A Rapid Analysis of Impacts of the COVID-19 Pandemic on Selected Food Value Chains in Tanzania

AGRA REGIONAL FOOD TRADE AND RESILIENCE PROGRAM

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List of Abbreviations

ACT	Agricultural Council of Tanzania
AgIF	Agricultural Input Fund
AGRA	Alliance for Green Revolution in Africa
AMC	Agricultural Marketing Cooperatives
AMCOS	Agricultural Marketing and Cooperative Society
ASA	Agricultural Seed Agency
ASDP-II	Agricultural Sector Development Program
ATI	Agricultural Transformation Initiative
CFTA	Continental Free Trade Area
COWABAMA	Collective Warehouse Based Marketing Schemes
CPB	Cereals and Other Produce Board of Tanzania
CYMMYT	International Maize and Wheat Improvement Centre
DRC	Democratic Republic of Congo
DUS	Distinctness, Uniformity, and Stability
FMSS	Farmer-managed seed systems
FSDT	Financial Sector Deepening Trust
GoT	Government of Tanzania
IRRI	International Rice Research Institute
MDAs	Ministries, Departments and Agencies
MEL	Mohammed Enterprises Tanzania Ltd
MIT	Ministry of Industry and Trade
MoA	Ministry of Agriculture
NAIVS	National Input Voucher System
NBS	Tanzania Bureau of Statistics
NFRA	National Food Reserve Agency
NMB,	National Microfinance Bank
NPHMS	National post-harvest management strategy
NPT	National Performance Trials
NRI	Naliandele Research Institute
PASS	Private Agriculture Support Service
PASS	Programme for Africa's Seed Systems
PHC	Plant Health Centre
PICS	Purdue Improved Crop Storage
SACCOS	Savings and Credit Associations
SARI	Seliani Agricultural Research Institute
SHP	Soil Health Programme

TADB	Tanzania Agriculture Development Bank
TAGMARK	Tanzania Agricultural Market Development Trust
TAHA	Tanzania Horticulture Association
TARI	Tanzania Research Institute
TARO	Tanzania Agricultural Research Organisation
TASAF	Tanzania Social Action Fund
TASTA	Tanzania Seed Trade Association
TBS	Tanzania Bureau of Standards
TCCIA	Tanzania Chamber of Commerce Industry and Agriculture
NFRA	Tanzania Fertilizer Regulatory Authority
TFTA	Tripartite Free Trade Area
TGDC	Tanzania Global Development Centre
TMDA	Tanzania Medicines and Medical Devices Authority (TMDA)
ToR	Terms of Reference
TOSCI	Tanzania Official Seed Certification Institute
TPRI	Tanzania Tropical Research Institute
URI	Uyole Research Institute
VCU	Value for Cultivation or Use
VICOBA	Village Community Bank
VISLA	Village Savings and loans Association
WMA	Weight and Measures Agency
WRS	Warehouse Receipt System
ZCC	Zonal Communication Centre

Executive Summary

Introduction and Background

The objective of the research was to conduct a rapid assessment of the impact of COVID-19, and to identify measures to be taken to mitigate the impact, to ensure the stability of food supply chains.

Methodology

The main research methodology used was a desk review of various literature, field visits to the companies of various value chain actors like processors, wholesalers, importers, traders, agro-dealers and farmers in Dar es Salaam and the coastal region. Additionally there was online data collection such as emails, information sourced from the internet, telephone calls and pre-arranged Zoom meetings with the Ministry of Agriculture Food Security Division (in Dodoma) and with Tanzania Horticulture Association (TAHAfresh, an aggregator of horticulture smallholder producers) in Arusha. There were also telephone conversations with officials from various ministries, departments and agencies and selected private sector stakeholders. The list of people contacted is shown in Appendix 1.

