



**ASSIGNMENT 3:**

**VALUE CHAIN ANALYSIS**  
*Fresh Tomatoes in Uganda and Kenya*

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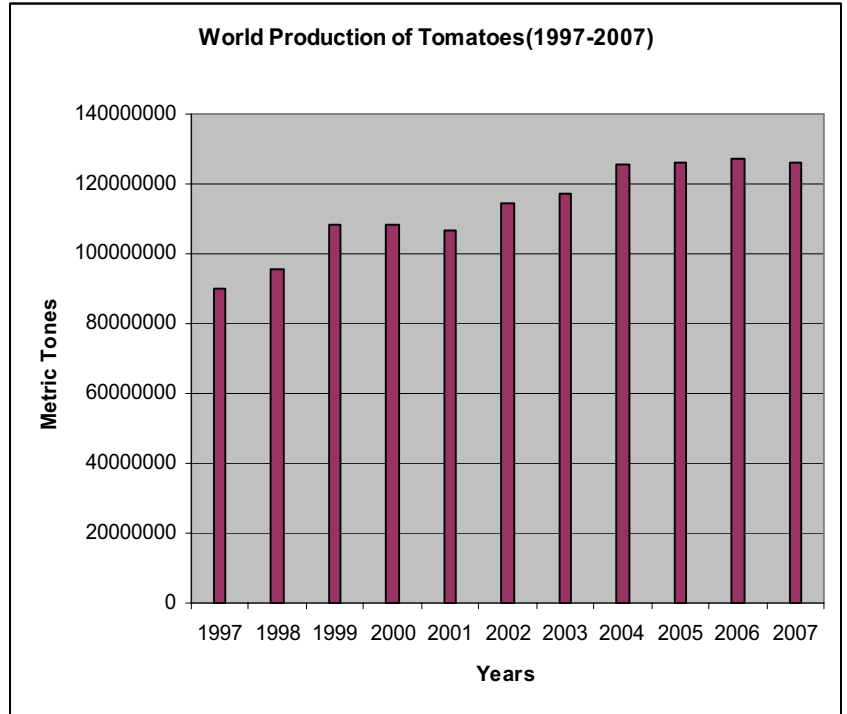
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# 1.0 INTRODUCTION

## 1.1 Global Tomato Production Trends

Figure 1: Global Tomato Production Trends

The tomato is now grown worldwide for its edible fruits and for optimum growth in differing growing conditions. According to FAOSTAT, 126 Million tons of tomatoes were produced in the world in 2007. (See figure 1 on the right) China, the largest producer accounted for about one fourth of the global output, followed by United States and Turkey.

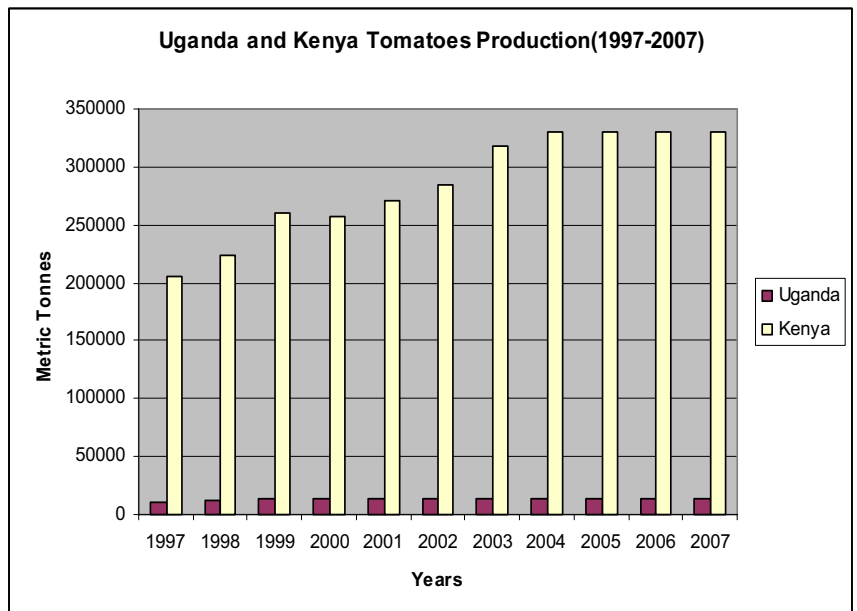


## 1.2 Production Trends in Uganda and Kenya

Tomato growing is one of the most promising areas for horticultural expansion and development in Uganda and Kenya.

Source: FAO Production Year Book (2008)

Tomatoes are among the vegetable crops grown for both home use and domestic markets and can be grown all year round. The tomato is an important cash crop for small-scale growers with a potential for increasing incomes in rural areas, improving the living standards, and creating employment opportunities for women and youth. The yields of tomatoes range from 600 kg/ha to 7,125 kg/ha, with an average of 3625 kg/ha). The tomato production trends are given in figure 2 on the right. Tomatoes are grown as a sole



Source: FAO Production Year Book (2008)

crop, mainly under rain fed conditions as unstaked or pruned plants. The most common varieties grown include “Money maker”, “Marglobe”, “San-marzano”, and “Amateur” Rodade.

### **1.3 Market trends**

Tomatoes are nutritious vegetables that provide good quantities of vitamins A and C. They are used in many cooking recipes or as a fresh item in combination with salads. Various varieties of tomatoes do exist in Kenya and Uganda.

Tomatoes are among the most sought after vegetables in our local markets and these days, with the advent of modern technology, some people have already gone a step further and are making tomato sauce, which is value addition, and an opening to even bigger markets.

