale, investments in the tourism, manufacturing, retail and finance sectors are growing in Kenya and other East African countries.

Interventions by economic development partners are mostly in the areas of environment, water, hygiene and health, followed by energy, roads and public finance management. The World Bank invests mainly in road construction and energy projects with 2.8 billion dollars and ADB has funded projects worth 1.8 billion dollars. These two donors are followed by EU and UN development organizations. While Japan and European countries are major bilateral donors, China is the biggest overall development partner for Kenya, investing in infrastructure and other projects. Kenya is the largest recipient of Japanese ODA in Sub Saharan Africa.

**Figure 4 Kenya's Product and Service Trade**

Source) ITC Trade Map Note) No 2012 data for product trade.

**Figure 5 Kenya's Trade by Area (2014)**

Source) Kenya National Bureau of Statistics

**Table 2 Inward FDI comparison within East Africa (USD Million)**

	2013	2009-13 年計		2013 年	2009-13 年計
Kenya	372	969	Uganda	1,194	4,680
Ethiopia	953	2,368	Mozambique	6,697	18,135
Tanzania	1,872	7,694	Madagascar	567	4,219

Source) World Bank, World DataBank

**Table 3 Kenyan ODA: Major Donor Countries/International Institutions (2012-2013 Par. USD Million)**

Total	3,366	Japan	282	AfDF	228
USA	820	EU institutions	240	IMF	220
IDA	395	Germany	235	UK	219

Source) OECD - DAC ; <http://www.oecd.org/dac/stats>

## 1.2.2 Logistics Infrastructure --- Kenya as the gateway to East Africa

Kenya is considered the gateway to Africa, in terms of both sea and air access. The government of Kenya is putting effort into attracting private-sector investment for infrastructure projects such as road and railway construction in the South Sudan Corridor (ports, roads, railways) and across the Mombasa-Uganda border as well as expansion of Mombasa Port and Jomo Kenyatta International Airport.

JICA is also active in assisting logistics improvements by implementing the Mombasa Port Development Project, Mombasa Port Area Road Development Project, one-stop border assistance as well as the Master Plan Development Project for Northern Corridor Logistics Network Improvement.

### Roads

Transportation in Kenya is mostly by road. The road network is relatively well-developed, particularly with regard to main roads. However, there is much to be done about urban-rural road connections. Paved roads are limited, other than main roads. Chronic traffic congestion in the Mombasa port area and elsewhere increases transport time and costs. Major road infrastructure projects include:

- Northern Corridor Repair (Mombasa Port – Nairobi – Uganda/Rwanda/Burundi/DR Congo)
- Nairobi – Thika multi-lane highway construction (to address increased Kenya-Ethiopia traffic)
- Lamu Port to South Sudan and Ethiopia highway construction (linking nearby regions)

### Rail

The existing railway connects Mombasa Port with Nairobi and Uganda, and as such it is an important infrastructure for the region. However, it has become obsolete and is underutilized. The amount of freight handled by the railway is merely around one-third of the available capacity, and accounts for only 6% of all freight in Kenya. In 2005 an South African-led consortium (Rift Valley Railways) acquired a 25-year concession for the Kenya -Uganda railways. In 2012 a Chinese company concluded a railway construction agreement with the Kenya Railways Corporation (KRC).

### Port

Mombasa Port handles the second largest volume of freight cargo in Sub Saharan Africa, behind only Durban, South Africa. Despite being a key freight transport and transit terminal, Mombasa Port does not have enough capacity to handle the increasing amount of cargo and has considerable challenges to face in terms of connection with roads and railways, access roads, customs clearance system, etc. A capacity expansion project is underway with ODA funding from Japan and other donors. The present phase of the expansion project of is scheduled to be completed in 2016. In addition, there is a plan to develop Lamu port and turn it into the gateway to the LAPSSET Corridor connecting to South Sudan and

**Figure 6 East African Railway Network**



**(black: existing, red: planning)**

Source) International Peace Information Service and TransArms-Research, 2014, *Supply Chains and Transport Corridors in East Africa*  
<http://ipisresearch.be/wp-content/uploads/2014/06/A4-SUPPLY-CHAINS-NON-PRINT-PROTECTED.pdf>



Ethiopia. With respect to maritime transport, the rising insurance cost due to the Somalia situation is a matter of concern.

### Airport

Jomo Kenyatta International Airport is growing as a hub airport in East Africa. Forwarders with cool and cold storage facilities operate there for the export of flowers and vegetables. Integrated farm-to-airport cold chains, however, have room for improvement.

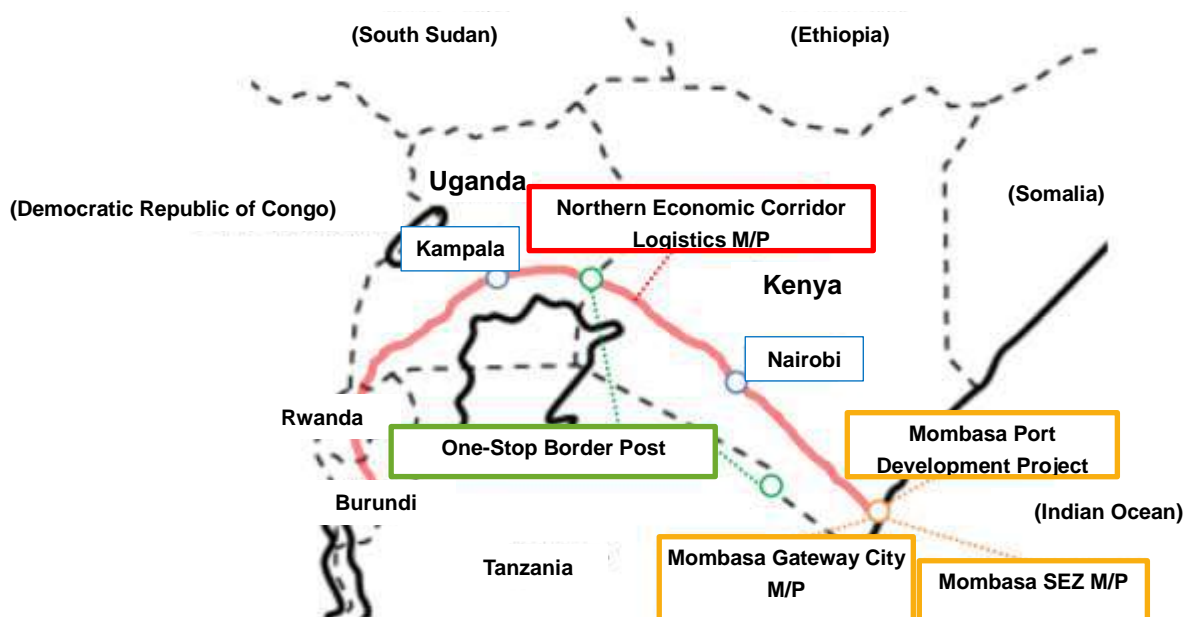
Figure 7 Northern Corridor with Kenya's Mombasa Port as a hub



Exports via Mombasa port in Kenya compared to nearby countries (2013)

		Unit : kt
Kenya	Exports	20,046
	Imports	2,230
Uganda	Exports	4,508
	Imports	404
S Sudan	Exports	716
	Imports	59
Congo-Kinshasa	Exports	491
	Imports	20
Rwanda	Exports	223
	Imports	17
Burundi	Exports	66

Figure 8 JICA Projects related to the Northern Corridor



Source) JICA, 2014, "JICA's Cooperation around Mombasa – improving the environment to promote investment"

[http://www.jica.go.jp/information/seminar/2014/ku57pq00001n31qp-att/20140717\\_01\\_01j.pdf](http://www.jica.go.jp/information/seminar/2014/ku57pq00001n31qp-att/20140717_01_01j.pdf)



### 1.2.3 Investing in Kenya: Incentives, Benefits and Risks

#### Incentives available to foreign investors

The Government of Kenya encourages foreign investment in agricultural production, infrastructure and certain other specified sectors, mainly through designation of export processing zones (EPZ) and through tax incentives such as VAT and import duty exemptions for farm machinery and equipment, VAT exemptions on capital goods, and investment credit.

A foreign investor operating in an EPZ is exempted from taxes during the first 10 years of operation and pays only 25% of taxes during the subsequent 10 years, provided that at least 80% of the products produced in the EPZ are exported. Further, import duties on the machinery, raw materials and inputs are exempted. As of this writing, nearly 50 EPZs are either in operation or under development. The investors are mainly from China, Taiwan and India. Many of the EPZs are located in the vicinity of Nairobi-Mombasa, the biggest being located near the Athi River (25 kilometers from Nairobi).

It should be noted that EPZs are not often used as a foothold for the regional market, because the EAC is already a customs union. To deal with this problem, the Government of Kenya has announced a policy to develop, near Mombasa Port, the kind of special economic zones (SEZ) that are prevalent in other African countries. The Government of Japan plans to support this project.

#### Foreign investment restrictions

Restrictions on shareholding ratios exist for insurance, communication, airlines and companies listed on the Nairobi Stock Exchange. Foreign nationals and firms are virtually banned from acquiring land as a result of the new Land Law and have to resort to a land lease contract of maximum 99 years. Some foreign firms in agriculture-related businesses see this regulation as an impediment. A new foreign investment must be worth at least 100,000 dollars, but no minimum requirement exists for projects to be located in an EPZ.

#### Investment benefits and risks from a foreign company perspective

An interview survey by UNCTAD of investors, firms and trade associations about setting up a business base in Kenya<sup>4</sup> revealed that many of the respondents were positive, citing as reasons the diversified economy supported by a vibrant private sector and the prospects of good EAC growth.

The Government of Kenya is clearly pro-business. Government officials, and at times the President himself, attend periodic business roundtable meetings with the private sector.

While the respondents were generally pleased with the improving communication, air transport and road network infrastructures, they were concerned about the stability of electricity supply. No particular dissatisfaction was expressed with respect to business permit procedures or employment relations. Some respondents pointed out the high quality and willingness to work of human resources in Kenya. Corruption was not mentioned as a big issue, but there are incidents among low-ranking officials.

Crime is on the decline. One cause for concern has been the sporadic terror attacks, which are said to

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<sup>4</sup> UNCTAD, 2012, "An investment guide to Kenya Opportunities and Conditions"

have been triggered by the government's decision to send troops to the African Union Mission in Somalia to quiet militant groups. However, although these terror attacks affect tourism adversely, little impact has been seen on currency exchange, stock market or capital inflow.

According to the "Issues and Requests for Improvements on Trade and Investment Barriers in 2015" published by Japan Business Council for Trade and Investment Facilitation, the railways development tax (1.5%), which is imposed on merchandise re-exported to EAC after a certain period of storage in Kenya, and the import declaration charge (the higher of: 2.25% of the CIF value or 5,000 Ksh) increase the costs and act as impediments to full performance of Kenya as the regional distribution hub. Another opinion expressed was that Kenyan Standards (KEBS) compliance certificates are costly and time-consuming, and stand in the way of timely merchandise shipment.<sup>5,6</sup>

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<sup>5</sup> For details on import duties, see JETRO and similar sources.

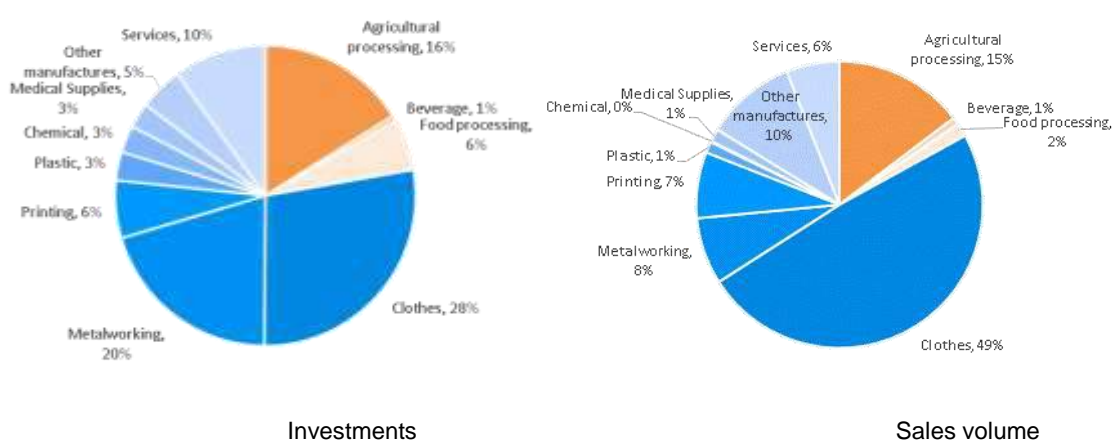
[https://www.jetro.go.jp/world/africa/ke/trade\\_03.html](https://www.jetro.go.jp/world/africa/ke/trade_03.html); <https://www.jetro.go.jp/world/qa/04A-001168.html>

<sup>6</sup> Japan Business Council for Trade and Investment Facilitation, 2015, Issues and Requests for Improvements on Trade and Investment Barriers in 2015: Middle East and Africa, <http://www.jmcti.org/mondai/pdf/sokuhou2015-7.pdf>

**Table 4 EPZ in Kenya**

County Name	Former State Name	Number of EPZ
Nairobi	Nairobi	8
Mackakos	Eastern	4
Kajiado	Rift Valley	1
Mombasa	Coast	20
Kilifi	Coast	5
Taita Taveta	Coast	1
Kiambu	Central	2
Muranga	Central	1
Elgeyo Marakwet	Rift Valley	1
Uasin Gishu	Rift Valley	1
Laikipia	Rift Valley	1
Nandi	Rift Valley	1
Meru	Eastern	1
<b>Total:</b>	<b>13</b>	<b>5</b>
		<b>47</b>

Source) Export Processing Zone Program, 2012, *Annual Performance Report*

**Figure 9 Market share of investment and sales by manufacturing industry in EPZs(2012)**

Source) Export Processing Zone Program, 2012, *Annual Performance Report*

**Table 5 Strengths/Weaknesses of Kenya for foreign investment**

Strengths	Weaknesses
Diversified economy	Unstable electric power supply
Abundant labor force	Complicated tax procedures
Low-wage workforce	Low efficiency of transportation
Strategic location for regional trade (EAC etc.)	Public security/safety (and increase in insurance costs during transportation)
Active support by the government for private sector and investment	Insufficient transport infrastructure

Source) UNCTAD, PwC

#### **1.2.4 Japan's Economic Aid related to the Food value chain**

A Japanese company interested in launching a FVC-related business in Kenya may want to take advantage of ODA or other economic cooperation projects by the Government of Japan. In the following section, we describe Japan's economic cooperation policy with Kenya and summarize some specific programs related to the FVC.

The Government of Japan's assistance to the Kenyan agricultural sector is targeted mainly at small farmers and its major objective is transformation of these farms from subsistence agriculture to market-oriented, in line with the Government of Kenya's Vision 2030. Major specific projects include: large-scale irrigation and rice cultivation in Mwea (irrigation development, strengthening of farmers' organizations, introduction of fertilizers and farm machinery), smallholder horticulture empowerment and promotion, and small-scale irrigation. The Government of Japan is also focused on logistics infrastructure and ESZ development, and plans to promote FVC-related investment from Japan.

##### **Rice**

On the occasion of the 2008 TICAD IV (the fourth Tokyo International Conference on African Development), JICA launched the CARD Initiative (Coalition for African Rice Development) with the aim of doubling rice production in Africa over 10 years. CARD is a coalition of donor organizations and others united for the objective of promoting rice production. Together with JICA, AGRA (Alliance for a Green Revolution in Africa), headquartered in Kenya, plays a key role in promoting the CARD Initiative.

Japanese assistance for large-scale irrigation is focused in Mwea. Initial studies for a development project began in 1988, and in 1991 the Mwea Irrigation and Agriculture Development Project was implemented to build capacity and execute a pilot program. The project culminated in 2010 as an ODA loan project called Mwea Irrigation Development Project that included construction of a new dam and irrigation channels. Since 2012, the Rice-based and Market-oriented Agriculture Promotion Project (Rice MAPP) has been ongoing, seeking to promote market-oriented rice cultivation by the 6,080 smallholders in the irrigation project area through organization of water management schemes and enhancement of cultivation and farm management capacities. In parallel, JICA provides grants to impoverished farmers for the purchase of fertilizers and farm machinery, and MAFF assists the trial use program of Japan-made agricultural machinery and equipment in Kenya.

##### **Horticulture**

The Smallholder Horticulture Empowerment and Promotion Project (SHEP) was begun in 2006 with the objective of enhancing the earning power of horticulture farmers through improved cultivation techniques and farmers' organization. The project was carried over in 2010 to the Smallholder Horticulture Empowerment and Promotion Unit Project (SHEP UP) and in 2015 to Smallholder Horticulture Empowerment and Promotion Project for Local and Up-scaling (SHEP PLUS). During the original SHEP phase, farmers in the model communities were given the opportunity to form alliances with market operators and farmer organizations received training to strengthen their unity. Under SHEP UP, Kenya's Ministry of Agriculture created SHEP units to spread the scheme nationwide. Under the framework of SHEP PLUS, approaches to counties were emphasized, in line with the national decentralization policy. The overall SHEP approach has been highly rated as an effective means to bring farmers and market operators together. The 2013 TICAD V chose SHEP as a model of Japan's agricultural assistance to be

disseminated to other African countries. Officials of competent authorities of Sub Saharan countries receive training for this purpose in Kenya.

### Logistics infrastructure and ESZ development

The Government of Japan is also active in assisting in the development of Kenya's logistics infrastructure. Since 2007, using the framework of ODA loans, Japan has assisted the construction of a new container terminal and rehabilitation of loading/unloading equipment in the port of Mombasa, the port from which the largest amount of Kenyan exports is shipped. In 2014 the second phase of the project was launched with a view to facilitating operation of a larger-area transport/transit network. In addition, in March 2015, the Project for Formulation of Master Plan on Logistics in Northern Economic Corridor was begun by the Government of Japan to help the planning of road infrastructure and transport development of the northern corridor connecting Kenya with Rwanda and Burundi via Uganda, which is a key logistics artery for East Africa. Transport for farm products is to be included as an important element in the master plan.<sup>7</sup> Currently, transportation costs in the northern corridor comprise as much as 30% of the product price, because the infrastructure is underdeveloped, connections between different means of transportation are poor, idle times at ports and borders are long and many trips are only one way. With a view to addressing these logistical problems, the master plan is being formulated with the assistance of Japan.

**Table 6 Major FVC-related assistance programs from Japan**

	Project title		Description
Rice	Mwea Irrigation and Agriculture Development Project (1991 – 1998)	Technical Cooperation Y600 million	Capacity development for National Irrigation Board (NIB), water management technique establishment at pilot farms, training
	Food Security Project for Underprivileged Farmers (2005, 2008, 2013)	Grant Aid Y2.27 billion	Funding for smallholders in the Mwea Irrigation Area for procurement of fertilizers, rice cultivation machines (4-wheel tractors, threshers, etc.)
	Mwea Irrigation Development Project (2010 – 2018)	ODA loan Y13.18 billion	Dam and channel construction in Mwea, a major grain belt of Kenya, rehabilitation of existing irrigation channels
	Rice-based and Market-oriented Agriculture Promotion Project (Rice MAPP) (2012 – 2017)	Technical Cooperation Y680 million	Information system analysis and monitoring on market, enhancement of water management system streamlining, cultivation and farm management techniques
	Feasibility Survey Project on Agricultural Mechanization for Small Scale Farmers in Sub Sahara Africa -Acceleration of Agri-Business -	MAFF subsidy	As part of an initiative to encourage private-sector investment in agri-business for Sub Saharan farmers, a pilot study was made in Kenya for agricultural mechanization.
	Project on rice research for tailor-made breeding and cultivation technology development in Kenya (2013 – 2018)	Technical Cooperation	Rice seedling growth system for diverse farm conditions, development of new rice varieties for domestic market as well as cultivation techniques
Horticulture	Horticultural Produce Handling Facilities Project	ODA loan Y2,016 million	Construction of pre-cooling and cooling facilities to maintain quality of horticultural produce and procurement of necessary equipment
	Smallholder Empowerment and Horticulture Promotion Project (SHEP) (2006 – 2009)	Technical Cooperation Y310 million	Facilitation of alliance between smallholder horticulture farmers and market operators, farmer group training and capacity development

<sup>7</sup> JICA, Kenya: Project for Formulation of a Master Plan on Logistics in the Northern Economic Corridor: Ex-ante evaluation table, November 2014

	Smallholder Horticulture Empowerment and Promotion Unit Project (SHEP UP) (2010 – 2015)	Technical Cooperation Y590 million	Presentation to provinces and districts for dissemination of the SHEP-type human resource development approach, training of officials, monitoring of outcomes
	Smallholder Horticulture Empowerment and Promotion Project for Local and Up-scaling (SHEP PLUS) (2015 – 2020)	Technical Cooperation Y950 million	Formulation of implementation strategy for the SHEP approach, capacity building for the implementing bodies
Small –scale irrigation	Project for sustainable Smallholder Irrigation Development and Management in Central and Southern Kenya (2005 – 2010)	Technical Cooperation Y380 million	Construction of smallholder irrigation facilities, organization of the water management cooperatives, human resources development in Central and Southern Kenya
	Sustainable Smallholder Irrigation Development and Management in Semi-Arid Lands Project (2012 – 2015)	Technical Cooperation	Verification of applicability to semi-arid lands of the smallholder-participatory irrigation development strategy successfully promoted in Central and Southern Kenya (blessed with good natural environment).
Logistics Infrastructure	Mombasa Port Development Project: Phase I and Phase II (2007 – 2019)	ODA loan Y58.83 billion	Construction of a new container terminal at Mombasa Port, renovation of loading/unloading facilities, facilitation of wider-area transport/transit network
	Project for Formulation of Master Plan on Logistics in Northern Economic Corridor	Technical Cooperation	Formulation of master plan on Logistics in the Northern Economic Corridor

Sources: JICA, JICAF

MOFA, 2013, Press release on grant aid to Kenya: Project for Rural Water Supply in Baringo County and Food Security Project for Underprivileged Farmers ([http://www.mofa.go.jp/mofaj/press/release/25/1/0121\\_02.html](http://www.mofa.go.jp/mofaj/press/release/25/1/0121_02.html)), MOFA, 2015, Japan's ODA data for Kenya ([http://www.mofa.go.jp/mofaj/gaiko/oda/data/gaiyou/odaproject/africa/kenya/contents\\_02.html](http://www.mofa.go.jp/mofaj/gaiko/oda/data/gaiyou/odaproject/africa/kenya/contents_02.html))

## 2 FOOD VALUE CHAINS AND THE KENYAN RETAIL MARKET

Service industries and agriculture form the base of Kenya's economic structure. The retail market is modernizing quickly, due to expansion of the middle class and the progress of innovation as exemplified by the wide use of information technology and mobile phones. Within the FVC, many market entry opportunities are believed to exist in agriculture, livestock and fisheries industries and food industry, as well as in the businesses dealing with intermediate goods, capital goods and service industries such as distribution, catering, information technology and financing. This chapter will illustrate an overall picture of Kenya's FVC from agriculture, livestock and fisheries to the consumer market. Major actors in the FVC and pertinent government policies will also be discussed.

### 2.1 Kenya's Food, Agriculture, Livestock and Fisheries Industries

#### 2.1.1 Domestic food supply

Kenya's total population is 46 million, 25% of which live in urban areas and 75% in rural areas. Its calorie intake per capita is increasing (Fig.10) and nutrition is getting improving. The poverty rate, however, is still high at 45.4% and the food-insecure population amounts to 9.9 million (21.2%). The total population is projected to double to 96 million by 2050 and not only calorie intake but also sufficient nutrition particularly for infants, children and young women, still present major challenges. It will be very important to expand the supply of grains, vegetables and fruits, dairy products, meat and fish.

The staple foods of Kenyan people are cereals (maize, wheat, and rice), potatoes (Irish potato, sweet potato, cassava) and plantain (cooking banana). In terms of caloric supply, cereals account for 55% and potatoes and plantain combined account for 10%. Among total cereal supply, maize occupies 55%, wheat 28% and rice 13%. Kenya depends heavily on imports for the supply of cereals requirement. While maize imports have generally declined due to increased production in Kenya, decline in local production can lead to surge in imports as it did in 2009. Roughly, imports account for 70% of wheat supply and 80% of rice. An important source of calories after the staple foods is beans, accounting for 11% of caloric supply. Hardly any potatoes or beans are either exported or imported. They are subsistence crops.

Sugarcane is grown in Kenya, but it does not meet the high domestic sugar demand and a quarter of sugar supply is imported. Oilseeds such as coconut and peanut are also domestically produced, but the domestic demand for vegetable oil is so high that palm oil must be imported from Indonesia and other countries. Vegetable oil production is a relatively sizable industry in Kenya. Using imported palm oil and other raw materials, refined and packaged vegetable oil products are produced and sold in Kenya and exported to other countries.

Vegetables and fruits are produced mainly for subsistence, but they are also typical export items. Major

export products in this field are green beans, avocado, mango, and canned pineapple. Coffee and tea are the biggest export items of Kenya. Most of the production is for export.

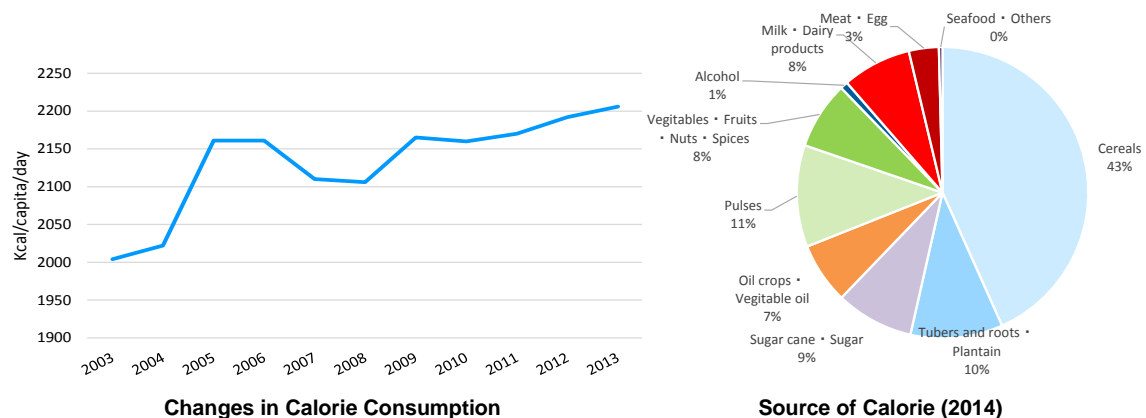
Kenya's climate is arid and rangeland is vast. Beef, milk and dairy products are the main sources of animal protein. More recently, chicken consumption is increasing, while the production and consumption of pork, eggs and fish are minimal.



**Table 6 Kenya's Food Balance Sheet (2014)**

	Supply('000 ton)					Demand('000 ton)						Per capita consumption	
	Production	Imports	Stock Variation	Exports	Supply	Fooder	Seeds	Processed	Disposal	Others	Food	kg	Kcal
Wheat	486	1,275	0	7	1,754	0	11	66	34	0	1,644	38	276
Maize	3,507	460	545	3	4,510	80	63	168	541	0	2,639	61	535
Rice	98	471	0	1	568	0	0	1	3	0	564	13	126
Sorghum	167	92	0	49	211	26	3	47	28	0	107	3	21
Other cereals	136	89	0	25	197	7	3	73	12	0	101	3	19
Potato	1,600	0	0	4	1,596	0	104	2	160	0	1,330	31	60
Sweet potato	1,150	0	0	0	1,150	0	0	0	115	0	1,035	24	65
Cassava	1,112	0	0	0	1,112	0	0	1	33	0	1,079	25	74
Other potatoes	30	1	0	1	30	0	0	-1	3	0	27	1	2
Plantain	600	0	0	0	600	0	0	6	60	0	534	12	30
Sugar cane	6,478	0	0	0	6,478	0	0	4,150	0	0	2,328	54	42
Sugar • Sweetener	572	179	-20	19	712	0	0	34	0	0	678	16	153
Oil crops	179	9	0	16	172	10	2	82	8	0	71	2	23
Vegetable Oil	35	536	0	80	491	0	0	0	0	258	232	5	130
Pulses	874	7	433	1	1,313	0	10	0	134	0	1,168	27	255
Nuts	33	0	0	6	27	0	0	0	1	0	23	1	4
Tomato	494	7	0	0	501	0	0	0	50	0	451	11	6
Other vegetables	1,720	108	0	228	1,599	0	0	0	173	0	1,497	35	21
Banana	1,375	1	0	0	1,375	0	0	0	206	0	1,169	27	45
Other fruits	1,555	56	0	252	1,360	0	0	0	104	0	1,331	31	38
Coffee	50	1	5	58	-2	0	0	0	0	0	4	0	0
Tea	445	2	0	442	5	0	0	0	0	0	5	0	0
Spices	256	3	0	3	256	0	0	0	0	0	256	6	55
Alcohol	553	7	0	2	558	0	0	0	0	0	557	13	19
Milk • Dairy product	4,078	26	0	11	4,093	17	0	347	327	0	4,218	98	173
Beef	380	0	0	2	378	0	0	0	0	0	378	9	46
Other meat	55	1	0	6	50	0	0	0	0	0	152	4	18
Offal	76	0	0	0	76	0	0	0	0	0	76	2	5
Animal fat	17	4	0	1	20	0	0	13	0	3	4	0	2
Egg	71	0	0	0	71	0	5	0	11	0	56	1	4
Freshwater fish	159	12	0	8	163	0	0	0	0	0	161	4	7
Other seafoods	16	25	0	15	26	0	0	0	0	0	31	1	1
Others	18	7	2	14	13	0	0	7	0	3	3	0	1

Source) Kenya National Bureau of Statistics "Economic Survey 2015"

**Figure 10 Kenya's Changes in Calorie Consumption and Calorie Sources**

Source) FAO STAT

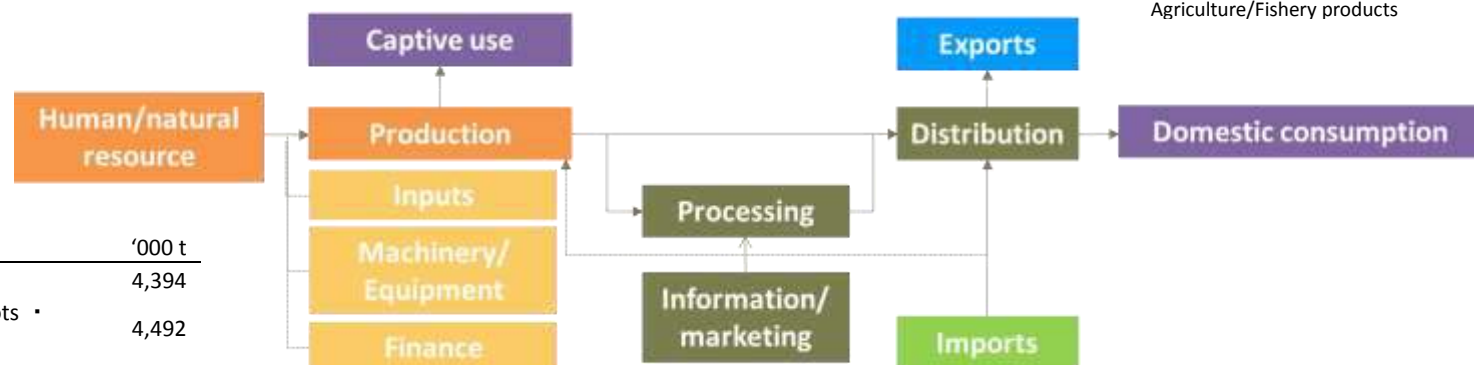
Export	'000 t
Cereals	85
Oil crops•	96
Vegetable oil	
Vegetables•Fruits•	489
Nuts	
Coffee•Tea•Spices	503
Seafood•Others	37



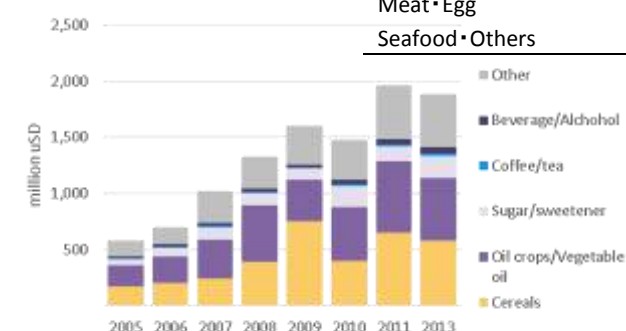
Exports of Food and Agriculture/Fishery products

Domestic food consumption	'000 t
Cereals	5,055
Tubers and roots • plantain	4,005
Sugar cane•Sugar	3,006
Oil crops•	303
Vegetable oil	
Pulses	1,168
Vegetables•Fruits•Nuts	4,727
Coffee•Tea•Spices	265
Alcohol	557
Milk•	4,218
Dairy products	
Meat•Egg	666
Seafood•Others	195

Production	'000 t
Cereals	4,394
Tubers and roots • plantain	4,492
Sugar cane•Sugar	7,050
Oil crops•	214
Vegetable oil	
Pulses	874
Vegetables•Fruits•	5,177
Nuts	
Coffee•Tea•Spices	751
Alcohol	553
Milk•	4,078
Dairy products	
Meat•Egg	599
Seafood•Others	193



Import	'000 t
Cereals	2,387
Sugar cane•Sugar	179
Oil crops•	545
Vegetable oil	
Vegetables•Fruits•	175
Nuts	
Milk•	26
Dairy products	
Seafood•Others	44



Imports of Food and Agriculture/Fishery products

Figure 11 Food Map of Kenya(2013)

Source) Promar Consulting, based on Kenya National Bureau of Statistics 「Economic Survey 2015」、ITC Trade Map、FAOSTAT

## 2.1.2 Trade in agricultural produce

### Export

Over half of Kenya's exports by value are agricultural products. In 2013 agricultural exports were valued at 2.9 billion dollars, 39% of which was tea, 17% flowers, 16% vegetables, fruits and their preparations, 6% crude coffee beans, and 5% tobacco.

The export volume of tea increased 50% in the 10 years from 2003 to 2013. In dollar terms, the increase was 150% because the international market was tight during the latter half of the 2000s. Mombasa is one of the world's busiest tea auction centers among in tea growing countries, paralleling Colombo, Sri Lanka and Calcutta and Guwahati, India. Tea leaves from neighboring countries also are traded at the Mombasa auction. The export value in 2014 declined 10% to 1.07 billion dollars reflecting the softening international market. The tea leaves are shipped to Pakistan, Afghanistan, Egypt, the UK, and other countries. Little blending, packing or tea bag production activity is done within Kenya. As a producing country, the low marketing capability is a problem that needs to be addressed. Kenya exported coffee, too, worth 220 million dollars in 2014. Like tea leaves, Kenya only exports raw beans, and the roasting and packing are done in Europe for worldwide distribution.

While tea exports declined in 2014, exports of cut flowers rose sharply. Horticultural exports including flowers, vegetables and fruits exceeded tea exports at 1.10 billion dollars. Some 80% of the flower exports are directed to the EU. Kenyan flowers are sold in the EU, the U.S. Japan and other countries, mainly via the world's largest flower market in the Netherlands. 36% of the flowers that the EU imports are grown in Kenya. Large horticulture facilities have been built in Kenya by British and other European companies. Other than the flowers, horticultural crops such as green peas and other beans, canned pineapples, avocado and mango are exported from Kenya.

### Import

Major agricultural imports include animal and vegetable oil and fats, cereals and sugar. The total value of agricultural imports in 2013 was 1.8 billion dollars, accounting for 14% of the nation's total imports. The largest agricultural import item is palm oil, followed by wheat, rice and sugar. Since Kenya's commercial food processing capacity is limited and the middle-class is expanding, imports of cooked food have been increasing, reaching 300 million dollars in 2013. Likewise, imports of fertilizers and farm machinery have been on the rise. In 2013, Kenya imported 810 million dollars' worth of fertilizers, pesticides, farm machinery and food industry machinery.

