



USAID
FROM THE AMERICAN PEOPLE



JESSE DAYSTAR

CASE STUDY GROWTH OF TANZANIA'S HORTICULTURE SECTOR: ROLE OF TAHA IN REDUCING FOOD LOSS

September 2020

This publication is made possible by the support of the American People through the United States Agency for International Development (USAID) and the United States Department of Agriculture (USDA). The contents of this case study are the sole responsibility of Agribusiness Associates Inc. and do not necessarily reflect the views of USAID or the United States Government.

CASE STUDY GROWTH OF TANZANIA'S HORTICULTURE SECTOR: ROLE OF TAHA IN REDUCING FOOD LOSS

September 2020

Rashmi Ekka and Bertha Mjawa

Acknowledgements

The development of this case study was part of the International Food Loss and Waste Hotspots and Business Models Project, funded by the United States Agency for International Development (USAID) and implemented by Agribusiness Associates Inc. with technical support from the United States Department of Agriculture (USDA).

Many thanks to those who provided invaluable support in the development of this case study: Ana Torres, Caitlin Corner-Dolloff, Noel Gurwick, Gurbinder Gill, Lisa Kitinoja, Mandeep Sharma, Melissa Yeakley and Paige Cowie.

We thank all the TAHA employees and member farmers that we interviewed and who facilitated the development of this case study: Ali Shemdangiwa, Amani Temu, Eric Mwaisigwa, Hashim Kimomwe, Isack Kibipi, Joseph Mwita, Loveness Rugiga and Simon Mlay. Your dedication to Tanzania's horticulture sector and reducing food loss is truly commendable.

SUMMARY

Tanzania has a diverse climate and geographical regions that produce a large volume and wide variety of fruits and vegetables. Its horticultural sector is growing at a faster pace and is on the path to meet the goal of Tanzania Development Vision 2025 to achieve a \$3 billion annual export, up from \$779 million in 2019. The country exports its horticultural produce to Europe, the Middle East, and regional African countries. However, the productivity of horticulture sector is suffering from issues like low-quality produce, improper packaging materials, poor traceability systems, unreliable transportation, and high postharvest losses. Since 2004, Tanzania Horticultural Association (TAHA), a member-based trade association, has been working to tackle several of these challenges in the horticulture supply chain. It advocates for the growth and competitiveness of the horticulture sector in Tanzania. TAHA represents 42,000 farmers and its members include producers, exporters, processors, suppliers, and smallholder farmers. TAHA also collaborates with international agencies like USDA and USAID to disseminate good agricultural practices in the country. TAHA's work in reducing high postharvest losses (40-50%) in the horticulture sector includes capacity building of farmers, connecting farmers to markets, and developing infrastructure throughout the value chain at critical loss points. For capacity building, its field-up approach where its agronomists work with farmers in 21 regions, has resulted in increased production as well as the preservation of quantity and quality of the produce through postharvest management and handling best practices. TAHA is connecting smallholder farmers to processors and exporters. In 2018, TAHA launched the Fresh to Market initiative where it is linking smallholder farmers with buyers and retailers, focusing on production, packaging, and export. TAHA has also developed strategic infrastructure including packhouses and collection centers. One of its biggest initiatives has been TAHA Fresh which was established in 2008 and is a premier logistics service provider in Tanzania. It provides integrated logistics services covering airfreight, sea/ocean freight forwarding, trucking, customs clearing, forwarding, and insurance. It also provides cold rooms at various ports. Moreover, TAHA does lobbying for the horticulture export sector and provides inspection and certification services such as GlobalG.A.P., Rainforest Alliance, Fair Trade, etc.

BACKGROUND

Tanzania is among the world's top 20 producers of vegetables. Exports have grown from \$64 million in 2004 to \$779 million in 2019 according to the Tanzania Horticultural Association (TAHA). The growth of the horticulture sector is 11% per annum while overall agriculture has a growth of 4% in Tanzania. The sector employs more than 450,000 people with 65 -70% being women. The country has a goal to increase exports to \$3 billion by 2025.

Tanzania has favorable conditions for being a major grower of fruits and vegetables. With its temperate and tropical climates as well as different altitudes and temperatures, it can grow a wide variety of fruits, vegetables, herbs, and spices. Tanzania also has a stable economy, strong political will, and competitive labor costs to support the horticulture industry.

