

Citrus in Tanzania

Prospects for increased participation of small and medium-sized enterprises

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Project Overview

Innovation and Inclusive Industrialisation in Agro-Processing is a two-year collaboration between researchers from the University of Edinburgh, the University of Johannesburg, and the Economic and Social Research Foundation, Tanzania.



The project is a comparative study conducted across Tanzania and South Africa focusing on three value chains: maize meal, citrus and dairy. The three aims of the study are:

- *First, to describe the factors that determine innovation and inclusion in agro-processing*
- *Second, explain the challenges to promoting SME participation in agro-processing value chains*
- *Third, to use these findings to support industrial policy formulation at the national and regional level*

In this project brief, we set out the key issues arising from our scoping work on citrus production in South Africa.

Summary

The most significant produced and traded citrus fruits are oranges followed by lemons, most of which are grown in Tanga and Morogoro regions, with about 26,230 ha and 2,592 ha, respectively (NBS, 2017). Production of citrus has been driven area expansion given that hectares have been increasing at an average of 6% per year, while corresponding productivity (yield per unit area) has been below 3% per year. The low yields are caused by, mostly, loss of genetic or variety line of purity (affecting consistency in processed juice), aged tree stocks, and failure to observe good agricultural practices (GAP). Most of the fruits are sold locally for table use and a small proportion for juice blending. Hotels, homes and street food vendors extract juice using small-scale blenders to serve as fresh drinks to customers. There are few medium and large-scale juice processing plants in the country. They include those owned by Salim S Bakhresa (SSB) (Azam Juice and Frutti brands) in Dar-es-salaam; Jambo Food products (Jambo Orange) in Shinyanga, Sayona (owned by the Motisun Group), etc. Nairobi based companies such as Selina Wamucii buy oranges produced from small farmers in Tanga for making juice concentrates and oil from the peels.

	<p>Packaging of juice cocktail including Frutti's by Sayona group (photo credit: http://sayona.co.tz/index.php) and Tropical Mix by Azam (SSB company) (photo credit: http://bakhresa.com/azam-tropical-mix-juice)</p>	
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Overview of the Value Chain

Overview of the sub-sector: Citrus fruits consist of oranges, lemons, lime, tangerines and grapefruits. Tanzania ranks 6th in Africa as a producer of citrus fruits, the leading countries being Egypt, South Africa, Morocco, Algeria and Ghana. Most commonly produced citrus fruits in Tanzania are oranges and lemons, largely produced in Muheza district, Tanga region. The taxes from trading of the commodity in this district contribute 70% of council's revenue and provide 75% of household income to citrus farming households (Mhando and Ikeno, 2008). Although production has been on the increase, the fruits have lost their genetic purity and lack strict formal classification in the market, although they are still referred to their original names, the most dominant being Valencia (otherwise known as (aka) as *Msasa* (early maturing) and *Kitenesi*

(seedless), Mediterranean (aka *Nairobi*), Washington (aka *Kitovu*), Jaffa (aka *Shamoti*) and Pineapple (aka *Pamba*).

Historical context and Production Trend: FAO estimates that production of oranges in Tanzania between 2005 and 2017 increased from 85,000 to 450,000 metric tonnes (mt), registering annual growth of 14% (Dube, et. al, 2018) (**Error! Reference source not found.**). The growth in amount harvested is attributed from both increase in the area cultivated, which increased from 23,063 hectares (ha) in 2002/03 season to 32,129 ha during 2016/17; and productivity per unit area or tree planted (Table 1). Households engaged in citrus farming during 2016/17 season were about 79,570; having decreased from 109,413 households during 2002/03 season. However, the area cultivated increased to 32,129 ha from 23,062 ha, during the same period. This is an indication of consolidation of farm sizes, doubling from 0.21 ha per household in 2002/03 to 0.40 ha per household in 2016/17.