At the present, nearly 80% of the exported foods and beverages are unprocessed; processed products account for about 20%. Import duties on imports from non-EAC countries are, in principle, 0% for raw materials, 10% for intermediates and 25% for finished goods. Relatively high rates are applied, however, on sensitive items such as milk and dairy products (60%), maize (50%), rice (higher of 75% or 200 dollars/ton), wheat (35%), wheat flour (60%), and sugar (higher of 100% or 200 dollars/ton). It should be noted that EAC member states apply reduced tariff rated to some sensitive products. Kenya, for example, applies 35% import duty on rice because it needs to import rice in large quantities.<sup>8</sup>

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<sup>8</sup> USDA FAS, 2015, 'Kenya Grain and Feed Annual'; WTO tariff data base

### 2.1.3 Agriculture, fisheries and food processing industries

#### Farmland availability and geographical distribution

Land area for agriculture in Kenya is 27 million hectares, 47% of the nation's total land area of 57 million hectares. However, most is rangeland and the area used for tilling and crop cultivation is merely 6 million hectares or 22% of the farmland. Using precipitation as a main criterion, the Government of Kenya has indicated land use possibilities. According to this classification, a total area of 7.4 million hectares is said to be arable, and another 3.4 million hectares is semi-arable. In other words, more than 80% of the national land territory is unfit for farming. The areas considered to be arable are mainly in the southwestern highlands of Kenya. In particular, the areas alongside the Mombasa-Nairobi Corridor and stretching to Kisumu and then to Uganda are the farming belts. Major trunk roads and communication networks are also found in this region.

Kenya is largely in an arid to semi-arid zone. The agriculture is basically rain-fed, and so agricultural production is highly dependent on weather. Much effort is being made to develop irrigation systems, because rainfall is often insufficient and food shortages caused by drought are a frequently-occurring problem. So far, only some 2% of tilled land is irrigated. The largest irrigated area is Mwea, followed by Tana/Hola, Perkerra, Bura and West Kano. These irrigated areas are managed by the National Irrigation Board – NIB). In addition, smallholder irrigation has been expanding recently. An increasing number of smallholders and cooperatives are buying subsidized irrigation equipment with the help of public-private partnerships. According to the Kenyan Ministry of Agriculture, the number of farm households using irrigation has increased from 400,000 in 2010 to 700,000 in 2012.

#### Farm Size

During the British colonial period, about half of the arable land in Kenya (around 3 million hectares) was used as “white highland” (farmland exclusive to Europeans). After independence, the government bought back the farmland from the European settlers and distributed it to Kenyan farmers. Land distribution, however, was conducted for political purposes by every government that followed, and is one of the direct causes of today's ethnic conflicts and political instability. Large landowners (20% of the total in number) own a majority of the arable land, while smallholders (67%) use what is left of the good land and low precipitation land and the remaining farmers (13%) own no land. Following the constitutional amendment, the Land Law has been revised and a new land reform is progressing.<sup>9</sup>

A nationally representative survey conducted in 2010 shows the mean farm size in Kenya to be 1.86 hectares per farm.<sup>10</sup> Over 80% have 2 hectares or less, and further segmentation of land is occurring through inheritance. Farms of 5 hectare or less each produce 70% of the total agricultural output, while middle sized farms of 20 – 50 hectare each produce 25%. Class disparities are large. Plantation agriculture and large to medium agricultural firms produce tea, horticulture and sugar cane in farms of 700 hectares on average in Nakuru, Uasin Gishu, Trans Nzoia, Kericho, Nandi and Laikipia counties.

<sup>9</sup> Suguru Sasaki, 2009, *The History of the Land Tenure System in Kenya*, Studies in Commerce, Meiji University Graduate School, Vol. 34, February 2011

Miwa Tsuda, 2014, *Land Tenure System in Kenya during Early Colonization Period and Subsequent Evolution*  
[http://www.ide.go.jp/Japanese/Publish/Download/Report/2013/pdf/B103\\_ch2.pdf](http://www.ide.go.jp/Japanese/Publish/Download/Report/2013/pdf/B103_ch2.pdf)

<sup>10</sup> T.S. Jayne and Milu Muyanga, 2012, *Land Constraints in Kenya's Densely Populated Rural Areas: Implications for Food Policy and Institutional Reform*

Recent examples of large-scale agricultural development projects include: cultivation of sugar cane and jatropha for bio-ethanol production. The Government of India has acquired land, and the Government of Qatar has expressed interest in leasing 40,000 hectares of land in the Tana River Delta. A Belgium company called HG Consulting has embarked on sugar cane cultivation, while a Canadian bio-fuel company has obtained land for jatropha cultivation.<sup>11</sup>

Pasture land is mostly owned by the local community and used by the community members.

**Table 7 Land Usage**

Unit: Thousand ha

<b>Country area</b>	<b>58,037</b>
<b>Land area</b>	56,914
<b>Farm area</b>	27,430
<b>Cultivated - Perennial crop</b>	6,130
Cultivated	5,600
Perennial crop	530
<b>Pasture area</b>	21,300
<b>Irrigation area</b>	103
<b>Forest area</b>	3,445
<b>Inland waters</b>	1,123

Source) FAOSTAT

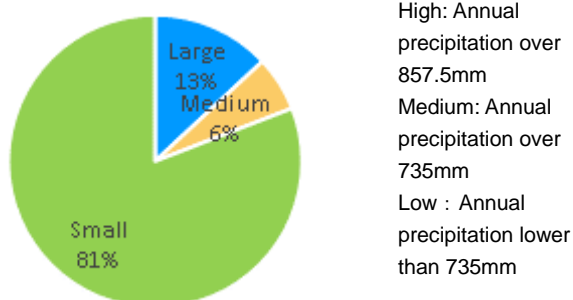
**Table 8 Firms and Establishments-Agriculture and Forestry (2014)**

	Less than 5	5-50	More than 50	Total
<b>Growing of beverage crops (Coffee)</b>	68	191	331	590
<b>Growing of beverage crops (Tea)</b>	17	26	90	133
<b>Growing of sugar cane</b>	28	20	71	119
<b>Growing of fibre crops (Sisal)</b>	-	-	20	20
<b>Mixed farming</b>	282	241	112	635
<b>Raising of cattle and buffaloes (Ranches)</b>	127	204	72	403
<b>Support activities for animal production</b>	770	317	90	1,177
<b>Post-harvest crop activities</b>	55	140	60	255
<b>Support activities for crop production</b>	61	86	126	273
<b>Hunting etc.</b>	-	-	-	103
<b>Total</b>	1,408	1,225	972	3,708

Source) Kenya National Bureau of Statistics

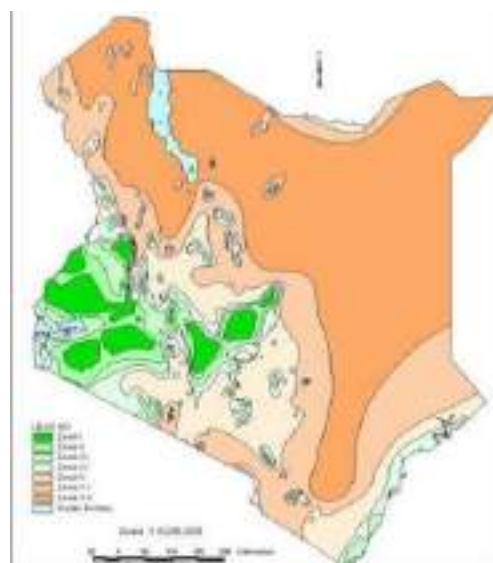
<sup>11</sup> Ogalo V., 2011, "Foreign Investment in Agriculture in Eastern Africa' A General Overview of Trends and Issues"

**Figure 13 Category of Agricultural Land by level of Precipitation**



Source) Kenya Ministry of Agriculture, Meteorological Agency

**Figure 12 Land Type by Volume of Precipitation**



Source) Infonet-biodivision

\*Semi-arid, arid areas and very dry area spread mainly on the right side of the country (in orange).

**Table 9 Large-scale irrigation development projects by the National Irrigation Board (NIB)**

Project	Area	Source of water	Project size	Cultivated Crop
<b>Mwea</b>	Central	Nyamindi River, Thiba River	12,300 ha (Irrigation8,000 ha)	Rice
<b>West Kano</b>	Western	Lake Victoria	1,780 ha (Irrigation900ha)	Rice
<b>Aero</b>	Western	Nyando River	1,740ha (Irrigation1,078ha)	Rice
<b>Bunyala</b>	Western	Nzoia River	694ha (Irrigation694ha)	Rice
<b>Perkerra</b>	Western	Perkerra River	2,350ha (Irrigation800ha)	Onion, Capsicum, Watermelon etc
<b>Tana</b>	Coast	Tana River	4,800 ha (Irrigation1,900 ha)	Cotton, Earth nuts, Maize, Black-eyed pea etc
<b>Bura</b>	Coast	Tana River	6,000 ha (Irrigation2,500 ha)	Cotton, Maize, Watermelon, Tomato etc
<b>Galana/Kulalu</b>	Coast	Tana River	By 2016, development of irrigation 4,000ha. Construction 2015	Sugar cane, Maize, Grazing etc

Source) NIB Website

## **Agriculture**

Agriculture and livestock industries occupy important positions in the Kenyan economy, together accounting for one quarter of the GDP in 2013. Among the agricultural gross domestic product, horticulture and edible crops each account for over 30%, industrial crops 18%, and livestock and fisheries 15%.

In terms of cultivation area in 2013, maize has the largest acreage with 2.03 million hectares, followed by beans (1.47 million hectares), sweet potato, cassava and other potatoes (290,000 hectares), fruits, vegetables and nuts (380,000 hectares), tea and coffee (310,000 hectares), coconuts, peanuts and other oil seed crops (240,000 hectares) and sugar cane (90,000 hectares). Maize production is on the increase but falls short of the domestic demand. Its imports are rising. Tea and sugar cane are recording fast growth. Though not included in the agricultural production statistics, flower production is rapidly growing, too. In dollar terms, flowers are next only to tea in production.

## **Livestock industry**

Kenya's livestock industry consists mainly of production of cow and camel milk, beef and other meat (poultry, goat, sheep, etc.). Kenya has the most advanced dairy production in Sub Saharan Africa. Apart from the traditional production by nomads, modern large-scale dairy production is found, too. Dairy products are exported to neighboring countries, while some raw material powder milk is imported. With respect to meat products, beef cow breeding is still dominant, but poultry production is on the increase reflecting the growing domestic consumption.

## **Fisheries**

Though small in scale, Kenya's fisheries industry extends from fishing of fresh water fish like omena and Nile perch to aquaculture and some coastal fisheries.

## **Food processing**

Production of foods, beverages and tobacco accounts for around 30% of Kenya's manufacturing GDP and some 40% of manufacturing employment. The food processing industry has been growing gradually in recent years. The growth in 2014 in terms of production quantity was about 4% over the previous year. Solid growth has been observed particularly in dairy products, flour products and animal feed. Production volumes of these products are some 50% greater than in 2009. Little growth is recorded for beverages or tobacco. In terms of value added, beverages including beer, spirits, soft drinks and sparkling water top the list. Within foods, sugar and sweets have the largest share (15%) in value-added, followed by animal and vegetable oil and fat (10%) and flour products (9%). In terms of number of firms and establishments, flour mills represent 18% of the total, while animal and vegetable oil and fat and sugar and sweets operators each represent 12%. The rest comprise bakeries, vegetable and fruit processing, dairy products, fish processing, animal feed and meat packing operators. Kenya's food processing sector is advanced by East African standards, but is facing competition against more convenient imported food products to which the growing domestic market is increasingly attracted. Furthermore, much needs to be done to develop high value-added products such as vitamin and mineral fortified foods, as the consumers are becoming more health conscious. There is also a need for high nutrition food materials like powder milk for humanitarian assistance programs. A little over 70% of the processed foods made in Kenya are consumed in the country and close to 30% are exported. Beer and refreshments are mostly sold in Kenya. The biggest challenges

for Kenyan food processing now are the high production costs resulting from the relatively high cost of labor, unstable electric power supply, poor transportation infrastructure, inefficient logistics and high raw material import costs.



**Table 10 Production of Main Agricultural Products**

	Production Area ('000 ha)			Production Volume('000t)		
	2003	2008	2013	2003	2008	2013
Cereal	2,102	2,022	2,494	3,351	2,866	4,307
Maize	1,671	1,700	2,028	2,711	2,367	3,391
Sorghum	149	104	189	127	54	139
Wheat	151	130	131	379	337	486
Rice	11	17	30	41	22	147
Pulses	1,315	1,065	1,474	608	417	758
Roots and Tubers	243	255	291	2,264	4,574	4,485
Oilcrops Primary	237	249	241	37	42	49
Tea	131	158	199	294	346	432
Coffee	170	155	110	55	42	40
Fruits	165	168	173	2,044	3,107	2,857
Vegetables	158	135	167	1,841	1,839	2,390
Treenuts	31	36	35	23	36	54
Sugar cane	50	54	85	4,204	5,112	5,900
Fibre Crops Primary	70	87	71	31	27	32

Source) FAOSTAT

**Table 11 Production of Main Livestock Products**  
(‘000 ton)

	2003	2008	2013
Milk	3,316	4,229	4,944
Cow	2,898	3,209	3,750
Camel	276	854	937
Other	141	166	257
Meat	496	680	641
Beef	343	458	425
Other	154	222	216
Egg	58	77	98

Source) FAOSTAT

**Table 12 Size of Food Processing Industry**  
(2009=100)

	2011	2012	2013	2014
Food Total	114.1	113.1	123.6	128.4
Beverage/ Tobacco Total	114.3	123.8	113.7	112.0

Source) Kenya National Bureau of Statistics

**Table 13 Sales Value of Agricultural and Livestock Products** (1 billion Ksh)

	2010	2011	2012	2013	2014
Total	253	332	345	335	333
Crop Total	198	251	256	242	235
Tea	88	100	100	95	85
Flowers	36	59	65	56	60
Sugar cane	18	19	22	25	20
Vegetables	19	26	20	23	19
Coffee	15	18	15	11	17
Maize	5	10	13	10	10
Wheat	6	3	6	7	8
Fruits	3	4	5	4	5
Others	9	13	10	11	12
Animal Total	55	81	88	93	98
Beef	32	49	54	58	59
Milk&Dairy product	11	15	15	17	19
Chicken/egg	5	6	6	7	7
Others	7	12	12	11	12

Source) Kenya National Bureau of Statistics

**Table 14 Activities of Food-related Companies (2013)**

	No. of workers	Salary Mil Ksh	Added value Mil Ksh
Total	135,673	64,249	146,970
Beverage/Tobacco			
Beverage	7,842	10,009	39,517
Tobacco products	941	954	6,693
Food			
Sugar/Confectionery	14,755	18,295	15,404
Animal/vegetable oil	15,494	6,698	10,287
Milling products	22,209	5,043	8,671
Bakery products	10,456	4,214	6,094
Processed fruits/vegetables	7,252	976	5,068
Dairy products	9,437	6,440	4,552
Processed fih	1,598	218	3,795
Compound animal feed	4,256	4,484	2,804
Meat/Meat products	3,360	335	2,527
Other	38,073	6,583	41,558

Source) Kenya National Bureau of Statistics

## 2.2 The Kenyan Retail and Distribution Sectors

### 2.2.1 Retail Market Size

Kenya's overall retail market is valued at about \$41 billion, and has been growing at 7-10% a year. Approximately 20~30% is estimated to be modern retail sector and the remaining 70~80% is the traditional retail channels such as Kiosks. According to Neilson 30% do regular shopping at formal retail (compared to 60% of South Africans). Other African countries lag far behind with Ghana (4% of population using formal retail) and Cameroon and Nigeria (2%).

According to AfDB research in 2010, middle-income consumers (spending 4 to 30 dollars/day) represent 16.8% of the population in Kenya. The average annual pay of employed workers in 2014 was 555,000 Kenyan shillings (Ksh) (approximately 6,300 dollars) /year, increasing 130% compared to 396,000 Ksh (approximately 5,000 dollars) in 2010. While such pay was 231,000 Ksh (approximately 2,600 dollars) in the agricultural, forestry and fishery industries and 350,000 Ksh (approximately 4,000 dollars) in the manufacturing industry, some industries indicate higher average pay such as 1,504,000 Ksh (approximately 17,100 dollars) in the banking/insurance industry and 1,247,000 Ksh (approximately 14,200 dollars) in the energy industry.

Along with the economic development and expansion of middle-income group, urban migration also contributes to the expansion of the retail market. The population growth rate in urban areas is 4.4%, far higher than the national average of 2.6%. The rate of food that is purchased (rather than home-grown) is 98% in urban areas and 30% in rural areas. According to Kenyan statistics, the retail industry as a whole has been growing at the rate of 7 to 10 % over the last five years. Since Kenya's population still spends around 40% of its income on food (and even urban middle class spend a higher share than in developed countries), growth in retail represents a growth in retail food sales.

The restaurant industry is still small in scale but is expanding rapidly, especially in the area of fast-food restaurants. The tourism industry is also growing, and spending at hotels and resorts can be expected.

The following section provides an overview of Kenya's traditional food retail, modern food retail, and restaurant and fast food sectors.

### 2.2.2 Traditional Retail

Kenya's food retail is dominated by kiosks (focusing on dry goods and daily staples), small specialty shops (butchers, grains, produce), street vendors and open air markets that offer a full range of food products.

#### Kiosks

Kiosks are found on every street, providing a range of staples such as maize meal, wheat flour, sugar, salt and cooking fat or oil, as well as daily goods such as soap, razors or sanitary pads. They are typically run by women and the shops play the role of a traditional convenience store, offering small volumes of maize, such as for a single family meal and or small sizes of soap and detergent. Many have a refrigerator for cold drinks. In Nairobi alone, it was estimated that there are 37,000 kiosks. Kiosks are typically stocked by the owner, who collects products from open-air markets or other wholesalers or distributors. Owners can

buy maize flour in bulk and then sell individual cupfulls. The advantage of kiosks is their neighborhood convenience (no car needed) and the much smaller packages available than in modern retail to suit customers who have smaller available daily income.

### Profile: Blue Spoon Kiosk Franchise

Blue Spoon kiosk franchises are the brainchild of Japan-based company AfricaScan, using basic marketing, POS data and inventory management common in Japanese convenience stores to improve profits and productivity of franchise kiosk owners. There are already 4 kiosks, with 30 more planned by the end of 2015.

The Blue Spoon kiosks which are accepted as franchises are branded with the company's blue logo, but look and function similarly to a typical neighborhood kiosk. A kiosk sells 200 different items, staples like mandizi (fried buns) and various brands and prices of flour, maize meal, sugar, salt, cooking fat, raw milk, packaged milk as well as soft drinks and a variety of daily use items like soap, sanitary pads and razors. The innovations, however, include:

- Stamp card membership system. Customers get a membership number and stamp card, with a discount offered after a certain value of purchases
- An inventory management and POS application on an Ipad. An iPad app records the purchases of each member, by member number. Kiosk owners can also place orders for inventory, that will be delivered by motorbike by Blue Spoon's contracted traders. (Blue Spoon is beginning to create its own warehouse)
- All kiosk prices are clearly labeled on products, so no negotiation is necessary

Ultimately, AfricaScan hopes to analyze the POS data on customer purchasing patterns together with health data collected at the health checks they periodically offer at Blue Spoon, to create marketing messages that could address nutrition gaps or encourage behaviors specific to the kiosks' customer health needs (such as lowering blood pressure or fighting iron deficiency). When Blue Spoon offers health checks, conducted by community health service workers, they will typically get 400 people coming over a 4-day period. Because of the limited opportunities for health checks, people will travel significant distances to take advantage of Blue Spoon's health check service.

The franchise owners still operate independently in terms of their pricing strategies, products offered and how they compete with other shops in the neighborhood. For example, the owner of the kiosk above had recently begun to source a few fresh produce items from the local market to resell (tomatoes, onions etc) because she found that busy customers want basic produce items to accompany the maize meal or wheat flour they purchase for the day. She and her assistant work 6 am to 10 pm each day, but says that business is especially busy from 5 pm when people are returning from work (many from the flower farming industry). She had also started to sell Nisshin noodles in child-size packs, but said that the product was still not known to most customers and not selling well.

The owner was still considering how to compete with the mini-supermarket that had recently opened in the neighborhood, offering prices as low as hers. Nevertheless she was confident she would be able to compete and she was considering her marketing strategy options. While modern supermarkets do draw more customers, the majority of trade is still in the cheaper, local kiosks.



A Blue Spoon Kiosk in Naivasha. Wheat products are sold in small packages.

## Specialty shops

In addition to the convenience kiosks, shops specializing in certain products line the main streets of Kenya. Butchers, grain sellers, produce shops, agrovet (farm and livestock inputs) and M-PESA and telecom shops are ubiquitous.

## Street Vendors

Street vending provides a livelihood for thousands of Kenyans and also provides an opportunity for branded products. Street vendors may set up on a tarp or small table, or may have a mobile cart. On the right we see an example of leading meat processor Farmer's Choice and their "Little Smokies" vendor program. Little Smokies are a popular pre-cooked sausage often available at local snack stands, sausage and chips shops and now with the branded Farmer's Choice mobile cart, which can be seen everywhere on urban streets. Vendors invest in the cart from Farmer's Choice then the company's field officers give training on how to handle, cook and sell the sausages and provide marketing support. Vendors can purchase the sausages at modern retail, or through Farmer's Choice wholesale shops, such as the one at their processing factory in Nairobi. Farmer's Choice reports that the program has been extremely successful, both at providing a livelihood to thousands of people and at promoting their sausage brand as a common and popular snack.

## Open Air Markets

Open air markets can specialize in a product category (such as fresh produce) or can have a wide range of product (foods, clothes etc). Overall there are only 21 produce markets in all Nairobi, a small number for the population and a bottleneck for efficient produce distribution.

Below we profile two open air markets in Nairobi as examples of the roles different types of open air markets play in fresh produce distribution.



Typical kiosk



Specialty shop: dairy products



Specialty shop: fresh vegetables/fruits



Farmer's Choice "Little Smokies" pre-cooked sausage vendor system



Nairobi Ice Cream Vendor



### Profile: City Market

City Market caters to middle class urban shoppers and is popular among the local Asian shoppers (Indian and Chinese heritage) and foreign residents due to its wide range of products and attractive layout.

Markets like City Market have an important role in produce distribution as they are both an end channel for produce directly from rural farms, as well as a buying destination for supermarkets, other produce shops and even other open air vendors in other markets. The characteristics of City Market are:

- Has 1200 shop owners
- Each stall is typically managed by one person, which could be a man or women. City Market vendors typically sell a variety of fruits or vegetables at each stall, indicating investment and sourcing planning to have a variety of products
- Vendors have invested in tables and display boxes for their produce
- Prices at City Market are per kilo. This means customers have higher incomes and are able to buy in bulk.
- Most products are sourced in Kenya, but some imported produce is available as well. Imported products seen were: Kiwi (NZ), Red grapes (Egypt), Oranges (South Africa), Apples (South Africa), Plantains (Uganda), Chili (Ghana, West Africa).

### Competitive Advantages

Vendors said their advantage over supermarkets is the freshness of their goods (more frequent deliveries and careful presentation) and good service (friendly personal relationships with customers and flexibility, such as arranging deliveries to homes). Within the market, customers interviewed said they chose which City Market vendor to buy from based on service and attitude, since many had equally fresh produce. Vendors who were friendly, approachable and professional tended to have repeat customers every week. Several vendors explained the scales they had invested in to clearly and transparently weigh produce for customers.

### Supply Models

Deliveries to the market are generally twice a week. Produce not sold is stored under tarps and sold the next day. Produce that goes bad is discarded. According to interviews with numerous vendors, there appear to be 4 main produce supply models:

- Source from the farming areas yourself. This means rent transport (truck or *matatu* shared van), visit the fields and bring back produce.
- Buy from distributors who bring produce on trucks and park outside the market,
- Buy produce from other local markets
- (Rarest option) source from own farm (like Mr Kamau, profiled below).

One City Market vendor, Mr Kamau, who owned his own farm described his business as such: He farms 15 acres of leafy vegetables (spinach, kale etc) and has 10 workers in Nemuru. He has his own car (not truck) to bring to the market. Usually his wife manages the City Market stall while he manages the farm. He has only been a farmer for two years and had to invest in an irrigation system. He sells to Nakumatt supermarket as well as selling at City Market.

### Relationship to Supermarkets

Some City Market vendors act as wholesalers and also sell directly to supermarkets like Tuskys or Nakumatt. Like other suppliers, they complain about the slow payments. They tend to have to deliver the produce to each shop.

Many City Market vendors strongly said they have no interest in selling to supermarkets and only accept cash on delivery. Supermarkets did not offer better prices than other City Market customers. Others report that supermarket buyers often come directly to City Market to choose their produce but sellers do not always know what shops they represent. The supermarkets do expect certain quality, but were not buying in such huge quantities that they impacted the remaining supply quality in City Market.

The City Market vendors who seemed most satisfied with their supermarket sales arrangements were those supplying larger volumes of consistent product types, like Mr. Kamau, the leafy greens farmer. While they still complained about supermarkets, they expected to continue the relationship.

### Prices and Margins at City Market

A typical statement from vendors was that they could buy produce from other markets or wholesalers at 30 kg and sell at City Market for 70-80/kg. However understanding the real costs and margins at informal markets like City Market is extremely difficult, as each sale is negotiated case-by-case. Margins will depend on the volume of the order, the relationship with the buyer, how much vendors paid in transportation from the fields or on pushcarts rented in City Market to move produce around.

City Market vendors, like their customers, appeared to have more financial resources than vendors at other markets, as they were investing in display tables, had the cash flow to invest in larger volumes and varieties of vegetables, had invested in cars for transport, irrigation.

Nevertheless, vendors did not seem able to report typical margins or income from their stalls, as they were focused on whether today's income covered their household expenses. If asked how much they make per day, they often said "enough to cover my expenses. If I can cover my children's tuition and the costs of this market stall then I know I am doing ok. " This reflects a short-term cyclical financial situation for many informal market vendors.

Research NGO IPA (Innovations for Poverty Action) has done multi-year studies on distribution systems and cash flow in informal markets (and was a Promar partner in this study) and has successfully studied the income flows in informal markets like City Market. This research requires creating data collection systems, like daily dairies and "shadowing" vendors to record all business-oriented transactions. IPA's work in collecting data on Kenyan market behavior and informal markets could be useful to Japanese companies aiming to work within Kenyan distribution systems. [www.poverty-action.org/kenya](http://www.poverty-action.org/kenya)



Vegetable vendors offer many clean, fresh product, displayed on tables



Vendors line the roads on a rainy day



Trucks come from rural areas to wholesale produce to sell the vendors.



Different cereals and lentils sold at the market

### Profile: Toi Market

This market borders the vast Kibera slum and caters to lower income consumers, though part of the market is also popular for second-hand clothing and increasingly attracts trendy customer.

Characteristics of the fresh produce market include:

- Products are sold individually (not per kilo) as customers can't always afford a kilo. The per unit price is not necessarily cheaper than City Market and some vendors say they actually buy their products at City Market in bulk and then resell individually.
- Many vendors only have one product (tomato, cabbage), unlike City Market where each vendor had many products. Signs hang to say the price per product (5 shillings etc.)
- Often vendors just buy (or take on credit) a certain amount of veggies or fruit from the distributors who come with trucks. At the end of the day they must pay the distributors. Some people can only afford to buy a small pile of veggies to resell.
- The vendors near the road (where customers with cars parked and went shopping) tended to have invested in tables, but they were smaller and poorly constructed compared to City Market. Vendors deeper in the market sold from tarps on the ground.

Toi Market cabbage dealer profile:

One area of Toi market specializes in cabbages sold from huge piles. The vendor reported:

- 2000+ cabbages sold in 3 days
- The cabbage supply model is to rent a truck, go up-country to farms and buy an entire field of cabbages, all for the same price per cabbage, which is negotiated with the farmer after he has a look at the field.
- These cabbages (photo right) were all bought for 8 shillings each. The vendor now sells them according to size, and he has sorted them into piles. Small ones he sells for 10 shillings each (which is selling at a loss actually) and he makes decent profit on big ones he sells for 18.20 each.

The cabbage leaves can be sold for animal feed.



Cabbage merchant of Toi Market sells more than 2,000 cabbages per 3 days.



Tomatoes are sold at 3-5 KSH/tomato.



### 2.2.3 Modern Retail

Kenya's formal retail industry is estimated to have a turnover of \$ 1.2- 2.3 billion over 300 supermarkets. The industry is dominated by 5 major chains (Nakumatt, Tuskys, Uchumi, Naivas and Ukwala).

Nakumatt, Tuskys, Naivas and Ukwala are all local and strong family-run businesses, while Uchumi is a former government-related company; one of its large shareholders is a Kenyan governmental agency, even after its public offering. Nakumatt, Tuskys and Uchumi are also expanding their stores to other EAC countries.

In addition to these large chains, there are many smaller chains, from the high-end, import-oriented Chandarana to numerous small supermarkets in local neighborhoods.

Small retailers such as Mulleys & Sons, GreenMart, QuickMart, Maathai Supermarket, EastMatt and CleanShelf are all reported to be expanding rapidly, offering competition to the more established retailers.

This has led to tough times and attempts at consolidation among the biggest players. Uchumi, one of the five big chains, failed once in 2006 and relisted with support in 2011, but is still reported to be close to bankruptcy due to poor management. Tuskys tried to acquire Ukwala in 2014 but was stopped by the Competition Authority of Kenya. It is reported that Choppies, a leading retail company in Botswana, concluded negotiations for acquiring 10 Ukwala stores in 2015. The top brands are also tightly family-owned. Walmart tried for many years to buy Naivas but was halted by disagreements between Naivas' shareholding family members.

Overall profits margins are said to be extremely small as these major supermarket brands are under pressure to expand the number of stores and take market share in the short-term at the expense of profits. For example, even in 2011, Uchumi had a profit margin of only 3.6 per cent, Tuskys 1.3 while both Nakumatt and Naivas had a profit margin of 0.8 per cent.



Nakumatt and its elephant mascot



Uchumi supermarket



Game offers significant discounts and will refund any price difference plus 10% if they fail to be cheaper than the competition on any product.



Supermarket chain EastMatt is expanding.

### Challenges for foreign retail entry and development of large scale retail stores in Kenya

Foreign retailers hoping to compete in the large scale, hypermarket store form have also faced challenges. Metro Cash & Carry's South African affiliate withdrew from the market due to the harsh competitive environment in 2005 and real estate development inefficiencies are slowing other foreign retailers. Supermarket growth goes hand-in-hand with the urban "mall" culture developing in Kenya. Currently there are reported to be 64 malls in Kenya, with 29 of them in Nairobi, and each includes at least one supermarket brand. New malls are aggressively planned but if the malls are not completed on schedule, supermarkets can't move in. This has been a main explanation for why the supermarket Walmart (through its 2011 51% acquisition of South Africa's Massmart) only managed to open its first store in 2015, despite announcing plans to have stores by 2014. Market entry for Massmart's Game brand hypermarket was initially postponed as the Nairobi shopping mall Garden City had not finished on schedule.



Massmart (Walmart) Company's hypermarket "Game" has finally opened in Garden City Mall.

Mall space competition continues. France's Carrefour, which finally entered the Kenyan market in 2015, has already exclusively contracted with the next two giant Nairobi malls under construction (the Hub and Two Rivers) reportedly making it difficult for Walmart's Game to find additional real estate.

For major international brands, preserving marketing style and sourcing origins also can bring unexpected complications. The new Game store has found it had to import all the pink ink it uses as its signature color because no manufacturer in Kenya could supply this color. It is also said to be struggling b/c many of its suppliers are contracted through South Africa and the logistics of getting products to its store have been more difficult than expected.

**Table 15 Kenya's Major Supermarket Players**

Company Name	Ownership	Estimated Sales	No. of Outlets
<b>Nakumatt</b>	Kenya	\$750 million	54 stores
<b>Tuskys</b>	Kenya	\$414 million	53 stores
<b>Uchumi</b>	Kenya	\$165.4 million	40 stores
<b>Naivas</b>	Kenya	\$160 million	35 stores
<b>Ukwala</b>	Kenya/Botswana	\$60 million	11
<b>Game</b>	South Africa/US	NA*	172 (1 in Kenya)

Source) Promar Consulting \* Entered in 2015.

These stores sell not only food but household products and in the case of Nakumatt and Game, appliances, homewares and toys are also sold. Despite the variety of products, modern retailers still do most of their business in staples: flour, milk, salt and sugar. Uchumi reported in 2012 that 65% of its annual revenue was these 4 products. The shelves for the milk and flour products stretch down entire aisles. The other 35% include popular categories such as cooking oil, cookies, cereals, snacks and bread. Categories like frozen meat and ready-to-eat meals are relatively new products. Alpha Fine Foods new ready-to-eat

meal brand Aly's Kitchen is considered to have good potential and is already found covering several shelves in supermarket freezers, but will still be a small share of store revenue.

Fresh produce in supermarkets seemed to be less of a draw for consumers. Produce deliveries do not appear to be daily and produce is not as fresh-looking as in the outdoor markets or specialty stores.

Because supermarkets are often located in malls, rather than local neighborhoods, they tend to attract mainly target middle-income consumers who have their own cars and who either stop by for staples when their professional life makes it hard to make it to the fresh markets or they go on the weekend, when families may do a large, bulk shopping for the week. While these consumers appreciate the convenience of large supermarkets, even middle-income consumers still usually buy their fresh produce at open air markets.

### The largest supermarket in Kenya: Nakumatt

Nakumatt was established in 1987 and is now the market leader in Kenya's modern industry. It operates 52 stores in four countries (Kenya, Uganda, Rwanda and Tanzania), employing 7,000 people. Nakumatt is a wholly Kenyan, privately held company, owned by the Atul Shah family (92.3%) who first immigrated from India to Kenya in 1947 and Hotnet Limited (7.7%)

Nakumatt stores typically sell not only food but also household items, healthcare and cosmetics products and electronics. Formats include convenience stores, supermarkets and hypermarkets with a range of over 75,000 products.

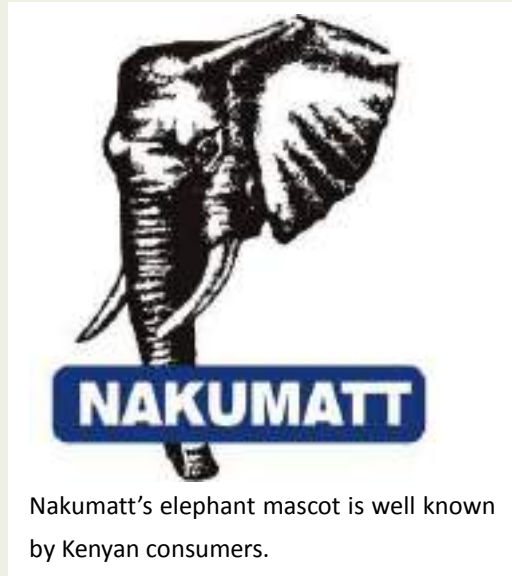
Nakumatt uses a flexible sourcing system for food products. Products like fresh produce are sourced from a combination of sources, including contracted farms, local wholesalers (such as those with stalls at City Market) and a partnership with fruit company Fresh and Juici. Suppliers of produce, dairy or meats, for example, often reported having to deliver directly to each individual Nakumatt store, rather than delivering only to a central warehouse fresh/chilled/frozen products.

The regional director for strategy and operations Thiagarajan Ramamurthy has been quoted as saying that by 2017 he envisions Nakumatt having 70 stores, 1.5 million customers (up from the current 1.1 million) and making \$1bn in annual gross revenue (currently \$700m). Nakumatt aims to expand into both West and Southern Africa, and has said it will be considering strategic partnerships.

Nakumatt credits its success to factors such as:

- Its loyalty card program which it reports are used by "1.1 million households which [represents] 4.4 million people, which is 10% of the population. So we have the 10% [of Kenya's 44 million population]."
- Strong ties with local supply chains. "You can't have one or two branches and import a lot of things. It is important to work with local people."
- Investment in Nairobi's up-scale shopping mall industry, a booming sector; there are currently 9 shopping malls named for Nakumatt.

However, rapid expansion has left Nakumatt with low profit margins and it suffers from criticism of a poor safety record (a 2009 fire in one store killed 29 people)



Kenyan consumers are known for their love of new products and variety. Even kiosks must constantly make an effort to introduce new products and carry a variety of brands of popular products, like maize meal. The larger spaces of modern retail allow for an even larger variety of products and brands to be displayed. In juices, candies, snacks and cookies there is a large range of brands and flavors.