High volumes of the following fruits and vegetables are grown in Tanzania:

- Vegetables: Tomatoes, cabbage, onions, spinach, amaranth, chives, mint, okra, carrot, green peas, eggplant, sweet pepper, green beans, potatoes, snow peas, baby corn

- Fruits: Oranges, avocado, mangoes, pineapple, banana, passion fruit, blackberries, strawberries, peaches, plums, pears, apples, lime, jackfruit

Globally, the horticulture sector is largely focused on fresh produce and suffers high rates of food loss and waste, often estimated at 30%-50%. Fruits and vegetables account for 46% of the total FLW. Food loss assessments for horticulture often show that FLW occurs throughout the chain from harvest, storage & handling, distribution to the final consumer. In Sub-Saharan Africa, food loss at the distribution stage can be quite high – fragmented value chains with the product being handled multiple times, long transportation times, lack of temperature management options, and poor handling and packaging, all contribute to high losses at this stage. It is only at the processing stage, that food loss is very low for fruits and vegetables. (Guo, et al. 2020).

Tanzania's horticulture sector suffers from many of these food loss and waste issues. Food loss for the domestic market is estimated at 40% while the losses in the export market value chain are considerably lesser at 10%. Tanzania exports mainly to the European and middle eastern markets as well as regional trade through the East African Community and the Southern African Development Community.

The main reasons behind the disparity between the domestic and export market loss rates are that the exported produce sector has improved production and postharvest practices, infrastructure (packaging, temperature management, electricity, and transportation) as well as a streamlined value chain. The domestic sector has low-quality produce, improper packaging materials, poor traceability systems, and unreliable transportation which results in long wait times. Actors in the unorganized sector are not able to easily access financial services to make quality-related upgrades to their business.

ABOUT TAHA

Tanzania Horticultural Association is a member-based trade association established in 2004. It advocates for the growth of the horticulture sector in Tanzania. Encompassing more than 700 members in mainland Tanzania and Zanzibar, TAHA advocates for its members which include large producers, exporters and processors, suppliers of agri-inputs and other service providers, smallholder farmer groups and associations representing approximately 42,000 farmers. It works in the Southern Highlands - regions of Morogoro, Iringa, Mbeya, and Ruvuma; Northern Corridor - Arusha, Kilimanjaro, Tanga and Manyara; and the Central Zone – Coast and Zanzibar.

TAHA has partnered with USAID and USDA for close to 10 years to develop and widely disseminate good agricultural practices to smallholder farmers and farmer co-ops nationwide and to strengthen TAHA's advocacy role for producers, traders, exporters, processors, and horticultural products nationally and internationally.

TAHA has been working to tackle several of the challenges in the horticulture supply chain holistically. They can be largely credit for propelling the increase in horticulture exports in the last decade. This case study will focus on TAHA's programming related to FLW and its impact.

TAHA's key focus areas are improving the business enabling environment, increasing access to markets, increasing productivity and competitiveness, promoting Public-Private Partnerships and horticulture investments, Market Information System, establishing market support infrastructure, providing technical support services, promoting nutrition and gender equity and engaging youth in horticulture.

TAHA'S WORK IN REDUCING FOOD LOSS

CAPACITY BUILDING



Figure 1: Isack Kibipi, Regional Agronomist training farmers on harvesting Okra

TAHA's work in reducing food loss starts with the capacity building of farmers. It has agronomists in 21 regions who train farmers on production techniques for higher quality produce as well as post-harvest management and handling practices. Extension systems have insufficient capacity and resources in several developing countries and especially for horticulture, the capacity is usually quite low. By providing extension services to Tanzanian farmers, TAHA is making a huge change from the field up as it focuses not only on increasing production but also on preserving the quantity and quality of the produce through postharvest management and handling best practices.

Isaac Kibipi, a regional agronomist serving Dar es Salam and the coastal region said, "Reducing perishability starts from production. I teach farmers good production practices so that there is high-quality produce from the field itself. For example, we know that fruits can rot if there is a lack of nutrients like calcium. We check water quality and test the irrigation water to make sure it fits the right criteria. For harvesting, we teach farmers how to assess the maturity of the produce and harvest at the proper maturity. Farmers must also avoid injuring crops during harvest to avoid the penetration of insects. Once, the harvest is done the crops must be kept in a cool condition. We advise the farmers to harvest early in the morning, when the weather is cool, and avoid high temperatures by keeping the harvest in the shade. Produce should be moved to a cool place as soon as possible. Cooling can be done using low-cost technologies such as forced air cooling, hydro cooling, and icing when recommended. Some farmers also use charcoal coolers, which use the principle of evaporation for non-electric cooling. Farmers can keep their produce

in the charcoal cooler as they wait for buyers. Farmers are also advised on proper storage practices such as sanitation and air circulation.”

Two farmers reported that before working with TAHA the losses were 50-60% and now they are seeing 5-10%. One of the main reasons for this decrease has been the usage of screen houses, which protects the produce from pests.



Figure 2: Charcoal Cooler (Left); Screenhouse (Right)

Ali Shemdangiwa, the Chairperson of MAMNAMA Farmer group said, “TAHA assisted us in increasing our production of tomatoes and bell peppers through the provision of technical capacity building. This was frequently done by TAHA officers to three groups - one from each of the villages of Maringo, Mnadani, and Malindi. They constructed a greenhouse and trained on its use, they linked us with buyers from Dar es Salaam.”

