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Horticulture Exports in Tanzania: A Review on Possible Influencing Factors

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Abstract

The study assesses performance of horticulture exports in Tanzania, while identifying potentials and challenges for growth, largely employing interview and desk review approaches. The findings indicate that horticulture is one of the fastest growing agriculture sub-sectors, with an average growth rate of 4.9 percent in the past eight years to 2019. The share of horticulture to total agricultural/traditional exports has been increasing over time as well, reaching 33.5 percent in 2020, while employment in the sub-sector is estimated at 4.5 million people.

The achievements notwithstanding, about 90 percent of the horticultural produce is consumed locally, probably pointing to potential for increasing exports. Horticulture exports continue to exhibit volatility, mainly driven by fruits, which accounted for about 77.2 percent of the output during 2013 to 2019. Exporters largely rely on foreign agents in reaching final consumers, which constrains market diversification due to prior contracts. Other challenges facing the sub-sector include high reliance on rain-fed agriculture, low-quality seeds, disease and pest attacks, prolonged transportation process, inadequate quality storage facilities at product collection centres and export exit points, multiple taxes, and difficulties in accessing long-term credit.

Potentials exist for boosting horticulture export growth. This mainly depends on the extent to which challenges facing the sub-sector are addressed, and exporters tap into available opportunities including improving policy, strategic and institutional support; improving transport logistics; unutilized arable land; and growing demand for horticulture products worldwide. To increasing further horticulture exports growth, the study recommends the need for:

Scaling up the efforts to attract more cargo flights and improving storage facilities (park houses) at the export exit ports as well as enhancing ease cargo clearance processes. The government's move to acquire a cargo plane and upgrade facilities at the major international airports can contribute in addressing this challenge; Facilitating direct access to foreign market by Tanzanian exporters; this role can partly be performed by the Tanzania's embassies abroad; Encouraging production of high value products such as avocado, cloves, black pepper, and cardamom; Promoting product certification and branding to market 'destination Tanzania' for the horticulture products; Encouraging and supporting exporters to tap into regional markets by fast tracking improvement of road and air connectivity to the potential markets and providing on time the relevant trade information; Increasing awareness to potential farmers and traders on export procedures and ensure timely availability of market information as a way of attracting new investments in the subsector; and Ensuring that land reserved for investors also

benefits the horticulture subsector. Efforts could also be directed at enhancing irrigation systems, timely availability of high yield seeds and pesticides, and extension services to not only increase production for exports but also improve products quality. Some production incentives may be provided to attract the growing micro, small and medium enterprises in the subsector, partly under contract farming to benefit from the more established companies. Such incentives may be in the form of subsidies, tax reliefs, and access to affordable loans as done in other peer countries.

1. Introduction

1.1 Background

Developing countries are highly dependent on export earnings to finance their import requirements for the development of their economies (Develloo, 2007; and Mulugeta, 2009). Instability of such proceeds significantly affects the balance-of-payments (BoP) and the national income in general. Vulnerability to this problem is high in sub-Saharan countries as their international trade heavily relies on exports of primary agricultural commodities, where they possess comparative advantage (Dube, *et al.* 2018). To cushion the economies from price shocks, horizontal diversification of exports of high value traditional agricultural commodities is one of the ways[1] to solve foreign exchange earning[2] problems (World Bank-WB, 2004). One of the non-traditional high-value commodity exports is horticultural products since they have exhibited significant growth world-wide due to changes in consumer preferences, increased health and nutritional awareness, rapid urbanization, increased incomes and trade liberalization. The global market for horticulture including edible oil increased by fourfold over the past two decades, estimated at about USD 428.0 billion in 2019-2021, from over USD 89.5 billion in 2000-2002, while FAOSTAT (2022) estimates production to be close to 2.0 billion metric tonnes in 2020 (See, Annex 1). Africa, nevertheless, lags behind; it contributed only 13.51 percent and 7.41 percent of the world's fruits and vegetable outputs in 2020 compared to Asia that accounted for about 58.14 percent and 78.21 percent of fruits and vegetables, respectively. For example, the global avocado market size reached USD 18.14 billion[3] in 2023 and it is projected to reach USD 40.18 billion by 2032[4].

In recognition of the horticulture's potential to growth[5], the need to leverage on the vast global market and its strong linkage to other sectors of the economy, Tanzania implemented several structural changes, as well as policy and strategic initiatives to increase horticulture production and exports in

[1] Other ways to insulate against volatility in export earnings include addressing structural rigidities (improving production efficiencies and scale), signing of commodity agreements, compensatory financing facility or BoP support of the International Monetary Fund, producers' cartel like OPEC and implementing sound fiscal and monetary policies (i.e. flexible exchange rate to enhance competitiveness and maintaining appropriate inflation levels and competitive interest rates).

[2] In addition to contributing to export earnings, some horticultural products such as edible oil serve as import substitute and thus contribute to BoP improvement.

[3] Tanzania supplied merely USD 30 million.

[4] See, https://www.expertmarketresearch.com/reports/avocado-market.

[5] See, The National Agriculture Policy (2013) and Tanzania Agriculture Masterplan (2024).

general[6]. Some of the groundbreaking initiatives encompass a transformative agenda 10/30 to leapfrog agriculture sector growth to 10 percent by 2030; scaling up agriculture sector budget to 10 percent by 2030 from current 3 percent of the total national budget to allow for reduced farming costs through subsidies, improved extension services, agricultural infrastructure development, improved productivity, seed production, and irrigation research. Other measures include cutting crop cess from 5 to 3 percent, customs duty and VAT exemption on imported agricultural implements and technologies applied in the sector, ranging from tractors to irrigation equipment and parts. Equally VAT exempted are agricultural input, including seeds, seedlings, cuttings, fertilisers, pesticides, insecticides, fungicides, plant growth regulators and biological agents. Packaging materials for agricultural seeds were granted one-year duty remission at the rate of zero (0) percent. Packaging materials for export products are also exempted from import duty. Other incentives include ease access and reduction of financing cost by recapitalizing Tanzania Agriculture Development Bank (TADB) and reducing lending rate on agriculture from over 15 percent to 9 percent. To capitalize on demographic dividend, the government has mounted a Building A Better Tomorrow–Youth and Women Initiative for Agribusiness (BBT-YIA). The BBT-YIA, which is now rolled-over to Local Government level addresses key fundamental challenges inhibiting the youth from participating in agriculture. These include limited access to arable land making most of the youth continue using family or leased land thus unable to make reliable investment; limited access to finance as youth lack collateral despite having viable ideas; limited access to requisite infrastructure, technology and hands-on skills in its application; and limited access to markets and business auxiliary services including appropriate logistics facilities, packaging materials and market information. Other youth related incubations include Sokoine University Graduate Entrepreneurs Cooperative (SUGECO) and the Private Agriculture Sector Support (PASS) initiatives.

To promote irrigation for small scale farmers, the government has initiated a Borehole to Every Farmer programme, targeting 1.0 million farmers and 2.4 million Ha of farmlands. Embracing partnerships with other stakeholders, the government in collaboration with AfDB launched a USD 2.5 million initiative under the Global Agriculture and Food Security Programme targeting 10,000 small horticultural businesses in: Mvomero district in Morogoro region, Wanging'ombe district in Njombe region, and Kaskazini A and B districts in Unguja, Zanzibar.

Another private sector collaborative initiative is an MOU signed between the government and Tanzania Horticulture Association (TAHA) as representative of private sector, targeting to attain USD 2 billion

[6] Further details on this are covered in section 4.

export earnings by 2030. The overarching aim of all these catalytic interventions is to boost the country's export earnings, also benefiting from the country's land potential (See, Annex 2), geographical position and the wide range of horticulture products that are mainly sold domestically and a significant proportion wasted in form of post-harvest losses, see for example Mashindano et al. (2013) and URT (2021).

1.2 Statement of the Problem

Despite the interventions and strong Government commitment summarized in Section 1.1, export development of the horticulture subsector has continued to be less competitive and in small scale when compared to peer countries such as Kenya, Ethiopia and Ghana as revealed in the ensuing sections. For example, Tanzania contributed less than 5 percent to the Africa's production volume in 2020. Horticulture accounted for merely 2.5 percent per annum of Tanzania's total export earnings and 4.3 percent of merchandise exports over the last ten years to 2022. Earlier studies on Tanzania such as those of Sergeant (2004), Mashindano et al, (2013), and Match Maker Associates (2017) attribute this relatively poor performance to mixed factors including passive government interventions along the horticulture value chain; high and stringent demands on quality in the destination markets; shortage of skills and experienced middle management and supervisors; inadequate incentives; inefficient business development infrastructure; and lack of legislative backup as the Food Security Act 1991 and its consequential amendment that resulted in the Cereals and Other Produce Act 2009 are grossly silent on horticulture (URT, 2021). Most of these studies though were done more than a decade ago, calling for a new investigation based on the latest available information

1.3 Objectives and Significance of the Study

This study reviews possible factors that influence horticulture exports in Tanzania. The overriding questions are: What are the horticulture export trends in the country? What products could be driving the performance? What reasons are behind the performance? What key lessons can Tanzania learn from peer countries in Africa?