So the demand for tomatoes is high and one can make good money out of tomato growing. Little wonder, therefore, that one of the tomato breeds grown in Uganda is dubbed “money maker”.

It is a crop that will start paying off quite early. With harvesting possible within 13 weeks after planting, tomato growing is an occupation a family can depend on with proper planning. There aren't that many overhead costs to worry about, apart from the cost of seeds and some agrochemicals and perhaps transportation of the crop to the market.

In Kenya tomatoes are marketed in the local markets and in the bigger cities of Nairobi, Mombassa, Nakuru, Kisumu, Eldoret and other major towns. They are sourced from Mwea area, Meru central district (Mitunguu area and Isiolo region), Nyeri District, Nakuru district (Bahati and Kabazi region) and Taita Taveta District.

The major tomato markets in Nairobi include; Wakulima wholesale market, Gikomba (Main market) and Kawangware market

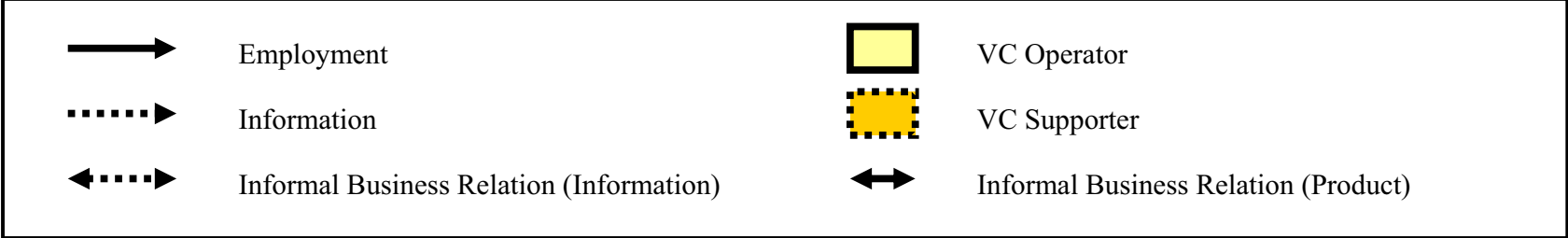
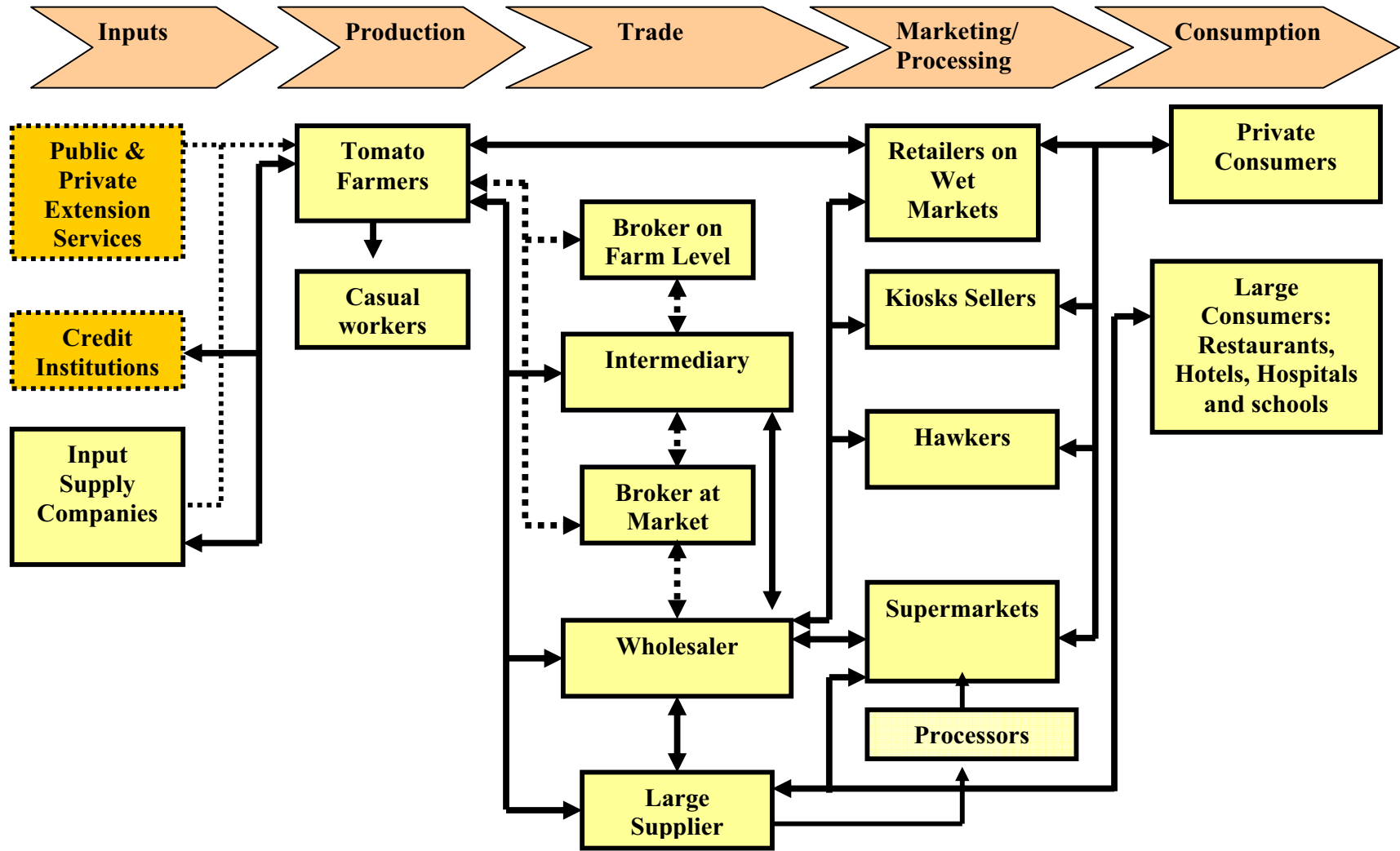
In Uganda, tomatoes are marketed in the main markets of Kampala (Nakasero, Owino, Nakawa, Kawempe and Kalerwe markets) and in the local markets. They are mainly brought from the lake basin, Kabale, Kasese, Mbale, Kapchorwa, Mubende, Masaka and Wakiso districts.