Tanzania Status of COVID-19 as of May 2020

Tanzania's first known case of COVID-19 was detected in Arusha on March 16, 2020 and the first death was recorded on March 31, 2020. The government's last update was made on April 29th, 2020, which officially stated that the country had registered 509 positive cases and 21 deaths. Many domestic and international observers believe the statistics are underestimated. A recent article that stated: "Despite limited official reports, all evidence points to exponential growth of the epidemic in Dar Es Salaam and other locations in Tanzania."[1] Tanzania's approach to COVID-19 has been "business as usual", with no lockdown and the emphasis placed on taking precautionary measures, discussed below. However, despite limited data, the impact of COVID-19 on the economy in Tanzania is likely to be severe. The IMF predicted that economic growth is set to slow down from 6.3% in 2019 to 2% in 2020. Based on the estimate given by the Economic Commission for Africa's (ECA), the COVID-19 pandemic could reduce the country's annual growth by 6 % of GDP in 2020[2].

Summary of Key Value Chains and Justification

The maize value chain was selected because it is Tanzania's main staple food crop. It is consumed by over 90% of the population of 58 million people and cultivated by 3.5 million smallholders. Most of those smallholders are women. Maize has a lucrative regional and cross-border trade.

Rice was selected because it is the top imported food crop in the country, grown by 1.5-2 million farmers, of whom 70% are smallholders, who would be affected by the COVID-19 export restrictions in exporting countries.

Horticulture[3] was selected because it supports 2-3 million people, mostly women. It is the highest growth sub-sector (11-13% annual growth), and most likely to be affected by COVID-19 as key export

[1]Read more at: https://www.thenewhumanitarian.org/news/2020/05/14/Tanzania-government-hidden-coronavirus-cases, Sourced June 12, 2020.

[2]Read more at: https://agra.org/wp-content/uploads/2020/06/Tanzania-COVID-19-Poiicy-Response-Package_June-2020.pdf. Sourced July 7, 2020.

[3]Excluding floriculture

markets were affected by disruption of air transport. The subsector generates a significant amount of the county's foreign exchange through exports and the hospitality industry.

Agro-Inputs Supplies

Adequate agro-input supplies are critical for enhancing productivity and increasing production in all the value chains under review. Tanzania imports about 80% of its fertilizers and 60% of its seeds through private companies. Importers bring in fertiliser on behalf of the industry under the fertiliser bulk importation competitive bidding scheme. COVID-19 has seriously derailed importation of agro-inputs for the two forthcoming planting seasons, due to reduced air and sea travel. Input importers, agro-dealer distributors, and farmers, who were contacted as part of this review, confirmed a nation-wide shortage of agricultural inputs. Due to the expected slowdown in economic activity, the country might require external help. Support from agro-inputs donors such as the World Bank, AGRA and its partners, FAO, IFAD, USAID, and JICA is needed to meet input requirements for 2020/21 and 2021/22 planting seasons.

Production and Harvesting

Production and harvesting for all the studied value chains were satisfactory for the past two growing seasons and were largely not affected by COVID-19 because inputs had already been procured before the pandemic. However, and going forward, large and smallholder farmers who were contacted observed that if COVID-19 does not abate, and the scarcity of agricultural inputs nationwide continues,- caused by COVID-19 disruption of international trade - productivity and production over the 2020/21 and 2021/22 period is likely to reduce. Therefore, urgent interventions by government, donors and private sector are required to ensure adequate inputs supply for the next planting season which begins in September, 2020.

Aggregation, Storage and Trade

Less than 10% of all value chains studied are aggregated. Horticulture is the most aggregated value chain due to support from TAHA's park houses This helps smallholders with transport, sorting, storage, and marketing. Storage is the greatest challenge in all value chains, with post-harvest losses ranging between 20-30%. Efforts to reduce losses through introduction of hermetic storage systems have not reached many smallholder farmers. Horticulture trade is mainly with regional markets (40% EAC, 32% SADC) and the rest to European markets. Maize is largely grown for domestic consumption and the surplus exported to EAC and SADC countries. COVID-19 has derailed exports due to the disruption of international trade, partial border closure of regional trading partners and cross-border challenges. This has caused significant losses to Tanzania its trading partners, traders, who are mostly women, and SMEs who are the majority in cross-border trade.