However, the largest increase in variety is in the refrigerated products categories, especially dairy and meats. Modern retail's cold chain capacity has allowed a range of new products, including cheeses (not a traditional Kenyan food), flavored yogurts, and milk products. Meat products, including frozen meat and poultry and chilled sandwich meats and sausages have increased. The retort brand "Al's Kitchen" series

newly released by Alpha Fine Foods Ltd. is occupying large space at the frozen food corners. While these new products are still a small share of store revenue, they all show high potential for the future.

A relatively large number of imported foods, especially cheese, frozen fish, candy, cookies, biscuits and cereals, are handled by modern supermarkets such as Game and Chandarana, but even at Game, more than half the foods are domestic and this has reportedly disappointed some customers. Due to the large Chinese expat community and growing familiarity with some Chinese foods, Nakumatt has sections carrying Chinese food products. It also has other multiple specialized stores handling Chinese food products in Nairobi.

For popular products, there is little difference in prices among supermarkets, and little difference in prices between modern retail and traditional retail. By volume, products sold in small portions at kiosks and open air markets are actually higher than at modern supermarkets. Poor consumers have less cash on hand and can only buy products only in small portions, resulting in purchasing products at comparatively high prices.

**Table 16 Price Comparisons of Common items at Major Kenyan Retailers**

Unit: Kenyan Shillings

	Uchumi	Tuskys	Game	Nakumatt
<b>Product</b>				
Pouch milk	50	41-50	50	50
Brookside 150 g yogurt	97	97	*	97
Daima brand yogurt 150 g	*	*	43	43
Manji Brand Marie biscuits 200 g	65	65	65	65
Kenchik brand frozen chicken leg (4)	485	*	485	485
QMP brand frozen legs 50 g	*	*	420	*
Chicken Legs fresh (5)	459	*	*	460
Del Monte Large Juice Box	189	189	189	189
Pembe brand maize meal 2kg	111	113	102-115	112
Elianto Corn Oil 2 liter	*	515	515	515
Weetbix cereal (225 g)	145	*	140	145
Kericho gold loose tea 250g	165	165	*	165
Eggs	105-160	90-110	105	95-120
Bread	*	68-95	100-185	90-175
Banana 1 kg	99	*	95	99-125

Source) Promar Consulting





(L) In-house bakeries are considered major way to attract customers into supermarkets (R) The main frozen fish products are Chinese Tilapia and Vietnamese Pangasius/Basa (both white fish).



(L) Alpha Fine Foods new frozen meal brand (R) Popular items like cooking oil come in many brands and price ranges

## 2.2.4 Distribution and Wholesale Systems

### Distribution for modern retail

Leading supermarket chains have their own distribution centers and aim for cost reduction through bulk purchasing and improvement of logistics efficiency. However, as there are few distribution centers that can handle fresh products and frozen products, these items are often delivered directly to each store by the manufacturers and wholesalers.

Meat and dairy products that require cold chain are often supplied directly by manufacturers.

Fresh produce is supplied in different ways depending on the chain. The largest chain Nakumatt works with wholesaler Fresh N Juici (Shree Ganesh) to manage fresh produce corners in each store, including sourcing and logistics. The wholesaler delivers fresh produce to each of Nakumatt's 54 stores. Uchumi uses three supply systems: purchasing directly from farmers, purchasing from traditional wholesalers (market and collectors), and purchasing from importers. It is able to handle some fresh produce at its distribution center.

Dry grocery is mainly delivered by way of distribution centers, but manufacturers selling their own branded products must send their own merchandisers to each store to check the shelf stocking and modify the displays of their own products.

For imported products, supermarkets rarely import themselves directly but source through importers or wholesalers. Wholesalers handling imported products are concentrated in the five big cities in Kenya (Nairobi, Mombasa, Kisumu, Nakuru and Eldoret). Even in Naivasha city, the second biggest city in Nakuru County, where we visited during field research, the biggest wholesaler of dry goods did not deal in any imported products (although grain used as the raw material for wheat flour and maize meal etc and the chemicals in fertilizer etc would be imported.)

### The relationship between modern retail and traditional retail

Modern retail and traditional retail have an interactive relationship. Modern supermarkets purchase products directly from traditional markets and distributors. On the other hand, small kiosks and specialized stores source much of their food from supermarkets and, especially in the case of flour, sugar, starch and other staples, purchase them in high volume, repackage into small sizes and sell at their own stores. Major wholesalers sell products to both modern and traditional retailers. Supermarkets therefore are, not only customers of wholesalers, but also direct competitors of wholesalers.

The wholesale business has become increasingly extremely difficult to enter. Not only are there many wholesalers already operating in Kenya, but the large initial investment is necessary for starting wholesale business (costs for warehouses and vehicles, etc.) has become a major obstacle for new wholesalers



Refrigerated fleet of trucks loading up at meat processor Farmer's Choice



Fresh N Juici (Shree Ganesh) packaged fruit at Nakumatt

considering setting up businesses. In addition, since not only wholesalers but also supermarkets serve as wholesale dealers, the competition in the overall wholesale business is extremely fierce.

### Challenges in supplying the modern retail business

The following issues and bottlenecks were identified by distributors during field research:

- Due to tight margins and cash flow and the competitive environment, major retail chains **often delay payments to suppliers** and in some cases do not offer payment for 120 days or more.
- **Poor packaging** is a problem. Leaking bottles or split boxes can damage shipments, and must be returned to the manufacturer. Modern retailers only accept clean products and so even one leaking bottle can ruin a delivery.
- **Manufacturers lack of supply and delivery delays** is a major bottleneck. Demand may be strong but many manufacturers simply do not have the capacity to supply consistently, leaving the wholesaler to lose sales
- **Cold chain capacity** is a major investment and even some of the largest dry goods distributors do not have plans to add refrigeration in the short term.
- Supermarkets struggle to maintain cold chains, which require stable power supply. **Power shortage and planned blackouts are continuous problems** in Kenya and other countries with vulnerable power infrastructure. Retailers are forced not only to install generators but also to manage quality and inventory of products under unstable refrigerating functions and also must address the decrease of customers in case of power failure. For this reason, most frozen and chilled goods are delivered directly by the producers (meat or dairy etc) and not handled by wholesalers.
- Kenyan customers are very interested in new products and brands. Wholesalers must constantly search for **new products** to stay competitive.

#### Carrefour's market entry and fee structure for suppliers

French retailer Carrefour has just entered the market and is trying to introduce fee structures that can potentially have a major impact on the Kenyan retail industry. Until now, Kenya's modern retailers do not charge entry fees, shelf fees or listing fees (as is common in many global markets and standard for Carrefour).

Interviewees have reported Carrefour to be expecting:

- 10% of the value of total order as a non-refundable entry fee.
- Rebate system (money paid to suppliers for past sales once they reach sales targets)
- Listing fees (10000 ksh per SKU)
- 

If Kenyan suppliers can be convinced to pay Carrefour's fees, it is likely that other local retailers will follow suit. However, it is not clear at all if access to Carrefour's stores (currently only one) is attractive enough to Kenya's



suppliers to pay the fees. Top pork supplier Farmer's Choice was not planning to sell to Carrefour for this reason and other brands, such as Happy Cow cheese, are still weighing their options.

## **2.2.5 Fast food and Restaurant Industry**

### **Fast Food**

Urban Kenya is increasingly seeing branded fast food, in addition to the ubiquitous "traditional" fast foods of street vendors, sausage and chips and other snack shops. There are about 70,000 eat-out facilities including restaurants, cafes and takeout stores. In urban areas, fast food chains have been expanding rapidly. The world-famous brands such as Subway, Ocean Basket and Kentucky Fried Chicken have already entered this market but the competition is so harsh that Nando's which is South Africa's grilled chicken chain withdrew recently. The once dominant Kenchic Inn fried chicken chain, dwindled from over 100 outlets to only 20 in the last 5 years and its owner, chicken processor Kenchic, announced in Feb 2016 that it was withdrawing the Kenchic Inn brand from the fast food market.

Cafes and casual dining are also becoming increasingly popular, expanding with the Kenyan mall culture. Popular local cafes include Nairobi Java, Urban Café and Dormans and ArtCafe casual dining has several locations. These offer table service and a range of coffees, smoothies, sandwiches, salads and main dishes, such a steak, chicken breast or burritos.

Some food chains may import some ingredients, including spices directly from overseas, but most shops source their ingredients from local suppliers.

### **Kenya's Tourism Industry**

Kenya welcomed 1,350,000 tourists to the country in i 2014. The decrease from the peak of 1,800,000 tourists in 2011 is due primarily to the influence of terrorism and the ebola outbreak, but because the country's national parks are popular, especially among European tourists, and the tourism industry is very important to the national economy, recovery and further growth in this industry is expected in the future.

### Toridoll's Teriyaki Japan

One example of a new fast food concept that seems ready to expand is Teriyaki Japan, owned by Japan's Toridoll, known for an udon noodle chain in Japan. Teriyaki Japan currently has one branch in upscale, downtown Nairobi across from the building housing JETRO. It attracts a steady crowd of lunchtime professionals, young middle class groups and families on the weekends, with prices geared solidly at the middle and upper income groups. Lines of 20 or more people is not uncommon. The

menu consists of various teppan-grilled chickens with teriyaki sauce, on rice or yakisoba, with stir-fried cabbage and vegetables in a cardboard "bento" box. The shops also offer donuts and a range of soft drinks.



Teriyaki Japan's Bento Box

On a Sunday afternoon, the shop was filled with well-dressed families and groups of young people, often waiting 15-20 minutes at tables for orders to arrive due to the high volume traffic. The novel menu, the premium image of chicken in Kenya, the presentation in a bento box and the modern atmosphere is clearly appealing

Toridoll sources from one of the main local meat suppliers who reported to us that working with a Japanese company has been very positive, as Toridoll has high standards and knew what they wanted, allowing the meat company too to learn a lot. The chain is expected to open more branches soon.

## 2.3 Business Development and Foreign Investment in Kenya's FVC

Kenya's rapid growth is drawing attention from foreign investors, leading to high hopes for an increasingly dynamic business environment. Kenya, which boasts the largest economy within the East Africa area and has the attraction of being geographically close to North/Central Africa and the Middle East, is establishing itself as the hub of East Africa and it is expected that future population growth and economic development via the East African Community will further strengthen such position.

Among leading companies in the Kenyan market, there are Government of Kenya-related companies, foreign and multinational companies and their subsidiaries, and domestic private sector companies. In recent years however, as companies are listed publically on stock exchanges, foreign investment increases and acquisition of Kenya's privately-financed companies is active, the classifications above have become more ambiguous.

### 2.3.1 Recent foreign investment trends related to Kenya's FVC

#### Major foreign-affiliated companies

Cash crops (coffee/tea/sugar/fruit/flowers, etc.) have been the central target for foreign investment in the agricultural sector but interest in investment in staple food crops and biofuel crops (sugarcane, castor oil plant, palm, jatropha, sweet sorghum, maize, cassava, wheat, rice, sweet potato, peanut, etc.) is increasing.

UK and other European companies have historically involved in the tea and coffee export industries. In the tea industry, U.S. Cargill<sup>12</sup>, U.K. Unilever<sup>13</sup>, Finlays (under the control of U.K. Swire Group)<sup>14</sup>, Eastern Produce and Kakuzi (under the control of U.K. Camellia)<sup>15</sup> and Williamson (under the control of U.K. Gong Tea) are major players, and Nestle (Switzerland)<sup>16</sup> is active in the coffee industry. The flower sector has been greatly influenced by UK companies and by the Netherlands Dutch Flower Group, which is a major flower distributor. Many of these long-established foreign players in Kenya can be seen now diversifying their business into areas such as crops and fruit, detergents and personal care products as well as pharmaceuticals.

In terms of products aimed at the Kenyan consumer market, major foreign and multinational players include East Africa's biggest beer company East African Breweries (U.K. Diageo and Guinness (U.S.A.)), soft drink company Coca-Cola (U.S.A.), canned /juice of pineapple company Del Monte (U.S.A.), instant noodle company Indomie (Indonesia), cereal company Weetabix (U.K.), powdered milk and soy protein

<sup>12</sup> Cargill has its core business in financing, sourcing, warehousing and distribution of tea and it is No.1 in the amount of tea exported from Mombasa. In addition, it handles flour, maize, rice and fertilizer and also produces seeds. It acquired Lesiolo Grain Handlers in 2014 and expanded its handling of crops/oilseed.

<sup>13</sup> Unilever has the largest scale of tea production in Kenya and it engages in not only production and export of tea but also production and sale of detergent and pharmaceutical products; it is the biggest employer in the Kenyan private sector.

<sup>14</sup> Finlays has the second largest tea production/processing business after Unilever. It has a factory for making instant tea.

<sup>15</sup> In addition to tea, has the largest private sector macadamia nut business in Africa as a private company. It is also involved in avocado, pineapple, dairy farming and forestry.

<sup>16</sup> In addition to its coffee bean business, it has a factory for producing dairy related products like Nescafe and Milo for the local market.

company Promasidor (South Africa), and Tiger Group (South Africa) which recently acquired milling and baking companies.

In the modern retail industry, as mentioned in the previous chapter, local companies have a large role with foreign companies such as US Walmart and French Carrefour eager to expand. The wholesale industry has fewer foreign companies though there are some in the flower and fruit export industry.

Within the agricultural inputs industry (fertilizer/agricultural/seed), major agribusiness firms such as Syngenta, Bayer, Monsanto, Zimbabwe's Seed Co, and South Africa's Pannar have offices in Kenya. In agricultural machinery and refrigeration, Chinese manufacturers have a large presence, as well as Western major manufacturers. In the packaging industry, Tetra Pak has a factory in Kenya and, from this factory, supplies 13 neighboring countries with packing materials for beverages.

### Recent Developments

Recently many foreign companies have been considering entry into Kenya's agriculture and food processing sectors. French major food company Danone acquired 40% share of Kenya's major dairy producer Brookside Dairy (which had acquired 3 other dairies in 2013 and has now 40% share of Kenya's dairy market) in July 2014 and then Brookside Dairy acquired Uganda's Sameer Agriculture & Livestock in 2015. In January 2015, it was reported that Kellogg's was also making plans to enter the Kenya market.

Chinese companies are also paying close attention to Kenya's market and, in 2015, the China Overseas Agricultural Development Alliance (COADA), made up of 19 top Chinese agricultural companies, entered into an agricultural technical assistance contract (estimated at 500 billion Kenyan shillings) with Mr. Raila Odinga who is now the leader of the Coalition for Reforms and Democracy and former Prime Minister. This is expected to expand China's presence in the agribusiness sector.

On the other hand, many companies have had to downscale their operations and lower profitability expectations in Kenya due to factors such as slower growth in the middle-income consumers than expected, the strong competitiveness of local companies with know-how, and failure in manufacturing and distribution due to vulnerable infrastructure and limited production lines. In October 2014, the UK's leading confectionery company Cadbury (part of major US food company Mondelez International, Inc.) announced that it would close down its Nairobi factory, which had about 300 employees, and instead, import and sell products manufactured in Egypt or South Africa in Kenya. In January 2015, Coca-Cola announced it would be reducing employees, and in June, Nestle announced a 15% personnel reduction in 21 African countries including Kenya.

### 2.3.2 Major Kenyan Companies

Domestic Kenyan companies are major players in the oil seed and sugar crushing as well as animal fats industries. Bidco, which acquired vegetable oil brand Kimbo from Unilever in 2002, has a sales network in 15 African countries, a palm farm in Uganda, and the owner was ranked as the 18<sup>th</sup> wealthiest person in Africa in 2013. Other major players are Kapa Oil Refineries and Menengai Oil Refineries in the oil and fat sector, and government-related companies Mumias Sugar and Sony Sugar in the sugar sector.

Domestic companies also have strong presence in the milling industry, including Mombasa Maize Millers (which is the biggest miller in Kenya with 33% domestic share), Pembe Flour Mills, Premier Group and Unga Group. These companies are diversifying their businesses from milling into bakery and confectionery,

and are also expanding their business to neighboring countries.

In the fresh produce sector, Shree Ganesh is a fresh fruit wholesaler who sells to both modern and traditional retailers, as well as direct management of the fresh produce corner at supermarket Nakumatt, as mentioned previously. Its subsidiaries include the juice and cut fruit brand Fresh an Juici. Kenya Orchards, in addition to production of frozen vegetables, dried vegetables and canned beans for export, has expanded its manufacturing to products such as sauce/spices/jam for the domestic market and also developing cold chain logistics. In juice and soft drinks, Kevian, which is operated by a former Kenyan politician, has high profile brands such as Afia and Pick N Peel, and is exporting to neighboring countries.

Seafood and meat processor Alpha Group, in addition to production, processing and export of Nile perch and tilapia, is expanding its domestic beef and chicken packing and distribution businesses. Alpha Fine Foods meat and food processing, mentioned previously, is its subsidiary. Cheese manufacturer Happy Cow and ice cream manufacturer Glacier Products are other examples of successful domestic companies.

### **2.3.3 Support for small-scale farmers/social businesses in FVC by major players**

One important issue in the Kenyan FVC is how to incorporate small-scale farmers into modern FVCs. Kenya reveals numerous examples of multinational companies with initiatives to support small-scale farmers, as well as examples of social enterprises, companies which are active in profit-making businesses that aim to maximize improvements in social, economic or environmental well-being.

#### **Support for small-scale farmers by major multinational corporations**

Both exporters and domestic manufacturers are expanding technical assistance and funding to small-scale farmers in order to secure procurement of raw materials and, and also to improve their corporate image. There are also examples of agrochemical and IT companies that support small-scale farmers. Many of these companies make use of subsidies and funding from governments, organizations and foundations to support their outreach to small-scale farmers. Domestic retail companies, however, such as the supermarket chains, rarely give direct support, such as training or guaranteed contracts, to the domestic small-scale farmers that supply most of their raw materials for products and goods.

Examples of companies that do explicit work with small scale farmers:

- Coca-Cola set up Project Nurture in cooperation with the Gates Foundation and the NGO TechnoServe in 2010. The program targeted about 50,000 small-scale mango and passion fruit farmers in Kenya and Uganda with the goal of doubling harvests by 2014. Under this initiative Coca-Cola purchased local farmers' fruit for its Kenyan juice business. The project fund was 11.5 million USD, 4 million USD of which was paid by Coca-Cola and its subsidiary;
- Nestle (Switzerland) is involved in rural development projects; its Nescafe Plan provides agricultural technical assistance to 26,000 coffee growers and its East African dairy development project provides technical support to 6,000 dairy farmers;
- Leading US dairy manufacturer Land O' Lakes carries out training for the Limuru Dairy Farmers Cooperative Society in cooperation with TechnoServe;
- Leading cereal manufacturer UK Weetabix announced in 2015 that it would procure 60% of its future raw materials from local farmers;

- Syngenta (Switzerland) established Syngenta foundation for Sustainable Agriculture in Kenya in 2009 to work on improving farmer livelihoods and productivity in arid/semi-arid land;
- Germany's Bayer works with Germany aid agency GIZ, the Fresh Produce Exporters Association of Kenya and microfinance services to supports small-scale vegetable farmers, including support for obtaining GAP certification etc
- The Monsanto Fund supports school gardens and potato farmers in cooperation with universities and NGOs in Kenya.

### **Kenyan Social Enterprises**

Examples of Kenyan social enterprises participating actively in the FVC include:

- Stawi Foods and Fruits Limited: an award-winning food processing company that started with banana flour production in 2011, and now produces gluten-free banana flour, fortified oatmeal porridge for children and starch for cooking, using raw materials obtained from about 300 small-scale farm producers
- Norda Industries: a potato chip manufacturing company established in 2008. It purchases raw materials directly from potato producers in Kenya and manufactures snack foods at domestic factories. It has own brands including "Bitez" and "Urban Bites" and all of its products are halal certified. Norda works at improving the incomes of producers by providing credit for the purchase of seeds, seedlings and fertilizers and purchasing postharvest crops at higher prices than the Fair Trade prices.

## 2.4 Kenyan Policy Related to the FVC

Under **the country's Long-term Development Plan "Kenya Vision 2030"**, the Government of Kenya set goals of a high economic growth rate, equitable society, and fair political system through infrastructure development, public sector reform, and macroeconomic stability. Among policy priorities in the agriculture sector were expansion of irrigation projects, productivity improvement through revision of land policy and expansion of food processing business were indicated. Expansion of modern retail by encouraging growth of large-scale supermarkets was indicated for the wholesale/retail sector. In the manufacturing industry, Kenya aims to become a major supplier of daily necessities to East/Central Africa markets by attracting large-scale investors into industries processing agricultural raw materials.

Under **the Second Medium Term Plan "MTP II"** for the period 2013 to 2017, Kenya aims for an economic growth rate of 10% by 2017/2018. The priority sectors in this plan include the development of transportation infrastructure such as roads, railways and harbors to strengthen competitiveness; investment in irrigation/mechanized farming for increased food security; support creation of added value; and public security. More specifically, Kenya prioritizes six sectors, including agriculture/livestock/fisheries, trade and manufacturing industry as pillars of the economy.

- **Agriculture/livestock/fisheries:** To reduce dependence on rain-fed agriculture, Kenya gives top priority to irrigation development on land of 400,000 hectares or more in total. In addition, it will take measures to provide subsidies for mechanization of agricultural production, revitalization of cooperative associations and farmer's associations, and agricultural inputs. For livestock, it will establish special disease-free zones to increase productivity of animal products including dairy products and to promote production of processed animal products. For fisheries, it will promote the introduction of value added products as well.
- **Trade:** to develop cross-border trade, it will strengthen economic cooperation with East African and other African countries.
- **Manufacturing industry:** Aiming at expansion of industry and diversification of products, it will establish special economic zones in Mombasa, Kisumu and Lamu, and expand meat and dairy processing. In addition, it will develop special zones to promote links to the agricultural sector with industrial and SME parks.

The Kenyan Ministry of Devolution and Planning published an economic survey in April 2015 which indicated the direction of future policy interventions.

**Table 17 Kenyan Government Priority Areas**

Agriculture	<ul style="list-style-type: none"> <li>• Strengthen activities for introducing commercial agriculture</li> <li>• Improve access to agricultural inputs by reducing cost</li> <li>• Promote agricultural mechanization</li> <li>• Quickly complete the fertilizer plant to reduce the cost of fertilizer and to promote its use</li> <li>• Ensure appropriate agricultural product management especially with export products</li> <li>• Expand irrigated area and to reduce reliance on rain water</li> </ul>
Manufacturing	<ul style="list-style-type: none"> <li>• Accelerate current activities to reduce production cost</li> <li>• Diversify the products</li> <li>• Accelerate the implementation of SEZ law, and quickly establishing SEZ/industrial park</li> </ul>
Trade	<ul style="list-style-type: none"> <li>• Quickly establish SEZ and provide tax and other incentives to exporters</li> <li>• Strengthen activities to promote SEZ and other measures for export growth</li> <li>• Promote regional trade and economic zones and bilateral arrangements to promote trade</li> <li>• Improve competitiveness of Kenyan products</li> </ul>

Source) Kenya Ministry of Devolution and Planning

While Kenya's the policy of encouraging market-oriented agriculture is considered to have contributed to the growth of the agriculture sector, others have felt that the policies were too focused on the short-term. The tariff reductions and eliminations for maize, wheat and sugar implemented after domestic crop shortages and associated price increases in the last half of the 2000's helped enhance food security and was beneficial to consumers. However, the tariff adjustments ultimately led to domestic price reductions of these crops and did not have advantages for producers. This case showed the importance, especially at the time of food shortages, of balancing support for both producers and consumers.<sup>17</sup>

The coherence between national strategy and sectoral policies, as well as their sustainability are still considered to be weak, but overall, policy is becoming more unified and, in the agriculture sector, market liberalization and agricultural commercialization are targeted. The Government of Kenya, in "**ASDS Agricultural Sector Development Strategy, 2010-20**"<sup>18</sup>, promoting moving from subsistence farming to business-oriented agriculture. The strategy outlines six sectors: improvement of input/financial services, expansion of research and dissemination activities, improvement of food and nutrition security, strengthening sustainable land and natural resource management, access to agribusiness markets, and promotion of added value creation. Other than research and dissemination activities, recent public spending has been concentrated on rural and country-level infrastructure development, leading to calls for policy support in other sectors.

Based on the Government of Kenya's Vision2030 and the Kenya Investment Authority, specific investment opportunities by sector are as follows:

**Table 18 Investment Opportunities by Sector**

<sup>17</sup> FAO, 2013, "Review of Food and Agricultural Policies in the Kenya 2005-2011" <http://www.fao.org/3/a-at553e.pdf>

<sup>18</sup> This is a revision of the Strategy for Revitalizing Agriculture 2004-14 (SRA), which was made as a framework for implementing the Economic Recovery Strategy (ERS).





#### Manufacturing

- Processing of purified white sugar (used in food and beverage and pharmaceutical, increasing in demand but is imported)
- Processing of fruit concentrate (concentrate other than pineapple-mango concentrate is imported from outside the EAC)
- Processing of vegetable oil (commercial cultivation of oilseeds exists but the challenge is the processing and sustainable production)
- Manufacturing & blending fertilizer (now imported)
- Adding value to plants such as Pyrethrum, producing raw materials for pharmaceuticals



#### Agriculture

- Developing sugar cane industry (expanding sugar factory)
- Adding value to coffee, tea, fruits etc.
- To develop marketing infrastructure (wholesale markets in Nairobi, Nakuru, Mombassa, from farm to market, cold storage facilities inside and near the airport)
- Developing irrigation facilities and multi-purpose dam



#### Livestock

- To establish Domestic Animal Infectious Diseases Control District (slaughterhouse, storage facilities, tannery, etc.)
- Developing meat industry (poultry and pork processing is a monopoly situation)
- Dairy (processing milk powder etc.)



#### Fishery

- Value added products
- Cold storage plant
- Processing plant for export

In addition, establishing wholesale/producer markets in major areas etc.

Source) Kenya Ministry of Devolution and Planning, Kenya Investment Authority

## 3 KENYA'S FVC BY SECTOR AND OPPORTUNITIES FOR JAPAN

Based on Japanese companies' areas of interest in the Kenyan FVC, this chapter looks at opportunities in Kenya's FVC from two viewpoints: individual sectors including crops (rice, maize), livestock and dairy farming, vegetable/fruit, flowers, and fisheries, as well as cross-sectoral industries including agricultural inputs and machinery, distribution and IT.

### 3.1 Japan's interest in the Kenyan FVC

#### 3.1.1 Overview of relevant Japanese companies

The table on the next page summarizes Japanese companies' activities related to the Kenyan FVC, as identified during this project. We classified the business activities into five groups, (i) to (v) below. Currently, there are few Japanese companies producing locally in Kenya, and Japanese companies are mainly involved in trading, as indicated the following (i) to (iii) categories. Nissin Food Products and Kikkoman are considering local production. In (iv) "investment in the service industry", there are two cases, Toridoll in the restaurant industry and AfricaScan in the retail sectors, although both are still small in scale. Investment in local agriculture and manufacturing/processing industries, described in (v) will be a future step for Japanese companies.

- (i) Selling or trading finished products (processed foods, beverages, seasoning, etc.) within Kenya (exported from Japan or third countries);
- (ii) Selling or trading intermediate goods and capital goods (packing of fertilizer, agrichemicals, seed, facilities such as agricultural machinery, food machinery, greenhouses, etc.) for Kenya's agricultural & marine/food sectors (export from Japan or third countries);
- (iii) Importing raw materials (green coffee beans, tea leaves, etc.) from Kenya and manufacturing finished products in Japan;
- (iv) Participation in Kenya's service industry (distribution, fast food, logistics, IT, etc.);
- (v) Participation in Kenya's agricultural, fisheries or food processing industry (establishment of company, JV, acquisition of business).

The number of Japanese companies in Kenya has increased from 20 companies in 2014 to 36 companies in 2015, and in many companies the number of staff has increased.<sup>19</sup> As examples of other sectors related to the FVC where Japan is active, Hankyu Hanshin Express, in cooperation with a local agency, conducts logistics services within EAC and warehousing for Japanese companies and Mizuho Bank entered into the Memorandum of Understanding for Business Cooperation with the Kenya Investment Authority in August 2015. This cooperation is expected to enhance the support system for Japanese

<sup>19</sup> JETRO, 2015

companies seeking to start businesses in Kenya.<sup>20</sup> In addition, consulting firms such as Africa Business Partners or law firms also arrange for Japanese staff to work in Kenyan-based offices.

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<sup>20</sup> Mizuho Bank, 2015, “Memorandum of Understanding for Business Cooperation with the Kenya Investment Authority”.  
[http://www.mizuhobank.co.jp/release/pdf/20150821release\\_jp.pdf](http://www.mizuhobank.co.jp/release/pdf/20150821release_jp.pdf)

**Table 19 List of main Japanese companies conducting business in Kenya**

	Company name	Description of business	Overview
Sale or trade of finished products  (production in Kenya or production in Japan/third countries)	Nissin Food Products	Import/sale of instant noodles	Established a joint venture company with Jomo Kenyatta University of Agriculture and Technology (JKUAT) in 2013. It imports and sells instant noodles manufactured by its Indian subsidiary; considering local production in the future.
	Suntory	Import/sale of energy and sports drinks	It imports Lucozade, a brand of energy and sports drink, and Ribena, a brand of juice from Lucozade Ribena Suntory (UK). Suntory took over both brands when it acquired Glaxo Kline Smith (UK) in 2014.
	Kikkoman	Amagayu products (JICA BOP F/S)	Developed improved version of local fermented cereal porridge (high in sugar, low in nutrition) targeting elementary school children and reducing sugar expenditure costs. aims at nutrition improvement and health promotion of children
	Ajinomoto	Sale of food seasoning	It established a branch of Nigeria's West African Seasoning (WASCO) in Kenya and began sales in 2014.
	ROHTO Pharmaceutical	Sale of skin-care products	Conducted "Preparatory Survey on High-Value Added Skin Care Product Business by Using Surplus Agricultural Crops" under the JICA Preparatory Survey (BOP Business Promotion) program in 2013; launched local sales of anti-inflammatory analgesics and ointments.
Sale or trade of agricultural inputs, agricultural/food machinery	Toyota Tsusho	Blending of fertilizers, distribution of farm equipment	Signed a comprehensive Memorandum of Understanding regarding mutual collaboration with Kenya under the Vision2030 strategy; signed a Memorandum of Understanding regarding the promotion of fertilizer business with Kenya Ministry of Agriculture; conducted market research on the domestic fertilizer manufacturing industry and is planning to build a blending factory in 2016; opened the human resources development center "Toyota Academy" in 2014 to conduct training pertaining to agribusiness and agricultural machinery repair
	Sakata Seed	Sale/production of horticultural seeds	Established a representative office in 2011. It acquired a South African seed & seedling company in 1999 and conducted research on the BOP market
	Sumitomo Corporation	Sale of agrichemicals	Sale of agrochemicals for cultivating cut flowers (roses).
	Marubeni	Sale of agricultural equipment	Export of agricultural equipment.
	Mitsui & Co.	Sale of agrichemicals	Export of agrichemicals
	Yamaha Motor	Sale of equipment	It handles generators for irrigation and fishing vessels and has sales network in Kenya (active in all countries in Africa, except Somalia).
	Rheon Automatic Machinery	Sale of automated food processing machinery	It imports automatic dough sheet forming machines for cookies and bread from Japan.
Participation in service industry (fast	Toridoll	Management of teriyaki chicken shop	Entered Kenya's restaurant market in 2015. It serves dishes such as grilled chicken + rice/noodle and developed the fast-food restaurant concept "Teriyaki Japan", targeting mainly middle-income consumers. It plans to expand up to 20

food, logistics, IT, etc.)	AfricaScan	Management of kiosks (convenience stores)	shops in the coming two years. Operates five Blue Spoon Kiosks, employing marketing techniques like membership cards and clearly market prices – something that isn't common at kiosks. It collects data including POS data and supports Japanese companies' development of BOP markets.
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Source:

"List of Japanese Enterprises Doing Business with African Continent and Countries"

[http://www.afdb-org.jp/file/japan/List\\_of\\_Japanese\\_Enterprises\\_jpn.pdf](http://www.afdb-org.jp/file/japan/List_of_Japanese_Enterprises_jpn.pdf)

Kikkoman Corporation, 2015, "Overview of Kenya Amagayu Project"

[http://www.kantei.go.jp/jp/singi/kenkouiryoku/kokusaitenkai/eiyo\\_dai1/siryou14.pdf](http://www.kantei.go.jp/jp/singi/kenkouiryoku/kokusaitenkai/eiyo_dai1/siryou14.pdf)

Toyota Tsusho and Kenya made the First Agreement on Domestic Fertilizer Business Development in 2014.

[http://www.toyota-tsusho.com/press/detail/140306\\_002601.html](http://www.toyota-tsusho.com/press/detail/140306_002601.html)

Sakata Seed, 2013, "Introduction of Business in Africa"

[http://www.jetro.go.jp/ext\\_images/world/africa/seminar\\_reports/pdf/20130226\\_2.pdf](http://www.jetro.go.jp/ext_images/world/africa/seminar_reports/pdf/20130226_2.pdf)

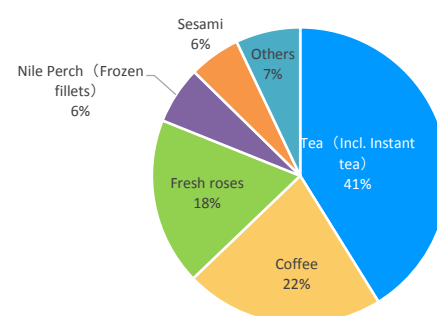
Nissin Food, 2013, "Japanese Instant Noodle Manufacturer's First Entry to Africa – Regarding Launching Joint Venture Business in Republic of Kenya"

<http://minkabu.jp/announcements/2897/140120130521046879.pdf>

### 3.1.2 Overview of agricultural trade between Japan and Kenya

#### Japanese imports from Kenya

Tea and coffee represent 63% of Japan's agricultural imports from Kenya. Tea imports have been decreasing in recent years but green coffee bean imports are stable. Some tea and coffee products are re-exported to Japan after blending and roasting in Europe or the US, and therefore the actual volume of Kenya coffee distributed in Japan is expected to be much more than only the green bean volumes. Other products include green tea and in recent years, instant tea imports have been increasing. Kenya's instant tea exports have rapidly increased over the past decade, reaching the equivalent of about 900 million yen equivalent in 2014. Kenya is the biggest supplier of instant tea to Japan.



**Figure 14 Japan's Import of Agricultural Products from Kenya**

Source) ITC

Behind tea and coffee, flowers represent about 20% of imports.

Among flowers, fresh roses account for the largest volume, and fresh orchid and carnations are imported as well. In addition, many imported flowers including fresh roses, arrive in Japan via the Dutch flower market; 30 - 40% of Japan's imported flowers from the Netherlands are reported to be produced in Kenya. In 2010, Kawasaki Flora provided the processing technique/know-how of preserved flowers, the demand for which has been increasing in Japan, and conducted a survey geared to test production for the Japanese market.

After flowers, frozen Nile perch fillets from Kenya are 6% of imports. Nile perch imports have been increasing since 2012, reaching 259 tons last year. Sesame, which also represents 6% of the import value, is for oil milling use, but its trade volume fluctuates greatly in response to other countries' production every year. Other items that are imported include octopus (smoked), macadamia nuts and cashew nuts.

Japanese companies importing from Kenya include not only major manufacturers and importers, but also small and medium enterprises including those involved in Fair Trade are also participating actively. Some

importers have export bases in Kenya and it is assumed that they may go upstream and strengthen their connections with producers and processors or develop other export items in the future. The JETRO Kenya office, in addition to holding briefings on the local market situation, is considering exhibiting Kenyan processed food products at the major annual Tokyo food and beverage exhibition Foodex.

### **Japanese exports to Kenya**

There are very few agricultural or fisheries products exported from Japan to Kenya. The two main items are frozen mackerel (which will be processed to canned mackerel simmered with tomatoes locally) and vegetable seeds for sowing. In addition, there have been small exports volumes of agricultural machinery, diesel engines and FVC-related equipment including refrigerators.