The insights from this study serve as input in designing policy responses to diversify and boost exports, with a view to narrowing the country's current account deficit that has been widening since 2005 reaching the highest level of USD 5.4 billion in 2021, nearly 7 percent of GDP (above the 5 percent threshold for developing countries). Also, the study contributes to the literature in this topical area, on-boarding new developments in the horticulture subsector and partly benefiting from horticulture exporters' perceptions and other peer countries experiences.

After the introduction section, the paper is organized as follows: section two summarizes literature on horticulture exports, trailed by delineation of study approach in section three. The discussions and recommendations are captured in sections four and five, respectively.

2. Literature Review

The starting point on the theory underpinning export of any good is the demand and supply theories. A mismatch in supply and demand may lead to a price increase if there is an undersupply of or higher demand for the good, while a decrease in price could result if there is an oversupply of or lower demand for the good. On the supply side, several factors could be in force such as the good's own price, prices of related goods, conditions of production, expectations, price of inputs, number of suppliers, government policies and regulations, and sellers' willingness or ability to produce and sell the good. As for the demand, there are factors including income, size of the population, availability of related goods, nature of the good, individual tastes and preferences, and consumer expectations about future prices.

Relatedly, according to the cost of production theory, the cost of production determines the market price of any commodity, influencing both production and consumption. The labour theory is also relevant, especially the quality and quantity of labour required to produce the goods. With higher quality and quantity, production is likely to increase other things remaining constant. Tax and subsidy theories provide some insights in the analysis of performance of a good through the burden imposed on the cost of production and the influence on consumers to behave differently.

The performance of the exported goods may as well be influenced by price stickiness, mostly contributed by the market-level degree of competition (Ginsburgh & Philippe, 1988), Martin (1993) and Domberger (1979). Important here are the contract and cost-based theories. In underwritten contracts, firms cannot raise or lower prices for existing clients without any contract renegotiation even under cost shocks or demand shocks (Carlton, 1979). On the cost-related theories, as elaborated by Ball and Romer (1990), price rigidity could result if the benefit of nominal price change does not outweigh the costs. In both cases, constant supply and demand may be maintained.

Studies on horticulture exports are scant. Most of the literature is concentrated on exports in general, in which factors that influence exports performance are revealed in two main groups: internal and external (see for example, Kingu and Rahul 2015; Spasova, 2014; Zoega, 2013; Nadeem, et al., 2012; Prasad, 2000). Factors found to influence horticulture exports include real effective exchange rate, real GDP, foreign GDP, foreign direct investment (FDI), prices, and structural breaks (Dube et al. (2018);

agricultural GDP and real interest rates (Meme, 2015); and global market competition, competitive advantage of a firm, and access to suitable distribution channels (Murugi, 2014).

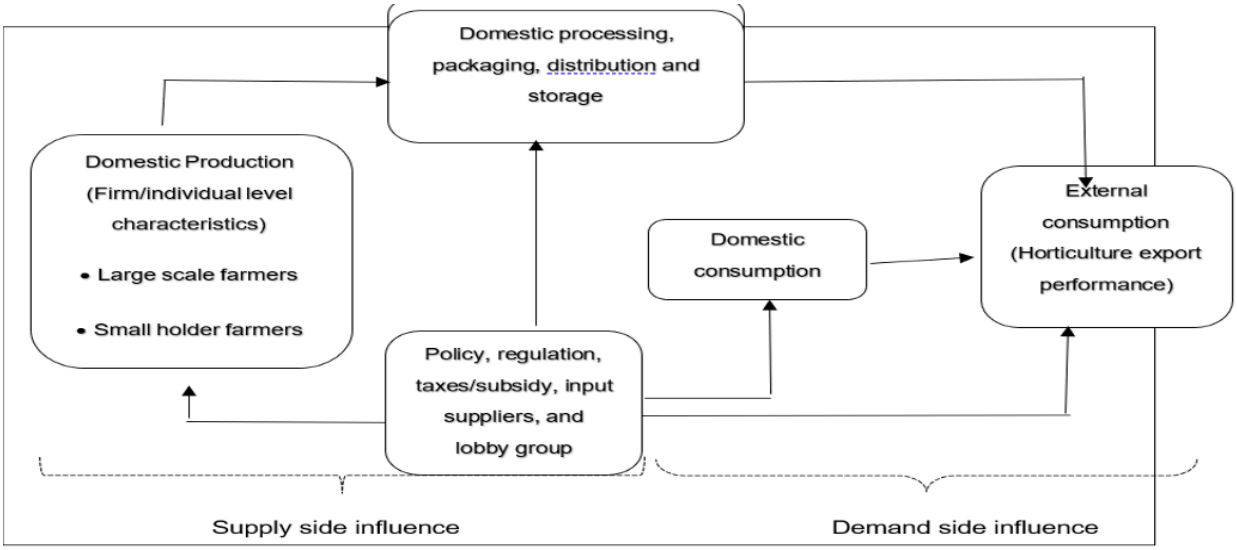
On Tanzania, only few outdated formal studies could be identified. These are Sergeant (2004), Mashindano et al. (2013), and Match Maker Associates (2017), which emphasize the supply side factors such as passive government intervention along the horticulture value chain in terms of policy support and strong institutional framework; shortage of skills and experienced middle management and supervisors; inadequate incentives; and inefficiency business development infrastructure. The current study seeks to extend this literature by onboarding new developments in the sub sector while providing answers to the research questions, partly benefiting from horticulture exporters' perceptions and other peer countries' experiences.

3. Study Approach

3.1 Conceptual Framework

The conceptual framework adopted in this study revolves around the supply-demand thinking as done in other earlier studies. As depicted in Figure 3.1, Tanzania's export performance may be influenced by interaction of both supply and demand factors. On the supply side, there are aspects relating to domestic production; processing, packaging and storage; market organization, and policy, regulation and taxes. The horticulture products resulting from that environment may be consumed both at domestic and external markets. Horticulture export performance depends on the course taken by the interactions, that is, increase if they are supportive or decrease if otherwise. Direction taken by domestic demand will respectively increase or decrease exports if production increases or decreases (or remains constant in an environment of increasing external demand). On its part, changes in external demand could have an influence on the export quantities and prices as well.

Figure 3.1. Conceptual framework



Source: Authors' construction

In this study, a combination of approaches was employed. These are desk review to help in tracing the country's horticulture export trends and possible reasons, and in gathering experiences from other African countries. The other approach is interviews of key informants which aimed at capturing key stakeholders' insights about what affects Tanzania's horticulture exports

A purposive sampling strategy was used to identify regions to be covered, in which Dar es Salaam, Arusha, Kilimanjaro, Morogoro, Iringa, Dodoma, Tanga, and Mbeya regions were selected as they host over two thirds of horticulture activities in the country. Dar es Salaam leads as major exit or headquarters of most of the businesses. Since the number of companies (firms) involved in export of horticultural products was small, 83 companies[7], the the initial plan was to cover them all during the survey conducted in 2020/21 by enumerators supervised by the principal researchers. However, upon verification and physical visits some of the firms were found to be inactive or completely out of operation. Hence, interviews were conducted with senior representatives of 31 firms[8], most of which deal in production, processing and export of horticultural products, as depicted in Table 3.1. Purpose sampling helped in identifying policy and regulatory oriented institutions; and facilitation, and umbrella organizations to be covered. On policy, regulation and facilitation side, the following institutions were identified Ministry of Industry and Trade, Ministry of Agriculture, Plant Health Services (PHS), respective Regional Administrative Secretary offices (RAS), Tanzania Bureau of Standards (TBS), Tanzania Revenue Authority (TRA), Tanzania Trade Development Authority (TANTRADE), Kilimanjaro Airports

[7] Bank of Tanzania.

[8] Dar es Salaam (12), Arusha (9), Kilimanjaro (3), Njombe (3), Dodoma (2), and Tanga (2).

Development Company (KADCO), and Swiss Port (SP), while on umbrella bodies were Tanzania Horticultural Association (TAHA) and *Mtandao wa Vikundi vya Wakulima Tanzania* (MVIWATA).

Table 3.1. Distribution of informants

Group	Name/Location	Number
Companies involved in horticulture export	Dar es Salaam	12
	Arusha	9
	Kilimanjaro	3
	Njombe	3
	Dodoma	2
	Tanga	2
Policy and regulation	Ministry of Industry and Trade, and Ministry of Agriculture.	2
Trade facilitation	Plant Health Services, Tanzania Bureau of Standards, Tanzania Revenue Authority, Tanzania Trade Development Authority, Kilimanjaro Airports Development Company, and Swiss Port, RAS offices (Dar es Salaam, Arusha, Kilimanjaro, Njombe, Dodoma, and Tanga).	12
Umbrella bodies	Tanzania Horticultural Association and *Mtandao wa Vikundi vya Wakulima Tanzania* .	2
Total		47

Source: Authors 'compilation.

A structured questionnaire administered on the spot aided collection of views from the respondents largely to enable comparability of views, while checklist questions were administered on policy and regulatory institutions, and umbrella organizations. The aim was to capture respondents' views on what could be hindering growth of horticultural products export and measures to be taken to address the constraints.

The SPSS package aided data processing and generation of response tables. To support interpretation of qualitative information, responses were organized in themes produced based on the research questions and the possible exports determinants as highlighted in the literature review. Econometric estimations to test for causal relationships were not attempted due to data limitations.