Processing

Tanzania does not have adequate processing capacity for horticulture products - less than 1.5% of all fruits and vegetables are processed in-country. Maize and rice are processed by local millers largely for domestic consumption. There are few large processing companies that process for both the domestic and export market. Discussions with millers and processors show that the social distancing measures, necessitated by COVID-19, had so far, required introducing extra work shifts and holding above normal stocks, due to the disruption of regional and international trade. Going forward, if the COVID-19 pandemic does not abate soon, products with short expiry dates will exert huge losses on companies, due to the failure to export as planned.

Wholesale, Retail and Distribution

The domestic market is the main outlet for all three food value chain products. Surplus is exported to regional markets and international markets. COVID-19 so far has exerted little impact on consumption because of good harvests in the previous and current seasons, but the country has few largely dryland areas facing food shortages as discussed in this report. The country has an on-going program since late 2019 to supply food to the deficit areas. Food prices show a slight downward trend since April 2020 due to the availability of carry-over stocks from 2019 and a good harvest this season. However, this may change as the harvest period wanes, leading to increases in food prices and thus exposing the poor and most vulnerable populations. Estimates by WFP show nearly 2.1 million Tanzanians may need food assistance if COVID-19 does not abate.

Rules and Regulations

Tanzania has adequate rules and regulations as well as enforcement institutions. There are frequent export and import bans on food trade. For example, a ban on rice importation, implemented in late 2019, in order to protect rice farmers from cheap imports, has not been lifted to date. Government might consider reviewing its trade policy by making evidence-based decisions to safeguard national food security and adopting a policy of unrestricted domestic, regional, and international trade. Given the impact of COVID-19, on the availability of agricultural inputs, the government has relaxed its policy on single importers of fertiliser under the competitive bulk procurement system. This has allowed free private importation of fertilisers. The government has also reversed its suspension of international flights, in order to revive the tourism and horticulture industry which were adversely affected by the COVID-19 pandemic.

Supporting Functions

All three value chains have adequate supporting functions. However, due to COVID-19 impact to the entire economy, commercial bank credit is becoming more difficult to access. Likewise, sourcing agricultural inputs from agro-dealers and importers is becoming difficult countrywide. The National Food Reserve Agency (NFRA) and the Cereal And Other Produce Board (CPB) have inadequate storage capacity to be able to assure the nation adequate food security while releasing surplus to domestic markets to stabilise food prices while, at the same time, trying to effectively participate in regional markets.

Food Balance Sheet (FBS)/Commodity Balance Sheet (CBS)

Tanzania does not have an official FBS and CBS. However, the National Bureau of Statistics (NBS), with donor support, unveiled the 2014-2017 FBS and the NBS/FAO FBS of 2019/20. The FBS shows national maize demand was about 5,199,000Mts in 2019, while production was 6,946,000Mts during the same year; indicating a surplus of 1,747,000Mts. National rice demand was about 1,720,000Mts in 2019, while national production was 1,505,000Mts; indicating a deficit of 220,000 metric tons. Overall, for the 2018/19 and 2019/20 season the country was about 115 to 120% food self-sufficient.

Strategic Grain Reserves

In 2019/20, carry-over stocks were 505,274 metric tons, of which 68,057Mts and 5,616Mts were held on NFRA and CPB premises, respectively. Remaining stocks were held by farm retention and private stockists. During the COVID-19 period, Tanzania has not released any food grains from NFRA. They have instead recommended that farmers and traders with carry-over stocks and purchases from

recent harvests take the opportunity presented during this COVID-19 period to engage in regional and cross-border trade. Only CPB exported 500Mts of maize flour to DRC in April 2020, and sold 6,000Mts of maize and 1,500Mts of beans to WFP in April and May 2020.

COVID-19 Economy-Wide Impact

The COVID-19 pandemic is exerting unparalleled impact on Tanzania's economy. Projections from several studies show that annual real GDP growth could decline from 6.9% in 2019 to 6% of GDP in 2020. This would push over 500,000 Tanzanians below the poverty line. In particular those in urban settings relying on self-employment and informal/micro enterprises which include those owned by women and other vulnerable people.