The JETRO Kenya office organized a “Japanese Brand Corner” at Kenya’s major supermarket Nakumatt in 2014 and conducted test marketing of several Japanese products including vegetable juice, fish meat sausages, canned fish and retort curries.

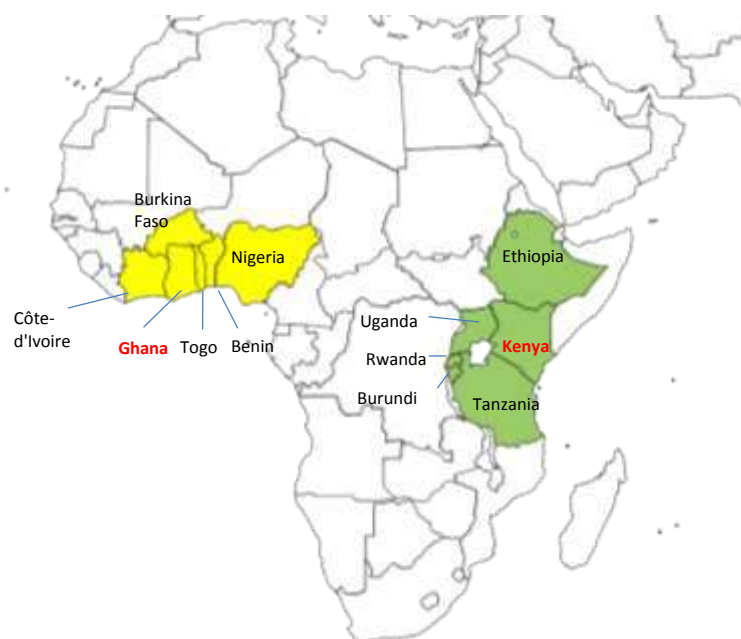
### 3.1.3 Member Companies' Interest in the East Africa's FVC

As part of this project, we conducted a survey of the member companies and organizations of the Public-Private Council for Promoting the Global Food Value Chain (220 companies/bodies) for the purpose of understanding Japanese companies' interest in developing business in the Eastern Africa region, including Kenya, and in the Western Africa region, including Ghana. We conducted the survey from July 9 to 24 in 2015 and received answers to our questionnaire from 23 companies in total. These respondents consisted of six companies from the agricultural production and food manufacturing sector, five companies from the machinery, material and IT sector, three companies from the consulting industry, one company from the trading and financial sector, and eight other companies.

**Table 20 Questionnaire Respondents-Number and Type of Companies**

Business type	No.
Agriculture/food processing	6
Machinery/material/IT	5
Consulting/service	3
Trade/finance	1
Other	8
Municipalities	(3)
Logistics	(2)
Packaging	(1)
Construction	(1)
Related organizations	(1)
Total	23

**Figure 15 Areas targeted in the questionnaire**



Source) Promar Consulting

**Table 21 Main economic indicators of the targeted countries**

	Population (10 thousand)	GDP (100 million USD)	GDP growth rate(%)	GDP per capita(USD)
<b>East Africa</b>				
Kenya	4,555	609	5.3	1,338
Ethiopia	9,651	548	9.9	568
Tanzania	5,076	492	7.0	998
Uganda	3,884	263	4.5	677
Rwanda	1,210	79	7.0	652
Burundi	1,048	31	4.7	295
<b>West Africa</b>				
Ghana	2,644	386	4.2	1,462
Nigeria	17,852	5,685	6.3	3,185
Côte-d'Ivoire	2,080	343	9.0	1,646
Burkina Faso	1,742	125	4.0	720
Togo	699	45	5.7	646
Benin	1,060	87	5.4	825

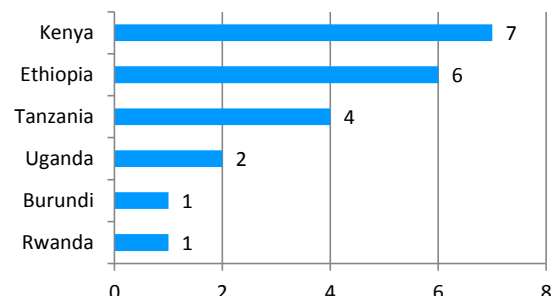
Source) World Bank

Of the 23 companies who completed the questionnaire, eight companies replied that they were interested in both Eastern Africa and Western Africa, and one company replied that it was interested only in Western Africa. The companies who answered that they were interested in East Africa consisted of four companies from the agricultural production and food manufacturing sector, two companies from the machinery, materials and IT sector, two companies from the consulting services industry, and one company

from the other (relevant organization). This shows that not only companies in the agricultural production and food manufacturing sector but also those in a wide range of other areas are interested in business opportunities in East Africa.

**Table 22 Companies interested in Africa**

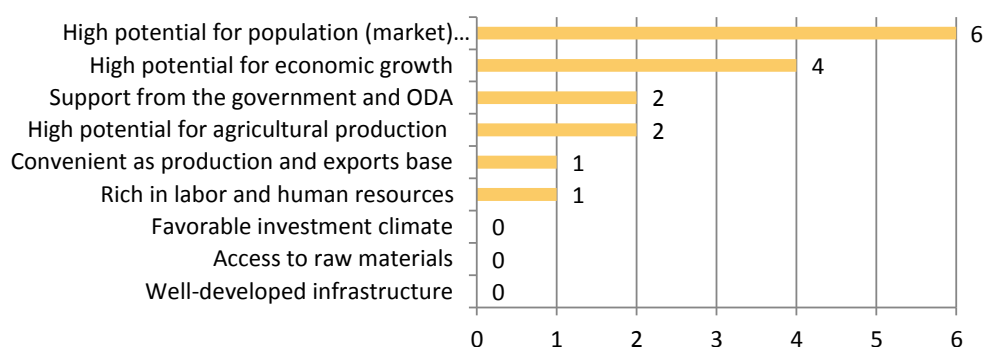
Business type	No.
Agriculture/Food Processing	4
Consulting/service	2
Machinery/material/IT	2
Other (related organizations)	1
<b>Total</b>	<b>9</b>



**Figure 16 Countries of interest in East Africa**

Within Eastern Africa, the highest interest was in Kenya, which has a relatively developed economy and many middle-income consumers. Seven companies replied that they were interested in Kenya. After Kenya, the countries that attracted strongest interest from were Ethiopia (6 companies), Tanzania (4 companies), Uganda (2 companies), Burundi (1 company), and Rwanda (1 company).

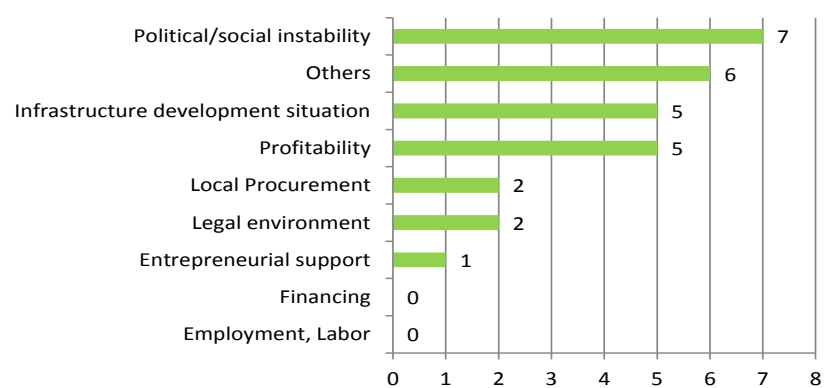
Among the reasons for interest in Eastern Africa, “High potential for market/population growth” was the most common response (6 companies) and “High potential for economic growth” was the second (4 companies), which indicates that domestic Kenyan market attractiveness is the biggest factor behind increasing interest. The other top reasons were “Support from the government and ODA”, “High potential for agricultural production”, “Convenience as a production/export base” and “Rich in labor force and human resources.”



**Figure 17 Reasons for being interested in East Africa**

On the other hand, among the reasons for not having interest in Eastern Africa (15 companies), “Political/social instability (political unrest, public order, corruption and bribery)” was most common (7 companies), followed by “Other” (6 companies), “Profitability (high-cost, small market scale, etc.)” and “Infrastructure development situation (transport, cold chain, communication, electric power, water system, etc.)” (5 companies each). The “Other” reasons given included three companies answering that Africa is outside their strategic region. Overall, concerns about political/social stability, infrastructure development situation and profitability, or lack of familiarity with the African region from a geographical and historical perspective, it is hard for Africa to be a strategic target for some companies.





**Figure 18 Reasons for not being interested in East Africa**

## 3.2 FVC Business Opportunities by Product

This chapter focuses on six agricultural product areas, that were chosen based on the interest and potential opportunities for Japanese businesses, as assessed through this research. For each we will summarize the distribution channels in the sector, as well as production and trade data. Then, we outline the FVC from production to consumption, including information gained through field research and discuss the primary challenges in each FVC, as well as opportunities for Japan.

- Grains (Maize, rice)
- Milk/dairy products
- Meat
- Fruits/vegetables
- Fisheries
- Flowers

### 3.2.1 Maize<sup>21</sup>

#### Overview

Maize is the most important staple food crop in Kenya (accounting for one-fourth of calorie intake) and has been eaten traditionally as ugali, which is prepared by mixing flour (usually maize) with warm water into a stiff porridge or dough-like consistency. Maize can be found everywhere, planted in empty spaces between houses or along roads in the country. 98% of Kenya's 3.5 million small farmers grow maize. Medium- and large-sized maize farms are concentrated in the western part, Trans-Nzola/Uasin Gishu County, in particular. In other districts, small farmers produce maize as a subsistence crop.



Corn Ugali eaten as a staple food.

The majority of Kenya's land is semi-arid. Maize production relies on rain water and therefore the crop is susceptible to the weather. Production in recent years is about 3.0 to 3.5 million tons and the yield is as low as 1.5 to 2.0 tons/ha. Kenya produces mainly white; yellow maize is intended for only feed and sale of yellow maize for human consumption is not allowed. The country is opposed to genetically engineered crops. According to a 2012 survey, approximately 60% of Kenyan farmers purchase hybrid seeds, while the remaining farmers use their own seed stocks or buy local seeds. About 40% of farmers utilize farmyard compost as a fertilizer, and 20% utilize tractors.

<sup>21</sup> Interviews with related companies, FAO, 2013, *Analysis of Incentives and Disincentives for Maize in Kenya*, <http://www.fao.org/3/a-at554e.pdf>, Michigan State University, 2011, *A Farm Gate-to Consumer Value Chain Analysis of Kenya's Maize Marketing System* <http://fsg.afre.msu.edu/papers/idwp111.pdf>, Erastus Kang'ethe, 2011, *Situation Analysis: Improving Food Safety in Maize Value Chain in Kenya*, [http://www.fao.org/fileadmin/user\\_upload/agms/pdf/WORKING\\_PAPER\\_AFLATOXIN\\_REPORTDJ10thOctober.pdf](http://www.fao.org/fileadmin/user_upload/agms/pdf/WORKING_PAPER_AFLATOXIN_REPORTDJ10thOctober.pdf), Lilian Kirimi, et al, 2011, *A farm gate - to - consumer value chain analysis of Kenya's maize marketing system* <http://fsg.afre.msu.edu/papers/idwp111.pdf>

Kenya's domestic production of maize cannot meet consumer demand. It is expected that the supply gap will grow as the population in urban areas increases in the future. Among high-income consumers there has actually been a shifting from maize to wheat, but this will not eliminate the overall maize supply gap. Currently, formal imports are approximately 10% (100,000 to 300,000 tons) of the total supply, and there are some informal imports as well. In 2009, domestic production plunged due to social unrest after the Presidential election as well as climate issues including prolonged rain and which resulted in price hikes and a drastic increase in maize imports to 1.5 million tons. Thus, the challenge in the maize industry also lies in the unstable supply structure. Production costs are lower in neighboring Tanzania and Uganda, which are the main exporters to Kenya, and not only is their maize sold for lower than the international market price but also tariffs on their maize were abolished in 2005. Maize from Tanzania, in particular, undergoes adequate post-harvest processing. Thus, Tanzanian maize is in higher demand than maize from Kenya among millers who especially value quality control.

### **The Maize Value Chain**

The National Cereals and Produce Board of Kenya (NCPB) and large- and medium-sized milling companies are responsible for the modern distribution of maize. The annual amount annually handled by the sector is 300,000 to 400,000 tons and accounts for only about 10 percent of domestic production. Almost 90% of production is consumed directly on the farm or distributed informally. In the informal sector, small-scale ugali flour millers do maize milling for consumers or farmers. This type of milling service is preferred by poor consumers in the urban areas of the western part of the country and by rural households.

NCPB was established with the aim of contributing to increased production and low-priced supply of grain through purchasing and sales of maize (white maize), rice, pulse, and sorghum. By increasing purchase in the case of oversupply and increasing sales in the case of low supply, NCPB has influence on the market price to a certain extent. It has also been involved in rice polishing since 2004. In addition, NCPB maintains and rents silos (storage warehouses). However, in practice, silo management and operation has not functioned well and it has been suggested that it must be improved. NCPB also deals in agricultural inputs such as fertilizer and seed.

Medium- and large-scale maize farmers sell a majority of their production, and in many cases, sell directly to NCPB, millers, major wholesalers or feed companies. Small farmers, however, only sell any extra maize that is not used for personal consumption. There are few cases in which small farmers directly sell their extra maize to NCPB or major millers. Usually, they sell extra maize to small-scale brokers who then resell the maize to local markets, large wholesalers, millers or NCPB.

There are about 30 larger- and medium-sized milling companies. In addition to packaging and selling retail maize flour, they sell flour to other such processing industries such as bakeries and flour products can be made with various functionalities, depending on what they will be used for. Momasa Maize Millers is the largest milling company in Kenya; it acquired five domestic milling companies in the late 2000s, and its market share reached 33%. Pembe Flour Mills Ltd., the second largest milling company, also deals in dairy products and feed, and has expanded to neighboring countries. Premier Group, the third largest milling company, has a good track record in packaged products for consumers. Rafiki Millers Ltd. and Magic Oven Bakeries, in fourth place, were acquired by Tiger Group of South Africa in 2014. Unga Group, which we met during our field research, is also a major company, and is involved in the bakery business, in addition to milling and feed manufacturing. Other millers include Mini Group, which has diversified its business into milling, baking, confectionary production, and sugar production, and has expanded to neighboring

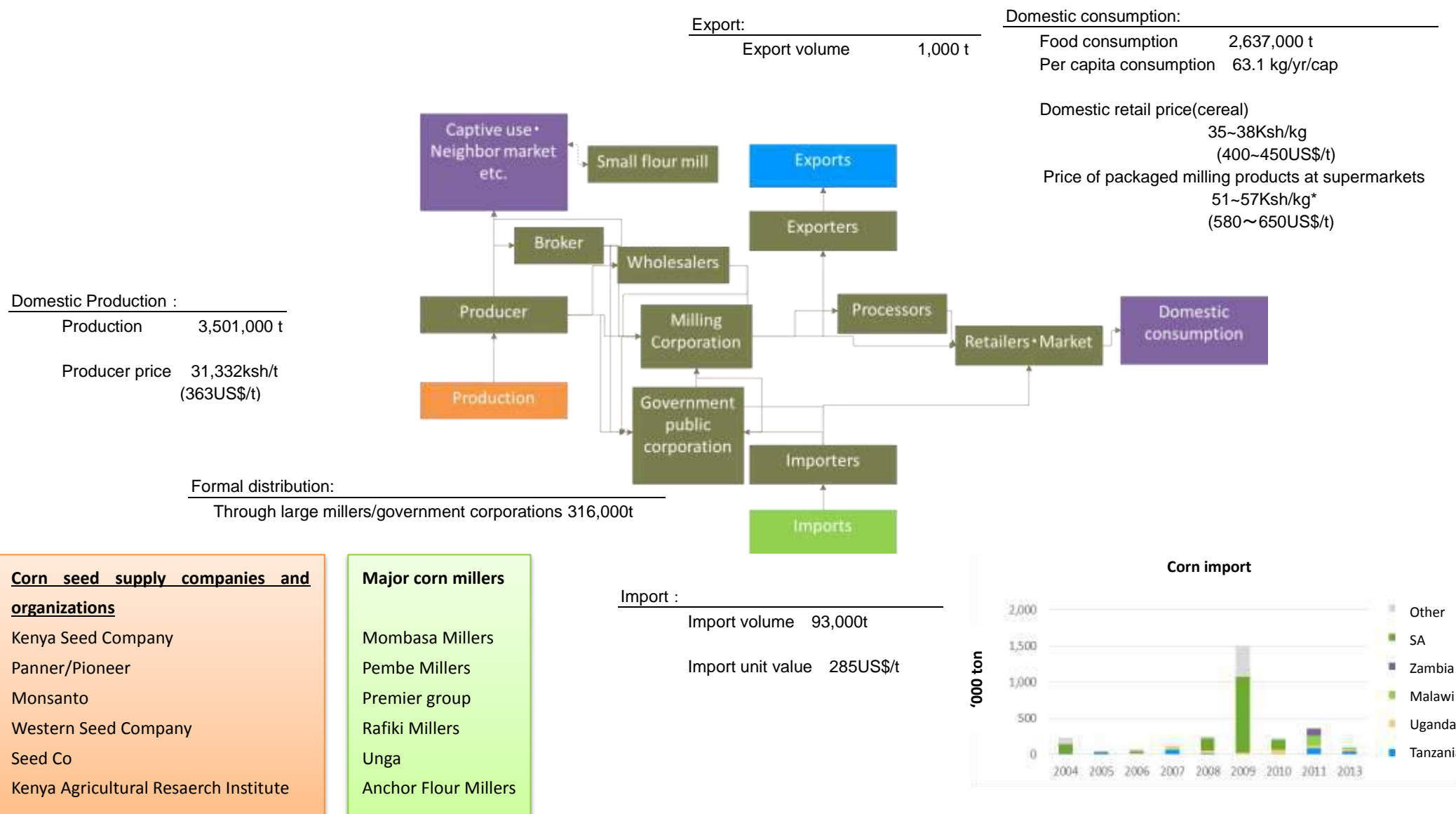
countries, and Anchor Flour Millers, which deals in flour, feed, and mineral water.

In order to improve maize sales and payment system, the Eastern Africa Grain Council (EAGC) has been playing a central role in assessing the possibility of introducing of a warehouse receipt system in Kenya. Under the warehouse receipt system, a farm household can deposit its harvested maize at the warehouse and, in exchange, receives a warehouse bond that can be used to obtain a loan or pay bills such as medical costs. This way, farmers can sell their maize deposits from the warehouse when they want and avoid having to sell immediately after harvesting when prices decline. Donor organizations like the World Bank have supported introduction of the warehouse receipt system, and private banks also show an interest in financing it.<sup>22</sup>

It is said that the official grain standards of the East Africa region differ only slightly from the global standards and Kenya grain standards are actually stricter than the United States. Although inspections for agrochemical residues are not currently conducted, the industry has been implementing more food regulations and aims to have a governmental organization which can enforce control over labels, inspections and quality control.

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<sup>22</sup> IFC, 2015, *Money in the Barn: How Warehouse Receipts Can Improve the Life of Farmers*  
[http://www.ifc.org/wps/wcm/connect/region\\_\\_ext\\_content/regions/sub-saharan+africa/news/za\\_ifc\\_warehouse\\_receipts\\_kenya](http://www.ifc.org/wps/wcm/connect/region__ext_content/regions/sub-saharan+africa/news/za_ifc_warehouse_receipts_kenya)



**Figure 19 Corn Value Chain Map (2013)**

Source) Promar Consulting, based on Kenya National Bureau of Statistics "Economic Survey 2015", ITC Trade Map, FAOSTAT, FAO, 2013, *Analysis of Incentives and Disincentives for Maize in Kenya*, <http://www.fao.org/3/a-at554e.pdf> Note)\*As of 2015 field survey conducted for the project.

### Profile: Milling Company Unga Limited<sup>23</sup>



- *The major problem lies in the quality of maize produced by small farmers. In recent years, to address this, Unga has started cooperation with an international NGO to conduct farmer training*
- *Unga has been aggressively expanding new businesses by investing in the bakery business, the demand for which is expected to grow, and focusing on nutritionally fortified flours..*

Unga Holdings Limited<sup>24</sup> is one of the oldest companies in Kenya. It has affiliated companies such as Unga Limited, Unga Farm Care (EA) Limited<sup>25</sup>, and Unga Millers (U) Limited and is involved in milling of wheat, maize and other grains as well as manufacturing of animal feed. The company has production bases in Nakuru and Eldred (the western part of the country) as well as Uganda and Tanzania. Unga Limited is a relatively large miller and is currently expanding its milling factory in Nairobi. The company's brands, EXE Bakers Flour and EXE Home Baking Flour, are widely sold to supermarkets, kiosks and bakeries. To take advantage of the predicted growth of the Kenyan bakery business, in 2014 Unga sold its shares in Bullpack, a packaging company handling packing materials such as cans and bag papers which was jointly operated with the UK's Nampak Holdings. Then, Unga acquired 52% of Ennsvalley Bakery Ltd., and made a full-scale entry into the bakery business. Ennsvalley Bakery supplies sandwich bread to supermarkets in Kenya and Eastern Africa and also supplies popular baked goods such as pastries, doughnuts and muffins. Unga has adopted the Japanese "Kaizen" management model in its business operations and has strong interest in international business models.

About 20% of the maize Unga mills is domestically produced maize, while the remaining 80% is imported from Tanzania and Uganda. Due to decreased production in the northern part of Rift Valley, which is the main production area, imports have been increasing. Maize is traded directly with farmers or through brokers. Unga sets prices depending on prices of other millers or supply conditions. Maize brokers have significant leverage and if brokers are not satisfied with the offered price, they take collective action not to sell, which disrupts the market. This situation could be avoided if Kenyan farmers were willing to pool their lands and cultivate maize cooperatively, cutting out these brokers. In Kenya, culturally, people deeply value individual land ownership, and organization of maize cooperatives has been extremely difficult.

Unga conducts quality inspections and makes payments for maize brought into their purchasing center. It has not traditionally provided producers with any technical assistance for improving production or quality control as it has felt it is difficult to control maize quality when so many small farmers are involved. However, recently, Unga has started working with the UN's FAO and the NGO TechnoServe to assist maize farmers in selecting appropriate seeds and providing agricultural technical assistance; Unga feels these partnerships are useful for Unga to address problems in production and also to help farmers to improve access to the market. Unga also reported that the partnership with FAO is helpful also in terms of improving traceability.

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<sup>23</sup> Promar Consulting, 2015, interviews ; Business Daily, 2015, 'Unga Group's deal values NAS bakery at Sh1bn' <http://www.businessdailyafrica.com/Corporate-News/-/539550/2520394/-/uvl3i2z/-/index.html>

<sup>24</sup> In 2000, Unga Group Limited concluded a strategic investment partnership with Seaboard Corporation of the United States and established Unga Holdings Limited. (65% of the shares are held by Unga Group Limited, while 35% by Seaboard Corporation).

<sup>25</sup> Unga Farm Care (EA) Limited has manufactured special chicken feed for chicken processor Kenchic Limited, which was the main supplier of chicken meat for foreign food-service franchises Galitos, Steers, Kentucky Fried Chicken and others. Kenchic has decided to withdraw its business from fast food industry in early 2016.

Unga's mills work at full capacity throughout the year, except for January and February. Although the company is interested in doing contract milling for supermarkets' private brands, its current capacity is insufficient. Since the milling business is capital-intensive and the margin is narrow, millers need to be processing high volumes of flour. Part of Unga's capacity limitations is linked to its lack of sufficient storage warehouses; it is studying the possibility of leasing warehouse space from NCPB. However, NCPB management and maintenance of its facilities is not adequate. Thus, in order to use the NCPB facilities, Unga would have to renovate the warehouse by itself.

Unga is working to diversify its milling business and is exploring business tie-ups, by, for example, to provide customized flour products for bakery companies, the demand for which is expected to grow in Kenya and neighboring countries. Unga expects growth, not only in wheat flour and fast growing products like rice and pulse flours, but in other types of flour as well. The company is also developing nutritionally fortified flour targeted at children and mothers and studying the possibility of providing value-added products such as cassava or sweet potato powder in response to the increasing interest in health and nutrition among the general public. Unga has also supplied maize flour to the UN missions in South Sudan and Congo.



Maize flour products lined up in the supermarket



Flour products in small package sold at a Kiosk

### Challenges in the Maize Value Chain

Maize plays a major role in the food security and domestic economy of Kenya. As maize is of primary importance in Kenyan agriculture, improvement of productivity and enhancement of quality control among small farmers are two central issues within the maize industry. With the development of the livestock sector, which is described later in this report, it is expected that demand for maize for feed will grow, along with increased demand for maize for human consumption.

Challenges in maize production include low land fertility of land; limited usage of hybrid seeds and high reliance on older, lower yield seed varieties; insufficient disease control; low fertilizer usage due to its unaffordability; small farm size that is getting even smaller due to land being parceled out in family inheritances and low levels of mechanization.

In the post-harvest processing stage, standardization of maize sizes and the quality control regarding pests and aflatoxin is difficult due to the large numbers of individual farmers involved in the industry. It is also estimated that post-harvest loss from poor processing or drying amounts to 10 to 50% of the harvest.

There is on-going discussion about how, if maize farmers could organize into a cooperative, they could purchase a dryer for communal use. However, although NGOs and other groups have made efforts to organize maize farmers, the cooperatives tend to break down after harvest, when farmers are unable to commit to selling as a cooperative and instead choose their own buyers and prices. Cooperatives have had some success in other Kenyan agricultural industries, such as dairy, but have consistently failed in maize.



This is linked to the fact that maize is so critical to the daily food security and subsistence incomes of Kenyan families; nearly every family grows at least some maize in their gardens and many feel they cannot wait and rely on a cooperative's system when there is a need for urgent cash. For this reason, maize farmers sell harvested maize to brokers, even at overly low prices, when, for example, they need cash to repay loans they took at planting time to cover fertilizer or input costs. Maize prices are a constant guessing game for small farmers, because although farmers have various sales channels and brokers, information is not transparent and there is a wide gap in sales prices even in the same region or same season. The importance of maize in family incomes and the instability of the maize sales system results in many farmers feeling more comfortable having full control of their own maize stocks and sales, rather than trusting in cooperatives.

Below is a summary of the challenges at various stages of the maize value chain.

Production (Input)	Distribution	Processing	Consumption
<ul style="list-style-type: none"> <li>•Difficult to organize farmers</li> <li>•Insufficient knowledge dissemination regarding inputs (seed, fertilizers etc)</li> <li>•Low yield and insufficient production area</li> <li>•High production cost</li> <li>•Difficultiy in quality management</li> </ul>	<ul style="list-style-type: none"> <li>•Difficult to organize farmers</li> <li>•Purchasing by middlemen (impacting the price)</li> <li>•Payment system for farmers-</li> </ul>	<ul style="list-style-type: none"> <li>•Large post-harvest loss</li> <li>•Insuffiient milling facilities, dryer, storage facilities (insufficient function or too expensive)</li> </ul>	<ul style="list-style-type: none"> <li>•Not enough production to meet the demand</li> </ul>

### Opportunities in the maize value chain

In the maize industry, improving productivity and quality of maize as well as alleviating post-harvest loss is critical for small farmers. Therefore, there are opportunities in the maize industry for agricultural inputs and machinery related to post-harvest processing. In addition, for small farmers, the long payment cycle of the maize season is a constraint and introduction of improved payment systems and financing has been called for. In the milling industry, as described in the recent business development of Unga, there is interest in the bakery industry and in fortified flours and foods is growing. Below is a summary of potential opportunities in the maize value chain:

- **Marketing and distribution of low-priced/high-yield agricultural inputs (can be imported or local manufacturing and blending) with technical assistance to farmers by the input company or its local business partner.**

Kenya relies on imports for agricultural inputs such as fertilizers, agricultural chemicals and high-quality seed, but as the need for fertilizer in particular increases, the need for low-priced/high-yield products is high. Japan's Toyota Tsusho Corporation plans to open Kenya's first fertilizer blending factory in 2016, and vitalization of the industry is expected in the future. Going forward it is likely that greater cooperation between private businesses and international organizations and NGOs will be an effective way to improve distribution of inputs in rural areas, provide education and technical assistance and familiarize farmers with new input products. For more information about the agricultural inputs industry, see section 3.3

## Cross-Sectoral Areas

- **Import and marketing of maize processing equipment including milling machines, dryer and storage warehouses, as well as the provision of after-sales service by local agents**

As NCPB functions are still weak, the milling industry needs appropriately-priced machinery, warehouses, milling machines for its post-harvest processing in order to grow. To improve post-harvest processing by small farmers, dryers and warehouses as well as improved management systems for post-harvest handling and quality control are indicated as priorities.

- **Introduction of inventory financing systems such as the warehouse receipt system.**

Introduction of a warehouse receipt system, which would allow farmers to store maize and then choose the timing for when to sell their crops based on favorable prices, is expected to have a significant impact in reducing post-harvest loss and stabilizing maize prices for small farmers. The milling industry supports the introduction of a warehouse receipt system introduction. A stable warehouse receipt system could also be built on by financial institutions to expand their financial and loan services to farmers.

- **Investment with millers into the bakery business or fortified flours, expanded local production and distribution of milling products, and implementation of stronger brand marketing to consumers**

The proliferation of in-store bakeries at supermarkets indicates that the bakery industry will expand along with the growth in the modern retail business. In addition, the development of the food-service industry is expected to further popularize cafés that offer sandwiches, baked goods, burgers and pizza etc, will boost the growth of bakeries and demand for flour. In addition, nutritionally fortified food is in demand both to improve nutrition deficits in some Kenyan populations as well as to respond to the growing consumer interest in health and food safety.

### 3.2.2 Rice<sup>26</sup>

#### Overall

Rice follows maize and wheat among Kenya's staple food crops. Traditionally, rice is eaten in Mwea and the coastal areas with an Arabic and Islamic influence. Rice consumption has grown among medium- and high-income families in urban areas, and, at present, approximately 400,000 tons of rice is consumed annually. A main reason for this increase is that rice can be easily prepared, while *ugali*, Kenya's traditional dish from maize flour, is more difficult to prepare. The domestic self-sufficiency ratio of rice is less than 20% with the rest imported from Pakistan and a number of other countries.

Rice production has been increasing, other than a few exception years (the droughts of 2000/2001 and 2009/2010, the steep global inflation in commodity prices in 2007/2008, and the period of social unrest after the election in 2007). According to Ministry of Agriculture data, annual rice production is about 40,000 to 50,000 tons, and the production area is 15,000 to 20,000 hectares. The yield is as low as 2 tons/hectare.<sup>27</sup> In Kenya, most rice is produced in wet paddies, and upland rice is the minority. Although there are rain-fed paddy fields and valley paddy fields, a majority of rice is farmed in irrigated paddy fields. Approximately 70 to 80% of rice is produced in the large-scale irrigation districts (Mwea, West Kano, Abero, Bunyala, etc.) managed by the National Irrigation Board (NIB). In these districts, under the control of NIB, a small plot (about 1 to 1.5 hectares) of irrigated farmland is assigned to each farm household. The Mwea irrigated district (approximately 8,000 hectares) is the largest and the fragrant Basmati rice produced there is called Pishori and distributed at relatively high prices. In addition to the irrigated districts under the jurisdiction of NIB, there are irrigated paddy fields in small-scale irrigation project areas (those managed by Lake Victoria Basin Development Authority of the Ministry of Environment and Natural Resources) and irrigated paddy fields developed by the private sector. Dominion Farms Limited is the largest private company (American-owned) and owns a huge tract of land of approximately 7,000 hectares, which can be irrigated, in the delta area of the Yala River. Of this, about 1,000 hectares have already been irrigated. Since 2006, the company has been producing long grain rice, and as well as complementary products, such as tilapia, rotation crops and crop by-products such as feed and fertilizer. The company is the largest rice producer in Kenya, highly vertically integrated and also has its own rice mills.<sup>28</sup> In 2008, the Kenya Ministry of Agriculture announced the National Rice Development Strategy 2008-2018, which is a long-term rice strategy with the aim of achieving self-sufficiency in rice by 2030, and emphasizes strengthening research dissemination activities and the seed distribution system.

About 70% of Kenya's imported rice is from Pakistan, with the remaining rice from Vietnam, Thailand, India, Egypt and other countries. Since Pakistan is the most important export destination for Kenyan black tea, there is the special agreement between the governments of the two countries. Thus, although the Kenyan tariff on rice is normally 75% or 200 US dollars/ton, the preferential tariff rate on rice from Pakistan is 35%.



Rice products in a supermarket

<sup>26</sup> Promar Consulting, 2015, interviews

<sup>27</sup> FAO (2013) and the Ministry of Agriculture data does not match data from NIB.

<sup>28</sup> Dominion Farms Limited <http://dominion-farms.com/community.html>

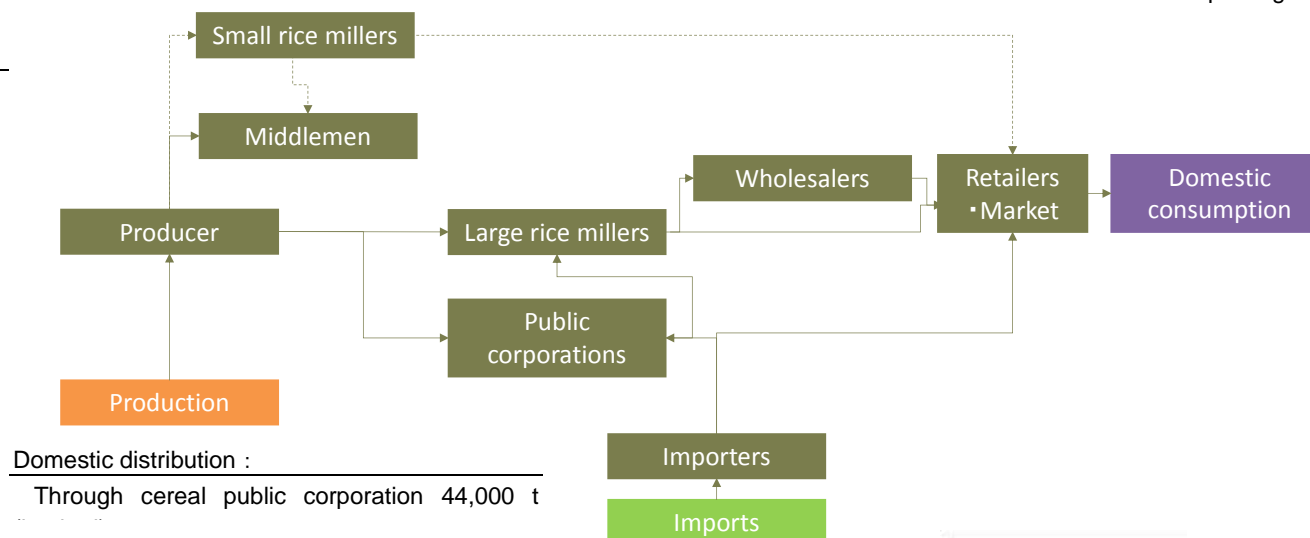
## Rice Value Chain

Rice distribution has been liberalized. In the irrigation districts of the NIB, there are rice mills (Mwea Rice Mill, Western Kenya Rice Mill, etc.) owned by NIB and producers' associations. While rice was once distributed through these organizations, it is now freely sold by farmers. Large sellers include Nice Rice Millers (profiled later in this section), which has recently increased the volume it handles and Capwell Industries, which is also involved in milling and packaging of maize and other cereals, and sells the Pearl Rice brand marketed in major supermarkets. Dominion Farmers also has their Prime Harvest Brand rice produced. With the expansion of supermarkets, these major rice milling companies have expanded their businesses. In addition to these major companies, there is a number of small-sized rice milling facilities that are commissioned to mill rice by farmers or brokers, and sell the milled rice to local wholesale markets or other small-sized wholesale distributors.