In both countries, tomatoes are sold to hotels and restaurants, local consumers, schools and institutions and the processors who make tomato sauce out of them.

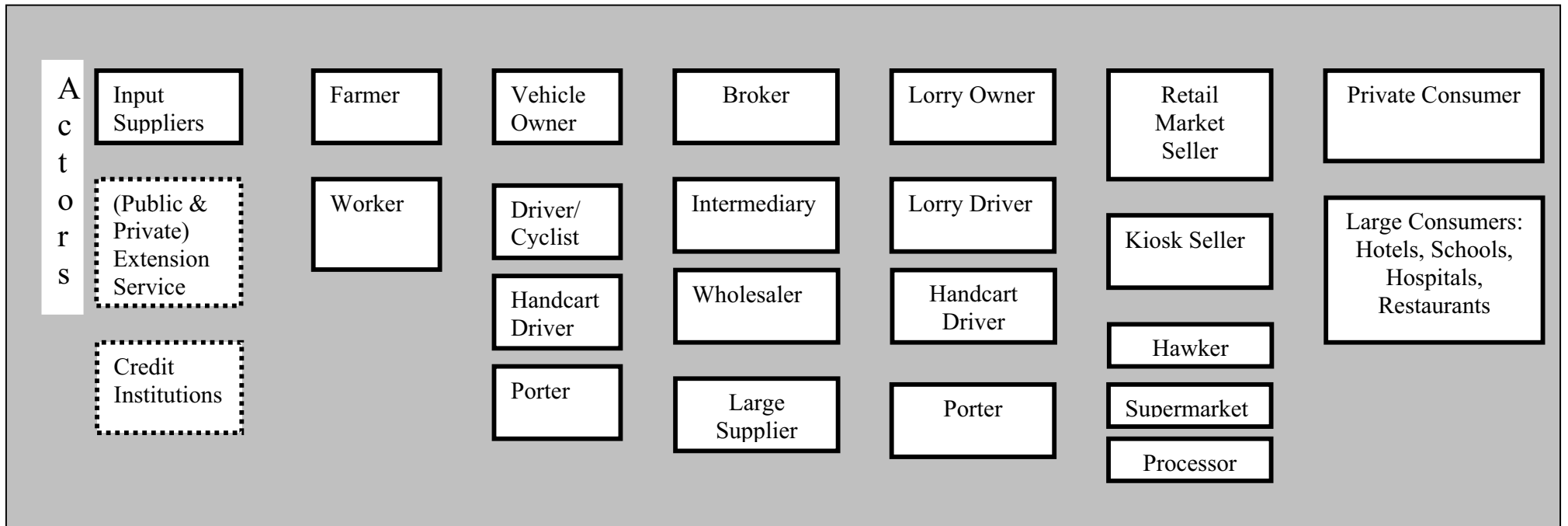
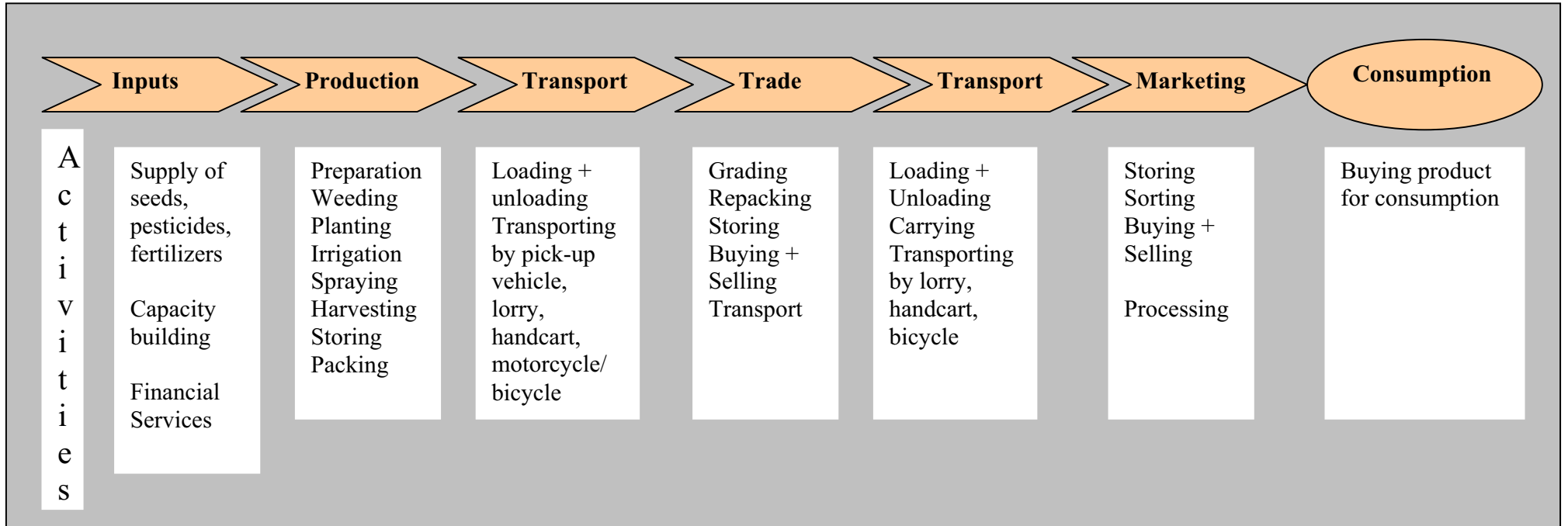
## **2.0 TOMATO VALUE CHAINS FOR BOTH UGANDA AND KENYA**