The area planted with citrus has been increasing at an average of 6% per year, while the corresponding productivity (yield per unit area) has been at about 3% per year, ranging between 90 and 120 mt/ha, compared to Kenya's 170 mt/ha. This implies Tanzania's that total citrus production (as shown in Figure 1) is driven more by area expansion than productivity changes. The only year when productivity changes outpaced rate of area expansion was between 2012 and 2013 (Table 1). The rate of area expansion started to slow down between 2016 and 2017, perhaps implying near exhaustion of available land for new developments of the crop. The peak in production reached in 2017 before dropping to levels realized in earlier years.

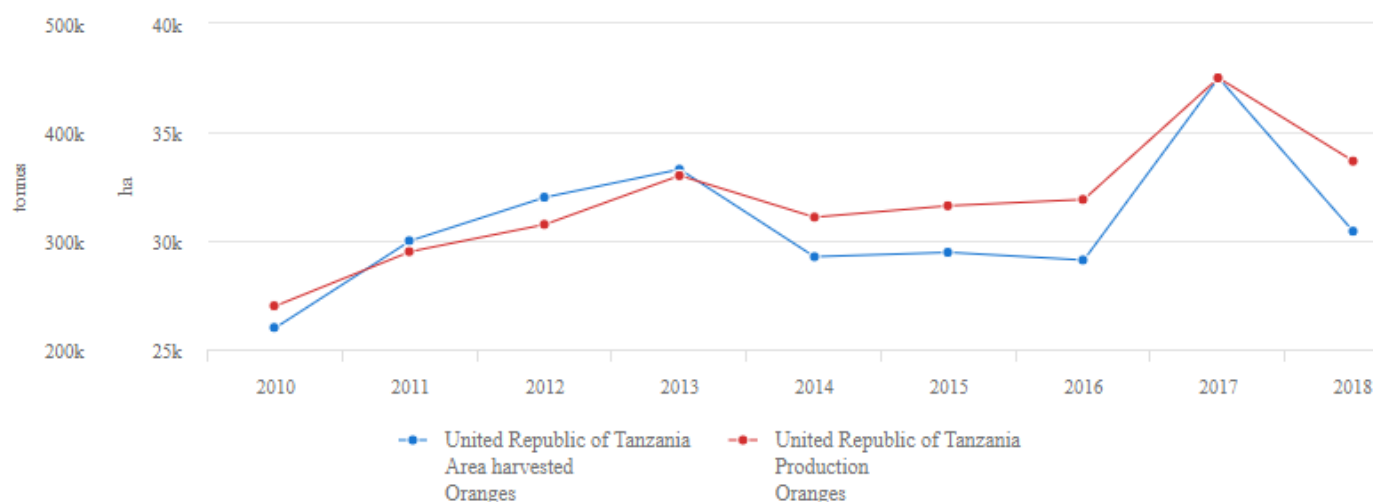
Table 1 Productivity in orange production in Tanzania

	2010	2011	2012	2013	2014	2015	2016	2017
Yield in mt/ha	9.23	9.67	9.84	10.82	11.15	11.32	11.65	12.00
Annual change in area cultivated		15%	7%	4%	6%	8%	5%	-6%
Annual changes in yield		5%	2%	10%	3%	1%	3%	3%

Source: FAOStat.

One of the recent feasibility studies by investors indicate that Tanga region alone can supply above 210,000 mt of orange fruits per year.