**Domestic production :**  
98,000 t (milled)  
150,00 t (husked)

Of which  
NIB irrigation scheme(2013/14)  
Mwea 70,000 t (husked)  
Other 26,000 t (husked)

Producer price(Mwea 2013/14)  
55Ksh/kg(husked)  
(0.6US\$/kg)



**Domestic distribution :**  
Through cereal public corporation 44,000 t

#### Large rice millers • NIB millers

Nice Rice Millers  
Capwell Industries  
Dominion Mills  
NIB-owned millers (Mwea Rice Mills,  
Western Kenya Rice mills, Tana Delta)

**Import:**

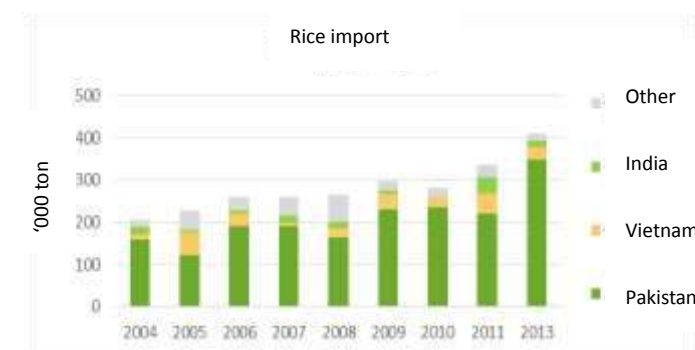
Import volume	410,000t
Import unit value	0.4US\$/kg

#### Domestic consumption:

Food consumption	509,000 t
Per capita consumption	12.2 kg/yr/cap

Sales price at millers (milled rice)  
115Ksh/kg  
(1.3US\$/kg)

Price of packaged milled rice products(milled rice) at  
supermarkets  
150~200Ksh/kg  
(1.7~2.3US\$/kg)



**Figure 20 Rice Value Chain Map (2013)**

### Rice production in Mwea<sup>29</sup>

The Mwea Irrigation District, the largest rice-producing district in Kenya, is located in Kirinyaga County of the Central Province, about 100 kilometers northeast of the capital Nairobi, and produces over 50% of rice produced in the whole country on land of less than 8,000 hectares. Historically, Kenya has had active trade with the Middle East or India, and now mainly cultivates Indica rice, which is a long-grain rice. Water for rice crop irrigation is brought from the Tana River, the largest river in the country, and because of improvement of irrigation equipment, breed improvement, and introduction of dual-cropping, the production volume in Mwea has been growing. In the future, expansion of about 10,000 hectares is planned.

JICA has been involved in rice production in Mwea since the initial irrigation development stage. Although the JICA project was temporarily suspended in the late 1990s when there was an active movements of farmers seeking the liberalization of rice production, JICA restarted its rice cultivation activities as a market-oriented agricultural promotion initiative called RiceMAPP) around 2010. Currently, JICA dispatches specialists on rice cultivation, water management, and agricultural extension, focusing on technical support for crop cultivation targeted at small- and medium-sized farmers in order to increase yields with lower inputs (thereby improving farmer incomes). In the upstream area of Mwea district, water can be obtained relatively easily as the river runs near the rice farming area. However, water does not always reach the downstream production areas, depending on usage of water in the area or rainfall during the rainy season. JICA has not only improved the water management system through construction of a dam, but also provides guidance on water-saving agriculture. In addition, it promotes introduction of dual cropping or continuous cropping and makes efforts to disseminate off-season cropping suited for the land, such as tomatoes or garden peas.

Mwea has an association of rice growers (MRGM — Mwea Rice Growers Multipurpose Co-op Society Ltd) that has been praised for its organization. Nevertheless, only less than half of farmers in this district belong to the organization. Rice growers in this district individually purchase fertilizers from a local market or MRGM by utilizing subsidies from the Kenyan government or borrowing money. The rice produced is purchased by rice millers from farmers or the association and supplied to retail shops. Some farmers report that, in particular, when access to main roads is poor, the brokers offer below market rates. Even though prices are fair when farmers deliver rice to the association, they have to wait for payment for about half a year. As a result, farmers who urgently need cash to purchase fertilizers or other inputs are forced to select other means of selling rice than through the association.

Secure sourcing and management of water is a major challenge for rice production<sup>30</sup>. Rice is more profitable than other crops and because Mwea is a wetland, cultivation of other crops requires construction of ridges or footpaths between fields; therefore, expansion of dual cropping of rice is being encouraged. However, increased yields, reduction of production costs, and improvement of access road to paddy fields are also required to really expand rice production. In addition, individual farmers usually do not have any storage warehouses and while there appears to be a need for storage facilities, how the warehouse can be managed and maintained needs to be carefully considered. A certain level of storage costs would be generated even if a warehouse was jointly installed and the reality is that farmers often borrow

<sup>29</sup> Promar Consulting, 2015, interviews; NIKKEI BUSINESS “Visiting the fields of rice production in Kenya; Paddy fields in Mwea Highlands”[http://special.nikkeibp.co.jp/as/201207/africa/vol3/step4\\_p1.html](http://special.nikkeibp.co.jp/as/201207/africa/vol3/step4_p1.html)

<sup>30</sup> For water management, the National Irrigation Board (NIB) is the main agency in charge, while the Water Users Association, WUA, is in charge of branch channels. NIB was in charge of all channels till the rice price liberalization movement around 2002. WUA's operations have been praised even by visitors from neighboring countries. An irrigation association fee of 2000Ksh/acre is collected, and distribution of water is determined among farmers. In addition, with the decentralization of authority in Kenya, irrigation management is also transitioning to the county level. Although the Ministry of Water and Irrigation had been integrated into the Ministry of Agriculture in the past, it was restored as a ministry after restructuring.

money to purchase fertilizers and agricultural chemicals and need cash immediately after harvesting rice to repay these loans.



Rice fields in Mwea



Sun-drying rice on the ground after the harvest



Packing after drying



### Profile: Rice milling company Nice Rice Millers<sup>31</sup>

- Provides rice-milling service promptly at an affordable price. In addition, their rice market area serves as a space where neighborhood people gather.
- Successful in attracting small farmers by offering services such as bus transportation to the mill.

Nice Rice Millers is a Kenyan invested company that handles about 70% of the rice annually produced in Mwea. The company is involved in both rice milling commissioned by farmers, and independent rice purchasing, milling and marketing. The rice milling capacity is 150 tons/day, and it currently mills about 70 tons per day. It is located in Wanguru, close to Mwea. In addition to 80 staff members, roughly 5,000 workers are indirectly involved in its business, in delivery or retail selling or other services. The company uses a rice milling machine made in China. Rice is classified into four grades: Rice of grades 1 and 2 is for food and rice of grades 3 or 4 is crushed and used as feed for cows or chickens.

Other major rice milling companies in the neighborhood include Mwea Rice Miller owned by the NIB. In the NIB's rice milling factory, farmers had to wait for 3 months till rice was milled. Nice Rice Millers provides more prompt rice milling service at 3KSh/kg, offers means of transport (bus) or storage facilities, which are important for small farmers having no means of transportation, and advertises the farmers' rice at no cost throughout the country. In addition, it ingeniously provides a sales space in the rice mill building for farmers to sell milled rice. One vendor in the rice market said that after she or her family purchases rice from several farmers and mills the rice, she sells it at 115Ksh/kilo in the Nice Rice market area. Prices in the rice mill market space are basically fixed as all offer the same product so there is no price competition.

In addition to offering services for small farmers, Nice Rice Millers now also supplies about 3 tons of rice every day with its 24 specially constructed "rice wagons" to Tharaka, Niti, Kirinyaga and Embu Counties. It aims to expand to Nairobi and Nanyuki, Nakuru Counties as well, in 2016. In some cases, Nice Rice delivers milled rice to hotels and schools sometimes buy directly buy because of the low price offered. Supermarkets may also purchase Nice Rice rice and sell it under their own their own brands. Nice Rice Millers has also built a shopping mall, Nice Digital City, near its mill where it operates a supermarket and bakery. It sells its own packaged rice at 150Ksh/kilo (for products not packaged, at 120Ksh/kilo) at these and related retail shops. This diversification of sale channels and flexibility in responding to farmer needs appears to aids Nice Rice in its business operations.



Milling area



Milling machine



Milled rice and rice husk

<sup>31</sup> Promar Consulting, 2015, interview,  
Business Daily, 2015, 'How serial trader overcame failure to build empire from grains of rice'  
<http://www.businessdailyafrica.com/How-serial-trader-overcame-failure-to-build-empire-from-rice/-/1248928/2761514/-/fvgyit z/-/index.html>



Rice bags piled up in front of the miller



People selling rice at the sales area



Nice Rice Millers products

## Challenges in the Rice Value Chain

The major issues lie in production, specifically in increasing productivity and cultivation area through appropriate sourcing and management of water. In addition, purchase of inputs such as fertilizers and agrochemicals is an economic burden for farm households, which forces them to sell their rice to brokers at low prices in order to obtain cash. Post-harvest processing is also an issue: storage warehouses are insufficient and poor cleaning facilities result in foreign matter such as stones found mixed in rice sold on the market. Below is a summary of challenges in the rice value chain.

Production (Input)	Distribution	Processing	Consumption
<ul style="list-style-type: none"> <li>•Difficult to secure/manage water</li> <li>•Insufficient function of the cooperative</li> <li>•High fertilizer/agrichemical price is an economic burden</li> <li>•Low yield and insufficient production area</li> <li>•High production cost</li> </ul>	<ul style="list-style-type: none"> <li>•Purchasing and payment cycle does not match farmers' needs</li> <li>•Low bargaining power of farmers</li> <li>•Purchasing by middlemen</li> </ul>	<ul style="list-style-type: none"> <li>•Insufficient storage facilities (especially among small farmers)</li> <li>•Insufficient post-harvest treatment</li> </ul>	<ul style="list-style-type: none"> <li>•Not enough production to meet the demand</li> </ul>

## Opportunities in the rice value chain

Under the current conditions, production cannot meet domestic demand, which is only expected to grow further in the future. Thus, agricultural inputs to increase production volume and yield are needed. Currently the farm machinery used in Mwea tends to be large-scale machinery, but there are indications that demand for small- and medium-scale machinery may also grow. It also appears that post-harvest facilities (from drying to storage) and improved post-harvest processing techniques are opportunities. (For more detail on each opportunity, see 3.3 “Cross-sectoral areas”). Below is a summary of opportunities in the rice value chain.

### ● Import of farm machinery, and provision of after-sales service through local agents

While, Kenya heavily relies on imports for farm machinery, including the large- scale machinery is mainly used in large-scale irrigated rice producing districts such as Mwea. The Kenyan government is also promoting mechanization as a way to reduce production costs, and machinery that can be widely used by

farmers for an appropriate price is needed. In view of the fact that in the past, there was the movement against mechanization by farmers who feared loss of employment, it is important to have advance discussions with local farmers before introducing farm machinery.

- **Imports of machinery for post-harvest rice processing including drying, sorting, rice milling machinery together with after-sales service by local agents; provision of storage warehousing**

While there is a need for machinery for post-harvest processing or grain storage warehouses, Chinese-made machinery is already available, such as at the previously mentioned Nice Rice Millers. Thus, it is likely that Japan-made machinery will have a pricing disadvantage. Instead importing rice processing machinery made or used in other countries may be more useful.

- **Marketing and distribution of low-priced/high-yield agricultural inputs (can be imported or local manufacturing and blending) with technical assistance to farmers by the input company or its local business partner.**

Issues related to agricultural inputs for rice are same as that previously discussed for maize.

### 3.2.3 Dairy

#### Overview

In Kenya, people have traditionally raised livestock such as cattle, goat, sheep and camels, and made use of milk produced from these livestock. During the colonial period, exotic breeds for milking were introduced from Europe and they are the base of current commercial dairy farming. After independence, many farmers sold their cattle to small farmers, and production allocation and market management were introduced as an initiative of the government to support dairy farming by small farmers. In the 1990s, the dairy sector was liberalized and today there are about 1,800,000 dairy farmers in Kenya. Many of them are small producers (raising less than three cows). It is estimated that 70 to 80% of the annual production of raw milk is produced by small dairy farmers.<sup>32</sup>

Kenyan dairy farming is one of the most developed industries on the African continent. The annual production volume of raw milk has reached 5,000,000,000 liters, which is significant growth compared to 3,000,000,000 liters in 2000. In particular, the promotion of private investment in dairy farming and enhancement of production capability, which were made by the government as part of “the Strategy for Revitalizing Agriculture (SRA)” in 2004, have worked well. Kenya also exports dairy products to neighboring countries. The increase in production in recent years, however, has not caught up with the increase in domestic demand and as of 2014 Kenya became a net importer of dairy products.

In Kenya, traditional dairy products and tea with milk are commonly consumed. In supermarkets, in addition to long-life milk and chilled milk, yogurt products with various flavors have been introduced and other dairy products such as cheese are supplied by various domestic and imported brands. Kiosks, on the other hand are often not equipped with refrigerators and so they usually sell retort



Various dairy products



Milk bar at a supermarket. Freshness and a “self-serve” system are popular.



Domestic and imported cheese products



Pouch products sold at kiosk

<sup>32</sup> Ynze van der Valk, 2008, *Quick scan of the dairy and meat sectors in Kenya Issues and Opportunities*  
[http://www.snvworld.org/download/publications/quick\\_scan\\_of\\_the\\_dairy\\_and\\_meat\\_sectors\\_in\\_kenya.pdf](http://www.snvworld.org/download/publications/quick_scan_of_the_dairy_and_meat_sectors_in_kenya.pdf)  
 Frans Ettema, 2013, *Dairy Development in Kenya*  
[http://www.dairyfarmer.net/fileadmin/user\\_upload/40\\_downloads/kenya-dairying-ETTEMA.pdf](http://www.dairyfarmer.net/fileadmin/user_upload/40_downloads/kenya-dairying-ETTEMA.pdf)  
 H.G. Muriuki, 2011, *Dairy Development in Kenya*  
<http://www.fao.org/docrep/013/al745e/al745e00.pdf>  
 Promar field research.

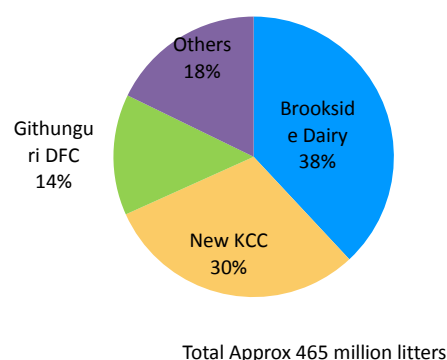
pouches of long-life milk, and raw milk they have boiled and sell in small amounts. Yogurt and cheese are not seen so often in kiosks yet. Cheese is not a traditional foodstuff in Kenya, but consumers have gradually been increasing in Nairobi and urban areas, with the development of food service industries. There are no more than three domestic Kenyan cheese manufacturers, but large numbers of products including imported products are displayed at supermarkets.

In order for Kenya's dairy industry to further develop, increasing of the number of dairy cattle, developing the capacity of dairy farmers and improving dairy infrastructure (increase of cool storage stations, establishment of cold chain, etc.) is necessary and therefore dairy product manufacturers are appealing to the government to develop and implement policies that will promote the dairy farming sector.

### Dairy Value Chain

Domestic dairy distribution is dominated by the informal sector. 75% of the milk consumed in Kenya is traded without passing through milk processing facilities. While some consumers do prefer the taste of unprocessed milk, one of the main reasons for the high share of raw milk is a formal distribution network has not yet been established.<sup>33</sup>

In Kenya, there are not sufficient collection centers which collect raw milk from dairy farmers and cold chain for keeping raw milk fresh needs further development. The dairy farmers' cooperative associations serve to collect and cool milk and then delivering it to dairy product factories, but there are regions without such associations. In addition, though such cooperatives were helpful in organizing farmers in the 1980s, cooperatives have been weakened by market liberalization and the relationship between farmers and cooperatives is not necessarily strong now. Recently, brokers buy raw milk before it is brought to cooperatives and pay in cash on the spot.



**Figure 21 Volume of milk collected by dairy manufacturers (2011)**

Regulations for raw milk are not yet comprehensive. While the Kenyan milk quality standards themselves are not much different from those of international standards, the country does not have any provisions for what to do with raw milk which does not meet the standard. If a farmer's raw milk is rejected by a dairy manufacturer because it doesn't meet the quality standard, the farmer can still sell the milk to some other independent milk broker. In addition, a pricing system for raw milk based on quality, which is common in the EU and USA, has not been established in Kenya, so farmers' incentive to supply high quality raw milk is low. The Kenya Dairy Board, which is the regulatory authority, lacks the capacity to regulate. Overall Kenyan dairy cattle have low productivity (average annual productivity is 1,344 liters/head) and lower quality raw milk. In addition, although most dairy cattle are pasture raised, the value-added tax (VAT) on feed that was introduced in 2012 has increased industry production costs. According to the dairy manufacturer Happy Cow (profiled later in the report), large dairy farmers have withdrawn from the industry because of low potential for profits, and high labor costs combined with insufficient mechanization impede the development of dairy farming in Kenya.

<sup>33</sup> Agri-business Africa

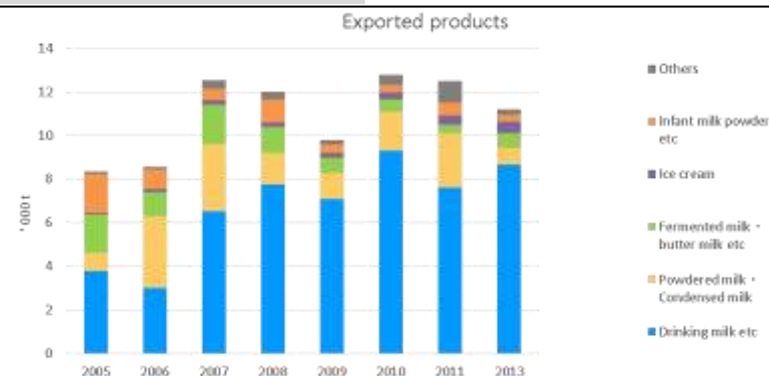
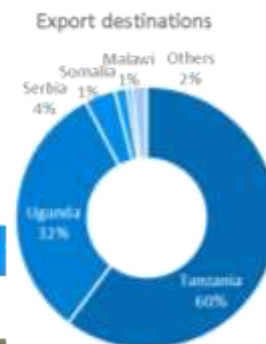
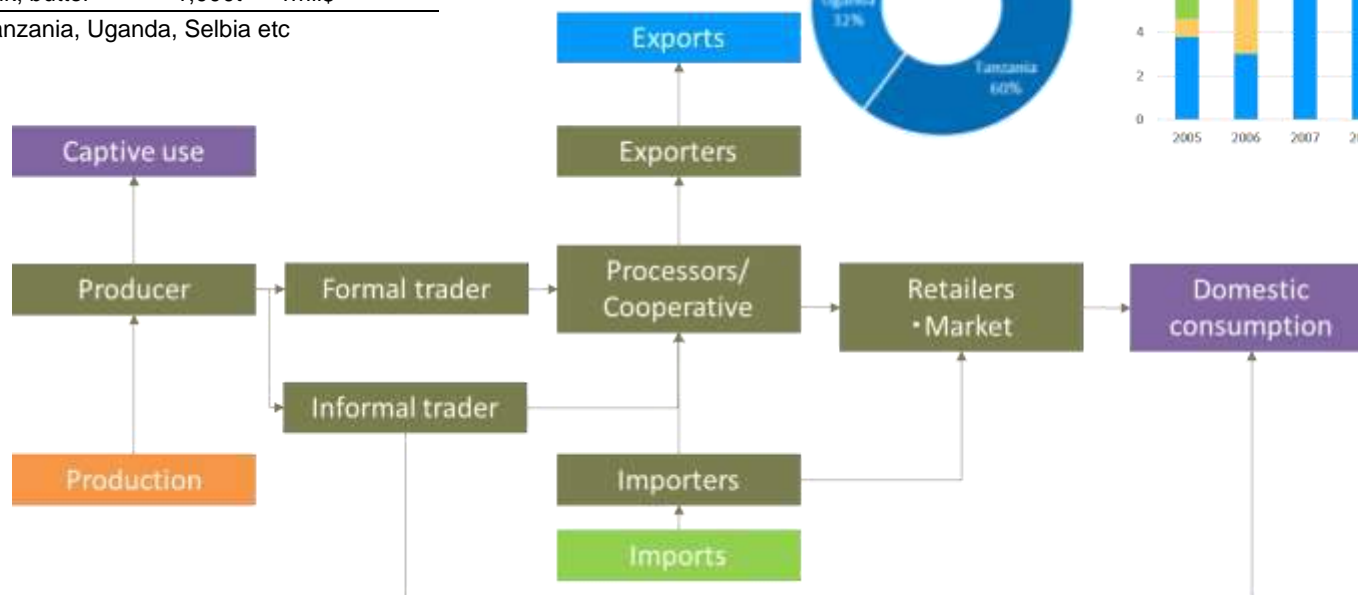


About 90% of raw milk collected by dairy manufacturers is processed and sold as fresh milk. Though there are 29 certified processing companies in Kenya, the market is an oligopoly where five companies, namely Brookside Dairy <sup>34</sup>, New KCC, Githunguri Dairy Farmers Co-operative Society, Sameer Agriculture and Livestock, and Buzeki Dairy now account for about 90% of collected milk. Among them, the first three companies above account for around 80% of collected milk and have great influence on milk price. The other processing companies tend to set their prices taking into consideration the top three companies' prices. These major companies are accelerating their business expansion; for example, Brookside Dairy is investing in powdered milk production factories; and Sameer and Buzeki are investing in improved packaging for a production line of long-life milk (UHT). Newer companies such as Happy Cow, Brown's Cheese, Eldoville Dairies, Bio Foods are further focusing on high quality, value-added products such as such cheese and yogurt.

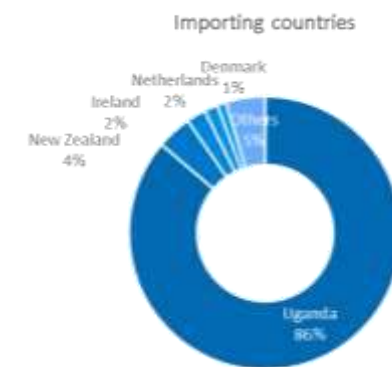
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<sup>34</sup> Brookside was established in 1993 and is manufacturing and selling products such as fresh milk, yogurt and butter in Kenya, Tanzania and Uganda. It is actively expanding its business; for example, it recently acquired the Ugandan dairy products maker Sameer Agriculture and Livestock Limited (SALL) and is aiming to establish a factory in Nigeria. In 2014, French Danone acquired 40% shares of Brookside, and Brookside shares are now held 50% by Kenyatta family and 10% by Dobai's Abraaj Capital.

Export	11,000 t	17mil \$
Drinking milk	9,000t	8mil\$
Countries: Tanzania, Uganda, Selbia etc		
Milk powder, condensed milk	1,000t	2mil\$
Countries : Uganda, Selbia, Malawi etc.		
Fermented milk, butter	1,000t	1mil\$
Countries : Tanzania, Uganda, Selbia etc		



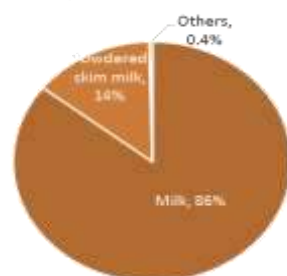
Domestic Consumption :  
Milk 4,713 thousand t 112.8kg/yr/cap



Domestic Production :

Milk  
4,187,000t

Dairy products volume



#### Major dairy manufactures

Brookside Dairy  
New KCC  
Githunguri Dairy Farmers  
Cooperative Society  
Sameer Agriculture and Livestock  
Buzeki Dairy  
Happy Cow  
Brown's Cheese  
Eldoville Dairies  
Bio Foods

Import :	13,000 t	28mil\$
Drinking milk etc	8,000t	6mil \$
Country : Uganda		
Milk powder, condensed milk	4,000t	18mil \$
Country : Uganda, NZ etc.		
Baby milk powder	400t	0.2mil \$
Country : Netherlands, France, South Africa etc		

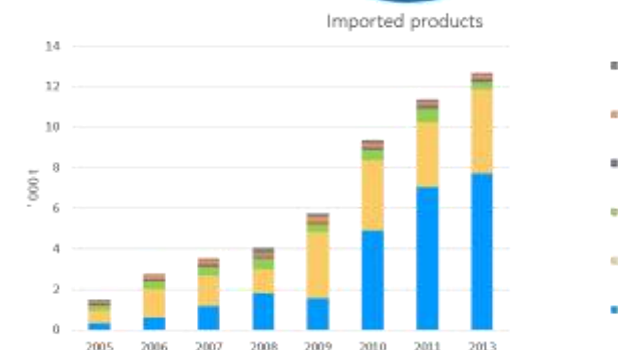


Figure 22 Milk/Dairy Value Chain Map (2013)

Source) Promar Consulting, based on Kenya National Bureau of Statistics "Economic Survey 2015", ITC Trade Map, FAOSTAT, Ministry of Livestock Development, "Kenya National Dairy Master Plan", 2010, HEIFER International, 2008, 'The Dairy Value Chain in Kenya'



**Profile: Dairy products maker Happy Cow (Happy Cow Ltd.)<sup>35</sup>**

- Kenya's leading cheese company. It manufactures cheese and yogurt products and is highly interested in exporting.
- It is operated under strong leadership and is active in organization of farmers and lobbying the government.

Happy Cow Ltd. is a cheese manufacturing company established in 1996 with the liberalization of Kenya's dairy products sector and is managed by a married Dutch./Kenya couple who met and then settled in Kenya through their work for a Dutch/Kenya livestock breeding agency. In addition to products based on Dutch cheese styles, it manufactures yogurt, fresh cream and butter and has brands such as "Cheesemakers from Holland" and "Jolly Fresh". It has obtained ISO and halal certification. Its processing factory and headquarters are located in Nakuru in the western part of Kenya. It also acts as the chair of the Nakuru Business Association and is active in revitalization of Nakuru business community including lobbying the government regarding the business problems.

Currently it processes 12,000 to 15,000 liters per day, 65% of which is for cheese, and 35% for yogurt. Cheese is its core product but cheese manufacturing takes time and cheese needs to mature, and so Happy Cow has started also producing yogurt which is able to generate cash flow more quickly. Among cheese varieties, cheddar is especially favored by Kenyan consumers and mozzarella and Gouda cheese also sell well. Recently Happy Cow developed a new drinking yogurt beverage using whey as an ingredient. Using whey allowed Happy Cow to lower the price and sell in small pouches, targeting kiosks instead of modern retail. Whey, however, carries a strong image among Kenyan consumers of being used as animal feed and so creative marketing will be required to avoid this image and grow the product.

For Happy Cow the main challenge in their industry is obtaining stable quantity and quality of raw milk. In order to address this issue, Happy Cow worked at reviving dairy cooperatives which were not functioning well and now works directly with two cooperatives (each of which has around 1,000 farmers). Each farmer provides up to 10 liters of milk per day and the cooperatives collect it. Happy Cow conducts awareness-raising campaigns concerning quality requirements and conducts milk quality inspections at the collection centers. It only purchases milk that has passed these inspections and farmers sell the remainder to New KCC.

Happy Cow, after processing and packaging its products at its own factory, sells 25% of cheese to hotels and 75% to retailers. While cheese is supplied mainly to urban areas such as Nakuru and Nairobi where there are tourists and high-income groups, yogurt is also sold in the western and central parts of Kenya because of its affordable price. Because supermarkets handle many domestic and imported products, Happy Cow, in order stay ahead of competitors, has worked on developing new customers; for example, it has opened a cheese deli in the new "Buffalo Mall" shopping mall which recently opened in Naivasha, and has a cheese counter in the major domestic supermarket chain Tusksys. It does not supply cheese to kiosks because they are not necessarily equipped with refrigerators but kiosks serve a wide



Raw milk brought to the factory



Inside the processing factory

<sup>35</sup> Promar Consulting, 2015, interview, Happy Cow Website:<http://www.happycowkenya.com/>

range of promising customers, and therefore Happy Cow is considering the development of marketing and distribution methods to kiosks. In addition, it aims at not only developing Kenya's domestic cheese market but also exporting products to other East Africa countries in the future. Its marketing strategy includes participation in trade shows, in-store food sampling and making use of social media.

Happy Cow currently does all its own distribution. It has three depots within the country and distributes its products twice a week, once a week in the case of Mombasa, with ten trucks in total. Some of its trucks (made in Japan) are not refrigerated vehicles, but it is planning to refit these trucks with refrigeration made by Thermoking. In addition in 2014, it signed an MOU with the American firm SunDanzer, which has developed a cooling system using solar power that can be used during electricity shortages preserve the quality of their dairy products, without depending on batteries or diesel generators.<sup>36</sup>

The other area that Happy Cow is concerned about as it grows its business internationally is the limited quality, sizes and variety of packaging for dairy products, especially liquids. Happy Cow needs packages which combine reasonable price, durability and usability, particularly as they are targeting export. For cheese packing, Happy Cow has been using a vacuum packaging machine, but is considering investing in thermoforming machines in the near future.

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<sup>36</sup> Powering Agriculture News, 2014, <http://myemail.constantcontact.com/Powering-Agriculture-September-October-2014-Newsletter.html?soid=1117796635521&aid=KQfIZ1o4RT8>

**Profile: Dairy producer Limuru Dairy Farmers Co-operative Society Ltd.<sup>37</sup>**

- Employs a flexible and computerized payment system which corresponds to the payment cycle needs of small farmers.
- In cooperation with financial institutions, it has developed a mechanism through which farmers can buy agricultural inputs based on the amount of collected milk.



Limuru Dairy is the fourth or fifth largest dairy and also owns a milk processing factory; it was established in 1963, and is located in Limuru Town within Kiambu District. Recently Limuru's performance has been poor and, in 2014, it was agreed that major milk processor Brookside would lease Limuru's factory. Brookside also buys about 200,000 tons of raw milk per day from Limuru. Although Limuru is struggling to improve its performance, it is relatively skilled at working with small farmers and the cooperative has grown from less than 100 member farmers at its establishment to nearly 10,000 members.

Farmers bring milk to the Limuru milk collection centers by motorbike or bicycle where it undergoes quality testing and is stored in bulk containers. The average production volume per farmer is 10 kiloliters per day (one or two cows), and, in case of commercial operators, not more than 300 kiloliters (20 cows). Since some member farmers also sell milk to brokers or other companies, Limuru pays a bonus to farmers as an incentive to attract their loyalty. Because milk purchasing prices vary every month and fluctuate greatly, Limuru alerts farmers in advance of any extreme price drop, to keep a strong and transparent relationship with their members. There are five main collection routes and Limuru has five trucks (not refrigerated vehicles) in total, using one truck per route. Limuru supplies its milk to processors and public institutions and some of which directly collect milk from the collection centers.



Collected milk



Storage house and inputs sales point next to the office

Limuru is a pioneer of eDairy, a program started by Kenya Dairy Board and Agritrace Kenya Ltd. It manages the calculation of collected milk volumes and payment to farmers through computerization, thereby making accurate and timely payments based on more timely information. When a farmer inserts his or her membership card into a machine, the volume of milk purchased is recorded and the data is transmitted to the Limuru office at the end of the day. Limuru is considering updating the data system, to allow immediate, live updates of incoming data to help decision-making throughout the day. In addition, at most of the collection centers, Limuru has set up shops where farmers can buy goods such as animal feed and medicines, seeds, fertilizer, agricultural equipment and food on credit. Limuru records farmers' purchases and then pays farmers at the end of each month the price of milk less the amount of goods purchased. Furthermore, Limuru cooperates with local bank K-Unity Sacco Ltd and has developed a system so that farmers can get low-interest loans based on the quantity of milk they deliver.

Because stable raw milk supply is a major issue, Limuru focuses on animal feed to improve milk quantity and obtained a subsidy in 2009 through the COOP Africa Challenge Fund by the International Labour Organization (ILO) to establish its

<sup>37</sup> Promar Consulting, 2015, interview, SNV/Kenya Netherlands Development Organization, Id ILO, 2011, 'International Year of Cooperatives: In Kenya, working hand in hand with the ILO to create cooperatives and jobs' [http://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS\\_166401/lang--it/index.htm](http://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS_166401/lang--it/index.htm)

own feed manufacturing plant, Limda Feeds, in the second half of 2010. Its production capacity is 5,000 bags per month while actual demand is estimated to be about 15,000 bags. Limuru had procured animal feed from various manufacturers in Nairobi, Kisumu and Nakuru before, but there were problems, such as sharp rises in price and deterioration in quality including aflatoxin contamination. Therefore it has established a system where it sells high quality feed at a reasonable price on credit and deducts the price from farmers' sales proceeds of raw milk at the end of each month.

The number of small farmers who can regularly use animal feed is relatively low due to the cost of fertilizer, but Limuru plans to continue dissemination of knowledge and technical training on quality control, feeding and hygiene management to farmers to increase the quantity of collected milk.

## Challenges in the Dairy Value Chain

Below is a summary of the challenges identified within the Kenyan dairy value chain.

Production (Input)	Distribution	Processing	Consumption
<ul style="list-style-type: none"> <li>• Low productivity</li> <li>• Insufficient use of animal feed</li> <li>• Insufficient knowledge regarding quality, hygiene and feeding</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient cold chain facilities (refrigerator/vehicles)</li> <li>• Not enough milk collection point</li> <li>• Weak organizational structure of the cooperative and inefficient milk collection from small-scale farmers</li> <li>• Purchasing by middlemen</li> <li>• Payment system partly undeveloped</li> </ul>	<ul style="list-style-type: none"> <li>• Low quality of packaging materials and not enough product variety</li> </ul>	<ul style="list-style-type: none"> <li>• Quality management at the retail level is partly insufficient</li> </ul>

## Opportunities in the Dairy Value Chain

Below is a summary of opportunities in the dairy value chain.

### ● Reasonably priced, high-yield feed marketed to distributors / farmers

Small farmers in particular do not use feed because of its cost, which leads to low milk production volumes. Since the value-added tax introduced by the government has pushed up feed prices, there is a need and opportunity for lower priced feed.

### ● Data management systems to track milk quantity and quality for dairies and milk processing companies; inventory management system for refrigerated products

Limuru sends milk collection data daily to the office and uses this data to management of milk volumes and payments to farmers, but it is considering the introduction of a more rapid data management system in order to make immediate analysis possible. In addition, if the regulations on quality of milk are to be strengthened in the future, there is expected to be a need for more milk quality inspection equipment. Moreover, dairy products companies also have expressed a need for inventory management system technology.

- **Refrigeration technology throughout the cold chain and after-sales service by local agents**

Refrigeration is essential for dairy industry development. Consumers will prioritize refrigeration suppliers who have durable, long-lasting products and local after-sales service.

- **Packaging equipment (thermoforming machines, bottles and cartons etc) and after-sales service by local agents**

Packaging is not only an issue of food safety, quality and hygiene but also important in increasingly competitive retail markets where consumers will judge products by their packaging quality. Packaging needs include better containers for liquids that will not leak or break, more variety of sizes and more durable packaging for longer transport or export.

- **Investment in dairy product manufacturers interested in expanding business and exporting to promising regional markets**

There are opportunities to invest into existing, recognized dairy product manufacturers who are looking to expand. Especially in non-traditional products in Kenya such as cheese, there are opportunities for partnerships to both enhance technical infrastructure, as well as branding and marketing know-how.

### 3.2.4 Meat

#### Overview<sup>38</sup>

The livestock industry in Kenya accounts for about 10% of gross domestic product (GDP) and about 40% of agricultural GDP. Average annual meat consumption per head in Kenya is 15 kilograms, but it is 26 kilograms in Nairobi, 21 kilograms in Mombasa, and consumption is expected to increase as the middle-income group expands in the future. About 80% of consumption is red meat and, in addition to beef, mutton and goat meat are also consumed traditionally, often barbecued over a charcoal grill (Nyama Choma). Though chicken and pork are new sectors, demand for them is growing substantially.

**Beef:** While annual consumption of beef is high in urban Mombasa and Nairobi, 15 kilograms and 18 kilograms respectively, it is low in the rural regions at about 3 kilograms. About 80% to 90% of the beef consumed in Kenya is supplied by small herders in Kenya and neighboring countries (Ethiopia, Somalia, Tanzania, Uganda). Within the country, there are about 13,000,000 cattle (many of them are for both dairy and meat). Because herders often put cattle up for sale when they get into financial trouble, cattle are often processed at an immature age. In addition, in Kenya, loss rate of cattle is high due to frequent droughts and poor public security, which is one of the major factors that hampers small cattle farmers from moving beyond subsistence level businesses. The number of feedlots is very low; grain-finished beef finish comprises only 3% of the total and is for premium markets.