In both countries, the actors and supply chain are similar. It is only the level of sophistication that in the chain that slightly differs as shall be seen later on in the discussion. The value chain including the actors is shown in Figures 3 up to 6 below.

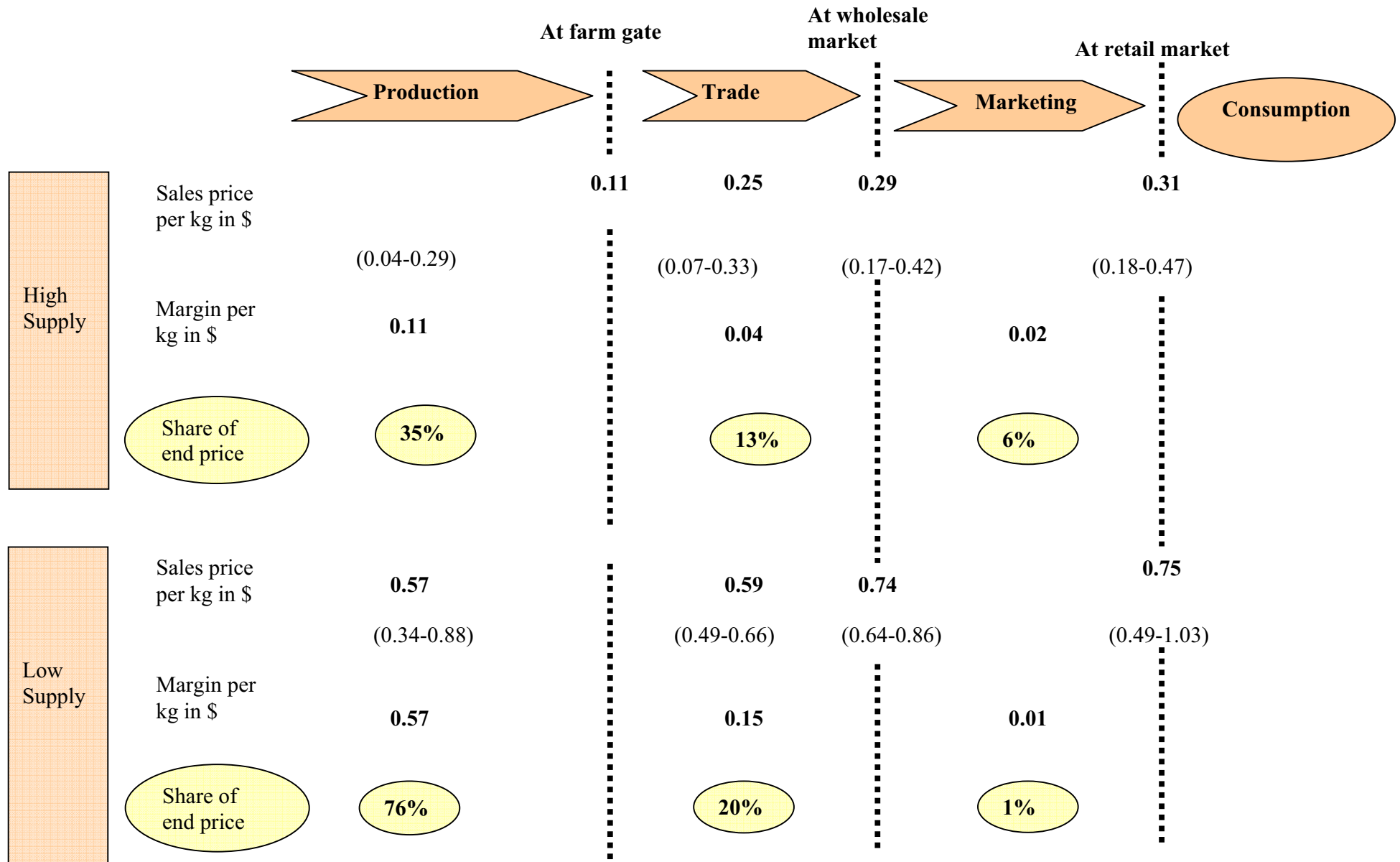
**Figure 3: Kenya and Uganda Tomatoes Value Chain Mapping: Actors and their Relations**