Figure 1 Estimated orange production in Tanzania



Source: FAO (2020): <http://www.fao.org/faostat/en/#data/QC/visualize>

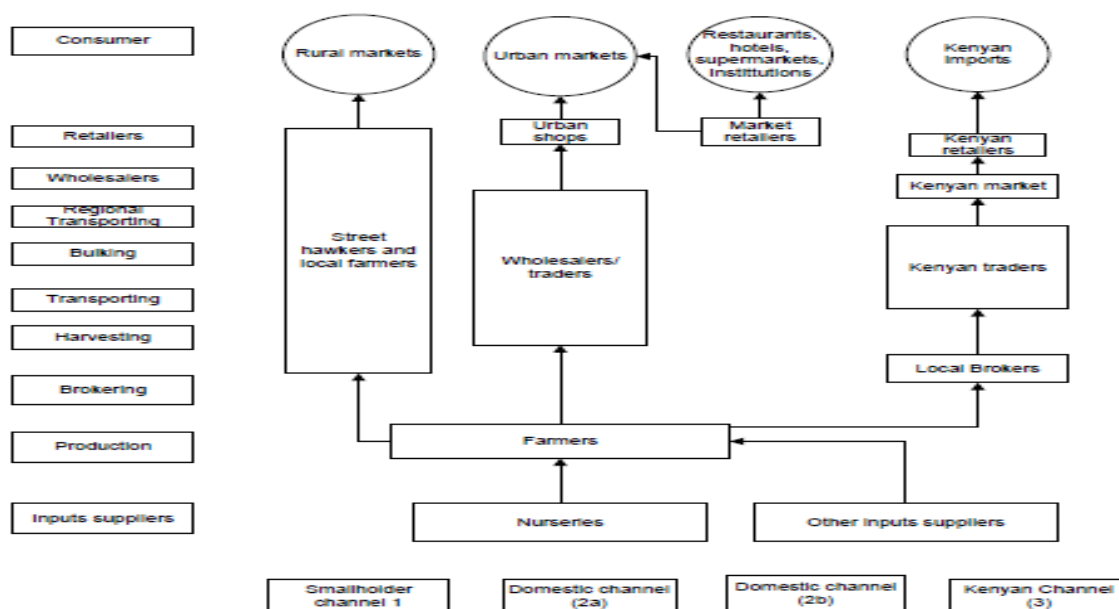
Export destinations: About 50-60% of the oranges produced in Tanga region is exported to Kenya mainly to the markets of Nairobi, Mombasa and Nakuru (Izamuha, 2008). The International Trade Centre (www.trademap.org) also shows that in addition to Kenya, some of the fruits are exported to Rwanda and

Uganda. Exports to Kenya between 2013 and 2017 earned Tanzania varied between USD 1 million and USD 2.7 million (recorded in 2015).

Imports: According to Trademap data, total imports of oranges into Tanzania between 2011 and 2017 were valued between USD 40,000 and USD 48,000 coming mainly from South Africa and Egypt. The country had a trade surplus in the citrus sector during this period given it earned more from exports than its expenditure on imports.

Structure of the sub-sector and concentration: As indicated in Figure 2, the main players in the citrus value chain are mainly smallholder farmers, who invest on their own in the development of tree nurseries and farm cultivation and planting. Once the fruits are ready for sale, there is entry of two types of middle agents: those buying fresh fruits for the domestic rural and urban market (wholesale buyers/traders and vendors/hawkers); and local brokers who buy on behalf of wholesale traders for the export market (mainly to Kenya and Uganda) as fresh fruits.

Figure 2 Map of Citrus Value Chain in Tanzania



Source: Match Maker Associates (MMA) (2008). Fresh Fruit & Vegetable Sub Sector / Value Chain Analysis Tanzania: Executive Summary. SME Competitiveness Facility (SCF). March 2008

National and Regional Institutional Players within the Citrus Value Chain: At national level the National Horticulture Development Strategy (2012-2021) is overseen by Tanzania Horticulture Association (TAHA). However, lack of adequate funding has hampered its role in supporting horticulture value chains and as such there is no specific national-level association responsible for citrus similar to those for mangoes and spices. The platforms for citrus growers is still confined at district levels. However, the member based TAHA actively provided a unified voice for producers, traders, exporters and processors of flowers, vegetables, horticultural seeds, spices and fruits (such as avocados and mangoes). The district-based platforms for citrus fruits value have been responsible for addressing issues facing the citrus industry. Supportive programmes have managed to reach farmers through MUVI (Muungano wa Ujasiriamali Vijijini) in promoting a more structured trade in orange value chain. Farmers have also been helped to combat orange diseases (such as that spread by tephritid fruit fly).