In June 2020, TAHA signed a new training initiative with the Europe-Africa-Caribbean-Pacific Liaison Committee (COLEACP), the World Vegetable Center (WorldVeg), and the Nelson Mandela African Institution of Science and Technology (NM-AIST) for a ‘Marshall Plan’ to bridge the skills gap in the horticulture industry. This initiative will focus on the capacity of actors to safeguard standards compliance, supply quality, and safe food; build right systems of traceability and provide right information packages like information on the business, technical and marketing as well as the promotion of products both within and outside the country for five years as a pilot program. NM-AIST will offer accredited training programs, certificates, and diploma courses in horticulture. This initiative will increase human resources in the sector and develop more food loss reduction capacity.

MARKET ACCESS

TAHA works to connect farmers to the market. Fruits and vegetables can both be quite profitable crops when an assured buyer is present in a timely manner. While fruit trees are often long term investments, many vegetables have short growing seasons of 3-4 months. Farmers who are new to the sector or who are expanding into horticulture, need market linkages. TAHA connects smallholder farmers to processors and exporters.

Focus on increasing investments in processing is very important for Tanzania. Currently, farmers have high year-round production – the fresh market can only absorb a limited amount of produce and the rest needs to be preserved. There are a few companies doing food processing such as making sauces, juice, jams, pastes, etc. More of these initiatives are needed. Some farmer groups are also doing small scale processing such as making juice and drying fruits using solar dryers.

TAHA has a new initiative called Fresh to Market which started in 2018 and is an effort to facilitate export markets for farmers by reducing postharvest issues in transportation and packaging. They work with TAHA members to collect their produce, which is cleaned, sorted, and graded at the packhouse and then sent to markets. The agronomists are working on reducing postharvest issues by focusing on better handling. Since 2018 they have shipped three hundred and thirty tons of avocados and five tons of mixed produce (chili pepper and beans) to UAE and Europe. Fresh to Market helped the farmers get the global gap certificate.

VALUE CHAIN INFRASTRUCTURE AND EXPORT SERVICES

TAHA's has been working to place infrastructure throughout the value chain at critical loss points. It has strategically placed packhouses at Njombe and Kilimanjaro and 4 collection centers in Arusha, 1 in Dar es Salam, and 1 in Zanzibar. These serve as convenient sites for farmer training, postharvest demonstrations, and advice on tools, supplies, and services.

One of the biggest initiatives has been TAHAFresh – it was established in 2008 and is a premier logistics service provider in Tanzania. It is a one-stop-shop for integrated logistics services covering airfreight and sea/ocean sea/ocean freight forwarding, trucking, customs clearing, and forwarding as well as insurance.

TAHAFresh starts its activities after packing the produce which is handled by Fresh to Market. They send the refrigerated truck that has the temperatures set according to the crop to be loaded. Then the produce is sent to the airport where it is loaded onto the aircraft. They also do traceability to ensure that the produce reaches safely and within acceptable quality standards.

Kilimanjaro International Airport has cold storage but Dar es Salaam does not. The cold chain in Tanzania is quite rudimentary with the key barriers being inadequate electricity supply infrastructure and the lack of availability of appropriate sized and affordable refrigerated trucks.

TAHA collaborates with various government agencies and does lobbying related to the sector and exports. It works with the Ministry of agriculture postharvest management team, Ministry of Industry and Trade, (Tanzania Bureau of Standards, TANTRADE), and other regulatory bodies.

TAHA also has a certification company called Green set that ensures the safety of produce. So far Green Set has conducted training for 1000 producers. Green set is focused on implementing the postharvest

management strategy in collaboration with the Ministry of Agriculture and ANSAF (Agriculture Non-State Actors Forum Tanzania Postharvest Management Platform - TPMP).

CONCLUSION

Tanzania's horticulture sector has a lot of opportunities. TAHA's work is tackling many aspects throughout the value chain from production, harvest, packaging and handling, processing, distribution, and export. Its emphasis on capacity building initiatives, linking to markets, and catalyzing investments in infrastructure throughout the value chain has charged up the export sector but is also uplifting the domestic market on the whole.

TAHA's work has increased the productivity and supply of horticultural crops. Production has even commenced in non-traditional areas like Dar es Salaam and Zanzibar. Using low cost and open source technology solutions like screen houses and charcoal coolers, and providing continuous farmer capacity building through training and visits, TAHA is scaling up the useful solutions that are inclusive of smallholder farmers.

TAHA's work has improved marketing at the export and domestic level. Value chain actors are now doing collective marketing using the collection centers. Investments throughout the value chain in infrastructure as well as processing will continue to yield high results for Tanzania in the coming years.