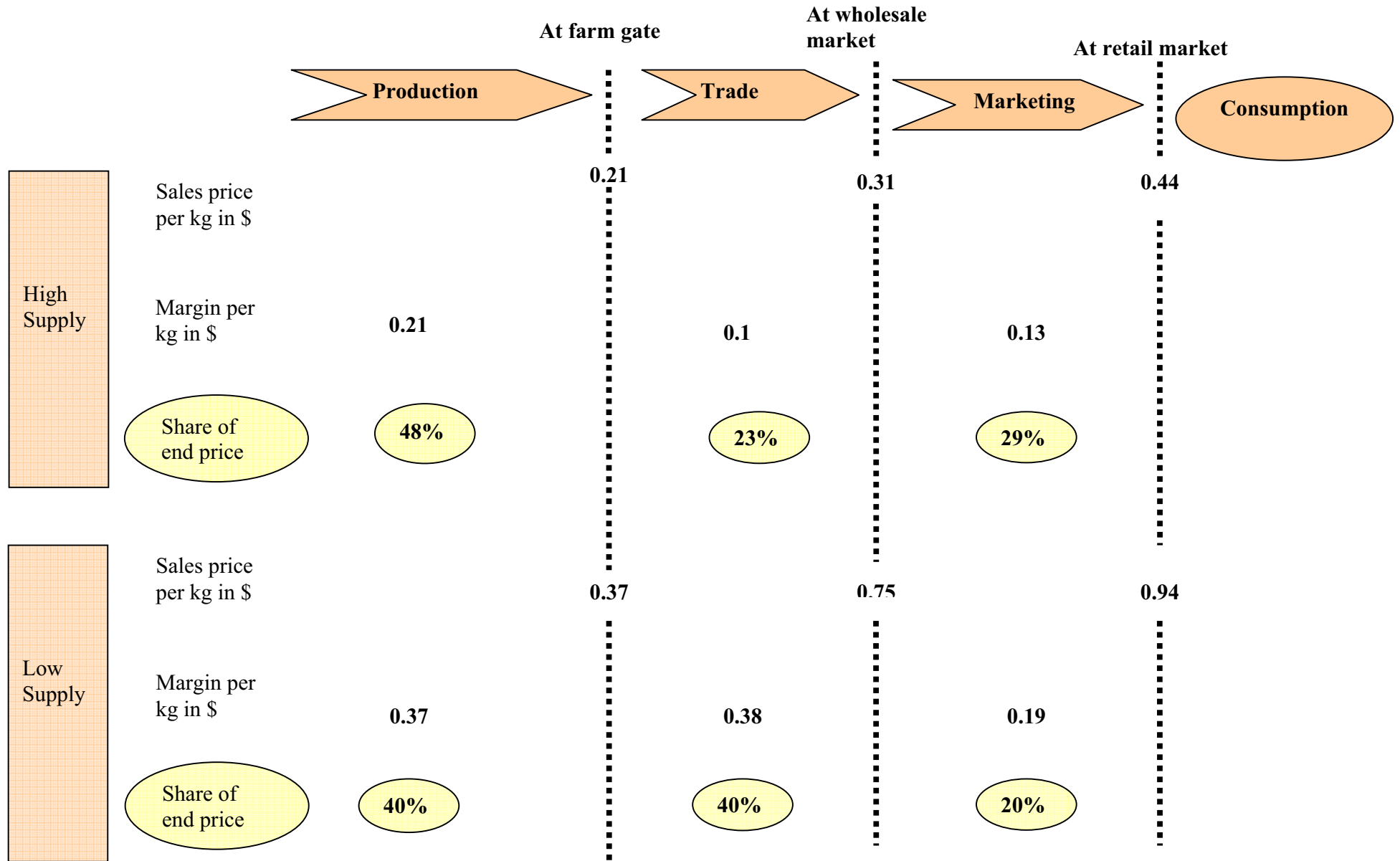
**Figure 4: Actors and their functions**



**Figure 5: Price Mapping: Tomato Price along the Value Chain in Kenya**



**Figure 6: Price Mapping: Tomato Price along the Value Chain in Uganda**



Source: Own Field Research

**Table 1: Constraints and Opportunities in both value chains (Kenya and Uganda)**

<b>Actor</b>	<b>Constraint</b>	<b>Opportunity</b>
Farmers	<ul style="list-style-type: none"> <li>• Raising right varieties by farmers (use of substandard seeds/varieties)</li> <li>• Lack of training sites for farmers on propagation of right planting materials</li> <li>• Diseases, pests and high costs to combat them</li> <li>• Limited funds to improve farm productivity</li> <li>• Dependency on rainfall which leads to seasonality in production</li> <li>• Lack of information on market prices</li> <li>• High perishability</li> <li>• Many farmers do not have access to effective transport to distant markets at the required time</li> </ul>	<ul style="list-style-type: none"> <li>• Support through research and provision of extension services</li> <li>• Training entomologists and virologists in areas of detection, identification and characterization of whitefly transmitted viruses, white flies and their natural enemies, as well as training in epidemiological research methodologies</li> <li>• Fostering organization of farmers to access financial services and distant markets</li> <li>• Access to irrigation schemes</li> <li>• Distribution of market information to farmers</li> <li>• Strengthening of the tracing and tracking structure to enhance EU accreditation and certification</li> <li>• Investing in cold chain facilities</li> </ul>
Traders, Retailers	<ul style="list-style-type: none"> <li>• Poor infrastructure i.e poor roads, lack of space, storage facilities, bad hygienic situation leading to waste</li> <li>• Payment of irregular fines or bribes</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement of infrastructure</li> </ul>
Processors	<ul style="list-style-type: none"> <li>• These are quite few especially in Uganda</li> </ul>	<ul style="list-style-type: none"> <li>• Investment in processing facilities</li> <li>• Tapping the regional markets: Rwanda, Sudan, Congo, Burundi</li> </ul>

## 2.1 Comparison of the Kenya and Uganda's Tomato Value Chains

There seems to be a high use of chemicals on farms in both countries with few producers implementing ecological/organic production methods. In both countries, the majority of tomato farmers do not store their produce, mainly because the facilities are not available.