4. Study Findings and Discussions

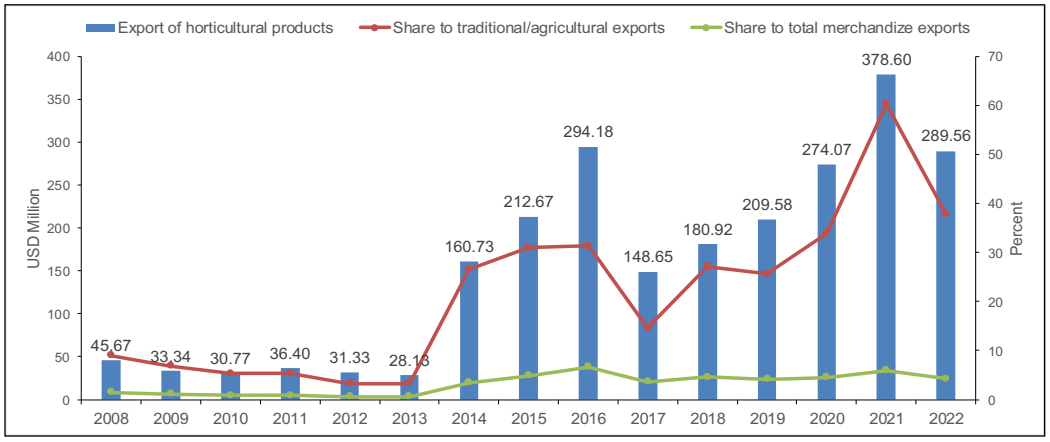
4.1 Tanzania's Horticulture Export Trends and Driving Products

Chart 4.1 depicts trends in Tanzania's horticultural products exports in the past one and half decades. Two phases are evident: a phase of low export levels recorded in 2008-13; followed by a phase of noticeable upward shift in value and contribution to export earnings, revealed since 2014. The upward

shift points to a structural change, probably echoing improved business environment. With the improvement in exports, the share of horticulture to total agricultural/traditional exports likewise rose, reaching 38 percent in 2022 (URT, 2021). The positive developments notwithstanding, the second phase ensued characterized by higher volatility driven by instability in unit prices and unpredictable supply.

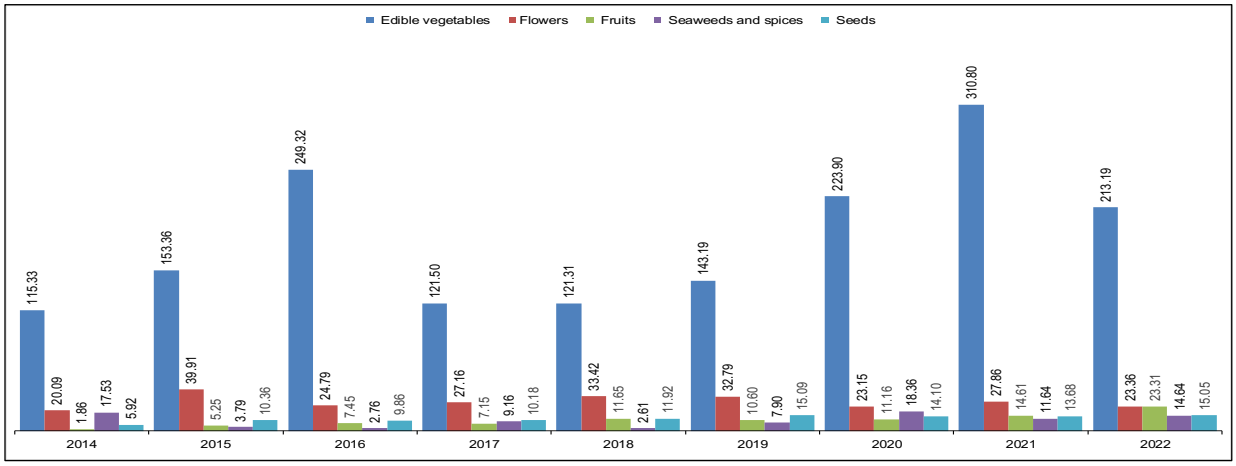
Noteworthy, horticultural products exports have been skewed towards high value vegetables which on average accounted for 74 percent of total export value, over the period 2014-2022, followed by flowers at 13 percent (Chart 4.2). The high concentration in export products could partly explain the observed volatility in the subsector's exports earnings. The volatility aside, the export data point to diversification since 2015, although at a slow pace, towards fruits and seeds, reaching USD 23.3 million and USD 15.05 million in 2022, respectively. Despite the diversification and increase in exports, growth of the exports, as shown in Figure 4.1, is not encouraging since no long growth trend can be traced; only a moderate movement around the mean is evident across almost all categories except seaweeds and spices. These findings imply that to move Tanzania's horticulture exports to a new and higher frontier, a concerted push would be needed. This could be reached by addressing the underlying constraints as discussed in the subsequent sections.

Chart 4.1. Horticultural products exports



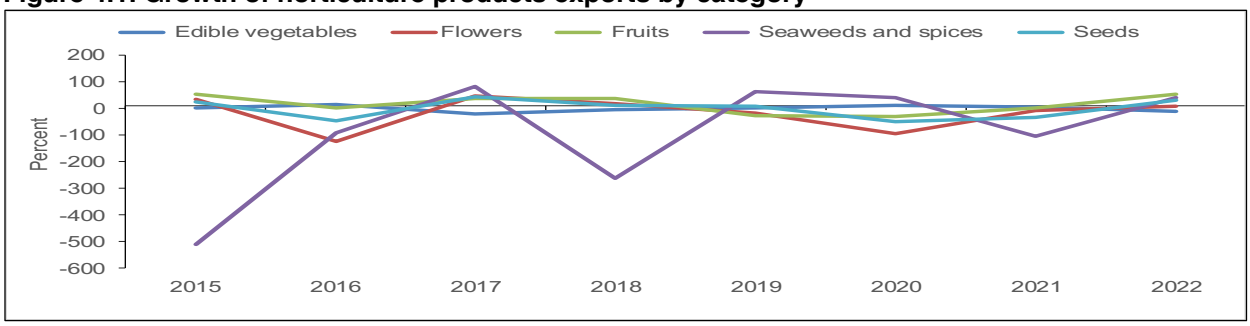
Source: National Bureau of Statistics, Tanzania Revenue Authority and Authors' computations

Chart 4.2. Horticultural products exports by category (USD Millions)



Source: National Bureau of Statistics, Tanzania Revenue Authority and Authors' computations

Figure 4.1. Growth of horticulture products exports by category



Source: National Bureau of Statistics, Tanzania Revenue Authority and Authors' computations

4.2 Possible Factors Influencing Horticulture Exports

4.2.1 Unpredictable Production Growth

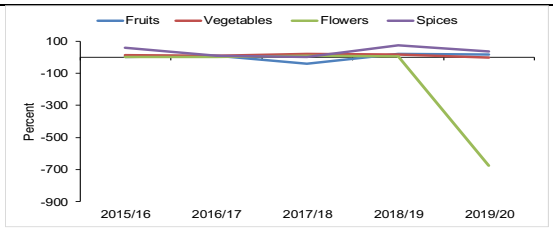
The growth trend observed in export values also features in the country's horticulture production numbers. This is revealed by an unclear growth pattern in all horticulture export categories except for flowers that witnessed a significant drop in 2019-2020 chiefly due to the negative effects of COVID-19 pandemic (Figure 4.2).

Figure 4.2. Horticulture production and growth

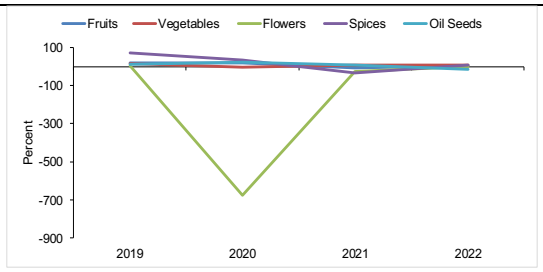
Production in Tonnes

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Fruits	4,574,240	4,711,000	5,243,343	3,703,124	4,576,948	5,582,117
Vegetables	1,041,375	1,189,000	1,298,388	1,595,489	1,926,927	1,852,676
Flowers	11,140	11,500	11,615	12,622	13,240	1,710
Spices	8,609	20,400	22,062	22,062	80,748	123,508
Total	**5,635,364**	**5,931,900**	**6,575,408**	**5,333,297**	**6,597,863**	**7,560,011**

Growth



	2018	2019	2020	2021	2022
Fruits	3,703,124	4,576,948	5,582,117	5,199,312	5,407,284
Vegetables	1,595,489	1,926,927	1,852,676	2,011,684	2,212,852
Flowers	12,622	13,240	1,710	1,338	1,351
Spices	22,062	80,748	123,507	92,389	101,628
Oil Seeds	1,109,142	1,230,767	1,583,669	1,713,178	1,507,565
Total	**6,442,439**	**7,828,630**	**9,143,679**	**9,017,901**	**9,230,680**



Source: Ministry of Agriculture and Authors' computations

The unpredictable growth in horticulture production volumes and export values suggests interplay of different factors. Hereunder, we run down the possible factors by blending evidence gathered by review of the available documentations, views from key stakeholders, and experiences from other countries.