**Chicken meat and eggs:** Poultry farming in Kenya is variable and vibrant. In the poultry sector, the biggest company is Kenchic, which until recently ran Kenya's biggest fried chicken chain and has customers such as Kentucky Fried Chicken, and large-scale commercial poultry farmers such as Muguku and Sigma, each of which produce both chicken and eggs. In addition, there are 10 to 15 medium scale poultry farms and those that do not have slaughterhouses sell chicks to other farms and small-scale producers. About 20 % of chicken consumed in Kenya is sourced from garden breeding in rural villages. 70 % of rural households breed an average 10 to 15 chickens, which are an important food source. In Kenya, chicken is expensive compared to beef or mutton but its consumption in the urban areas and food service industry is expanding, and at the supermarket in the urban areas, 20% of meat carried is chicken.

**Pork:** Pig farming is also a relatively new sector and only the biggest company, Farmer's Choice, has developed an integrated business from production to processing. Medium and small-scale intensive breeding has been expanding and some farmers have come to have their own processing facilities. In addition, there are free-range pigs at the household level.



Chicken is popular as a café menu.



Japanese company Toridoll is operating "teriyaki chicken" fast food chain.

<sup>38</sup> USAID, 2012, *End Market Analysis of Kenyan Livestock and Meat*  
[https://www.microlinks.org/sites/microlinks/files/resource/files/Kenya\\_Livestock\\_End\\_Market\\_Study.pdf](https://www.microlinks.org/sites/microlinks/files/resource/files/Kenya_Livestock_End_Market_Study.pdf)  
 FAO, 2008, *Poultry Sector Country Review*,  
<ftp://ftp.fao.org/docrep/fao/011/ai379e/ai379e00.pdf>  
 Company's websites, Promar interviews



## Meat Value Chain

There small-scale livestock markets for cattle, sheep and goats in numerous regions (primary market) and relatively large-scale living livestock markets in five locations (secondary market); livestock transactions are mainly made through these markets. In addition, in Nairobi and Mombasa, there are several local markets dealing in live animals. Farmers bring their livestock to the primary market or secondary market and then middlemen bring them by truck or on foot to the secondary market or to the high consuming regions of Nairobi and Mombasa. The high transportation cost of cattle is one of the bottlenecks in Kenya's livestock business. Many of these cattle, sheep and goats are slaughtered informally. At the formal slaughter and meat processing facilities for modern distribution in urban areas, the biggest company is owned by the government agency Kenya Meat Commission, though it essentially functions as a private sector business. For chicken and pork, the major companies are Kenchic and Farmer's Choice, poultry farming and pig farming companies that have vertically integrated businesses from production to processing. The export volume of beef is small, less than 2,000 tons, but several facilities, including one of the Kenya Meat Commission's slaughterhouses, has obtained export certification and exports are gradually increasing. Though the Kenya Meat Commission's slaughterhouse had a debt of 330,000,000 shillings in 2013 and was in danger of being closed, in 2014, the government announced it would invest 700,000,000 shillings to improve equipment and enhance its competitiveness.

There are various models for slaughter and meat processing. For example, Alpha Fine Foods (described in the next section) is a beef, lamb and chicken processor but it purchases from individual contract farmers who handle the slaughtering themselves. Alpha processes the carcasses into various products at its own factory and delivers to supermarkets and hotels. On the other hand, the biggest pig farming company, Farmer's Choice, processes pork, beef and chicken, but, for pork, it not only raises its own pigs but also purchases of live pigs from neighboring medium-scale producers; it conducts 80% of the pig slaughter and pork processing in Kenya. Meanwhile, for beef, Farmer's Choice slaughters and processes beef cattle, which have been raised at a large farm it contracts, at its own facilities. For chicken, it purchases processed meat from poultry farmers and only packs the chicken meat for supply to supermarkets, schools and retailers.

In Kenya, raw meat is mainly packed and transported in aluminum or steel boxes. As the consumption volume increases and consumer interest in food safety grows, development of the cold chain is becoming increasingly important.



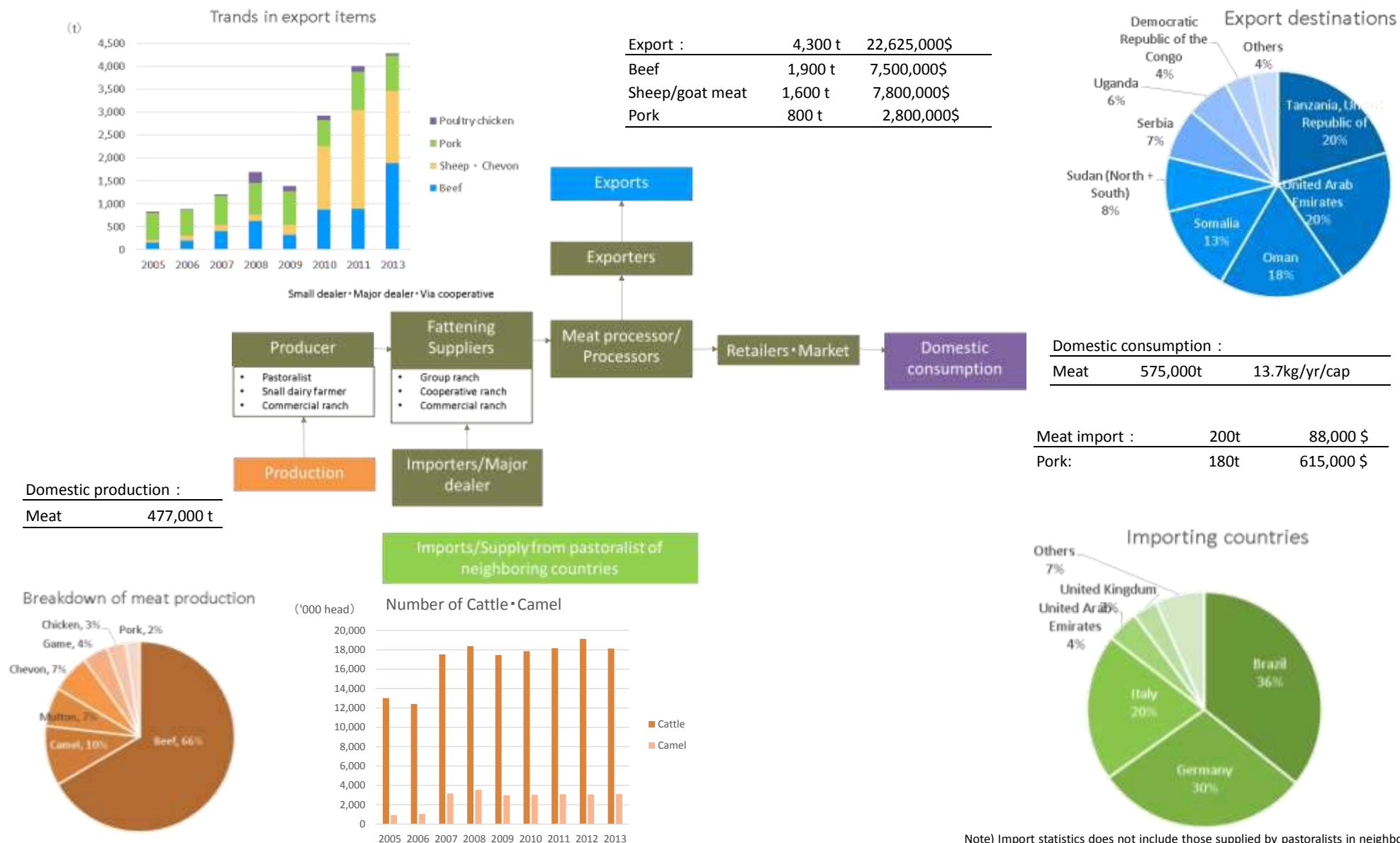


Figure 23 Meat Value Chain Map (2013)

Note) Import statistics does not include those supplied by pastoralists in neighboring countries.

Source) Promar Consulting based on Kenya National Bureau of Statistics "Economic Survey 2015", ITC Trade Map, FAOSTAT, USAID, 2012, *End Market Analysis of Kenyan Livestock and Meat: A Desk Study*, [https://www.microlinks.org/sites/microlinks/files/resource/files/Kenya\\_Livestock\\_End\\_Market\\_Study.pdf](https://www.microlinks.org/sites/microlinks/files/resource/files/Kenya_Livestock_End_Market_Study.pdf)

**Profile: Meat / seafood processor and frozen food manufacturer Alpha Fine Foods Ltd.<sup>39</sup>**

- Belongs to the Alpha Group a trader and processor of meat and seafood, which is managed by ethnic Indian Kenyans; conscientious of supporting local farmers and communities.
- Has its own major meat brand often seen at retail shops and also sells to hotels and wholesalers
- It has obtained halal/kosher certification and has high interest in exporting, especially in the Middle East market, which has a constantly high import volume, and also to the eastern and central African markets.

Alpha Group is a Kenyan business group involved in fisheries, seafood processing, meat processing, manufacturing of processed food, and related logistics business. In addition to meatpacking, it engages in manufacturing frozen food using meat and seafood. It sells its products to hotels, restaurants, cafes and retailers.

Under its brand Alpha Fine Foods, it sells beef, lamb, goat meat and chicken in the meat sector, and also processed food such as sausages and seafood. Alpha has entered into contracts with farmers regarding purchase of meat and now its suppliers number 50 farmers for beef and 20 farmers for lamb. Such livestock farmers vary in scale; a small-scale farmer has about 5,000 acres and 100 cattle, a medium-scale one has 10,000 acres, and a large-scale one has about 20,000 acres. Because it is necessary to enter into contracts with small and medium farmers individually, livestock management is inefficient. Some of the large-scale farmers seek to strengthen livestock cooperatives, but, in the meat sector, farmers are generally not organized into associations or cooperatives. In addition, as Kenya cattle is raised on pasture grass and there is little grain-feeding, improvement in the feed sector would allow development of more premium beef.

Under such circumstances, the biggest problem in the meat business is unstable supply and quality control. To meet its quality requirements as it expands its meat business, Alpha feels that education and technical assistance to livestock farmers on quality control, and strengthening of cooperatives is important. It is also hoping to develop its own slaughterhouse and grain-finishing facilities and develop an integrated livestock management system, from production through finishing and



Alpha Fine Food products

<sup>39</sup> Promar Consulting, 2015, interviews

slaughter in the near future. At this stage, it is considering expansion of its storage and processing facilities and moving its facilities to an urban Nairobi district.

For seafood, it imports not only tilapia filets from China but also small amounts of basa /pangasius from Vietnam. It provides value-added products such as fish with bread crumbs and while sales are still modest, it expects that there the potential to expand.

In addition, under the Al's Kitchen brand, Alpha offers a broad range of packaged frozen food such as samosa and egg rolls. Since this type of frozen ready-to-eat meals is convenient, its consumption is increasing, especially among urban, middle- or higher income groups. Many households in the middle-income group have microwave ovens and can easily heat the Al's Kitchen meals at home. There is another company in Kenya which also produces frozen, ready-meals but it does not put as much effort into marketing and brands as Al's Kitchen. Alpha has been strengthening its branding and competitiveness by new approaches such as hiring external PR companies to handle marketing activities.

Packaging of Alpha products has been mostly done by hand, but this results in some inconsistency. To automate the packaging process, Alpha recently invested in a thermoforming machine. Though Alpha has its own distribution system, it wants to strengthen its distribution system by partnering with a logistics company that can accommodate long-distance cold chain transportation, rarely available in East Africa, but essential for regional exporting. For refrigeration technology, Alpha uses the German ThermoKing brand, which has staff in Kenya and provides good after-sales service. They prefer ThermoKing over Chinese products which are not as durable or long-lasting. Japanese refrigeration products such as Sanyo were seen in the past, but Korean LG and Samsung products which provide after-sales services in Kenya are more common now.

Alpha deals closely with modern retail and has found it necessary to send instructors to train retail staff on appropriate handling of chilled meat products. In addition, it conducts activities with retailers such as in-store food sampling and discounts in order to differentiate its brand from other meat products sold in the supermarkets. Dealing with modern retail can be difficult - retail supermarkets commonly delay in payment to suppliers, and the listing fee (shelf fee) which French retailer Carrefour requires could become a burden on suppliers if other stores start to implement similar fees. Nevertheless, consumption in Kenya is increasing and Alpha is expecting growth in the modern retail industry. Alpha intends to develop business partners and expand domestic and export markets in the future.

**Profile: Meat processing company Farmer's Choice Ltd.<sup>40</sup>**

- Largest pork processor and the only holder in East Africa of a pork export certification; also exports products to the Middle East and African countries.
- Has an integrated system for pork from production to distribution to secure quality control.
- Supplies products not only to big cities but also to various regions within the country. Through vendors using carts, it sells products such as sausages to low-income consumers at affordable prices.

It was established as a processing company specializing in pork in 1980. It is under the IPS (Industrial Promotion Services) group which provides investment, technical assistance and management support in Sub-Saharan Africa and South Asia. It has 1,800 staff and factories in two locations (one for products such as pork, and the other for Halal beef products).

Pork is its main product and accounts for 90% of sales but in order to expand its market, it has begun to invest in chicken, beef and lamb. The factory for producing Halal beef products opened three years ago and sells products such as the "Choice Meats" brand. In addition to its own brands, it handles other companies' cheese, chicken, turkey products and frozen vegetables. However it does not do any contract processing for other companies. As a major brand, it conducts marketing activities such as in-store food sampling, creating recipes by in-house chefs, and recipes on products' packages. It uses face-to-face communication more than mass media such as TV and conducts promotion activities at cafes, festivals and school sport events. Farmer's Choice also provides marketing support to distributors in its export destinations.

Farmers Choice owns its own pig farms in Kimiti, in the outskirts of Nairobi and in Eldoret, western Kenya. It raises cattle through contracts with large farms and does the slaughter and meat processing itself. Chicken is bought from third parties. It sells 30% of its products to large-scale retailers, 30% to fast food, and 30% to hotels and schools for catering. The remainder is exported to UAE, Nigeria and Uganda. Other than this, it also has sales proceeds from handling of third party brands (value-added products like Raka cheese, turkey, frozen vegetables, etc.). Farmer's Choice has its own small retail shops where it sells its products at discounted prices.

Farmer's Choice delivers to major retailers every day in Nairobi and twice a week in other regions. It also supplies to fish and chips shops, sausage and chips shops, sandwich cafés, fast food and shopping mall restaurants. To respond to growing health consciousness among consumers, it released pre-cooked chicken slices for sandwiches recently and also expects growth of fast food market.



Variety of products based mainly on pork.

<sup>40</sup> Promar Consulting, 2015, interviews.

One of Farmer's Choice's signature programs in the support of "little smokies" sausage vendors. Vendors have to buy the sausage carts but they are provided training by Farmer's Choice and marketing support by field staff. They can buy sausages to sell at wholesale prices from Farmer's Choice. This allows Farmer's Choice sausages and brand access to neighborhoods across the country and, according to Farmer's Choice, has provided a livelihood to over 100,000 people.

Farmers Choice has refrigeration facilities at two locations, Nairobi and Mombasa, and is considering additional facilities. All of its distribution trucks are refrigerated vehicles and use ThermoKing refrigeration technology. Maintaining the cold chain incurs costs but Farmer's Choice considers it as investment for quality control.

The biggest problem they report in their business is product management after selling products to retailers. Even if retailers understand the importance of the cold chain to quality, their cold chain management may be sufficient or careful enough. Farmers Choice staff regularly visit retail shops and check product quality and storage conditions. They have also encouraged quality control by introducing a no-refunds policy.



## Challenges in the Meat Value Chain

The meat processing industry struggles to procure stable quantities and qualities of meat within a highly informal system of numerous small suppliers. In addition, there is room for improvement in developing the cold chain, establishing feedlots and adequate slaughterhouses as well as improved meat transport. Below is a summary of challenges in the meat value chain.

Production (Input)	Distribution	Processing	Consumption
<ul style="list-style-type: none"> <li>• Unstable volume and quality</li> <li>• Lack of veterinarians and hygiene management due to inflow of live animals from neighboring countries</li> <li>• Cooperatives not functioning well</li> <li>• Pastoralists not having enough knowledge and techniques</li> <li>• Unstable price of animal feed</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient cold chain facilities (refrigerator/techniques/vehicles)(especially long-distance transport)</li> <li>• High transport cost</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of/old slaughter house fattening facilities</li> <li>• Insufficient hygiene management (especially backyard production)</li> </ul>	<ul style="list-style-type: none"> <li>• Quality management at the retail level is insufficient</li> <li>• Price differentiation by quality is insufficient</li> </ul>

## Opportunities in the Meat Value Chain

Entry opportunities exist in all stage from production to processing, and in particular, there are great opportunities for feed at the production stage and in cold chain at the distribution stage. In addition, medium-scale meat processing companies which do not have a solid cold chain are struggling with quality and hygiene management. This provides opportunities in meat processing refrigeration as well as feed-lots, and for packaging equipment (for details on these sectors, see 3.3 “Cross-sectoral areas”). Below is a summary of opportunities in the meat value chain.

### ● Reasonably priced, high-yield feed marketed to distributors / farmers

As with the dairy industry, increased access to feed is required, not only for chicken farming and pig farming, but also for beef cattle which are mainly grass-fed now. To market and distribute feed, cooperation with organizations such as NGOs that have close relationships with farmers may help expand access to customers.

### ● Packaging equipment such as thermoforming machines and after-sales service by local agents

As in the dairy industry, the meat industry provides opportunities in packaging, especially for companies which supply modern retail supermarkets or need improved packaging options suitable for export

### ● Cold chain development (freezing technology and equipment, refrigeration, and refrigerated vehicle) and after-sales service by local agents

The above-mentioned Alpha Fine Foods and Farmer's Choice are using German ThermoKing's refrigeration technology. Thermo King is considered reliable because it has staff in Kenya and provides good after-sales service. Because cold chain technology tends to be expensive, buyers prioritize not only price but also quality, durability and ability to provide quick service and maintenance in Kenya.

- **Investment in meat processing companies with strong interest in exporting**

There are meat processing companies, like Alpha Fine Foods, with interest in the promising regional meat export markets. These companies struggle with quality control on the supply side because of the supply structure based on contracts with many small farmers and they struggle on the export side due to a lack of long distance refrigerated transport. Collaboration with such companies, and investment in specific sectors such as slaughterhouse and fattening facilities, or logistics appear to be interesting opportunities.



### 3.2.5 Fruits and vegetables

#### Overview<sup>41</sup>

The production volume of fruit and vegetables in Kenya is approximately 5,000 tons, 10% of which is exported. Among agricultural and farm products exported from Kenya, the fruit and vegetable volume is the fourth largest, behind only coffee, black tea and flowers.

The major vegetables produced in Kenya are beans, cabbages, tomatoes, and watermelons. The major fruits are bananas, mangos, avocados, pineapples, papaya, other tropical fruits and citrus fruits. The major exported vegetables are green beans and other beans, and exported fruits are avocados and mangos. The exported processed foods include bean products and canned pineapple. Although the volume of imports is small, Kenya imports vegetables such as beans from Uganda and Tanzania, and fruits including apples, citrus fruits and grapes from South Africa and Egypt.

Production and export of beans including French beans, among others, are growing. Kenyans traditionally consume significant volumes of beans, but exports to India and Pakistan are increasing, in addition to exports to Europe. For example, the East Africa Grain Council (EAGC) has launched a project to organize 100,000 farms for promoting production, strengthen quality control and enhance exports to India where the demand is high.<sup>42</sup>

Although fruit and vegetables are produced mainly by small farmers, large-scale integrated agricultural systems, from production to export, can be seen for export products. In some cases, a large-scale producer engages in all stages from production to export, and in other cases, several dozen farmers are organized by a service provider to do contract farming. Irrigation systems are often used. Fertilizers and agrochemicals are not used so often. While farmers depend on imports to obtain high quality seeds,



Various fresh produce sold at retail



Processed fruit products



Domestic and imported products sold at an open market

<sup>41</sup> Karina Fernandez-Stark, et al, 2011, *The Fruit and Vegetables Global Value Chain*, [http://www.cggc.duke.edu/pdfs/2011-11-11\\_CGGC\\_Ex.Summary\\_Fruit-and-Vegetables-Value-Chain.pdf](http://www.cggc.duke.edu/pdfs/2011-11-11_CGGC_Ex.Summary_Fruit-and-Vegetables-Value-Chain.pdf)  
OMIC, 2009, "Report of Basic Studies on Policy Consistency in ODA and Agricultural Trade (Spices and Vegetable Oils)" [http://www.omicnet.com/omicnet/reports/consul/4.%20ch\\_1.pdf](http://www.omicnet.com/omicnet/reports/consul/4.%20ch_1.pdf)  
From Kenya National Bureau of Statistics "Economic Survey 2015," etc.

<sup>42</sup> Business Daily article dated April 27, 2015, *EAGC to help farmers access Sh400bn India pulses market* <http://www.businessdailyafrica.com/EAGC-to-help-farmers-access-Sh400bn-India-pulses-market/-/539552/2698978/-/10os8uoz/-/index.html>

domestic seeds with a low germinating rate are also still used in some cases. Greenhouse cultivation of some vegetables such as tomatoes is increasing rapidly mainly among younger producers. Although the share of greenhouse cultivation is low, 5% for tomatoes, the government has made it a priority area until 2020 and future expansion is expected. Israeli company Amiran constructs and maintains approximately 90% of greenhouse facilities in Kenya. Amiran is part of the Balton CP Group, which is based United Kingdom. The company engages in a wide range of agricultural businesses, from construction and management of greenhouses, to dealing with seeds, fertilizers and agricultural agents, conducting irrigation projects and providing financial support for farmers. Other similar greenhouse and high tech horticulture businesses are increasing.<sup>43</sup>

### The Fresh Produce Value Chain

Fresh produce is transported from producers to collection centers, then local storage depots where distributors are waiting (some facilities have refrigeration facilities) and then to secondary and larger depots. After that, products are finally exported or distributed in the domestic market. Transportation difficulties from producers to collection centers present the biggest bottleneck. Transport is time consuming and costly. While exporters and distributors sometimes send trucks to pick up products from producers, in most cases, women carry produce on their heads or use animals. Bicycles and motorcycles can be used but face problems during the rainy season on rural roads.<sup>44</sup>

According to Twiga Foods (profiled later in this section), 96% of fresh produce is sold through traditional channels such as open-air markets, kiosks and specialty stores, even in Nairobi. At supermarkets, such as Nakumatt, chilled products including fresh fruit and vegetables are transported to each store directly, without a central distribution center. Due to the multiple wholesalers and brokers involved in the various steps logistics and traffic congestion in urban areas, distribution of fresh fruit and vegetables to kiosks and supermarkets is costly and inefficient. As a result, new distribution businesses for fruit and vegetables have been emerging, such as Shree Ganesh/Fresh N Juici<sup>45</sup>, which directly manages fruit and vegetable sale spaces at Nakumatt as mentioned in Section 2.2.4, and Twiga Foods (profiled later in the section), which provides an ecommerce distribution service for fruit and vegetables to kiosks.

One of the major exporter organizations is the Fresh Produce Exporters Association of Kenya, whose member companies include Vegpro, a Canadian capital company, Kakuzi, a major UK capital tea company, and domestic companies, such as AAA Growers, Hillside Green Growers and Exporters, and Sunripe. Vegpro has contracts with 1,700 small farms in the four main producing areas in Kenya, engaging in distribution and export of fruits and vegetables. It is the largest produce exporter in Kenya.<sup>46</sup>

Fruit and vegetable processing is limited to a few product types, including canned pineapples and other

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<sup>43</sup> Amiran Kenya Website <http://www.amirankenya.com/>  
August 6, 2012, Amiran Kenya: Gateway to Israeli, *Amiran Kenya: Gateway to Israeli Agriculture*  
<http://embassies.gov.il/nairobi/NewsAndEvents/Pages/Amiran-Kenya-Transforming-Farming-In-East-Africa.aspx>

<sup>44</sup> UKaid, Crown Agents, AFCAP, 2015, *Horticultural Value Chains in Kenya*  
<http://www.kendat.org/wp-content/uploads/2015/01/illustrated-booklet-final.pdf>

<sup>45</sup> Manages and supplies the fresh produce corner (branded under its affiliate Fresh N Juici) at Nakumatt, as well as supplying other modern/traditional retailers. Fresh and Juici also produces juice.

<sup>46</sup> The Vegpro Group provides air/sea transportation services for export of fresh foods, flowers and ornamental plants and fisheries products in East Africa. Its floriculture department, VP Floriculture, produces more than 3 million roses of various kinds per week at five farms in Kenya as a major flower grower/exporter. It is also engaged in the flower propagation business and supplies plants. Currently, it reorganizes brands, aiming at expansion of business to Ghana, Ethiopia and United Kingdom.  
<http://www.vegpro-group.com/home.html>

fruit and vegetables, processed bean products, dried fruit and fruit juice. International companies involved in fruit and vegetable processing include Del Monte (US) producing canned pineapple and Frigoken, the largest vegetable processing and exporting company in Kenya, dealing with fresh, canned/bottled and frozen product including green beans. Frigoken belongs to the Industrial Promotion Services (IPS) Group, an affiliate of Pakistan-based Aga Khan Fund for Economic Development, which supports new businesses in South and Central Asia and Africa. Frigoken has contracts with 70,000 small farmers in Kenya and provides training on crop and pest control, irrigation, soil protection and water conservation techniques, utilizing a agricultural extension team that consists of agriculture trainers and local farmers. In addition, it has introduced a credit system to provide high-quality seeds at planting time and receive repayment after harvest with no interest.<sup>47</sup> There are also some domestic companies: Kenya Orchard which produces sauces, spices and jam for the domestic market, as well as frozen vegetables, dried vegetables and canned beans for export, and works on improving cold chain distribution, and Norda Industries, a potato chip manufacturer which works to improve living standards by buying potatoes at higher prices, while providing a credit line for seeds and seedlings and fertilizers to support local farmers.

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<sup>47</sup> Frigoken Website <http://frigoken.com/>

## Export :

Vegetable	136,000 t	263mil \$
Fruits/nuts	55,000 t	79 mil \$
Fruits/veg preparations	116,000 t	151 mil \$

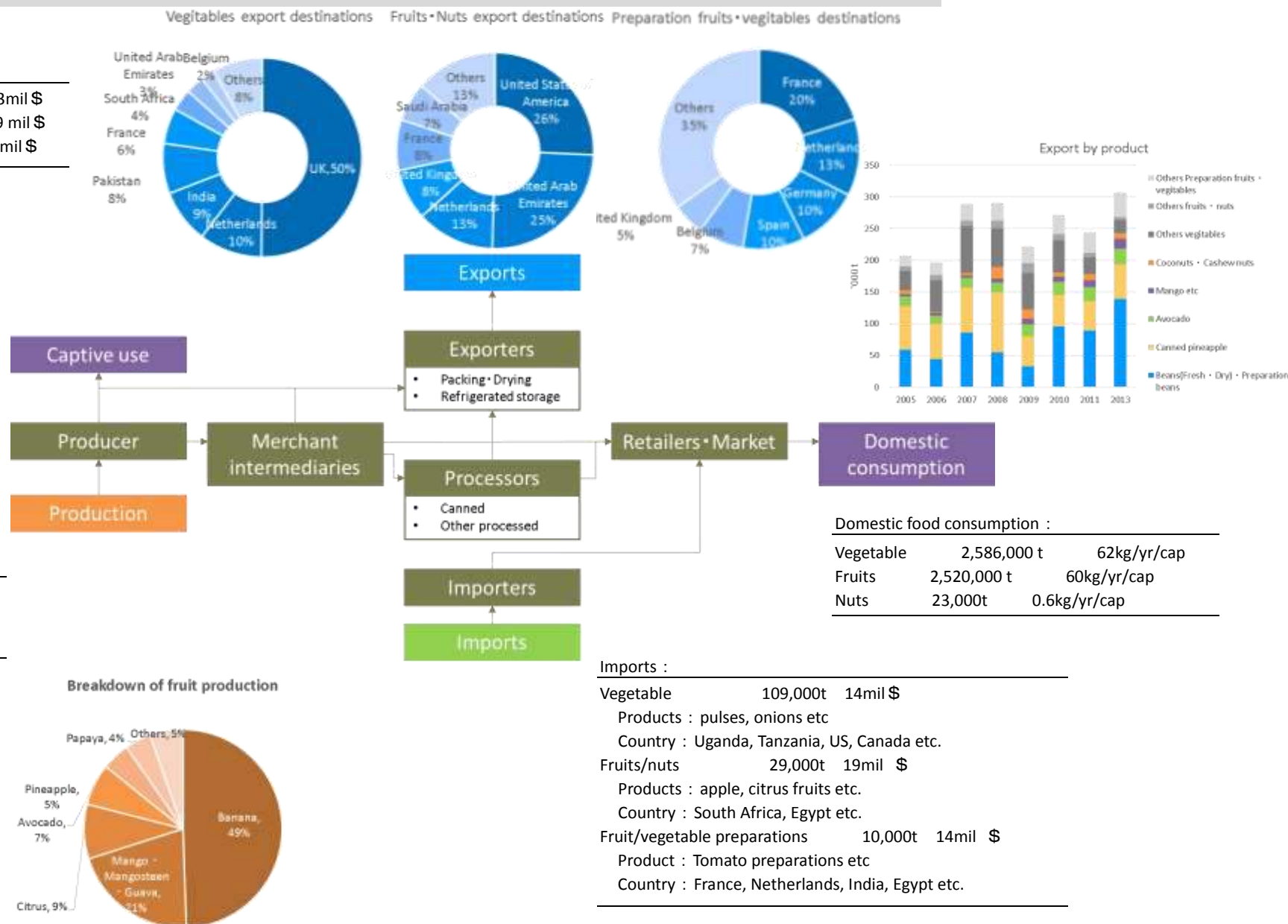


Figure 24 Fruit/Vegetable Value Chain Map (2013)

Source) Promar Consulting based on Kenya National Bureau of Statistics "Economic Survey 2015", ITC Trade Map, FAOSTAT, Karina Fernandez-Stark, et al, 2011, *The Fruit and Vegetables Global Value Chain*, [http://www.cggc.duke.edu/pdfs/2011-11-11\\_CGGC\\_Ex.Summary\\_Fruit-and-Vegetables-Value-Chain.pdf](http://www.cggc.duke.edu/pdfs/2011-11-11_CGGC_Ex.Summary_Fruit-and-Vegetables-Value-Chain.pdf)

Note) Fruit excludes plantain



### Case Study: Independent Kenyan farm producing French beans

This individually owned farm started cultivation in 2009 with approximately 30 hectares of land. Seven hectares of land is used for French bean cultivation and the remaining area is for growing cabbages, tomatoes, zucchini, eggplants, onions and beets. The farm employs eight full time workers as well as some seasonal workers. The farm secures water from nearby Lake Naivasha using an irrigation hose. The farm has adopted measures to prevent field invasions by hippopotamuses living in the lake (e.g. deep canals between farm fields and guard dogs).

French beans are produced for export, and the other crops are for the domestic market. They plan to produce chili peppers for export in the future. They sow French bean seeds three times a year. The harvest volume is 2 to 2.6 tons per hectare. Approximately 90% of the harvested French beans are exported and the remaining 10% are supplied to local markets (mainly supermarkets: products that cannot be sold at supermarkets are supplied to traditional retailers). Size and color of export products vary depending on destination, and the requirements for export products are likely to be more stringent than those for the domestic markets. Exporter purchase prices change depending on demand in the EU market and season (around 78 to 80Ksh/kg in the peak period between April and July, and 45Ksh/kg between August and March). Export prices are more stable than the prices of products for the domestic markets as there is less competition. French beans are packed in a 25kg box and picked up by exporters with refrigerated trucks.

In addition to the increase of exports, this farm plans to purchase trucks to expand supply distribution routes to Nairobi where they can get higher prices.

The farm buys imported seeds from local businesses. The main fertilizers are standard NPK fertilizer. Liquid fertilizer are also used for mixing in irrigation water and foliar spray. Exporters give some training on how to use fertilizers, but basically the farmer just follows the instructions written on product packages. They do not receive any training or technical support from governmental agencies such agricultural extension nor from the supermarkets they supply.



Independent French bean farmer's fields.

### Profile: Twiga Foods

Twiga Foods is a mobile phone application-based B-to-B supplier of fresh produce and FMCG goods to kiosks. They consider themselves an e-commerce start-up, focusing on improving the inefficiencies in the fresh produce distribution system to local kiosks. The three founders (from one from Coca-Cola, one from Safaricom and American who had conducted his PhD thesis in Kenyan informal market) started in 2013 and were inspired by the efficient Coca Cola model of drink deliveries – having distribution depots in local neighborhoods for quick delivery by tuktuk to any kiosk. The idea was that kiosk owners would be willing to pay a premium for fast delivery direct to the kiosk, rather than going out early to other markets to collect inventory for their shops.



Twiga's branded trucks deliver fresh produce to neighborhood depots throughout Nairobi.

Source) Twiga Foods

Twiga saw a huge market opportunity based on the fact that 96% of fresh produce in urban areas flows through traditional markets, not modern supermarkets. And yet supply of fresh produce to neighborhood kiosks is highly inefficient. (Even to modern retail fresh produce distribution is highly inefficient. Nakumatt has no central distribution for fresh produce and deliveries must be made to each of their 56 stores.)

Twiga aimed to create a smooth and direct supply chain, from farmers to collector, to 21 depots located strategically in key neighborhood from which rapid deliveries can be made to kiosks by tuktuk. Twiga developed its own phone app for ordering goods and has already contacted 12,000 of the estimated 37,000 kiosk vendors in Nairobi. They are working with KRep Bank to begin distributing cell phones to any kiosk owner who needs one in order to use the application.

A vendor orders stock from Twiga, and Twiga will show up the next day at their shop with a low-cost, better quality, product than informal markets can provide. Twiga is not simply introducing a new technology, but has been called a "total disruption of the distribution chain – changing it completely to serve a huge, untapped market."

Twiga's model has proved to be a hit and it is expanding rapidly. It has 45 employees and is hiring now. Twiga focuses only on a limited range of FMCG (fast moving goods that do not need to be stored long) in urban areas where there is the population density needed to make their delivery system profitable. They have started with banana, pineapple and tomatoes and demand is so high that they can only currently fulfill 30% of orders. Twiga just finished attracting a round of new investment and will be scaling up both in the major Kenyan cities as well as Nigeria and Tanzania. Their long term target is moving into the 250 cities in Africa with population over 1 million people, that are the basis of urban African retail sales - Twiga aims to revolutionize the distribution of food and consumer goods throughout Africa.

The Twiga business model offers 6 main advantages to kiosk owners:

- Twiga prices are lower than the wholesale market as they are directly sourced from farm collectors, and then delivered direct to kiosks from Twiga depot, avoiding the "layers" of wholesalers that are usually needed to get products deep into neighborhoods. (Twiga reports its bananas are 10% less than wholesale market and pineapples are 20% less)
- Quality of products is guaranteed (fruit is delivered ripe and ready to eat, so there is less food loss)

- Buying fresh produce is easy – use your cell phone.
- No need to visit markets at 5 am to collect stock. Tuktuks come to the vendor.
- Twiga offers business support
- Goods are safe and traceable back to the farm.

Other e-commerce options in Kenya include Jumia.com, similar to Amazon.com, that delivers mostly high-end goods to private homes, but Twiga is the first to focus on kiosk owners. Twiga delivers to local depots late at night to avoid the intense Nairobi traffic. In the morning, tuktuks deliver the goods ordered the evening before.

Twiga offers one-day credit (order in the late afternoon and the next day remit payment for those goods while placing an order for the next day). Twiga charges a 30% premium for their service and estimates that every new client is worth 55\$ a day in revenue, so it is worth investing in training clients to use the app and understand the service.

Twiga reports that they have no trouble getting investors, as there is great interest in solid business ideas for Kenya.

Twiga aims to continuously increase the range of goods they can supply through their e-commerce model and is an excellent example of a system that can be tapped into by Japanese FMCG producers looking to access urban kiosks. Twiga is also hoping that other companies, government or NGOs will eventually take over the farm level produce collection systems, so Twiga can focus on the urban business and services.



## Challenges in the Fruit and Vegetable Value Chain

Below is a summary of the challenges in the fruit and vegetable value chain identified through this survey.