The packaging used for tomatoes (wooden boxes of 50 – 60 Kgs) is not standardized by law but has established itself in the market in both countries with a more or less standard weight even though the produce is not generally weighed

The level of cooperation among actors is low, as they do not consider it necessary to build up long term relationships. However, while brokers and other actors elongate the chain in Kenya, tomato farmers in Uganda are less dependent on them. In both countries, brokers do not play such a dominant role. The only exception to this can be found in times of low supply for the retailers especially the big supermarket chains (Kenya) and in times of high supply for the more remote farmers, who have to find buyers for their produce in a short space of time

In both countries, the better graded tomatoes are sold to the important wholesale markets in the capital cities (Kampala and Nairobi), while the poorer grades are sold in the local markets (Hawkers and Kiosks). In addition, most tomato farmers in both countries prefer to sell most of their commodities at farm gate. Selling on farm enables farmers to reduce losses that could be incurred during transit.

In both countries, brokers/wholesalers act as information agents, providing news about market demand, diseases etc. The competition among brokers seems to be higher in Kenya especially at the farm gate. Farmers in Kenya depend more on them in terms of market access

In both countries consumers characterize high quality in terms of medium size, good colour, faultless skin, shape and taste. They also look for storable tomatoes. Only few consider organic production or pesticide residues. For most consumers, quality is more important than price, but during low supply when prices are higher some customers purchase less.

## **2.2 Differences in the chains**

### ***Production***

Quite a number of tomato farmers in Kenya have access to irrigation systems and have large acreages whereas most farmers in Uganda rely on rainfall and have small acreages. The Kenyan farmers are also better organized and the opportunities for technical assistance are quite high as shown in one of the two cases below:

### **Technoserve Hub**

Many producers face the problem of low power levels compared to traders due to their low level of organization. Technoserve, a U.S. funded NGO active in Kenya, has developed an approach which they described as a “hub”. The hub is a bulking space/facility for fresh vegetables. It is owned by a farmer group. They exercise the function of a board but have employed a professional management. The hub buys the product from the farmers for a fair but market oriented price. It then retails the products again in larger bulks. Due to this concentration the hub possesses greater negotiating power and is able to command better prices. Other NGOs/companies such as KACE apply a very similar concept with their regional trading centers. Other possibilities for the hub exist. These would add value to the products such as washing, packing, storing and/or transport. Parts of the higher income could than be channeled back to the farmers.

Source: Thomas Koenig, et al 2008 (Page 86)

### **Seminis – Kenya**

This project is a combined effort with the Kenya Horticulture Development Programme (KHDP), which is funded by the United States Agency for International Development (USAid). The role of the Seminis is to teach growing practices and supply hybrid tomato seed to farmers. KHDP sponsors the greenhouse and drip irrigation for farmers’ operations.

Kenya farmers who have an available 240 square meters of land are funded with US\$ 1,700 to install greenhouses and drip irrigation. The farmers’ contribution to the project is concrete and labour. Then, Seminis provides growers with seeds, fertilizers, chemicals and technical back-up. Seminis provides education on growing practices at field days to farmers.

On 240 square metres, farmers can bring in 10 times more yield than on open-field and open-pollinated(OP) varieties, and the growing window expands to the rainy season, where prices for fresh tomatoes in the market increase three-fold. Already, with only five greenhouses, the project has reached more than 3000 farmers directly at field days. An additional 10,000 farmers have learned about production practices through newspapers, other media outlets and the sales team. The project has also been introduced in Ethiopia and intends to reach Tanzania and Uganda in the near future.

Source: <http://www.freshplaza.com/news>

### ***Production Statistics***

Kenya's tomato production is over 10 times much higher than that of Uganda. This is shown in the table 2 below:

Table 2: Tomato Production (Metric Tones): Uganda and Kenya; 1997-2007

Country	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Uganda	11000	12000	13000	14000	14000	14000	14000	14000	14000	14000	14000
Kenya	205085	223697	260037	256770	271151	284859	318639	330000	330000	330000	330000

Source: FAO Statistics. <http://faostat.fao.org>

### ***Costs of production***

Uganda has a higher cost of production compared to Kenya as shown in the table below

Costs in US\$ per Kg	Kenya	Uganda
Seeds	0.001	0.002
Fertilizer/Pesticides	0.019	0.079
Labour	0.026	0.070
Land Preparation		0.001
Miscellaneous Expenses		0.045
<b>Total</b>	<b>0.046</b>	<b>0.197</b>

#### **Source:**

- (i) Thomas Koenig, *et al* (2008). Market Driven Development and Poverty Reduction: A value chain analysis of fresh vegetables in Kenya and Tanzania. (Page 127 for Kenya)
- (ii) Robinah Ssonko *et al* (2005). Pro-poor Horticulture in East Africa and South East Asia: The Horticulture Sector in Uganda (page 58)

## **3.0 KEY SUPPORT SERVICE PROVIDERS IN THE VALUE CHAINS**

### ***Uganda***

#### **(i) Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)**

Its role is to create an enabling environment in the Agricultural sector by performing the following horticulture related functions:

- a) Formulating and reviewing national policies, plans, legislation, standards and programmes relating to the agricultural sector;
- b) Controlling and managing crop epidemics diseases and pests affecting production;
- c) Controlling the use of agricultural chemicals, enforcing sanitary and phytosanitary regulations including seed quality standards;
- d) Promoting sustainable utilization of natural resources for agricultural production
- e) Providing technical advice, quality assurance, technical audits and support supervision in the areas of agricultural advisory services for crops

## **(ii) National Agricultural Research Organization (NARO)**

The National Agricultural Research Organization (NARO) is the apex body for guidance and coordination of all agricultural research activities in the national agricultural research system in Uganda. NARO is a Public Institution established by an act of Parliament, which was enacted on 21<sup>st</sup> November 2005.