Trading in Fresh Orange: There exists a tradition whereby traders visit farmers to assess the quality of fruits while in the tree and agree on the price per fruit or per tree. Usually transactions between producers and traders passes through brokers, who applies three methods of transacting at the farm gate: (a) *Direct Spot Exchange*; whereby fruits are picked by the farmer and assembled into heaps before they are counted and receives payment based on the number of fruits. Some cheating happens at the counting stage since it involves several youth hired by the broker who collude to under-declare the amount harvested; and, (b) *Pre-harvest advance payment*. Farmers take loans from traders and fellow farmers to be repaid in kind through harvested fruits.

There are complaints that some traders charged abnormally high interest rate for the advanced money. This will be subject to further investigation to understand the range of rates charged. Another disadvantage to the traders comes from some farmers who sometimes deliberately abandon their fields once they receive payments and assume it is the responsibility of the agents or traders to take care of the farm.

Value Addition: The most common type of value addition for citrus fruits is that of sorting and grading, which starts at the farm-gate or market gate, depending on the situation. This involves separating them into different sizes, normally 3 sizes: small, medium and large. Most of the oranges are taken as table fruits at homes and hotels. In some urban centres there is emergence of kiosks with blenders for making fresh pure orange or mixed juice using pineapples, passion fruits and water melons. The remaining and more promising processing plants include: Salim S Bakhresa (Azam Juice) and Sayona (Frutti's) in Dar-es-salaam; Jambo Food products (Jambo Orange) in Shinyanga, and Sayona. Nairobi based companies such as Selina Wamucii buys oranges produced from small farmers in Tanga for making juice concentrates and oil from the peels.

Competition within the Citrus Value Chain: The country is near self-sufficient in fresh citrus fruits save for a small niche market that demands imported varieties. Pineapples are regarded as near substitutes for oranges, posing some competition of choice among consumers of fresh fruits given their limited purchasing power. Orange prices tend to drop during coincidence of supplies for oranges and pineapples during December to February period thus affecting incomes of orange farmers. Serious competition for fresh oranges comes from the supply of pasteurized orange juices, mostly imported from South Africa and Kenya. Companies also fruit-flavoured drinks and diluted juices from mostly imported concentrates. They are marketed under different brands such as Mo juice, Sayona, Jambo, and Afiya. Tetra-packed juices are consumed by middle and high income consumers, while low income consumers prefer fresh fruits and fruit-flavoured drinks. Carbonated drinks such as Fanta Orange and Mirinda Orange also tend to compete with fresh orange juices.

Challenges

Upstream challenges within the Citrus Value Chain: The current low yields obtained by Tanzanian citrus farmers (90-120 mt/ha) has been attributed to the need for more support to Research and Development (R&D) by specialized institutions. Farmers cannot access higher yielding citrus cultivars preferred by the market. Even in cases where they get the cultivars, good agricultural practices (GAP) are lacking due to weak research-extension-farmer linkages. Pests and diseases¹ have subjected farmers to incur losses of between 40 and 60%. Most farms still rely on natural precipitation due to low investment in irrigated farming, essential for stabilizing soil moisture, ensure healthy fruits and attain better yields.

Downstream Challenges: Preliminary observations suggest the challenges facing SME processors relate to both supply and demand factors. These include the importance of farm-level higher yielding cultivars, uniformity of breeds for the processing industry, and stability in seasonal supplies. The relatively lower costs of concentrate and the growth in consumption of other fruit juices appears to be an important factor limiting the growth in domestic orange juice processing.

¹Notably *Gummosis* and *Root rot* from *Phytophthora Spp* and *Bactocera-dorsalis* (spread by fruit flies) (Izamuhaie, 2008)



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