4.2.2 Smallholder and Rain-Fed Farming

It was found that the horticulture subsector is still dependent on smallholder farmers, with fruits and vegetables dominating, attributed to ease of cultivation. The crops are mostly grown on land holding of less than 2 hectares. Vegetables include tomatoes, cabbages, onions, carrots, round potatoes, baby corns, baby carrots, green (French) beans, mange tout and spices. Fruits comprise mangoes, oranges, jackfruit, apples, avocadoes, pineapples, passion, and bananas. Cut flowers are largely cultivated by large farmers in a controlled environment owing to high quality requirements. Cut flowers require relatively high investment cost, driven largely by costs of setting up greenhouses, cooling facilities, pack houses, irrigation systems, and acquisition of inputs including fertilizers, pesticide and agrochemicals. To overcome competition (quality) constraints, growers have opted to produce unique flower types such as gun flowers. Worth noting that, despite ranking second in production, fruits still lag behind in export earnings.

Generally, most of the production is rain fed exposing the subsector to the vagaries of weather and seasonality effects. During drought or heavy rain periods shortages are experienced, while bumper harvests appear in the event of adequate rains. In such a situation, price volatility is normal, which discourages production. Most of packaging materials, seeds and pesticides are imported increasing operational costs. Production is also affected by inadequate skilled and trained research personnel. Sokoine University of Agriculture is the only higher learning institution in the country that offers degrees in horticulture, while two technical tertiary Institutes offer courses at the diploma level. There are other challenges in respect to research and development; and lack of intellectual property registration, and enforcement mechanism to safeguard innovation. The external factors impact production as well. In point here include the rising cost of energy and fertilizers registered particularly during the global financial crisis of 2008/09, COVID-19 pandemic (2019/20), on-going war in Ukraine and conflicts in the Middle East.

With smallholder farming dominating, the industry is prone to low productivity partly attributed to high reliance on traditional (elementary) agricultural practices that put less emphasis on irrigation, mechanization, and improved horticultural seeds, seedlings, and other related inputs. It is not surprising that post-harvest losses in Tanzania are very high relative to other peer countries. URT (2021) estimates pre- and post-harvest losses at 40 percent of the total horticultural crop produced which is twice that of Ghana. The main reasons for the losses comprise limited farmers' awareness on the appropriate techniques to reduce crop losses, inadequacy or limited skills in harvesting techniques; inadequate adherence to market requirements, especially during peak demand/ scarcity season; inadequate horticultural post-harvest handling facilities, inappropriate transportation system and transport techniques or facilities; and the improper packaging and unstandardized packaging materials. During field visits, unspecialized vehicles (lorries and pickups) could easily be spotted loaded with fruits and vegetables from the production centres on the way to the markets, largely major cities of the country.

4.2.3 Land Scarcity in Northern Regions

For a long time, horticulture production has done relatively well in Northern regions of Tanzania (Arusha, Kilimanjaro and Tanga). The main reasons are the high altitude and good soil advantage, increase in demand, improvement in business environment, and the ease of reaching markets facilitated by relatively improved transport infrastructure. The rapid growth is also attached to its proximity to Kenya where the horticultural industry is flourishing. However, production in this zone appears to have reached its full capacity point caused by land scarcity. The future growth of the subsector, exports in particular,

is therefore expected to come from other potential regions in the country, largely the Southern Highlands (Mbeya, Ruvuma, Iringa and Njombe) and Coastal regions of Coast (Pwani) and Tanga. The shift may have a negative impact on the horticulture production and exports if not well managed. The extent of the impact will depend on the speed of adjustment to the new potential areas tapping into the huge underutilized arable land, while ensuring realization of a wide diversification of products. Tanzania is estimated to have over 44 million hectares of arable land of which only 33.0 percent is cultivated. Likewise, the irrigated area is estimated at 694,715 hectares of which a substantial portion is used for non-horticultural crops[9].

4.2.4 Uncoordinated Domestic Market

Presence of a well-organized market is one of the key aspects that can influence trade of any commodity by incentivizing participation. Domestic horticulture supply chains are largely less organized and are based on contacts and knowledge of the actors involved in the trading. Regional markets within the country are easier to access compared to the local markets due to infrastructural bottlenecks. Other identified constraining factors comprise limited adherence to appropriate marketing requirements; uncoordinated local markets, unstructured and unstandardized produces; and lack of appropriate market storage facilities for horticultural produce. In such a market arrangement, smallholder farmers and traders are price takers, with prices of their produces/products being below that of the market due to information gap, as well as low negotiation power and skills. The phenomena act as disincentive to potential investors in the subsector.

Traders operate in three categories, namely: large, medium and small traders. Large traders have more capital and are in a better position to cover a large area for buying products. Medium traders are more restricted to the area where they trade and offer only local products while small traders generally do not own land and have no other option than to trade to earn a living. At a commission, small and medium traders usually serve as aggregators of horticultural products for foreign agents or large traders. Only one-third of the respondents (35.5 percent) reported to rely on what they produce when exporting, implying much of the export products are sourced from other producers.

[9] URT (2021),

4.2.5 Low Contract Farming Arrangement

Contract farming arrangement is likewise low as a mere 9.7 percent of the respondents supported existence of such schemes. The observed low contract farming arrangement is attributed to difficulties in controlling quality of produce largely the preferred organic products, as well as contract enforcement difficulties.

Scaling up contract farming schemes in the subsector could be advantageous to both farmers and traders through increased supplies. Contract farming is beneficial to small holder farmers, since it can enable farmers to access local and global markets[10], and to achieve higher yields, diversify into new crops, and increase income[11]. The arrangement may, however, be detrimental to farmers if not well managed as it could be a conduit of exploiting farmers by large agribusiness firms due to their inherent bargaining power in favour of smallholder farmers[12].

4.2.6 Inadequate Product Value Addition

Tanzania has made steps in adding value to her horticulture products. But that is still limited to a few products and domestic market. As shown in Table 4.1, most of the value addition is in avocado. Fruits that dominate production in the subsector still lack behind. Enhancing and broadening value addition to all products, would help the country preserve the produces for lean period, increase economic value (price), and lift consumers' appeal of the good thus widening the customer-base.

[10] Key and Rusten (1999), Warnings and Key (2002), Gulati et. al. (2005), Minot and Roy (2006).

[11] Simmons (2002), Warning and Key (2002), Simmons et al. (2005).

[12] Little and Watts (1994) and Singh (2002).

Table 4.1. Horticultural Products Processing in Tanzania

S/N	COMPANY NAME	REGION	PROCESSED PRODUCT
1	Saipei Foods Tanzania Ltd	Mbeya	Avocado oil
2	Darsh Industries Ltd (Red Gold)	Arusha and Iringa	Processed fruits and vegetable
3	East African Foods	Dar es Salaam	Processed fruits and vegetables
4	Nature Ripe Industry	Dar es Salaam	Processed fruits and vegetables
5	Edimige Spring Ltd	Arusha	Rosela wine
6	Halisi Organic Farm Ltd	Kilimanjaro	Spices and herbs
7	Morogoro Food Processing Cluster	Morogoro	Processed fruits and vegetables
8	Zanzibar Spices Herbs	Zanzibar	Spices and Herbs
9	MED Foods Products	Arusha	Spices
10	Dabaga Vegetable & Fruit Canning Company Ltd	Iringa and Dar es Salaam	Tomato paste
11	Trianon Investment Limited	Tanga	Spices
12	African Vegetable Limited	Kilimanjaro	French beans
13	Elven Agri Limited	Dar es Salaam	Dried fruits, vegetables & spices
14	Olivado Tanzania Limited	Njombe	Avocado oil
15	Kuza Africa Company Ltd	Mbeya	Avocado oil
16	Nzallacado Oil Company Limited	Iringa	Avocado oil
17	Avomeru Group Ltd	Arusha	Avocado oil
18	Natural Extracts Industries Limited	Kilimanjaro	Processing vanilla pods
19	Lima Kwanza	Songwe	Avocado oil
20	CETAWICO	Dodoma	Grape wine
21	ALKO Vintages Co. Limited	Dodoma	Grape wine
22	DANE Wine	Dodoma	Grape wine
23	Africado Ltd	Kilimanjaro	Avocado
24	HomeVeg Tanzania Ltd	Arusha	Vegetables
25	Dutch Farms Ltd	Arusha	Flowers
26	Rungwe Avocado Co. Ltd	Mbeya	Avocado
27	Serengeti Fresh Co. Ltd	Arusha	Vegetables
28	Kiliflora Ltd	Arusha	Flowers
29	Hortanzia Ltd	Arusha	Vegetables
30	Mbeya Food Processing Park	Mbeya	Fruits and vegetables

Source: TAHA (2022)

4.2.7 Product Quality and Competitiveness Improved but still Facing Challenges

When asked to indicate the quality and competitiveness of Tanzania's horticultural products, more than 80 percent of the respondents pointed to high quality rating, while 90 percent showed that they are competitive. Since most of the horticulture produce is consumed domestically, the response could be applying most to domestic market whose impact also filters into the export market. For those who indicated that the products are not competitive attributed it to poor seeds that cannot withstand unfavourable weather conditions, attack by diseases and pests thus impairing quality.