Production (Input)	Distribution	Processing	Consumption
<ul style="list-style-type: none"> <li>• Inappropriate use of fertilizer</li> <li>• Use of illegal pesticide</li> <li>• Insufficient production management by small farmers, low agricultural techniques</li> <li>• Weak farmers organizations</li> <li>• Insufficient irrigation</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient transport infrastructure (for export, especially the access road to Mobassa)</li> <li>• Insufficient quality management</li> <li>• Low distribution efficiency and a lot of losses</li> </ul>	<ul style="list-style-type: none"> <li>• Limited variety for value-added products (canned products, juices/concentrates, frozen products)</li> <li>• Unstable supply of raw materials</li> <li>• May be difficult to obtain packaging and labeling materials</li> </ul>	<ul style="list-style-type: none"> <li>• Quality management at the retail level is partly insufficient</li> </ul>

## Opportunities in the Fruit and Vegetable Value Chain

The fruit and vegetable supply chain is expected to have opportunities for agricultural inputs, as well as greenhouse technology like water or temperature control. Investment and expansion of the processing industry is expected to provide opportunities. (for details on these sectors, see 3.3 “Cross-sectoral areas”). Below is a summary of opportunities in the fruit and vegetable value chain.

- **Marketing and distribution of low-priced/high-yield agricultural inputs (can be imported or local manufacturing and blending) with technical assistance to farmers by the input company or its local business partner.**

Issues related to agricultural inputs are same as that previously discussed for rice and maize.

- **Introduction of high-tech agricultural technology such as greenhouse and water conservation technology**

During this survey, we often heard about greenhouse and high tech agriculture. Younger farmers have become especially interested in it. Especially in the export market, there is demand for stable supply of crops all year round, and this is expected to lead to expansion of the export horticulture industry and the need for greenhouse technologies.

- **Improvement of facilities for value-added products including canned products, fruit juice and frozen products**

The Government of Kenya has promoted diversification of value-added products and there is particular needs for processing facilities for products that are currently relying largely on imports such as fruit juices and processed foods.

### 3.2.6 Flowers

#### Overview

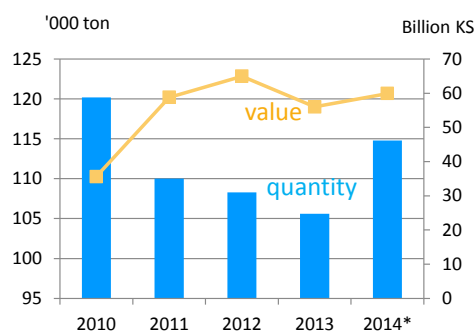
Despite the introduction of custom duties on flowers by the EU in 2014, exports of cut flowers from Kenya are stable, hovering at 60 billion Kenyan shillings. Flowers are the second most important export after black tea in Kenya.

Eighty percent of cut flowers from Kenya are exported to the EU. Kenya has a great presence in the EU and currently accounts for 36% of the total volume of flowers imported to the EU from countries outside the EU. Main export items are roses (single-stem and spray roses) and carnations. The major destination is the Netherlands, and flowers exported to the Netherlands are often re-exported via the flower market of that country. However, in recent years, overseas retailers such as UK's Tesco have come to Kenya to purchase directly from producers in response to the increasing demand and reduce cost and now direct exports to United Kingdom and Germany are also increasing.

Kenya is located right on the equator, with a natural environment that allows high-volume production of quality flowers in an annual average temperature of 15 to 20 °C. Production areas are concentrated along the coast of Lake Naivasha, the Rift Valley and Mount Kenya. Production of flowers has created employment for 2 million people (including both direct and indirect employment) that corresponds to approximately 7% of the total population of Kenya. In the 1980s, as a result of economic deregulation and deregulatory measures, investment from Europe countries such as the Netherlands went into full swing and efforts were made to improve the flower growing infrastructure, including irrigation facilities, chemical fertilizers and agricultural agents, new types of seedlings and refrigeration facilities. About half of the approximately 40 member companies of the Kenya Flower Committee, which is a major producers' organization in Kenya, are affiliates of Dutch and British companies. For example, Dutch Oserian Flower Farm<sup>48</sup> has one of the largest farms in Kenya. Transportation routes were secured as a result of the acquisition of Kenya Airways by Royal Dutch Airlines and investment was made in the EU-side of the flower value chain, such as utilization of the distribution network to supermarkets in the European market.

Because most flowers are transported by air, exporters are investing in modern refrigeration facilities near Jomo Kenyatta International Airport. However, there remain some inefficiencies in the existing supply chain. For example, consistent temperature control throughout the supply chain has not been thoroughly implemented and the products need to be chilled again at the airport. There are also various issues of transportation, processing and packaging, such as handling of flowers that need different types of temperature control. Insufficient management of cold chain has caused a great loss in value.

**Figure 25 Cut Flow Export from Kenya**



Source) Economic Survey 2015

<sup>48</sup> Oserian, a flower-producing farm in Kenya, is an affiliate of Dutch group company in Kenya, Mavuno. It has 240-ha farm and more than 6,000 employees. The production volume exceeds 400 million flowers, most of which are exported to Europe. In 2010, Kawasaki Flora Auction Market Co., Ltd. conducted a survey related to introduction of technique of preserved flowers to Kenya and establishment of import and sale system in Japan as a development import planning verification project. Oserian was surveyed at that time.

In recent years, the use of transportation by ship is attracting more interest as a measure to reduce cost. The current issues in sea transportation are the necessity for consistent refrigeration, quality of service provided by shipping lines and the existence of pirates. The Dutch floral wholesaler association has set a target to shift 40% of the total transport of cut flowers, corresponding to 4,800 containers per year, to transportation by sea by 2020.

### Challenges in the Flower Value Chain

Insufficient temperature control and inappropriate handling of cut flowers are issues that lead to deterioration of quality and loss of value. Because of Kenya's reliance on the EU market for its exports, developing diversified export destinations is important for the sustainability and stability of the Kenyan industry. Below is a summary of the challenges in the flower value chain identified through this survey

Production (Input)	Distribution	Processing	Consumption
<ul style="list-style-type: none"> <li>• Customized fertilizers/pesticides not always available</li> </ul>	<ul style="list-style-type: none"> <li>• May lack consistent temperature control</li> <li>• Transport method may not always be appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• Processing/packaging is sometimes inappropriate</li> </ul>	<ul style="list-style-type: none"> <li>• Export may decline due to EU custom duties</li> </ul>

### Opportunities in the Flower Value Chain

Below is a summary of opportunities in the fruit and vegetable value chain, including greenhouse technology, cold chain, and agricultural inputs (for details on these sectors, see 3.3 "Cross-sectoral areas").

#### ● Greenhouse and preserved flowers technology

As mentioned in the fruit and vegetable section, Kawasaki Flora Auction Market Co., Ltd. of Japan visited Kenya and was positive about the possibility of introducing flower preservation techniques for export and sales in Japan. The preserved flower business is expected to be an opportunity and to become a opportunities for Japanese companies to expand their sourcing of preserved flowers.

#### ● Import of high-quality seed/seedlings/agricultural inputs and marketing to distributors

There is need for high-quality seeds that meet the needs of export markets including Europe and Japan.

#### ● Cold chain development (refrigeration) and provision of after-sales services on machinery

If sea transport of flowers increases, then investment would need to be directed not only on the cold chain from farm to airport, but also directed to port improvement. This provides opportunities for Japan's refrigeration businesses.

## 3.2.7 Fisheries

### Overview

Fisheries in Kenya are small scale: the sector accounts for 0.5% of gross domestic product (GDP). The

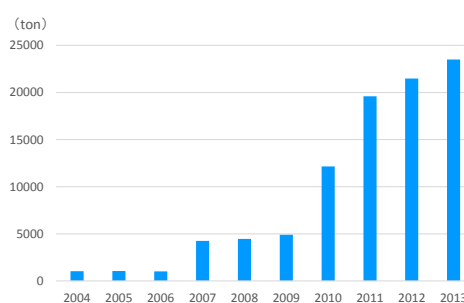
number of people who engage in fishing and aquaculture are slightly over 60,000 each. The total number of those engaged in fisheries including related businesses is approximately 1.1 million.<sup>49</sup> The amount of fish consumed by Kenyans is also small, 5 kilograms per person annually, which is much smaller than the average in Low-Income Food-Deficit Countries (LIFDC) of approximately 11 kilograms. The Fisheries Agency of Kenya has set a target of increasing fish consumption to 10 kilograms and is aiming to increase aquaculture and diversification of the fish and seafood in Kenyan diets. In the domestic market, Nile perch, tilapia, *omena* (cichlids, small silvery fish from Lake Victoria) and sardine are found. Relatively expensive fish and seafood, such as the Nile perch fillets that account for approximately 90% of the total seafood exports, as well as octopus, shark, lobster and crab are exported to Europe, Middle East, Japan and the USA. Exports to Europe account for approximately 75% of the total seafood exports. Frozen mackerel, sardine and tilapia are imported from China at low prices. Japan also exports frozen mackerel to China. At present, sales routes to the domestic market are weak and we rarely saw fish produced in Kenya available in supermarket chains in Nairobi.

The fisheries industry of Kenya is classified into three categories: the inland water fishery that accounts for 80%, the aquaculture industry that accounts for 14% and the marine fishery that accounts for 6%. Fresh water fish accounted for approximately 90% of the total fish catch of 175,000 tons in 2014. Out of the total fresh water fish catch, *omena* accounts for 40%, Nile perch 30%, tilapia slightly less than 20% and others 10%. Although Lake Victoria, the largest lake in Africa, accounts for 90% of the total fish catch in Kenya, the number of wild freshwater fish has rapidly decreased due to the excessive fishing and water contamination in recent years. To address the issue, the Government of Kenya has promoted aquaculture and launched the Fish Farming Economic Stimulus Programme in 2009. As a result, the number of farmed fish increased year by year: the production of aquaculture increased from slightly less than 5,000 tons in 2009 to approximately 24,000 tons in 2013. However, there are many issues remaining, such as availability of fish fry and fish feed, poor aquaculture technology and insufficient market information.

In the marine fishery, the catch of bottom-dwelling fish accounts for approximately 50% of the total catch: the remaining share is deep sea fish (30%), shark and ray (10%), crustacean (slightly less than 10%) and mollusk (slightly less than 10%). In Kenya, most fisheries are small-scale traditional fisheries. Since there are few motorized fishing boats, fisheries in coastal waters is the most common. Commercial fisheries are limited to shrimp fishing (one commercial fishing vessel) and longline fishing and purse seine fishing by countries engaging in deep sea fisheries, such as Korea, Spain and France. In the traditional shrimp fishery, the number of vessels was slightly more than 3,000 in 2011, 10% of which were power-driven vessels. The rest are row boats. Fishing of lobster, which is a high value product, is done by divers on a small scale (approximately 100 tons per year). At present, Kenya does not have commercial vessels for tuna. However, under the Kenya Tuna Fisheries Development and Management Strategy 2013-2018, it aims to work to develop offshore fisheries centering on commercial tuna fishing in the future.

Fish processors in Kenya are classified into two categories: those dealing with inland freshwater fish and

**Figure 26 Production of Farmed Fish**



Source) Kenya Fisheries Department (2013)

<sup>49</sup> Latest statistics from the Fisheries Agency of Kenya (2013)

those specializing marine products (tuna, octopus and crustacean). There are far more processing freshwater fish. Because more than 90% of fishermen do not do any processing such as scaling or sun-drying, processors carry fish in trucks with ice, fillet the fish and remove skin and fins at factories. Fish larger than 50 cm are generally sold for processing, and other fish are often sold at outdoor markets or through wholesalers and retail shops.<sup>50</sup> Since these stores do not have refrigeration facilities and a minimum amount of ice is used, the loss is high.

### Challenges in the Fisheries Value Chain

Around 35% of post-catch loss occurs due to insufficient refrigeration facilities and unsanitary processing especially during distribution and processing. While the stage of the value chain from boning to export is relatively well developed near Lake Victoria, fish processing is still undeveloped along the Indian Ocean coast. There are a few motorized vessels for sea fishing so the scale remains small and activities are limited to the coastal waters. There are few coastal processors.

In addition, overfishing was reported is also reported as an issue in the inland fisheries. Below we summarize the challenges identified in the fisheries value chain.

Production (Input)	Distribution	Processing	Consumption
<ul style="list-style-type: none"> <li>•Difficult to obtain parr and fish feed</li> <li>•Low level of aquaculture techniques</li> <li>•Overfishing</li> <li>•Water pollution</li> <li>•Lack of boats and ships</li> </ul>	<ul style="list-style-type: none"> <li>•Lack of cold chain facilities</li> <li>•Insufficient market information</li> </ul>	<ul style="list-style-type: none"> <li>•Lack of processing companies for marine fish</li> </ul>	<ul style="list-style-type: none"> <li>•Limited size of domestic market</li> <li>•Product handling at retail is partly insufficient</li> </ul>

### Opportunities in the Fisheries Value Chain

Below is a summary of the opportunities identified for investment and support of the fisheries value chain.

- **Processing machinery and investment in existing processing for domestic and export markets.**

Processing equipment is needed for expansion of the seafood processing industry, just as in the meat industry. In addition to domestic fish processors, fish import processing as well as export for promising regional markets are opportunities for investment.

- **Fisheries related equipment**

There are needs for fisheries related equipment, such as, outboard engines, slings, feed, refrigerators and drying equipment. Motors made by Yamaha are reported to be widely used on small fishing boats.<sup>51</sup>

- **Cold chain and refrigeration facilities that can be used even in rural area with of after-sales**

<sup>50</sup> "BOP business potential needs report, agriculture/fisheries materials and equipment sector in Kenya," 2011, Japan External Trade Organization

<sup>51</sup> Japan External Trade Organization, Id

### **service by local agents**

Refrigeration equipment that can be used in rural areas where electric power shortages can often occur is needed. Although the Government of Kenya has funded some modern catch landing facilities equipped with refrigeration/freezing functions with the financial support by EU in the past, the facilities have not been completed or utilized.<sup>52</sup> Refrigeration facilities that utilize solar power are under consideration.

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<sup>52</sup> Nottingham University, Id

### 3.3 Opportunities in cross- sectoral areas

In this section, opportunities in cross-sectoral areas are described based on the following four points. Based on the FVC opportunities identified in our assessment, as well as past success of Japanese companies, there seem to be comparatively more opportunities in the cross-sectoral areas for Japanese companies, such as agricultural inputs, refrigeration, IT and logistics.

- Agricultural inputs (fertilizers, agricultural chemicals, seeds, feed, and drugs and medicines for livestock, etc.)
- Agricultural machinery and food processing machinery
- IT/Information Services
- Distribution, cold chain, packaging, product development for Kenyan consumers

#### 3.3.1 Agricultural inputs: fertilizers, agricultural chemicals, seeds, feed, and veterinary drugs

With the growth of the agricultural sector in Kenya, the demand for agricultural inputs, such as fertilizers, feed, seeds, agricultural chemicals and drugs and medicines for livestock, is increasing. Among these, fertilizers and agrochemicals show largest growth. Fertilizer has the largest share of the total value of agricultural inputs. An increased demand for feed is also seen as a result of the development of chicken farming, pig farming, intensive dairy farming and feedlots.

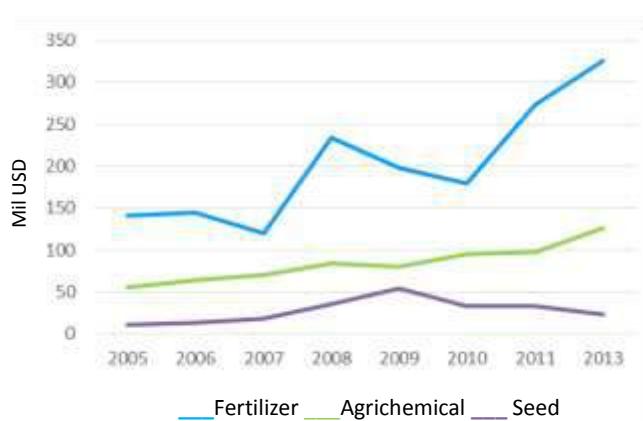


Figure 27 Import of Fertilizer, Agrichemical and Seed

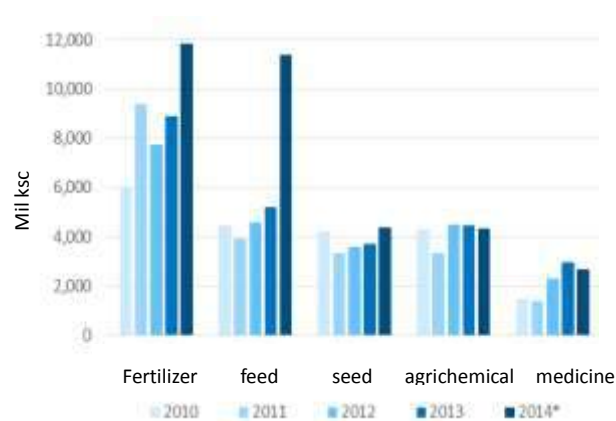


Figure 28 Purchases of Agricultural Inputs

Source) ITC

Note) Seed includes horticulture seeds and maize seeds

Source) Kenya National Bureau of Statistics Economic Survey 2015  
\*2014 forecast .



## Fertilizer<sup>53</sup>

Fertilizer is not produced in Kenya. Almost all of the approximately 500,000 tons of fertilizer used in Kenya is imported. The average annual use of fertilizer is 32 kilograms per hectare in Kenya, which is higher than the average of Sub-Saharan African countries of 10 kilograms per hectare. The government of Kenya began privatization of the agricultural inputs market, including fertilizer, in the 1990s: the use of fertilizer began to increase result of investment into fertilizer distribution businesses and the price declined due to this increased competition. However, transportation cost and fees at ports account for 40% of the price of fertilizer and it is still an expensive agricultural input for small farmers. In order to promote the use of fertilizer by grain farmers, the Government of Kenya started to import fertilizers and sell them at subsidized prices through National Cereals and Produce Board (NCPB) and National Accelerated Agricultural Input Programme (NAAIAP). The Kenyan Government began to slowly strengthen its role in fertilizer distribution, especially after the food crisis in 2009, when a sharp decrease in domestic maize and other grain production coincided with a sharp global price increase in fertilizers. In 2014 and 2015, the government imported approximately 100,000 tons of fertilizer. Farmers could buy DAP, a phosphorus (P) fertilizer that is the most widely used inorganic fertilizer in Kenya, at the subsidized price of 2,000Ksh per 50kg bag in 2014 if they bought it through NCPB, when its normal market price was around 3,000KSh per 50kg bag.<sup>54</sup>

According a Kenyan Ministry of Agriculture survey, average fertilizer use during 2008/2009 and 2010/2011, 75% of fertilizers were used for grains, 13% for black tea, and the rest on horticultural crops and coffee. Farmers growing export crops, such as black tea, horticultural crops and coffee, as well as large-scale farmers understand how to use fertilizers and there is consistent usage of fertilizers. For black tea, Kenya Tea Development Authority (KTDA) directly imports NPK fertilizers and provides them on credit to farmers, to be repaid after the harvest. In 2014/2015 KTDA imported 70,000 tons of fertilizer from Russia and other countries. As a result of this system, fertilizers are widely used in black tea. Although there is no similar system for coffee and horticultural crops because these farmers do not work with an Authority as tea does, there is still an incentive to use of fertilizers as these are a cash crops. However, there is a vicious cycle for small grain farmers: when they do not have enough cash at planting time, they reduce their use of fertilizer, resulting in a decrease in yield, which in turn decreases income. If this situation can be addressed, there is high potential for an increase in fertilizer usage among grain farmers.

The Government of Kenya has investigated the possibility of producing fertilizer domestically for many years. In 2013, the Kenyan government received expressions of interest from India, China, Brazil, Russia and Eastern European countries to invest in construction of fertilizer manufacturing plants. Ultimately, it was announced in 2014 that Japan's Toyota Tsusho Corporation would build the first fertilizer manufacturing plant. Toyota Tsusho plans to construct a plant in Eldred to produce 150,000 tons of fertilizer, mainly to be used for maize. Eldred is located in the surrounding area of Lift Valley in the western part of

<sup>53</sup> Joshua Ariga and T.S. Jayne, 2010, *Fertilizer in Kenya: Factors Driving the Increase in Usage by Smallholder Farmers*, World Bank

[http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1271798012256/YAC\\_chpt\\_16.pdf](http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1271798012256/YAC_chpt_16.pdf)

IFDC, 2012, *Kenya Fertilizer Assessment*

[http://www.amitsa.org/wp-content/uploads/bsk-pdf-manager/203\\_KENYA-FERTILIZER-ASSESSMENT.PDF](http://www.amitsa.org/wp-content/uploads/bsk-pdf-manager/203_KENYA-FERTILIZER-ASSESSMENT.PDF)

David Mather, et al, 2014, *Measuring the returns to input subsidy programs: methods and applications*

[http://fsg.afre.msu.edu/inputs/DRAFT\\_manuscript\\_measuring\\_returns\\_to\\_ISPs\\_Mather\\_et\\_al.pdf](http://fsg.afre.msu.edu/inputs/DRAFT_manuscript_measuring_returns_to_ISPs_Mather_et_al.pdf)

Interview during field research.

<sup>54</sup> However, many scandals have been reported: for example, a major company bought large amounts of this subsidized fertilizer and resold at 2,800Ksh.

Kenya, which has the largest consumption of fertilizer in the country. Production is expected to start in 2016. Toyota Tsusho has been involved in agricultural business in many countries, but this will be their first attempt to directly engage at the farmer-level. The Government of Japan is expected to cooperate in the development of this investment project.<sup>55</sup>

Other companies that have operations in the fertilizer market in Kenya include two local companies, MEA and ARM which are mainly engaged in the cement business, and foreign companies, including Yara<sup>56</sup>, a major Norwegian fertilizer firm.

Another issue pointed out during interviews with manufacturers and distributors is that when farmers buy fertilizer at retail stores using government subsidies, they tend to select products that they have used before, that have been recommended by the Ministry of Agriculture or that have an immediate visible effect. As a result of heavy use of these limited and harsh fertilizers, soil becomes acidic and nutrients become depleted, resulting in a reduction in yield. Fertilizer products and education that can address these issues has high potential as well as liquid foliar fertilizer with nutritional supplements is growing and products for horticultural crops and other high value crops.

## Agrochemicals

As with fertilizers, Kenya is completely dependent on imports for agrochemicals. Agrochemicals are imported from various countries, including European countries, China, India, South Africa, Israel, Australia and Singapore. Imports from Japan include agrochemicals registered as insecticides and disinfectants. They are mainly used for large-scale agricultural production, especially production of export crops, such as coffee, fruits, vegetables and flowers. Tea is free from agrochemicals as it is cultivated on the highlands and the incidence of disease and pests is low.

Imported products must undergo field trial and registration and Kenya's requirements are the second most stringent in Africa after South Africa. The disease and pest control committee of the government supervises the procedures and conducts tests. The registration process for new agrochemicals varies by crop plant, but data covering three cropping seasons is required for all target crops. In response to the increase of counterfeit products in neighboring countries, such as Tanzania and Uganda, the Government of Kenya has been strengthening the registration system and oversight of agrochemicals. In 2014, the new Pest Control Products Act was proposed, with tougher sentences for those found violating rules for registering new pesticides. A new Pesticide Control Products Authority would have additional authority over registration compliance and fight against counterfeits with stricter regulation of the manufacture, sale and use of public health pesticides, insecticides, fungicides, herbicides and pesticide for veterinary use.

Multinational corporations operating in the agrochemicals industry in Kenya include Bayer, Monsanto, Arysta Life Science and Syngenta. Local companies are also active and mostly sell generic products. There are approximately 20 major distributors that specialize in agrochemicals in Kenya, and they supply

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<sup>55</sup> Daily Nation, Jan. 30, 2014, *New bid to build fertilizer plant*  
<http://www.nation.co.ke/business/New-bid-to-build-fertiliser-plant/-/996/2167382/-/4r29ks/-/index.html>

Interview during field research

<sup>56</sup> Yara operates broadly in Tanzania. It established SAGCOT jointly with the Government of Tanzania, Tanzania Agricultural Affairs Committee, USAID, the Embassy of Ireland and Unilever, contributing to improving fertilizer-handling capacity at Dar es Salaam Port to the level of Mombasa Port.

Michael E. Porter, et al., 2015, *Yara International: Africa Strategy*  
[http://sharedvalue.org/sites/default/files/Affiliates/Cohort%204%20Training/Yara%20International\\_Case%20Study.pdf](http://sharedvalue.org/sites/default/files/Affiliates/Cohort%204%20Training/Yara%20International_Case%20Study.pdf)

products to smaller distributors.

## Seeds

Both domestic and imported seeds and seedlings are available in Kenya. Approximately 90%, a little less than 50,000 tons, of the certified seeds that were used in 2010 were domestic seeds. Most maize seed is produced by the state-owned Kenya Seed Company, but imported seeds are also found in Kenya. For vegetables, flowers and hay for export, imported seeds are more common.

The Government of Kenya works on development and dissemination of high-quality seeds through support for seed research. Kenya Agriculture and Livestock Research Institute (KALRI) In particular is having success in development of high-yield disease-resistant seeds for grains and horticultural crops. They also conducting research and development on propagation techniques related to banana suckers and sugar cane ratooning.<sup>57</sup> In addition, the government focuses on development of seeds that are suitable for dry areas, because it is critical for the country to ensure food safety in areas that are far from water sources. For example, under one USAID project to strengthen Kenya's horticultural competitiveness, seeds, particularly bean seeds, were produced and distributed in cooperation with Dryland Seed Limited (DSL). DSL produces and sells maize, beans and sorghum grain seeds suitable for dry areas, which were developed jointly with governmental research institutions through public-private partnerships.

The main reason high-quality seeds are not widely used is because the cost of seed is high and the distribution system is weak.

## Animal Feed<sup>58</sup>

Kenya has the largest animal feed industry in East Africa. Use of animal feed and feed supplements has increased in the past ten years with the growth of the livestock industry. Demand increased from 400,000 tons in 2004 to 650,000 tons in 2013, and domestic production increased from 250,000 tons to 400,000 tons. 64% of the total amount of feed is for domestic poultry, 27% is for dairy husbandry, and 8% is for pig farming. In response to high demand, a large volumes of milling by-product (maize bran, etc.) and oil cake is also imported from Uganda, Tanzania, India and other countries.

In 2013, 150 feed companies were registered with the government, 20 of which were large-scale grain milling firms, 8 were oilseed manufacturers, and approximately 50 were importers. The formal feed trade industry, comprised of registered companies, meets approximately 60% of the demand, but there are also many small companies and importers that have not been registered. Investment is being made in this industry because high investment returns are expected. For example, Vidogo, a major cooking oil and consumer goods company, has started manufacturing animal feed, aiming at expanding its business to East Africa from its base in Kenya. In addition, there are reports on interest in investment in feed for aquaculture, an industry whose development has particularly slow because of the difficulty in obtaining feed.

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<sup>57</sup> Japan External Trade Organization

<sup>58</sup> USDA FAS, 2014, *Kenya: Animal Feed Situation*

[http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Animal%20Feed%20Situation%202014\\_Nairobi\\_Kenya\\_10-14-2014.pdf](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Animal%20Feed%20Situation%202014_Nairobi_Kenya_10-14-2014.pdf)

ABS TCM, 2013, *Study on the Kenyan Animal Feed and Fodder Sub-sectors*

<http://www.snvworld.org/en/countries/kenya/publications/snv-kenya-dairy-study-on-animal-feed-and-fodder-sub-sectors>

The main challenges are unstable supply, high prices, a lack of standardization and low quality, including, in particular, the presence of aflotoxins. Kenyan meat and dairy companies reported that the taxes on feed by the Government of Kenya have led to fluctuation in feed prices. There is also little incentive for improved feed development among local companies. For example, according to Unga Farm Care, which manufactures feed for the chicken industry, accepted government definition of chicken feed is very restricted and allows little differentiation in terms of marketing. Even if a company produces improved feed with enzymes, for example, it will not be legally recognized as a different product from standard chicken feed, discouraging companies from developing improved feeds.

### Profile: One Acre Fund

Smallholder farmers are the clear target customers for inputs such as seeds and fertilizers, but in many rural areas, agrovets (shops supplying farm and livestock inputs) do not even stock fertilizer because farmers rarely have the lump sum of funds needed to buy a bag of fertilizer. Selling to Kenyan farmers requires not only appropriate products and distribution systems, but also financing schemes to make the products affordable.

Farmers traditionally are caught in a vicious cycle of unstable cash flow. As One Acre Fund's policy director explained, "They have cash constraints around harvest time and don't have an option of selling only a few bags of their harvest – so they sell 100% at weak prices to pay school fees and then 6 months later have no money left to buy inputs."

One Acre Fund (OAF) is a social enterprise founded in 2007 that has designed a microfinance-based business model for selling inputs to small farmers. OAF uses a version of a group liability microfinance model to fund the input sales, by hiring field staff in villages who then create groups of 10-15 trusted farmers, who will be collectively responsible for making sure all farmers pay for the inputs that they order. Twice a year farmers place orders from a catalog of goods (fertilizer, seeds, solar lamps, cooking stoves) which are delivered from the OAF warehouses. They pay 10% up front and then have the next 7 months to pay the remaining 90% for this package of goods (the package includes mandatory funeral and crop insurance as well).

The farmer groups meet weekly to make small repayments, to check in that others are making their payments and to learn about various improved farming practices. The training is especially valuable in Kenya, where there is currently little to no agricultural extension service offered by the governments. OAF currently has 130,000 farmers enrolled in Kenya and 300,000 in other countries. They report over 98% repayment rate and 50% increase in take-home profits for farmers who use their packages.

OAF customers are small farmers, averaging 1.2 acres, doing maize, beans, greens, onions, and some other vegetables. OAF rarely works with cash crops like sugarcane or coffee.

OAF is currently 76% sustainable, covering most of the business operations, but still relies on donors to fund some of its staff positions, particularly those positions that deal with government relations and policy, core roles for improving input quality and distribution.



One Acre Fund's core product line of fertilizer, seeds and solar lamps.



Field officers look at the 2015 catalog of OAF products which includes photos



OAF field officer teacher a farmer group about properly spacing bean seeds.

Source) One Acre Fund Kenya

Currently seeds and fertilizers are imported and OAF does market research and field trials of new products before deciding whether to offer a new product in its catalog. The typical process is:

- Desktop research on new products
- Set up a trial station (in dairy, insemination and feed products as well as seeds).
- Do a demand trial (basically market trial with 100 households to see the impact of the product)
- Then, if there is product demand, OAF will scale up and start offering it to their groups

One Acre Fund does not sell agrochemicals because of the safety concerns of transporting fertilizer in the same trucks as agrochemicals, which can result in combustible combinations.

A remaining issue is that there are few options for fertilizer and the commonly-used DAP is actually damaging to soil as it is too strong. One Acre Fund expressed interest in learning more about Toyota Tsusho's future products and with working with new input suppliers to do field trials, measure consumer demand among farmers and, if there is demand, include new Japanese input products in their catalog for farmers.

**Agrochemical firm Arysta Life Science (K) Ltd.)**

Arysta Life Science, a major US agrochemical firm, has engaged in the agrochemicals business for approximately 10 years in Kenya, in cooperation with local distributors. The company has six staff members and 15 field staff members, including general agronomists and specialists for particular crops such as wheat, coffee and cut flowers.

Arysta sells its own brand, generics and brands of other companies. Their products range specific formulas for the cut flower industry to generic products popular among small farmers with 1 to 15 acres of land. Arysta imports both pre-packaged and bulk products from Europe, China, Japan, the USA and Latin America and select suppliers based on whether they can meet Kenyan regulatory requirements.

There are three main distribution patterns. The main pattern is that agrochemicals are sold to large distributors who then sell to companies similar to wholesalers who then sell on to individual small farmers. In other cases, Arysta sells directly to the wholesalers on a cash basis, and finally it also sells seasonally and on credit to the large farmers that are found in industries like coffee or wheat. Logistics is outsourced and cash payment is due within 30 days. Large farmers are supplied in 200-liter bulk packages, while small farmers purchase small packages. Arysta and its brands conduct mass marketing activities, but also many practical marketing activities such as demonstration fields, meetings with groups of farmers to introduce products for specific crop types, one-on-one farm visits, or, in some cases, providing product samples. Training sessions for each crop type about pest prevention and pest management are conducted by Arysta field staff for farm families. Nevertheless, farmer education on appropriate agrochemical use is still considered a major challenge.

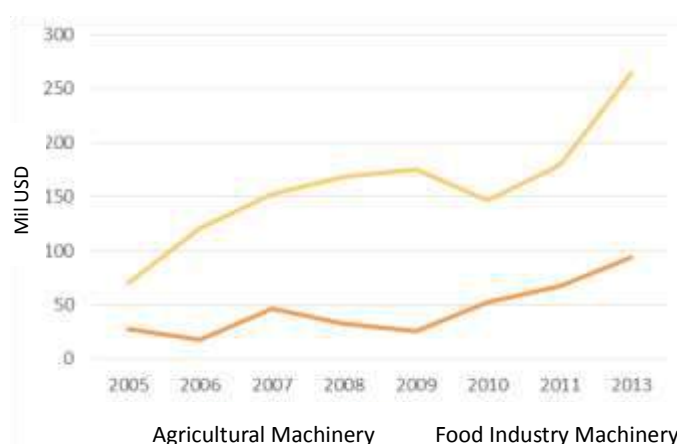
Arysta is considering expanding its partnership with other entities, such as insurance companies, government-related services (food safety, health and water that are related to agricultural chemicals in a broader meaning), and seed companies that do not deal with agricultural chemicals (With the growth in demand for both seed and agrochemicals, major distributors are coming into Nairobi to pick up both seeds and fertilizers). There is no support from the Ministry of Agriculture in terms of agrochemical subsidies, although they sometimes provide input and feedback at meeting with farmers. The government actually purchases and distributes agrochemicals itself in some cases.



### 3.3.2 Agricultural machinery and food processing equipment

#### Overview

Imports of agricultural machinery and food processing equipment are on the rise, recording slightly less than a twofold increase in the past five years. The growth of the tractor market is especially strong. In addition, maize, wheat and rice harvesters, potato harvesters, grass cutters, grain threshing machines and other machines for postharvest processing, and spreaders for fertilizer and agricultural chemicals are being used.



**Figure 29 Import of Agricultural Machinery**

Source) ITC

Large machines are common in the tractor market, where leading Western manufacturers have a big presence. Major local dealers include CMC holdings (dealing with New Holland and Bobcat brands), Tata Africa (John Deere), and FMD East Africa (Massey Ferguson). Chinese machinery are also popular because of their affordable prices. Toyota Kenya has announced its entry into the tractor market, influenced by the stagnation in the passenger car market; the company says it will start business by handling Yanmar's small machines and large machines from Case (USA).<sup>59</sup> Car & General deals with Kubota tractors in Kenya. Japan-made machinery was considered particularly useful because it tends to be small or medium-sized.

There are some local manufacturers of agricultural machinery, including Ndume which manufactures various types of attachments and trailers, and NGOs that develop small simplified machines for small farmers.<sup>60</sup>

90% of farmers use tractors in the Mwea in the rice cultivation area; however, they have only just started to introduce combines and harvesting is still mainly manual. Mwea farmers mostly use large 80 HP tractors. (Japanese products are generally 60 HP). JICA's Grant Assistance for Underprivileged Farmers (2KR) project in Mwea provided four-wheel tractors and other machines. Under this system, machinery is sold to the Agricultural Machinery Services supervised by the Ministry of Agriculture, agricultural cooperative or large farmers, and then contracted out for use by smaller farmers.<sup>61</sup>

The Government of Kenya is actively promoting introduction of agricultural machinery. In 2015, the government established a credit line of 80,000,000 dollars with the Government of Brazil to import agricultural machinery. 2,000 units of tractors and other machines were imported to improve productivity of agricultural crops and reduce cost. In 2015, the government also concluded agreements on special preferential imports of agricultural machinery (tractors, harvesters, dryers, storage machines, flour milling machines, etc.) from Korea that were worth \$US9,650,000. In this system, all machines are offered at

<sup>59</sup> IPSOS, Business Dairy 17, Jan, 2014, *Toyota enters tractors business to cut reliance on salon cars* [http://www.ipsos.co.ke/NEWBASE\\_EXPORTS/Toyota%20Rwanda/140117\\_Business%20Daily\\_9\\_6695a.pdf](http://www.ipsos.co.ke/NEWBASE_EXPORTS/Toyota%20Rwanda/140117_Business%20Daily_9_6695a.pdf)

<sup>60</sup> FAO, 2009, *Farm equipment supply chains*, <http://www.fao.org/3/a-i1209e.pdf>

<sup>61</sup> JICA, 2012, *Grant assistance for underprivileged farmers (2KR) project in the Republic of Kenya* [http://www2.jica.go.jp/ja/evaluation/pdf/2012\\_1260660\\_1\\_s.pdf](http://www2.jica.go.jp/ja/evaluation/pdf/2012_1260660_1_s.pdf)

prices 20% below market prices, and farmers pay over a seven-month period, after a 18-month grace period.