The functions of the National Agricultural Research Organization are to:

- a) Provide strategic direction for publicly funded agricultural research in Uganda and act as a forum for agricultural researchers in Uganda;
- b) Coordinate and oversee, in collaboration with the Uganda National Council for Science and Technology and other lead agencies, the development, consolidation and implementation of agricultural research policy and national research strategies, plans and budgets relating to publicly funded agricultural research;
- c) Set national priorities and harmonize agricultural research activities of the national agricultural research system, constituent institutions and public agricultural research institutes, civil society organization, private sectors and farmer organizations and promote delivery of quality and efficient agricultural research services;
- d) Advise and coordinate formulation of policy and legislative proposals, research standards, codes of ethics, conduct and practice; and guidelines for delivery of agricultural research services;
- e) Provide guidelines, guidance and ensure delivery of quality agricultural research by agricultural research service providers;
- f) In collaboration with other relevant agencies, provide policy guidance to local governments on matters relating to agricultural research;
- g) Carry out monitoring and evaluation of national agricultural research programmes, projects and activities to ensure adherence to the set work plans, standards and regulations;
- h) Mobilize funds for agricultural research and manage the agricultural research trust fund including raising funds for research of national strategic interest;
- i) Coordinate and promote cooperation and collaboration between Uganda and other countries, institutions, scientific or professional societies and other agricultural research service providers, with regard to agricultural research, development and technology transfer in the agricultural sector so as to optimally utilise agricultural resources and improve production capacity of such resources;
- j) Provide leadership and advocacy for the promotion, protection and development of agricultural research in Uganda;
- k) Make grants or provide funds to any institution or person for the advancement of agricultural research and development on both competitive and non-competitive basis; and

## **(iii) NGOs**

There are quite a number of NGOs providing a range of business development services to tomato farmers; linking producers to markets, training, product development and financing. Key among these NGOs include; SNV, USAID (IDEA Project).

## ***Kenya***

- (i) Horticultural Crops Development Authority (HCDA) – it was set up under the Agriculture Act 1967 to develop and regulate the industry. It offers technical and marketing services to the stakeholders in the sector
- (ii) Fresh Produce Exporters Associations of Kenya (FPEAK) – assists members in technical and marketing aspects
- (iii) Kenya Agricultural Research Institute(KARI) – undertakes research in new varieties and improved farming techniques and methods
- (iv) Ministry of Agriculture (MOA) – responsible for implementing government initiatives to improve the competitiveness of the sector and incomes of the farmers
- (v) Asian Vegetable Research and Development Centre (AVRDC) – it provides technical support to farmers involved in Tomato growing

## **Collaborating agencies**

- Kenya Bureau of Standards (KBS)
- International Centre of Insect Physiology and Ecology (ICIPE)
- Kenya Plant Health Inspectorate Service (KEPHIS)
- Pest Control Products Board (PCPB)
- Kenya Industrial Research and Development Institute (KIRDI)
- Kenya Universities and Colleges of Agriculture
- National Resources Institute (NRI)
- Japan International Co-operation Agency (JICA)

## **4.0 CONCLUSION**

Tomatoes are a potential source of income most rural farmers engaged in horticulture production. Although there are a number of constraints restricting their full exploitation, the present actors are doing their best within the limited framework especially those in the Central districts of Kenya and Uganda. Smallholder farmers can be harnessed to exploit high value markets in the region their present networks. They could also be assisted to gain certification status to penetrate global markets. Efforts can also be made at the farmer level with a view to improving the overall status of marketing, distribution, infrastructure, technology, and other management efforts of the farmers. This will substantially help quality growth of the domestic market as well as reduce poverty among the small holder horticulture farmers.

# Appendices

## 1. Tomato Production Areas of Kenya

Production Area	Altitude	Type of production (rainfall p.a)
Kiambu, Machakos, Nairobi	800-2400 metres	Rain-fed (1500- 2000 mm) Machakos: irrigated (600-1000mm)
Baringo, Nyandarua, Nakuru	2100-2800 metres, Lake Naivasha: 1900 metres, Lake Baringo: 1000 metres	Molo, Nyandarua: rain-fed (1200-1800 mm) Lake Naivasha, Lake Baringo: Irrigated (400-600 mm)
Embu, Meru, Nyeri, Murang'a	800-2500 metres	1200-2500 mm rain-fed
Kisii, South Nyanza	1100-2200 metres	Rain-fed (Kisii: 1200-2100 mm) S.Nyanza: (700-1800 mm)
Busia, Siaya, Kakamega, Bungoma, Kisumu	Busia, Kisumu, Siaya: 110-1500 metres Bungoma, Kakamega: 1200-2000 metres	Rain-fed (Bungoma, Busia, Kakamega: 1100-2000 mm; Kisumu, Siaya: 700-1800 mm) Lake Victoria: Irrigated
Trans Nzoia	1600-2200 meters	Rain-fed and irrigated (900-1400 mm)
Kilifi, Kwale	0-500 metres	Rain-fed and irrigated (400-1400mm)
Taita Taveta	600-1000 metres	Taita Hills:irrigated (400-600 mm)
Oloitokitok	1800-200 metres	Irrigated (600-800 mm)
Garissa	200-300 metres	Irrigated (250-500 mm)