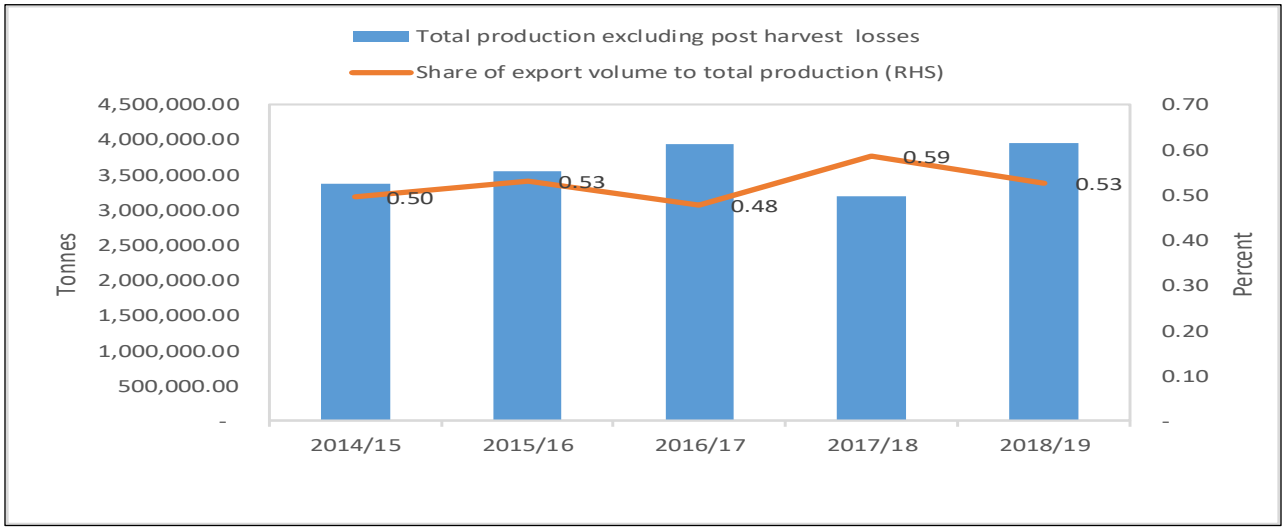
Quality is also affected by poor cargo handling, prolonged export procedures, difficulties in enforcing quality from smallholder farmers, and inadequate storage facilities at product collection and exit points. Low knowledge on the part of smallholder farmers on the outcome of standards and certification related requirements contribute to this too. Examples of these include the Hazard Analysis and Critical Control Points (HACCP), ISO 9001, and BRC Global Standard that are the most widely applied in high end markets for horticultural packing and processing. Other encountered challenges are in respect to certification[13]. They include unstructured producer and marketing systems with the majority being unified SMEs; inadequate skills for development and implementation of effective quality assurance systems; high costs of certification and compliance controlled by foreign certification bodies; limited funds to facilitate the certification process; unavailability of local/domestic certification bodies; and limited skills and professionals in certification.

4.2.8 Low Export Market Access and Diversification

Proxied by Tanzania's share of horticulture export volume to total production (excluding the post-harvest losses), available data indicate very low access to exports market. In the last five years to 2018/19, Tanzania managed to export only 0.5 percent of the horticulture production volume. The export data suggest that a large chunk of the produce is consumed domestically, partly reflecting the small-scale operations that are characterized by limited access to regional and international markets. The low export outturn could as well be manifesting under reporting of exports data, largely from informal cross-border trade. Partly supporting this thinking, there is huge discrepancy (estimated at USD 300 million as of October 2023) between official data from National Bureau of Statistics (NBS) and Tanzania Revenue Authority (TRA) and what is reported by stakeholders (TAHA and others). These developments suggest that there are high potentials for improving exports numbers by not only increasing production; constraining domestic consumption in favour of highly paying exports; reducing post-harvest losses that is currently estimated at 40 percent of the total horticulture production; but also, by enhancing the quality of reported export statistics.

[13] URT (2021).

Figure 4.2.6. Share of horticulture export volume to total production



Source: Tanzania National Bureau of Statistics

Respondents attributed the low access to export market to limited cargo flights and cold room facilities at the exit points, which leave the exporters with no option other than relying on the neighbouring country, Kenya. This increases operational costs, causes delays of cargo to the intended destination, while products lose their originality and brand. Recently, the country made a step by acquiring one cargo plane. This is inadequate however given the need to cover many external markets at a time and to connect the country's diverse regional markets with the exit ports. URT (2021) underscored that exports market access is similarly constrained by weak linkages between upstream actors (producers) and downstream actors (retailers), lack of adequate market intelligence and weak capacity to comply with international food safety standards.

When inquired to express their perception about the level diversification of markets, most of the interviewees indicated that market diversification is far less for flowers due to quality requirements than is for fruits, vegetables and spices. About 75 to 80 percent of fresh flowers are auctioned in the Netherlands, while the remaining volume is sold to other direct markets like Norway, Germany and the UK. The main fruit export destination countries are India, Vietnam, Kenya, France, the Netherlands, Thailand, Zambia, UK, Malawi, UAE, USA and South Africa. For vegetables, markets include India, Kenya, Pakistan, UAE, Bangladesh, Vietnam, Uganda, Indonesia, Netherlands, Belgium, Rwanda and Portugal. Spices go, among others, to Kenya, UK, the Netherlands, Spain, Australia, India, Egypt, Germany, UAE, Libya, Yemen, Singapore and Pakistan. The markets are mainly reached through foreign agents as alluded to by 67.7 percent of respondents. Direct export or use of agents within the country is still tiny. This points to the need to facilitate internationalization of domestic entities through,

among others, enticing foreign direct investment (FDI) participation in the horticulture and integration into the global value chains.

Market diversification into Africa is good news though room still exists for further expansion into regional markets to which the country has some influence and comparative advantage. However, it was echoed that a lot more needs to be done to ensure the country benefits fully to the regional markets. For example, AfCFTA market of 1.4 billion people is a potential market for Tanzania's horticulture products but is yet to be fully exploited since so far only spices (cloves) has found its way to Morocco. The ongoing trade engagement under the Guided Trade Initiatives pilot phase will have to hasten negotiation while ensuring more horticultural products enter the continental trade bloc.

To some exporters, diversification is key in withstanding high competition in the export market, commodity price fluctuations; exploiting available horticulture export opportunities; and benefiting from better returns. Some interviewees indicated that the outbreak of COVID-19 pandemic provided an opportunity to exploit regional markets in an endeavour to meet demand for medicinal leaves and fruits such as lemongrass, neem and baobab. Nevertheless, they indicated that the pandemic brought with it negative effects as well, mostly resulting from cancellation of flights, closure of some overseas markets, high shipping costs, and products price fluctuations in international markets.

Despite the benefits associated with diversification, when asked to indicate whether they have diversified markets, about half of the respondents (54.8 percent) said they hadn't, signifying many traders continue relying on their traditional markets. The reasons for such inclination comprise: favorable market conditions in the current niche including price; exploring new markets; risk aspects as they might incur loss on the way; specialized product for a particular market; serving of a parent company; and lack of capital to increase production. Access to affordable credit is a problem because many farmers and traders operate on small-scale lacking viable assets to pledge as collateral and unable to afford high interest rates. The limited funding hinders firm growth including product and market diversification.

4.2.9 Inadequate Transport and Logistics

Existence of exports exit ports provide opportunities for market expansion both within the region and outside the region. This includes offering service delivery infrastructure such as cold rooms and facilitating freight loading. According to TAHA (2022), air transportation is used for 8 percent of flower exports, and 14 percent and 26 percent of vegetable and fruits exports, respectively. The low uptake of this mode of transportation could partly explain the low share of horticulture exports since most of the

external markets are far away and apart. The products are transported to diverse global destinations, with key destinations being Europe, the Middle East, and Asia. Transportation involves both cargo and passenger aircraft via JNIA and KIA, which have cold-room facilities, though limited as explained below. Songwe and Mwanza Airports provide domestic transfers only.

Cargos are served upon confirmation of booking of shipment by airline and secured all relevant export permits and customs release order. Respondents' views are that there are still cases of cargo delay due to, among others, network outages at the exit ports, and prolonged procedures for cargo clearance, which sometimes make it difficult to meet products delivery deadlines or/and hamper products' quality. Challenges specific to each port are briefly highlighted hereunder.

Julius Nyerere International Airport

The total cold room space for perishable cargo at JNIA is 750sqm facility and is constrained by absence of Pharma as well as Centre of Excellence for Independent Validators (CEIV) certifications which are necessary for perishables handling; absence of temperature-controlled offloading room; inadequate capacity; limited offloading bays; and inadequate access to air space which requires trolling exports to aircrafts about 200 - 500m which exposes perishables to heat.

Kilimanjaro International Airport

KIA has a holding capacity of 110 tons designed to handle 30 percent vegetables and 70 percent flowers. KIA facility is over 15 years of age, which is beyond the recommended average life span of 7 years for commercial cold storage facilities.

Songwe Airport

It was built to facilitate exports from the Southern Highlands regions with huge potential for avocados, tomatoes, potatoes, other fruits, vegetables, spices and flowers. Songwe airport has not been able to facilitate exports due to absence of cargo terminal and associated infrastructure including cold room facilities; lack of adequate volume for inward cargo to attract air carriers for outward cargo; and absence of certified cargo handler for international air deliveries.