Challenges in the machinery sector include the high cost, the need for long-lasting machinery, after-sales care services, local availability of spare parts, and specifications that respond to local needs.

Technology and machinery for the flower industry is a step ahead of other crops and plants, and this technology is now spreading into other horticultural crops including tomatoes. Since greenhouse cultivation requires less investment than large scale field farming, and allows efficient use of water, there is high interest among farmers.

Within the food processing industry, as we discussed earlier, there is high demand for reasonably priced, durable machinery that recognizes the challenge of unstable electrical supply. Technology for improved slaughterhouses and feedlots, meat processing equipment as well as cold chain technology are all in demand. Fruit and vegetable processing also shows interest in processing and freezing/refrigeration equipment.

### Agricultural machinery for rice in Mwea<sup>62</sup>

Two types of agricultural machinery are found in Mwea: tractors for rice planting and combine harvesters. In many cases, private companies have two to three tractors and lend them to farmers. Most farmers do not own a tractor themselves and even large farmers tend to be just land owners who contract out their land to smaller farmers. Today 90% of rice farms in Mwea use tractors. With a tractor it takes only 30 minutes to complete work on 1 acre of land, a major improvement over laborious and inefficient manual labor. Harvesters have started to be introduced more recently, and harvesting is still primarily done by hand.

The tractors in Mwea are mainly 80-HP. Most of them are manufactured by foreign companies such as New Holland. Yanmar and Kubota machines from Japan are not widely used yet, because many Japanese tractors are only 60 HP. However, during the farming season, machinery leasing businesses are extremely busy providing these large tractors and some are considering introducing more medium-sized tractors to ensure there enough machines available. In addition, there appears to be increasing demand for medium-sized tractors as farm sizes decrease due to farmers subdividing land to provide inheritances to their children.

The Government of Kenya is promoting mechanization of agriculture to reduce production costs and the Rice Promotion Unit within the Ministry of Agriculture specifically emphasizes mechanization in the rice industry. On the other hand, local farmer workers are often concerned about the possibility of losing their jobs as a result of introducing more agricultural machinery, and some have raised opposition to machinery in recent years. For this reason, discussions with local farmers and sensitivity to local concerns are important for the smooth expansion of machinery use in Mwea and other regions.

Japanese businesses have introduced Kubota's harvesters and Yanmar's tractors through the support of 2KR (Kennedy second round). Under 2KR, they provided 15 80-HP tractors and 5 30-HP four-wheel tractors, 13 1.5mW and 3 units of 2.0mW harvesters, 52 rice threshing machines, 22 cropping machines, 2 two-wheel and 2 four-wheel rice planting machines, 500 seedling raising boxes as well as spare parts.

Chinese made machinery is also found in Mwea. Although Kenyan farmers report that Chinese machines break down easily, some farmers use them because of their affordable prices. Availability of replacement parts is also a common



Agricultural machineries delivered to Mwea Irrigation  
Agriculture Development Center (MIAD)

<sup>62</sup> Promar Consulting, 2015, Interviews

problem for both Chinese and Japanese products. However, Japan manufactures some types of machines and spare parts in third countries, especially for the auto industry; this model of manufacturing results in products that are lower prices and relatively easy to repair. It is a model that could be applied to the agricultural machinery industry as well. Interest in catering to small farmer needs among Japanese companies can already be seen, for example, in Toyota Tsusho Corporation (East Africa) which has established a department for agricultural machinery to market Yanmar tractors to small farmers.

### 3.3.3 IT/Information Services

#### Mobile IT innovation and the FVC in Kenya

Kenya is sometimes called the Silicon Valley (or “Silicon Savannah”) of East Africa. IT innovation is flourishing in Kenya. The information services market in Kenya has rapidly expanded from 2 billion yen in 2002 to 55 billion yen in 2013<sup>63</sup>. Google, Intel and Nokia all have offices in Nairobi and the IBM innovation center in Nairobi is IBM’s first research lab in Africa. As with Silicon Valley, venture capital funds, such as Savannah Fund, that invest in new businesses, and co-working spaces that encourage interaction among entrepreneurs, are motivating the growth of many tech start-ups.

Unsurprisingly, innovative agtech services are emerging in Kenya in various areas related to the FVC, including distribution of agricultural input, agricultural product and food distribution, farm management, agricultural finance and insurance and market information. For example, when we visited a Nairobi co-working, start-up hub, we saw the Kenya business startup team for Uber, the mobile app which is revolutionizing global taxi industries, working next to Twiga Foods, a venture that has introduced mobile e-commerce for distribution of fruit and vegetables to traditional kiosks.

The Kenya-born phenomenon of M-PESA, a mobile phone-based money transfer and financial services system utilizing, has a great impact on innovation of economy, industries and distribution in Kenya. The system enables immediate and safe payments, facilitates access to microfinance services, and reduces transaction risks. M-PESA has had a great impact in all stages of the FVC including agricultural finance and input credit, intermediate distribution and traditional and modern retailing. (More detail on the next page.) Additionally, BitPesa, a virtual currency (bit coin) that originated in Kenya, succeeded in attracting more than 100 million yen in funding in 2015. BitPesa is expected to become the next-generation mobile money platform.

Kenya’s IT innovation is firmly rooted in mobile phone technology, which can be introduced at low cost. 99% of internet subscriptions in Kenya are for mobile phone use. Access to the internet through cell phones and Wi-Fi allows Kenya and other developing markets to bypass any need for land-line telephones and home computers. Unlike agricultural technologies in developed countries which often assume the use of a personal computer, Kenyan IT innovation is in the palm of farmer’s hands. According to KPMG, which oversees several competitive business funds in Kenya, such as the Africa Enterprise Challenge Fund (AECF) as well as the MasterCard Foundation Fund for Rural Prosperity, business plans related to IT innovation are the major trend and a characteristic of recent challenge fund winners.

This interest in IT extends to agribusiness and food value chains, where technical innovations can offer services or collect and share data about consumers, markets and transactions. IT innovation can also support improved farm management and inventory control. IT for agriculture is particularly of interest to young farmers in Kenya, including:

- Agricultural finance / insurance
- Market information services
- Farm management such as remote agriculture
- Logistics management, customer databases

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<sup>63</sup> Mail and Guardian Africa, 21 Feb 2015, *Why Kenya, home to Africa’s ‘Silicon Valley’, is set to be the continent’s ultimate tech hub* <http://mgafrica.com/article/2015-02-19-why-kenya-is-africas-tech-hub>

### M-PESA Mobile Money Services

It is impossible to discuss retail growth or innovation without discussing M-PESA, the mobile phone payment platform that was originally launched in 2007 by Kenyan mobile carrier Safaricom and has since spread to countries around the world. M-PESA is reported to be used by over two-thirds of Kenyan adults (17 million) and around 25% of the country's gross national product flows through it.

M-PESA is technically a small-value mobile payments system (though it now allows institutional payments like salary payments etc), but also offers services like short-term loans as well as payments to shops, taxis, repayments of microloans and remittances to family or friends. M-PESA introduced its new service "Buy Goods" in 2013 in partnership with certain retailers, to allow consumers to purchase goods and services and withdraw cash with low handling charges (1%, etc.)

Kenyans sign up to be M-PESA members and then pay money into the system by handing cash to one of Safaricom's 40,000 agents (typically in a corner shop), who credits the money to the M-PESA account. Money is withdrawn by visiting another agent, who checks that the member has sufficient funds before debiting the account and handing over the cash.

M-PESA is not a bank and cannot accept deposits but still many Kenyans use M-PESA as their only banking account and de facto savings account, uploading money as credit into their account to use later.

M-PESA has allowed payments and money transfers with speed and safety, lowering the risk and transaction costs of doing business. From small holder farmers to retail supermarkets brands, people can focus on more productive tasks than traveling to make cash payments or withdrawals or collecting and chasing payments. It is credited as a key factor in the development of formal retail in Kenya.



M-PESA user screen



M-PESA agents can be found in the smallest village

### Agricultural finance/Insurance

While M-PESA has greatly improved the ability to conduct money transactions, the limited availability of financial products and services themselves is still a major bottleneck for small farmers. Although farmers have cash during harvesting time, they often do not have enough cash left to buy agricultural inputs, such as fertilizers, when next planting season comes around. Government institutions such as the Agricultural Finance Corporation offer some services, but most small farmers still do not have access to financial services. To improve the situation, various development funds have established microfinance services for small farmers, the expansion of which is greatly helped by M-PESA and its convenience in disbursing or collecting loans. However, interest rates for microfinance are high, 22% on average, which is much higher



than the money market rate of 16% that commercial banks can offer to large businesses.<sup>64</sup>

The largest micro finance entity in Kenya is Equity Bank, which has 250,000 customers. It has grown to account for approximately 50% of newly opened bank accounts in Kenya, and focuses on mobile banking services.<sup>65</sup> For agriculture-related financing, Equity Bank cooperates with Juhudi Kilimo, a private-sector, agricultural microfinance institution. Juhudi Kilimo is supported by partners including the Rockefeller Foundation, Grameen Foundation and KIVA (microfinance NPO based in the USA), and provides loans to small farmers and agricultural businesses for equipment and animals together with training and technical support. It also offers index-based weather insurance for grain farmers in cooperation with UAP Insurance, Syngenta Fund and SafariCom. When purchasing seeds and fertilizers, farmers can subscribe to the insurance via cellular phone; this will allow them to receive a refund on the purchased price when the rainfall exceeds or drops below a predetermined index, due to drought or excessive rainfall.

One Acre Fund (OAF), as profiled in the Agricultural Inputs section, is a social enterprise founded in 2007 that has designed a microfinance-based business model for selling inputs to small farmers. It now provides services to over 200,000 small farmers, including loans for agricultural inputs, distribution of seeds and fertilizers, training of agricultural techniques and improvement of access to markets. When OAF started the business in 2006, there were very few small farmers with cellular phones. However, the situation has changed dramatically over the past 5-6 years. Now, even farmers who do not have their own cellular phones, will still have access to cellular phones in some form. With a network of M-PESA agents are now firmly in place throughout the country, in 2012, OAF decided to integrate the M-PESA payment system into its services.<sup>66</sup>

### Examples of mobile IT in other agricultural sectors

Mobile IT has great power to share market information between farmers and buyers, as well as improve farm management. For example, the Connected Farmer Alliance (CFA) was launched in 2012 in partnership with the U.S. Agency for International Development, Safari Com and Techno Serve. It uses mobile phone technology to improve productivity and revenues for 500,000 smallholder farmers in Kenya, Tanzania and Mozambique as well as increase revenues for agribusinesses along the agricultural value. One of its activities in Kenya is to support information management and communication between 5,000 smallholder mango and passion fruit producers with soft drink manufacturers sourcing fruit for beverages.

Mobile applications are being actively developed for small farmers to address numerous issues in agricultural production in Kenya. For example:

- MgbuChoice: Application that provides information provides information and local availability of seeds for purchase
- WeFarm: Q&A platform which uses crowd sourcing through SMS messages to answer farmer questions

<sup>64</sup> Business Daily, Feb. 10 2015, *Microfinance banks charge high interest despite taking deposits*  
<http://www.businessdailyafrica.com/Microfinance-banks-charge-high-interest-despite-taking-deposits/-/539552/2619850/-/4oxgmy/-/index.html>

<sup>65</sup> The fantasy and reality of microfinance, Article dated April 8, 2014, Tokyo Keizai  
<http://toyokeizai.net/articles/-/13572?page=3>

Agriculture For Impact, 2015, *Agricultural Finance*  
<http://ag4impact.org/sid/socio-economic-intensification/creating-enabling-environments-2/agricultural-finance/>

<sup>66</sup> Once Acre Fund, 2014, *Using Mobile Money to Extend Financial Services to Smallholder Farmers*  
<https://www.oneacrefund.org/blogs/tag/m-pesa/197>



- FarmDrive: Platform that enables recording of income and expenses and financial management through SMS
- iCow: a wide range of services to small scale Kenyan farmers, such as tracking individual dairy cow health, diet and milking data, providing vaccination calendars for chickens and cows and alerting farmers on the locations of the nearest veterinarians.

Furthermore, “telephone farming” the idea of using mobile technology to allow farmers to live in urban areas and efficiently manage farms from remote locations, is very attractive to younger farmers, many of whom prefer to live mainly in urban areas. For example, “EZ Farm,” which was developed by IBM in Kenya, is a system that enables farmers to monitor and manage the state of water storage tanks and soil water via cellular phones using remote sensors and cameras.

#### **Examples of mobile IT in the distribution sector**

In the distribution sector, mobile IT is increasingly utilized for order placement, inventory management or management of customer database. For example, the Japanese firm Africa Scan using existing iPad applications to collect POS data and manage customer information using iPads at kiosks as described earlier.. Twiga Foods, also profiled earlier, has developed a proprietary mobile application for the BtoB e-commerce field that improves distribution of fresh fruits and vegetables to traditional retail kiosks.

### 3.3.4 Distribution, cold chain, packaging and consumer product development<sup>67</sup>

#### Distribution

Direct investment from overseas into modern retailing, such as supermarkets, is ongoing, as we have detailed earlier, with retail giants like Carrefour and Walmart. It would take more research to determine whether direct investment by Japan into retail shopping has potential, though Japanese-related collaboration with major retailers is already showing progress, such as CFAO, a French subsidiary of Toyota Tsusho, which established a joint venture for collaboration with Carrefour in western and central Africa.<sup>68</sup>

Instead, the efforts to introduce POS systems at kiosks by AfricaScan and the improvement of the fruit and vegetables distribution system for kiosks by Twiga Foods attracted our attention as they illustrate specific operational areas where Japanese technology and systems could also play a role.

In countries dominated by highly developed, demanding modern retail sectors, high supermarket quality and traceability requirements often require intensified farm production and improved post-harvest handling. This not only means that new technologies and systems are implemented in the food value chain targeting efficiency, but there may be opportunities for increased employment on farms and job creation throughout the supply chain. This is an important aspect to look at because rural employment generation, on and off-farm, is considered an important step in poverty alleviation and income stabilization. In Kenya the positive impacts of modern retail on supply chains are less clear. However, there is beginning to be some evidence of how retail can impact food supply chains. For example, according to a survey of a small number of farmers who regularly supply supermarket in Kenya<sup>69</sup>, farmers who had made improvements in order to secure stable customers and respond to growing supermarket demand had a lower loss of fresh fruit and vegetables.

We think there may be opportunities for Japan in terms of technology and improved systems of distribution and supply chain management. In the following sections, we discuss opportunities in cold chains, packaging and consumer product development.

#### Cold chain

Although cold chain development varies by sector, it is relatively advanced in the cut flower industry. Flower dealers have refrigerated facilities for air transport at Jomo Kenyatta International Airport. However, the current flower supply chain struggles with maintaining consistent temperature throughout the supply chain. Although there is no need for cooling at farm-level due to low temperatures in the greenhouses, the temperature rises during transportation from the farm to the airport, and the flowers need to be chilled again after they reach the airport. This problem is exacerbated by the fact that different kinds of flowers each require different temperatures. Some calculation shows that inadequate management of the flower cold chain resulted in loss of product value of approximately 20%, 100 million dollars.<sup>70</sup>

<sup>67</sup> University of Nottingham (n.d.) 'Cold Chain Opportunity Assessments'

<http://naturalleader.com/wp-content/themes/natlead/images/CRC3656-ColdChainOpp.pdf>

<sup>68</sup> Toyota Tsusho enters joint venture with Carrefour in supermarket business in Africa, Article dated May 30, 2011, Nikkei

[http://www.nikkei.com/article/DGXNASFD3000I\\_Q3A530C1000000/](http://www.nikkei.com/article/DGXNASFD3000I_Q3A530C1000000/)

<sup>69</sup> Claris Karimi Riungu, 2011, *Effects of Supermarkets on Fresh Fruit and Vegetables Small-scale Farmers in Central Kenya*

<http://ageconsearch.umn.edu/bitstream/134484/2/Claris%20Thesis.pdf>

<sup>70</sup> Cold Chain Conditions – Case of roses in Kenya, 2018, Ministry of Agriculture, Forestry and Fisheries

A cold chain has been partly developed for fruit and vegetables exported by air. For example, some companies pack and cool avocados near the farm and maintain the cold chain through export. Longer-term storage has been built and export destinations have been expanded from Middle East countries to the European market, where the price of avocado is three times higher.

In general, however, poor post-harvest handling, contamination with insects and insufficient refrigeration facilities result in high fruit and vegetable loss. To deal with the lack of refrigeration, perishable food tends to be transported during the night and stored away from direct sunlight. Without refrigerated storage facilities, traders sell fruit and vegetables immediately, or store unsold goods overnight in the open air markets or on trucks and sell the produce at a lower price the next day. Multiple traders and wholesalers are involved along the fruit and vegetable supply chain, especially for supply to urban areas, and this affects the quality of goods.

In the dairy industry, farmers have to discard excess raw milk, especially in the rainy season, because of the distance to roads and markets, and limited refrigerated and processing facilities. Especially in remote areas, milk loss is also due to unstable electricity supply. Although dairies are making effort to improve milk collection systems, there is still work to be done to reduce milk loss.

As seen throughout this report, the meat sector is dominated by informal distribution systems. However, meat processors who can supply products to modern supermarkets, such as Alpha Fine Foods and Farmer's Choice as described previously, are seeing their business grow and this motivates further improvement in their cold chain capabilities.

In the fishery sector, some estimates show that loss is 35% due to lack of refrigeration and unsanitary processing. While the Government of Kenya has provided funding for modern catch landing facilities with refrigeration and freezing equipment with financial support from the EU, these facilities have not been managed properly and in some cases were never completed. This highlights the need for effective cooling and freezing infrastructure as well as further consideration of solar powered refrigeration equipment for use especially in rural areas.

Currently the main suppliers of refrigeration equipment are Germany, China and Korea. Chinese products are the cheapest, but are criticized for not being long-lasting. As mentioned previously, it is important to provide products that are more durable than Chinese products but also that provide after-sales service (maintenance, parts supply and other technical support). For example, although Sanyo's refrigerators were well known in Kenya, the company did not have an after-sales service system. As a result, Thermo King of Germany and LG of Korea have become the main suppliers of high quality refrigeration.

Also, as part of an initiative by the United States' President Obama, the Global Cold Chain Alliance planned to conduct a survey on cold chain infrastructure and human resource development in Kenya in October 2015.

## **Packaging**

Companies that supply products to modern retailers, such as supermarkets, are particularly concerned

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[http://www.maff.go.jp/j/study/kaki\\_sangyo/02/pdf/data3-2.pdf](http://www.maff.go.jp/j/study/kaki_sangyo/02/pdf/data3-2.pdf)

The CoolBot system, introduced in India and other countries, provides relatively small-scale refrigeration equipment at low cost.

<http://storeitcold.com/>

about the quality and design of packaging. This is due to both the requirements of retail stores, as well as the response of manufacturers to a tight competitive market. Retailers refuse to accept products if contents leak or quality of packaging is bad. According to a distributor we interviewed, every modern retailer expects clean packages without leaks or tainting. As a result, distributors and wholesalers have become more careful about product handling. If they find damaged bottles and packages, distributors return them to original manufacturers and claim a refund. To respond these retailer requirements, manufacturers have started to invest in high-quality packing machines, such as vacuum packing machines in recent years.

Happy Cow dairy explained that in the early days of their business they simply supplied whole cheese to retailers, who cut them into portions and wrapped in paper or plastic wrap. Then Happy Cow invested in a table top vacuum packing machine, which staff used to hand-cut cheese portions and vacuum-pack them to create individual portion sizes with the Happy Cow branded label. As their cheese business develops Happy Cow plans to get an automatic thermoforming machine that will allow cutting cheese to more uniform sizes and increase packing speed.



Thermoform packaging machines (such VC999's I-series above) were mentioned by both dairy and meat processors as important for faster and more consistent retail packaging. (Source: Wikipedia)

The packaging available within Kenya is expensive, and there is a very limited range of packaging types and sizes; many manufacturers are disgruntled about bad quality. We heard complaints about damage to plastic cooking oil bottles during transport to wholesalers, as well as leaks of liquid from plastic bottles/pouches of milk at retail stores. Tetrapack dominates the packaging sector, but dairy manufacturers for example, complained that Tetrapack's plastic bottles were too expensive, pouches were too fragile and inappropriate for export, but cartons were not available in the right range of sizes.

Therefore, we believe that there is much room for development in packaging materials and packing equipment in Kenya. However, as with refrigeration equipment, it is important that machinery or equipment is durable as these would be long-term investments for Kenyan businesses. After-sales support from a local agent must be able to address any complaints or problems related to the packaging materials or equipment

### **Development of consumer products for the Kenyan market**

In Kenya, people have great interest in new products, especially urban middle class consumers. One of the most effective ways for foreign companies to market to these Kenyan consumers is to develop products designed for Kenyan consumer tastes, in combination with local production to keep costs down. Two cases of Japanese manufacturers who are using a version of this approach are profiled below. In the fast food sector, we have also seen the case of the Toridoll teriyaki chicken shop.

## Japanese Companies Manufacturing Products for Kenyan Consumers



### Suntory-Ribena and Lucozade

Lucozade (energy and sports drinks) and Ribena (juices) are produced in the Lucozade Ribena Suntory (LRS) factory and are found in most supermarkets. They come in a variety of sizes and flavors. Lucozade Ribena Suntory (LRS) was formed in 2014 when Suntory acquired the two brands from GlaxoKlineSmith (GKS). In addition to Kenya, Lucozade and Ribena is also produced in their brands' main market, the UK, as well as Nigeria.



### Nissin Instant Noodles

Nissin's instant ramen is competing against the dominant brand, Indonesia's Indo-Mie. Nissin has created a product from sorghum flour (Indo-Mie uses wheat) in two flavors aimed at the Kenyan consumer – chicken and NyamaChoma (grilled meat). In addition, it has developed a small "kid's pack size" that sells at a reduced price. While it is available in many supermarkets and even some kiosks, retailers reported it is not moving fast yet as advertising is still insufficient and consumers don't know what it is yet (a critical issue for kiosks, where consumers must request the product from behind the counter.) It is reported that Nissin will be building a local factory, with cooperation for the Jomo Kenyatta University of Agriculture and Technology.

## 4 SUMMARY

*This chapter summarizes the contents of Chapters 2 and 3 to present recommendations about opportunities for Japan in Kenya's FVC.*

### Overview of Kenya's Food Value Chain

Kenya has a population of over 46 million people (the population of Nairobi is 4 million) and with a growth rate of 2.6%, the population is expected to be 96 million in 2050. Kenya's Mombasa Port is the largest port in East Africa, and is the gateway to inland states of East Africa, including Uganda, Rwanda and Burundi. Kenya is also the center of East African Community (EAC member countries are Kenya, Tanzania, Uganda, Rwanda and Burundi) whose regional population is 150 million people. The GDP of Kenya was 60.9 billion dollars in 2014, GDP per capita was 1,338 dollars and the real growth rate is 4~5%.

Kenya is the largest recipient of Japanese ODA in Sub-Saharan Africa and TICAD VI will be held in Kenya in 2016. JICA's efforts in Kenya focus on improvement of the Northern Corridor distribution network to inland East African nations, Mombasa Port development and road infrastructure, and international trade facilitation such as one-stop border support. JICA has also continuously supported the Mwea irrigated rice cultivation area and efforts within the flower industry to develop a strategy to shift from the idea of "Grow and Sell" to "Grow to Sell". These efforts are the foundations of Smallholder Horticultural Empowerment Project (SHEP) that has subsequently been disseminated across Africa.

There are 680 Japanese residents in Kenya, 170 of whom are involved in business. The Japanese Chamber of Commerce and Industry in Kenya has 36 member companies and entities as of the end of May 2015, and the number of employees of Japanese businesses who were sent to Kenya from Japan is increasing. There are fifteen FVC-related companies in the Japanese Chamber of Commerce, from Toyota Tsusho who is constructing a local fertilizer blending plant and sells of Japanese agricultural equipment, to Nissin Food Products who imports and sells instant noodles and Toridoll who manages of a fast-food chain. The main agricultural export products from Kenya to Japan are black tea, coffee, roses (cut flowers), Nile perch, and sesame. Main import items from Japan are frozen mackerel and seeds for planting.

Kenya's wholesale/retail market is valued at 4.1 billion dollars with a growth rate between 7 to 10% per year. The modern retail market is the second largest in Sub-Saharan Africa after South Africa; supermarket chains are increasing their number of stores every year, with the total at already over 300. International chains like Walmart and Carrefour are also steadily pushing into the market. At the same time, the technological innovation is increasingly being used in traditional retail markets, such as kiosks, open-air markets and street vendors, and fast food is expanding rapidly.

Kenya's main agricultural exports are black tea, flowers, fruit and vegetables (kidney beans, tropical fruit, etc.) and coffee. Maize is the staple food crop; import volumes are decreasing due to increased domestic production, but Tanzanian maize, which is higher quality than domestic Kenyan maize is imported to meet the demand for flour milling. Kenya depends on imports for 70 to 80% of its supply of wheat and rice, the demand of which is increasing in urban areas. Although the domestic sugarcane industry has been developing, the country imports 25% of its total sugar supply to respond to strong demand for sugar in the country. Vegetable oil is also in heavy demand. Cattle, goat and sheep herding is a traditional industry and



production and consumption of dairy products and beef is large. Chicken farming and pig farming are also increasing. With the development of the modern retail industry, the dairy industry and the meat processing industry have developed further.

Foreign companies are active in FVC: Unilever and Nestle, which have invested in agriculture and consumer goods in Africa for a long time, have bases in Kenya to supervise a broad area in the eastern part of Africa, and major food companies, such as Del Monte, Coca Cola, Guinness and Indomie, and leading agri-business firms, such as Arysta Life Science, Syngenta, Bayer and Monsanto, all have offices in Kenya. Tetrapack dominated the packaging industry and has facilities in Kenya. New investment has also been active in the FVC in recent years, based on an expectation of stable economic growth and market expansion. For example, Danone acquired a 40% share of a major dairy company in Kenya in 2014. Preferential treatment for foreign investment in the FVC includes tax advantages and exemption of VAT and customs, particularly for the export processing zones (EPZ) and agricultural machinery facilities. There are plans to set up new special economic zones in the future.

### **Opportunities for Japan**

One of the areas of the Kenyan FVC that could provide opportunities for Japan is import of agricultural inputs, agricultural/food processing machinery, agricultural equipment and refrigeration equipment from Japan, from third countries or by local production. Demand is expected to increase in agricultural inputs, including fertilizers, agricultural chemicals, seeds, feed, and medical products for livestock. The use of fertilizers, in particular, is increasing substantially. There is widespread demand for many fertilizer products, from low-price fertilizers to liquid foliar fertilizers for flowers and vegetables. There is large demand for agricultural machinery, food processing machinery and refrigerating facilities: excellent after-sale service and parts supply are critical, as well as high-quality and reliable products. In all cases, effective methods for marketing and education of farmers and finance, go hand-in-hand with market entry. Close relationships with dealers and cooperation with organizations close to farmers, such as NGOs, are also required.

As several multinationals mentioned above have done, it is also possible to eye the possibility of expanding sales networks to East African countries using Kenya as base.

Other opportunities lie with the development of final products (processed foods, beverages and seasonings), for the Kenyan consumer market, imported from Japan or third countries, or through local production. With the expansion of the retail market, demand for various branded products is expected to increase. In addition, service industries related to FVC, such as distribution and logistics, fast food and food processing industry show growth, and acquisition and establishment of companies can be considered. There is still room for improvement in cold chain technology, which is a strength of Japan, with investment opportunities particularly strong in flowers, fruit and vegetables for export. In Kenya, sometimes nicknamed the Silicon Savanna, mobile IT innovations have extended into the FVC. There is a potential for Japanese IT know-how to contribute models and ideas. In the area of agricultural finance and insurance areas, the development of mobile technology has enabled services to a broader range of people at lower cost, thereby creating interesting new business opportunities in agricultural tech and finance.

The table on the next page summarizes opportunities for Japan in Kenya's FVC by item and cross-sectoral area field as discussed in Chapter 3.



Table 23 Opportunities for Japanese Companies in the Kenyan FVC

Area	Production	Manufacturing/Processing	Distribution	Consumption
Situation in Kenya	<ul style="list-style-type: none"> <li>❑ Dependent on import for seed, feed and agrichemical</li> <li>❑ Frequent drought/lack of water</li> <li>❑ Shipments not adjusted to market demand</li> <li>❑ Large agricultural machinery rental services are spreading</li> <li>❑ Growing demand for lower-priced agricultural machineries</li> </ul>	<ul style="list-style-type: none"> <li>❑ Growing demand for packaging machines such as vacuum forming</li> <li>❑ Limited variety of packaging materials and design</li> <li>❑ Lack of processing equipment for meat/fish/fresh produce</li> </ul>	<ul style="list-style-type: none"> <li>❑ Distribution is complicated and inefficient</li> <li>❑ Cold chain facilities are relatively developed for export products but are insufficient overall</li> <li>❑ Reach-in refrigerator is partly deployed in local area</li> </ul>	<ul style="list-style-type: none"> <li>❑ Middle-class is growing</li> <li>❑ Surging demand for convenient products (frozen foods etc.)</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>➢ Import/production of fertilizer, agrichemical and high-quality seed</li> <li>➢ Water-saving technologies and water-conservation related products (pumps etc.)</li> <li>➢ Low/constant temperature storage facilities</li> <li>➢ Post-harvest related technologies/equipment</li> <li>➢ Agricultural machineries for grain/horticultural products</li> </ul>	<ul style="list-style-type: none"> <li>➢ Various machinery including packaging machineries</li> </ul>	<ul style="list-style-type: none"> <li>➢ Logistics</li> <li>➢ Cold chain (especially long distance)</li> </ul>	<ul style="list-style-type: none"> <li>➢ Frozen/preserved food products</li> </ul>

Area	Finance/Insurance	Branding/Marketing	IT/Information	Specifications/Standards
Situation in Kenya	<ul style="list-style-type: none"> <li>❑ Expanding demand for microfinance</li> <li>❑ Unstable weather condition (especially rainfall)</li> <li>❑ Small farmers tend to struggle for income</li> </ul>	<ul style="list-style-type: none"> <li>❑ Brands (including packaging) not established for many products</li> <li>❑ Insufficient level of design</li> </ul>	<ul style="list-style-type: none"> <li>❑ M-PESA is widely spread</li> <li>❑ Innovations such as customer management using iPad</li> </ul>	<ul style="list-style-type: none"> <li>❑ Quality standards etc. are undeveloped</li> </ul>

Opportunities	<ul style="list-style-type: none"> <li>➤ Establishing investment funds/challenge funds</li> <li>➤ Agricultural property and casualty insurance products</li> <li>➤ Selling agricultural input products with flexible payment terms (tie-up with social enterprises, international organizations)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Branding consulting including packaging and design</li> <li>➤ Support for branding and marketing</li> </ul>	<ul style="list-style-type: none"> <li>➤ Various services using IT and mobile technologies (inventory finance, payment system etc.)</li> <li>➤ Introducing high-tech agricultural techniques (green house etc.)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Partnerships for developing standards</li> <li>➤ Partnerships for operating the standards</li> </ul>
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Source) Interviews with government ministries, farmers, manufactures and literatures

## **Business partners**

Local partners and their know-how is extremely important for entry into new markets. Information on potential partners can be obtained from organizations like the Kenya Investment Authority and JETRO.. Information exchange with the Kenya Private Sector Alliance (KEPSA - approximately 200 member companies and subordinate bodies, such as committees for agriculture, livestock and fisheries) and the Chamber of Commerce of Kenya, which also has an agriculture committee, may also be useful. In businesses throughout the value chain, especially those that directly engage with smallholder farmers, partnership with international organizations, NGOs and social enterprises (profit-based business models for addressing social or environmental issues) are an option.

## **Support for market entry**

There is various support available to reduce risk in entering the Kenyan food value chain.

Japanese government programs include JICA's funding for basic research for small and medium-sized businesses and cooperation preparation survey (promoting bottom-of-the-pyramid (BOP) business collaboration) by JICA and JETRO's BOP/volume zone business support service, its high export potential support service (for small and medium-sized businesses) and its African business support service.

In addition, programs by international organizations can be utilized. In Africa, various competitive funds that support innovative business plans called Challenge Funds have been established. A typical example is the Africa Enterprise Challenge Fund (AECF), to which Great Britain, Sweden, Denmark, Australia and the International Fund for Agricultural Development have contributed. M-PESA, the mobile money platform, is one of the successes from an early stage of the AECF Challenge Fund. Non-sovereign loans (NSL) from the Enhanced Private Sector Assistance for Africa (EPSA), which was established in 2005 at the initiative of the Government of Japan, can also be utilized. In this system, multiple donors provide financial support through various schemes.

These types of funds can all be considered part of the “impact investing” trend, which aims to use private sector investment models to support businesses in ways that positively impact social or environmental issues. Impact investment in Africa accounts for 26% of global impact investment<sup>71</sup>. Additionally, there are many cases of impact investment funds started by private companies. These companies include food companies, such as DANONE and Starbucks, and Japanese firms, such as Mitsubishi Corporation and Toyota Tsusho.

## **Suggestion for TICAD VI and improvement of the North Corridor distribution network**

In September 2015, the 2030 Agenda for Sustainable Development, which would serve as post-MDG strategy, was adopted at the UN summit. Its Goal 2 promotes efforts to “End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.” The Goal aims to eliminate hunger by 2030. The international community is expected to commit to the more challenging target of reducing hunger population from the current approximately 800 million people to zero, amid continuing population increase. As improvement in the rate of malnourished people lags, we need to take measures focusing on Sub-Saharan Africa and South Asia, where rapid population expansion continues.

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<sup>71</sup> According to Impact Base (<http://www.impactbase.org/>)

There are 9.9 million food-insecure people in Kenya, which accounts for approximately 20% of the total population. The calorie intake per capita has increased and the nutrition condition has improved but we need to consider a new framework to completely eliminate starvation while supporting the increasing population. In addition to caloric deficit, improvement in nutrition for infants, children and young women is a big issue. Various measures need to be taken in broad areas: for example, securing supply of staple foods, including grains (maize, wheat and rice), potatoes and edible bananas; increase in supply of grains, fruit and vegetables, dairy products, meat, fish and seafood; development of processed foods that are affordable for poor people and easy to cook; and education about nutrition. New efforts by Japanese companies to increase grain supply and improve nutrition, such as the construction of a fertilizer blending plant for maize by Toyota Tsusho and the BOP F/S survey with JICA by Kikkoman (development of new products aiming at improving nutrition and promoting children's health), give many ideas for our future direction. In addition, there is the rise in new FVC-related innovation such as mobile IT in Kenya. How can it be connected to areas such as elimination of hunger and improvement of nutrition? We consider this theme is worthy of further in-depth examination.

### 2030 Agenda for Sustainable Development

#### **Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture**

2.1 By 2030 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round

2.2 By 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons

2.3 By 2030 double the agricultural productivity and the incomes of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment

2.4 By 2030 ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality

2.5 By 2020 maintain genetic diversity of seeds, cultivated plants, farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge as internationally agreed

2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks to enhance agricultural productive capacity in developing countries, in particular in least developed countries

2.b. Correct and prevent trade restrictions and distortions in world agricultural markets including by the parallel elimination

of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round

2.c. Adopt measures to ensure the proper functioning of food commodity markets and their derivatives, and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

Source) Website of Ministry of Foreign Affairs of Japan <http://www.mofa.go.jp/mofaj/files/000101402.pdf>