Source: Kenya Horticultural Crops Development Authority, 2003

## 2. List of companies involved in processing Tomato Sauce in Kenya

Company	Location	Company	Location
Avenue Fresh Produce	Nairobi	Makindu Growers and Packers Ltd	Nairobi
Belt Cargo Services Ltd	Nairobi	Mbogu Tuu	Nairobi
Bud of Paradise	Nairobi	Myner Exporters Ltd	Nairobi
East African Growers	Nairobi	Sacco Fresh Ltd	Nairobi
Everest Enterprises Ltd	Nairobi	Sunripe (1976) Ltd	Nairobi
Fian Green Ltd	Nairobi	Tropical Horticultural Products Ltd	Nairobi
Frigoken Ltd	Nairobi	Vitacress (K) Ltd	Nairobi
Greenlands Agro Producers Ltd	Nairobi	Wamu Investments Ltd	Nairobi
Hillfarm Fresh Produce Ltd	Nairobi	Wilham (K) Ltd	Nairobi
Indu Farm EPZ Ltd	Nairobi	Woni Veg-Fru Exporters	Nairobi
Jambo Horticultural Export "2002"	Nairobi		Nairobi
Horticultural Exporters (1977) Ltd	Nairobi		Nairobi

### 3. Key tomato actors and their addresses – Uganda

Actor	Address/Contact
National Agricultural Research Organization(NARO)	Plot 3, Lugard Avenue, Entebbe P.O. Box 295, Entebbe, Uganda Tel. +256 414 320512/320341/320342 Fax: +256 414 321070 Email: <a href="mailto:dgnaro@infocom.co.ug">dgnaro@infocom.co.ug</a> <a href="mailto:narohq@imul.com">narohq@imul.com</a>
Ministry of Agriculture Animal Industry and Fisheries (MAAIF)	P.O. Box 102 Entebbe Email: <a href="mailto:maai@infocom.co.ug">maai@infocom.co.ug</a> Minister of State for Agriculture Tel. 256 414 320841 Email: <a href="mailto:mosagr@hotmail.com">mosagr@hotmail.com</a> The Permanent Secretary Email: <a href="mailto:psmaaiif@infocom.co.ug">psmaaiif@infocom.co.ug</a>
USAID(IDEA Project)	Agribusiness Development Centre Plot 18, Prince Charles Drive P.O. Box 7856, Kampala, Uganda Tel. +256 414 255482/83/68 Fax: +256 414 250360 Email: <a href="mailto:adc@starcom.co.ug">adc@starcom.co.ug</a>
Horticulture Exporters' Association (HORTEXA)	<a href="mailto:hortexa@yahoo.com">hortexa@yahoo.com</a> Chairman Mr. Lule; Tel: +256 772 419357 COSEDA: <a href="mailto:cosedainterpriseslimited@yahoo.com">cosedainterpriseslimited@yahoo.com</a> Tel. +256 772 419357 SULMA: <a href="mailto:Sulma_foods@yahoo.com">Sulma_foods@yahoo.com</a> Tel:+256 772 502350 St. Jude Masaka: Tel: +256 772 604814 Lusaka Growers; Tel: +256 772 367386
Agribusiness Development Centre -ADC	P.O. Box 7856 Kampala, Uganda Email: <a href="mailto:adc@starcom.co.ug">adc@starcom.co.ug</a>

## Others

Actor	Focus Area	Contact
RECO Industries Ltd	Tomato Processing and export of fresh fruits and vegetables	P.O. Box 215 Kasese, Uganda Tel. +256 4834 44222 Fax: +256 4834 44077 Email: <a href="mailto:info@reco-industries.com">info@reco-industries.com</a>
Star Tomato Sauce	Tomato Processing	Star Foods Ltd P.O.Box 12031 Kampala
Britannia Allied Industrial Ltd (Top Up Tomato Sauce)	Tomato Processing	Britannia Allied Industrial Ltd P.O.Box 7518 Kampala
Macdough Foods (U) Ltd	Tomato Processing	P.O.Box 30278 Kampala
Mode Ltd	Tomato Processing	Pride Tomato Sauce P.O.Box 26540 Kampala
Kawanda Agricultural Research Institute (KARI)	- Culture - Multiplication of quality planting materials - Entomologist - Agronomy - Pathology and virology of fruits and vegetables	P.O. Box 7065, Kampala, Uganda Tel. +256 414 566790/567507 Fax: +256 414 567649 Email: <a href="mailto:karidir@imul.com">karidir@imul.com</a>
Uganda National Farmers Federation (UNFFE –an NGO)	- Farmers’ association - Mobilization & Training - Policy advocacy - Networking - Sustainable agriculture production	Plot 27 Nakasero Road P.O. Box 6213 Kampala, Uganda Tel. +256 414 230705 + 256 414 255250
Uganda Spices Producers Association - NGO	-Primary production - Networking -Trade	Baumann House Parliamentary Avenue P.O. Box 27761, Kampala, Uganda Tel. +256 772 324372 Email: <a href="mailto:shrini24@hotmail.com">shrini24@hotmail.com</a>

## References

FAO Statistics

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