Mwanza Airport

Mwanza Airport is in the Lake zone with a newly built cargo terminal with perishable handling section commissioned in May 2020. However, the cold room facility operated for only a short period after commissioning because it did not meet international aviation standards. The facility has 12 small rooms

each with a capacity of 11.7m3. Operation of the cold room facility is constrained by inadequate insulation at the top to preserve desirable temperatures; absence of Pharma as well as CEIV certifications which are necessary for perishables handling; unavailability of temperature-controlled offloading room; limited capacity of the facility; limited offloading bays; and lack of direct access of the cold room facility from the offloading vehicles.

4.2.10 Policy and Regulatory Support

Although there is no policy directly linked to the horticulture sub-sector, the sub-sector benefited from measures taken to address the United Republic of Tanzania National Agriculture Policy (URT, 2013)'s emphasis on developing an efficient, competitive and profitable agricultural industry. Several macro and sector specific reforms that have a bearing on agriculture have also taken place. These include fiscal and monetary policies and other sector specific policies like the National Trade Policy (URT, 2003) that explicitly promote agricultural marketing, including strengthening marketing linkages among others for exports. In addition, the Agricultural Marketing Policy (URT, 2008) focuses on the development of an efficient, effective, flexible, accessible and equitable agricultural marketing system. These are pre-requisite in fostering market-oriented agriculture's contribution in income generation, job creation, foreign exchange generation, providing balance between rural and urban areas, and supplying food to all at affordable prices and strengthening linkages with the manufacturing industry. Other policy measures worthy of underscoring, include the Agriculture Sector Development Programme (ASDP II), Export Processing Zone Act 2006, the Cooperative Societies Act 2013, and Agricultural Marketing Policy (URT, 2008). These legal and programme instruments take care of the major agricultural constraints, including inadequate inter-institutional coordination, communication and linkages.

In addition, various other strategies have been put in place aimed at boosting production and strengthening both domestic and foreign markets. Tanzania horticultural development strategy is demand-driven initiative drafted by horticulture stakeholders to exploit the fast-growing demand and market opportunities available in the national, regional and international markets. The strategy aimed at promoting horticulture in Tanzania; expanding long term financing and investment; addressing specific land, policy issues and infrastructure bottlenecks in horticultural industry; supporting market development; expanding production base and improve quality; strengthening industry linkages; and mobilizing human resources. The latest TZS 4.7 trillion National Horticulture Development Strategy and Action Plan 2021-2031 (URT, 2021) has set target to increase production and productivity target by 40 percent from the production of 7,560,010 tonnes in 2019/2020. The anticipated target will be reached

through a harmonized multi-sectoral engagement to support and drive the transformation of Tanzania's horticulture industry. Horticulture has also been identified as one of the priority sub sectors in the National Export Strategy (2010-2014) (URT, 2009), key in diversification of the agricultural sector from overdependence on traditional primary products. Tanzania National AGOA Strategy (URT, 2016) outlines four sectors that can be developed rapidly for the purpose of increasing Tanzanian participation in AGOA market access opportunities. These are: garments and textiles; agro-processing that includes horticultural products, spices and edible nuts; leather products and footwear, and handicrafts sectors.

4.2.11 Supportive Institutional Services

Various services are provided to support horticultural produce exports. Some of the services are facilitative in nature, while others aim at ensuring adherence to standards and compliance. Some of the respondents were of the view that the institutional framework is still fragmented and uncoordinated limiting its benefits to the horticulture subsector. The response notwithstanding the increase in exports to a new and higher export frontier (2014-22) explained earlier could have been supported by the improvement in support services. The observed low access of Tanzania's horticulture products into the external market, however, calls for a further push to help leapfrog horticulture exports.

The key supportive institutions are Tanzania Bureau of Standards, (TBS), Kilimanjaro Airports Development Company (KADCO), Swiss Port, Mtandao wa Vikundi vya Wakulima Tanzania (MVIWATA), Tanzania Revenue Authority (TRA), Tanzania Horticulture Association (TAHA), Tanzania Trade Development Authority (TANTRADE), Ministry of Agriculture, Food Security and Cooperative (MAFSC), Agriculture Council of Tanzania (ACT), Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA), Tanzania Horticultural Association (TAHA) as well as Mtandao wa Vikundi vya Wakulima Tanzania (MVIWATA). Some of the organizations such as TAHA, MVIWATA and TCCIA represent farmers' interests and play an important role such as offering information on inputs, credit services, and markets; conducting membership education; providing training on technical and organizational issues; lobbying and advocacy on behalf of their members; and participating in the processes of policy formulation, programme planning and implementation.

As for market intelligence, business linkage and promotion services, they are provided by, among others, TAHA, TANTRADE, MVIWATA and Tanzania's Embassies with the aim of linking farmers to markets. This entails advocacy, provision of trade and market information, and branding of Tanzania produce with a view to improving production. Also, they assist horticulture producers to access foreign markets and to promote their products in trade fairs and trade missions in various foreign countries. Through this

spirit, strengthening of farmer-producer associations is undertaken with overall objective of addressing constraints and risks faced by small producers, especially access to credit, technical services and marketing. Some of the reiterated challenges include the absence of zonal trading centres/offices making it difficult to disseminate market information thus creating a gap between producers and markets. This restricts the movement of goods from production centres to markets. Information gap (not well integrated information system) also persists between public and private entities, thus increasing market search costs rather than reducing them.

4.2.12 Tax Structure in Horticulture Sub Sector

Unpredictable taxes and other charges were also mentioned to affect export decisions. Taxation in horticultural products is broadly classified in two types, namely explicit and implicit taxes. Explicit taxes include both direct and indirect taxes. Direct taxes involve income, land rent, wealth and property taxes. Indirect taxes include taxes on domestic trade (e.g. VAT) and foreign trade, stamp duty and taxes levied in specific marketed products (excise tax and cess[14]). Implicit taxes on the other hand are taxes on non-horticulture sub-sectors which affect horticultural output prices such as non-tariff barriers and import tariffs.

Of recent (2020 to date), taxation on horticultural produce has fallen significantly in line with implementation of the institutional and regulatory reforms to improve business environment (the National Blueprint). Nevertheless, it continues to be a fundamental and important source of revenue for many local governments. Some of the tax waivers on horticulture activities include exempted customs and VAT on imported horticulture implements and technologies applied in the sub-sector, ranging from tractors, irrigation equipment and parts to storage facilities. VAT exempted are horticultural inputs, including seeds, seedlings, cuttings, fertilizers, pesticides, insecticides, fungicides, plant growth regulators and biological agents. Cess on horticultural products was reduced to 3 percent in 2017/18 from 5 percent. However, this reduction seems insufficient according to stakeholders, and several reform options, aiming for further reduction of cess rates and their harmonization among crops and LGAs, are currently under discussion. In 2019/20, import duty for fruits and vegetables increased from 25 percent to 35 percent to promote local production of horticultural products.

[14] Cess is an 'earmarked' levy charged by the local government on specific marketed products. It can be imposed using flat, proportional or graduated tax rates on either quantities (volume) or value of the traded commodities. More recently, both cash and staple crops are targeted by produce cess.

TAHA Agricultural Sector Fiscal Reform Proposals for 2023/24 presented several tax concerns including the following:

a. The 2 percent withholding tax on purchases of agricultural/horticultural inputs which was assented to law effectively on 1st July 2021, was introduced as among measures to broaden tax base, nevertheless the purchasers who are mainly producers of various horticultural products and others who are purchasing for local resale and export have ended up bearing the 2 percent withholding tax cost which potentially increases the cost of production and compromise competitiveness.
b. The The 30 percent Corporate Tax was reported to be on the higher side and thus preferential treatment was requested to be reduced to 10 percent for 3 years from commencement of the business.
c. Skills Development Levy of 3.5 percent was proposed to be lowered to 2 percent.
d. The land rent of Sh. 1,000 per acre in rural area and Sh. 5,000 per acre in urban area was proposed to be harmonized for a level playing field.
e. Considering reinstating import tariffs of 25 percent and 35 percent for crude and refined edible oil, respectively to protect local industries and empower small holder farmers and attract foreign investments for edible oil processing, and safeguard farmers involved in edible oil production.
f. Radiation fees charged by Tanzania Atomic Energy Commission (TAEC) should only be charged when required by importing country.
g. VAT is relief on capital goods marginalize small farmers as it is charged on imported capital goods which does not meet the minimum threshold of 60 million customs value. This Threshold is very high for many agribusinesses and SME in the agricultural sector (Crop, Livestock and Fisheries). It was recommended to be reduced to 20 million.
h. VAT charged on seed research and breeding services done in Tanzania is distortive, counter innovation and increases production costs to seed thus the Government was advised to review the Value Added Tax Act, 2014 and zero-rate the seed research and breeding service.
i. Considering adding modern horticultural inputs to the VAT exemption list. These include mushroom casing (H.S 2703.00.00); peat moss (growing media) (H.S 2703.00.00); agricultural drones; packaging materials for Agriculture Lime and Gypsum; Aseptic bags with H.S Code 3923.21.00.
j. Occupational Health Services (OSHA) medical examination fees needed to be reduced. The prevailing medical examination consultation of TZS 20,000; lung test – TZS 25,000; vision test – TZS 15,000; audiometry test – TZS 15,000 were on the higher side.
k. Scrapping all nuisance multiple LGA fees such as TZS 50,000 charged by LGA per truck, Permit fees of TZS 150,000 and Loading and Off-Loading fee of TZS 150,000 per month per vehicle.

l. NEMC and other regulatory authority fees are exorbitant including irrigation fees charged by NEMC per acre; EIA fee of TZS 4,000,000, TAFIRI fees of TZS 3,500,000, Basin Authority fees of TZS 1,000,000, NEMC annual fee of TZS100,000.

4.3 Lessons from Selected African Peer Countries

Lessons emerging from the peer countries' experiences include the need to scale up FDI in the effort to transform the horticulture subsector, and to help penetrate the global value chains. Other key areas of interest are in relation to the need to adequately: put in place supportive policies, food processing industries that] use modern technology to add value to products, requisite infrastructure for logistics and storage and bound flights. Others are enhancing product and market diversification, post-harvest management, ensuring availability of a critical mass of experts and extension workers, and adherence to quality control measures.

4.3.1 Kenya

Kenya's economic growth has been mainly dominated by the agriculture sector, with the horticulture subsector (fruits, cut flowers and vegetables) being the third leading contributor to agricultural GDP after dairy and tea (Nzomoi et al., 2022). Kenya's horticultural subsector contributes about 33 percent (USD 300 million) of the agricultural GDP (Samoei and Kipchoge, 2021). Avocados are the country's largest export fruit followed by pineapples, mangoes, raspberries, passion fruits, and lemons. The main export vegetables include chillies, basil, peppermint, French beans, mixed vegetables, peas, and herbs. In 2022, the sector generated USD 1.03 billion through exports, a significant increase from USD 50 million in 2006. In July 2023 about 65,172 tonnes of fresh fruits, vegetables, and cut flowers were exported, recording the highest volume of horticultural produce in more than two years. The main export markets for Kenya's horticultural produce are Netherlands, United Kingdom, Germany, Austria, Italy, France, Belgium, United States of America and the Middle East.

Penetration into the global value chains pioneered by FDIs and local companies explained much of Kenya's success story (Christine et al., 2021). Some of the FDIs that contributed to transforming Kenya's horticulture sub-sector include the input suppliers (BASF, Syngenta, Balton CP, Yara), production, processing, storage and packaging companies (Flamingo, Oserian, Kakuzi Ltd, Del Monte, Olivado) and distribution and marketing companies (Tesco, Marks & Spencer, Waitrose and Walmart). Other factors include climate that permits a year-round growing season; conducive business environment, massive investment in irrigation, food processing industries and infrastructure for logistics and storage as well as

rise of supermarkets in 1990s including Nakumatt, Uchumi, Chandarana, and Tuskys, Naivas and Zucchini.

The country's horticultural sector benefits from high-quality soil, robust agricultural infrastructure coupled with frequent European bound flights. The success is also attributed to investors in Kenya meeting the EU standards for safety and quality for the horticulture products. Additionally, the Kenyan government has played a pivotal role by implementing policies that support the horticulture sector, including stabilization of the exchange rate and inflation rate, provision of incentives to farmers and development of export-oriented farms.

4.3.2 Ghana

According to FAOSTAT (2022) and Irene et al. (2022), Ghana, fruit production is highly commercialized, mainly include pineapple, banana, oranges, mangoes, pawpaw and passion fruits, which are exported in greater quantities, estimated at 30 percent of total fruits production. The country's exports of fruits alone more than doubled to USD 161 million in 2020 from USD 64 million in 2016. This compares unfavorably with Tanzania's USD 7 million and USD 11 million in the same period. Proper usage of fertilizers and pesticides explains much of high productivity and quality in fruits farms, averaging at 40-50 tonnes per hectare. Wide range of fruits varieties also is reported to boost Ghana competitiveness in the world fruits markets. Effective post-harvest management of the fresh fruits is another secret behind Ghana success. Post-harvest loss in Ghana is estimated at around 20 percent, quite below 40 percent reported for Tanzania (URT, 2021). Most Ghana's fresh fruits are exported to Asia, Europe, and neighboring countries, championed by private sector. To ensure availability of critical mass of experts and extension workers, Ghana has four public universities and four agriculture colleges, teaching agriculture and horticulture related courses. Value addition is widely practiced by private companies that apply modern technology in cleaning fruits, peeling and cutting, removing and sorting and packaging. They also have dryers for drying processed fruits. In addition, Ghana has a world-class, dedicated fruit terminal, which among others, provides cold storage for pineapple and other horticultural products.

4.3.3 Ethiopia

Fruits, vegetables and flowers play a significant role in Ethiopia's economy through generation of foreign exchange. Since 2017/18, horticulture has been among the three largest agricultural export earners for the country after coffee and oil seeds, generating close to USD 500 million annually (CSA, 2018 and Hengsdijk et al, 2021). About 80 percent of these earnings were derived from the export of flowers, with the main export markets being Europe and the Middle East. Between 2017 and 2020, exports of fruits

and vegetables were USD 91.6 million. Non-graded fresh fruit and vegetables, such as tomato, onion, banana, mango and avocado are exported to neighbouring countries of Djibouti, Somalia and Sudan, while high value, fruits such as strawberry, avocado, grapes and blueberry are exported to Belgium, the Netherlands, and the United Arab Emirates (Hengsdijk et al. 2021).

Ethiopia's commercial horticulture production has benefitted mainly from policies of the Ethiopian government to support private sector large scale investments in the production of flowers and propagation material (i.e. cuttings) for the export market. This is further enhanced by investments from the public sector and non-governmental organizations (NGOs), which provide smallholders with access to irrigation water and other farm inputs. Furthermore, commitment to sustainability and adherence to international quality standards have also contributed to the country's competitiveness in the global horticultural market.

5. Conclusion and Policy Recommendations

In recognition of the horticulture's potential to the growth of the economy, the need to leverage on the vast global market and its strong linkage to other sectors of the economy, the government has been taking different measures with a view to boosting horticulture production and exports. Despite the effort, the horticulture subsector has not performed to the expectations in generating foreign earnings. This study analyzes possible factors which influence Tanzania's horticulture exports using a combination of approaches: descriptive analysis, desk review, and interviews. A structured questionnaire was used to gather traders' perceptions, while a set of checklist questions was administered to purposely selected policy, regulatory, and facilitation institutions.

It was found that horticultural products export performance in Tanzania have exhibited mixed trends in the past one and half decades to 2022. A low exports phase was recorded in 2008-13, followed by a phase of noticeable upward shift since 2014, partly revealing supportive business environment. In line with this, the share of horticulture to total agricultural/traditional exports likewise rose, reaching 38 percent in 2022. However, the increase has been characterized by higher volatility, while exports are skewed towards high value vegetables which on average accounted for 74 percent of total export value over the period 2014-2022. Diversification has been witnessed since 2015, although at a slow pace, towards fruits and seeds. The growth trend observed in export values also features in the country's horticulture production numbers characterized by unclear growth pattern in all categories except for flowers that witnessed a significant drop in 2019/20 partly due to the negative effects of COVID-19

pandemic. Access to exports market as measured by Tanzania's share of horticulture export volume to total production (excluding the post-harvest losses) is still low at 0.5 percent.

The unpredictable growth of horticulture production and export values is associated to several factors. These are highlighted here under together with the possible policy intervention measures.

a) *Horticulture production is undertaken on small-scale; contract farming arrangement is low; and irrigation infrastructure, skills and affordable quality inputs are inadequate*: In collaboration with key stakeholders, the government to scale up measures aimed at enhancing irrigation systems, timely availability of high yield seeds and pesticides, availability of requisites training institutions, R&D and extension services to not only increase production for exports, but also improve product quality. The ongoing government dedication to increase budget for agriculture to at least reach 10 percent of the total budget may help to resolve most of these challenges. Important also is provision of incentives to attract MSMEs investment in the subsector, partly under contract farming arrangement to benefit from the more established companies. Such incentives may be in form of subsidies, tax reliefs, and access to affordable loans as done by other peer countries. The ongoing government Building A Better Tomorrow–Youth and Women Initiative for Agribusiness (BBT-YIA) which introduces block farming for MSMEs, is a good start.

b) *Cargo planes and storage facilities are inadequate contributing to delays in reaching external markets and impairing quality of products. In addition, airport landing fees, navigation fees and agency fees were reported to be relatively high in our airports. Combination of these constraints culminated to dependence on neighbouring country's facilities that increases operational costs and shifts originality of Tanzania's horticultural products to another country*: The government to allocate more funds to acquire more medium size cargo planes for inbound aggregation and/or scale up the efforts to attract more cargo flights into/from the country with the view to cover the key market destinations so as to enhance the export shares of fruits and vegetables that have been lagging behind. In partnership with other actors in the industry, the government to allocate adequate resources to improve the standard and capacity of storage facilities at product collection centres and exit ports to reduce post-harvest losses and improve quality of products. Responsible government institutions to improve operational efficiency with a view to speeding up cargo clearance processes at the exit ports and reduce unnecessary red tapes.

c) *Southern Tanzania has room for more off-takers, and it may be feasible to invest in containerization along the TAZARA railway that could connect with Dar es salaam port.* The ongoing Tanzania and Zambia engagement to upgrade the TAZARA railway line needs to be hastened.

d) *Horticultural products export depends on foreign agents with local traders used as aggregators with a commission; this impairs trade expansion and limits market diversification*: Responsible actors to

collaborate to increase the efforts to facilitate direct access to foreign markets and export trade information by Tanzanian exporters to reduce use of foreign agents. This role can better be performed by the country's embassies abroad and umbrella bodies if well-staffed and coordinated, respectively. Improving further the business environment to attract FDI is also critical since it can facilitate penetration into global markets and in linking farmers to off-takers and commercial marketing entities. The ongoing trade engagement under the Guided Trade Initiatives pilot phase needs to hasten negotiation for more horticultural products into the continental trade bloc.

e) *High dependence on few export products*: Scale-up campaigns and support in terms of tax and input incentives to foster diversification and boost production of high value products such as avocado, cloves, black pepper, and cardamom which the country has a comparative advantage to cushion the subsector from price volatility and tap into the growing demand from the Asian and African (regional) markets. Collaboration with other countries in the region to fast-track improvement of road and air connectivity can as well help in this.

f) *Farmers and traders have inadequate knowledge about quality, certification and export procedures*: Mandated actors should work together to: increase awareness to potential farmers and traders on export procedures and ensure timely availability of market information as a way of attracting new investments in the subsector; promote and support product certification and branding to market 'destination Tanzania' for the horticulture products. Digital market linkages and promotion of Commodity Exchange (ECX) in horticulture are dynamic ways of promoting market linkages as may easily attract more potential clients and branding Tanzanian products.

g) *The institutional framework is fragmented and un-coordinated limiting its benefits to the horticulture subsector, whereas zonal trading centres are lacking making it difficult to disseminate market information creating a gap between producers and markets*: The government help put in place an apex arrangement that will facilitate coordination of various institutions in the industry to ensure they deliver to their establishment objectives; and facilitate flow of market intelligence information while addressing on timely basis emerging challenges.

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Authors' contributions

Dr. Wilfred Mbowe and Mr. Evarist Mgangaluma were responsible for study design and drafting of the manuscript, while Ms Joyce Kivamba was responsible for data collection and organization. All authors read and approved the final manuscript.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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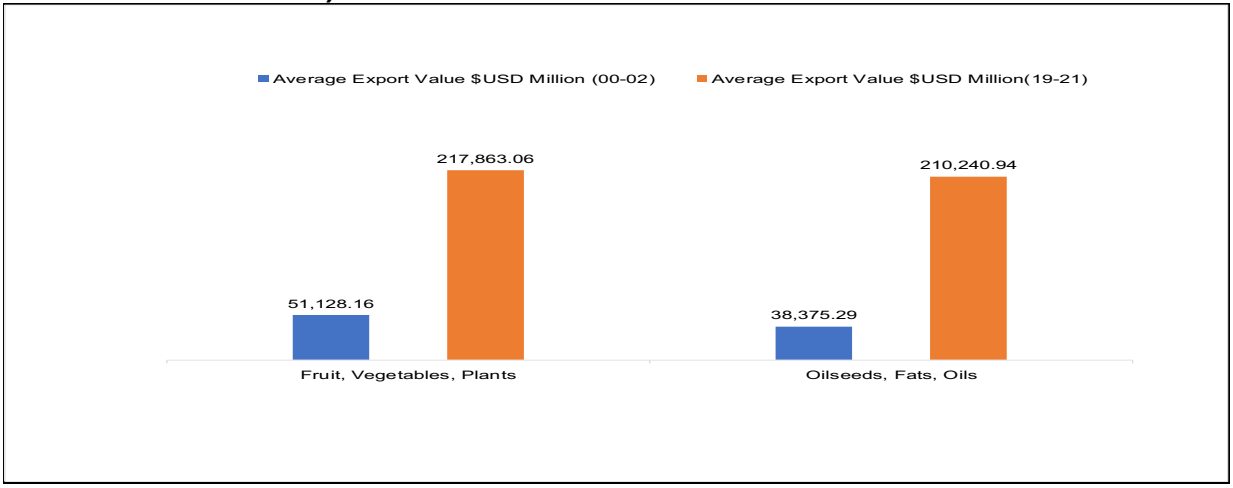
Annexes:

Annex 1a: World Export Value of Horticultural Products (Average 2000-2002 versus 2019-2021)



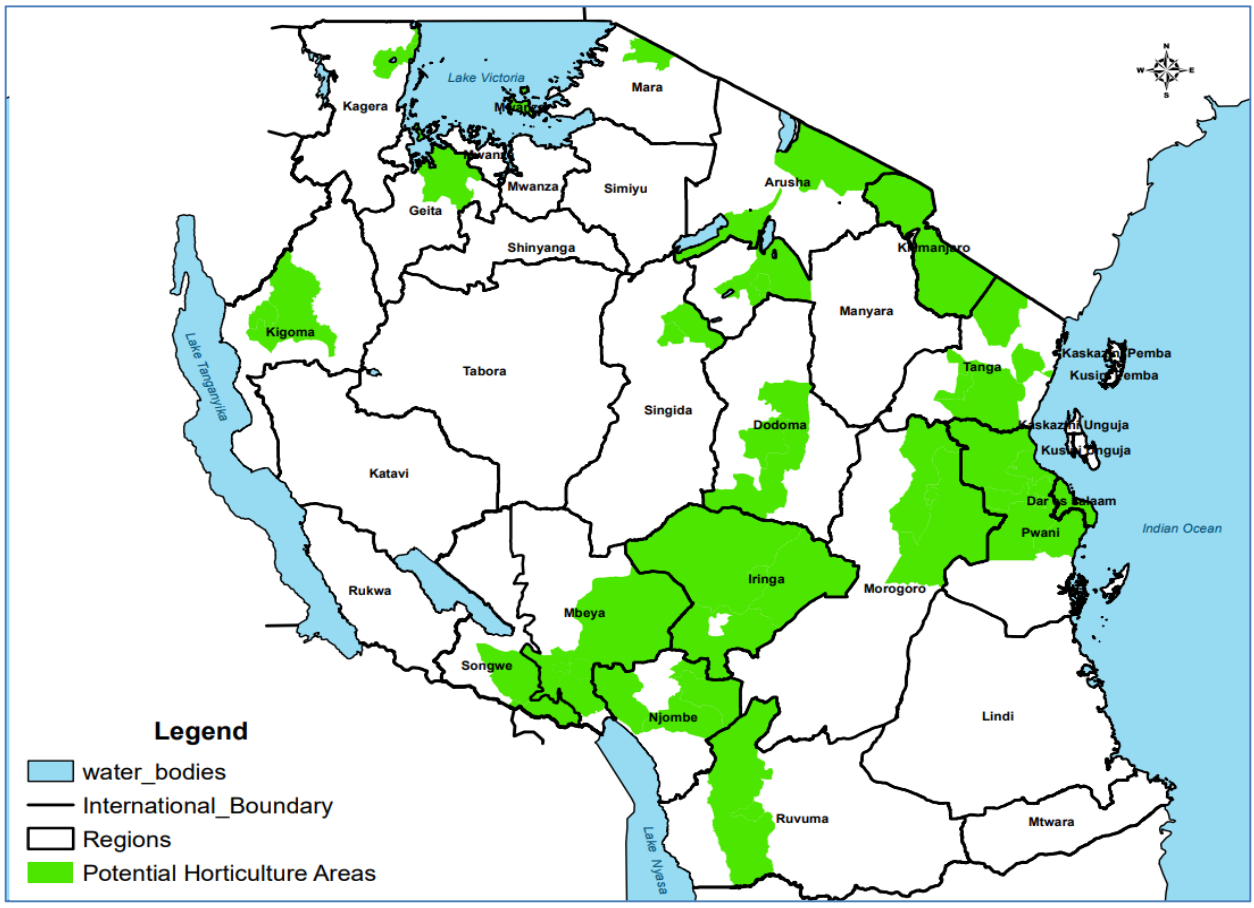
Source: WTO, 2023 (https://www.wto.org/english/tratop_e/agric_e/ag_imp_exp_charts_e.htm)

Annex 1b: Fruits and Vegetable Production Across Regions (2020)

Region	Vegetable Production (metric tones)		Fruits Production (metric tones)		
	Quantinty	Share (%)	Region	Quantinty	Share (%)
Asia	898,151,797	78.21	Asia	515,770,210	58.15
Europe	84,577,939	7.36	Europe	82,853,809	9.34
Africa (excl WA)	58,620,859	5.10	Africa (excl WA)	91,368,938	10.30
West Africa (WA)	26,528,444	2.31	West Africa (WA)	28,514,991	3.21
Latin America	42,035,925	3.66	Latin America	135,864,415	15.32
North America	35,365,836	3.08	North America	24,673,541	2.78
Oceania	3,165,452	0.28	Oceania	7,981,472	0.90
Total	1,148,446,252	100.00	Total	887,027,376	100.00

Source: FAOSTAT, 2022

Annex 2: Potential Areas for Horticulture Production in Tanzania



Source: Ministry of Agriculture (2021)