Government Response to the Adverse Impact of COVID-19

- The stimulation of private sector investment and business performance, through monetary policy. This is to ensure liquidity to private enterprises which are the country's engine of growth. In this regard, the Bank of Tanzania (BOT) reduced the discount rate, lowered the minimum reserve requirement ratio, incentivised the restructuring of loans for severely affected borrowers, and relaxed limits on mobile money users as an initial step towards addressing the shortage of credit to businesses. Designing a safety net to cushion impact of COVID-19 on the most vulnerable populations of the society under the Tanzania Social Action Fund (TASAF).
- Allowing unrestricted importation of fertilisers in order to address critical shortages of this important agricultural input and waiving the requirement of having to go through the fertiliser bulk procurement system due to COVID-19 disruption of international trade.
- Reversing the suspension on international flights to revive tourism and horticulture industries which are the main foreign exchange earners and a major source of employment and tax revenue. This policy decision is partly aimed at reversing the sharp fall in tourism revenue since the outbreak of COVID-19, given the sector's importance as a driver of Tanzania's economy. In the 2019 financial year, tourism accounted for 11.7% of GDP and 25.8% of foreign exchange earnings and horticulture earned US$ 700 million for the economy in 2019. The two subsectors are also the main source of employment and tax revenue.

Recommendations

Short term measures (1-2 years)

Input Supply and Production

- AGRA and partners are urged to support the government in the supply of adequate agricultural inputs for the 2020/21 and 2021/22 planting season – all value chain actors will benefit.
- Almost immediately AGRA and partners could consider committing to distribute 30,000 tons of maize seeds (25kg/ha or $20/ha) to farmers through agro-dealers and the government to encourage farmers to plant immediately after the current harvest.
- AGRA and partners could consider supporting the government to develop strategies, to reduce post-harvest losses in maize and rice, through widespread use of Hermetic Storage (HS) systems.
- AGRA and partners could also consider supporting climate smart strategic agriculture production of maize and rice during the dry season. Targeting 420,000 hectares under irrigation and 650,000 hectares of dryland would bring the total off-season planted area to over

one million hectares. This would result in an additional two million tons of maize and rice, and potentially over USD 400 million annually in regional export earnings.

Aggregation, Storage and Trade

- AGRA and partners could consider supporting TAHA in expanding its aggregation off-take park houses country-wide, to reduce horticulture post-harvest losses. Likewise to improve cold chain transportation of horticulture produce and entice private sector investment in cold storage systems at major airports.
- AGRA and partners could consider supporting the expansion of the storage capacity of the strategic reserve agencies (NFRA and CPB) enabling them to stock more food and grain supplies for domestic emergency and regional market demand. Such support could enable NFRA to procure and store an additional 200,000 metric tons of food.
- NFRA should be advised to maintain strategic stocks for import substitutes, such as sugar and edible oil, to mitigate price shocks, particularly when supply chains are disrupted, and consumers make panic purchases. This would involve increasing funding to NFRA to be able to implement this action at the soonest possible opportunity.

Distribution, Wholesale and Retail

- The Ministry of Agriculture and high-level authorities should continue to engage in negotiations with the neighbouring countries of Kenya, Uganda, Rwanda, Burundi, Zambia, and the DRC through diplomatic channels, in order to create an enabling environment for improved regional trade. This would resolve inter-regional transit of food trucks across borders with minimal hassle and no need for long queues. Consider reviewing the rice import ban based on evidence-based domestic rice supply and demand.

Medium-term measures (2-5 years)

Support ICTs Approaches in Extension Service Provision

- Information and telecommunication technologies (ICTs) could help smallholder farmers in maize and rice, and other food-crops producers, to improve productivity through use of appropriate inputs, availing information on how to reduce post-harvest losses, increase access to price information in various markets to enable them to make informed decisions, as well as provide information on credit outlets, extension services and improve food security and profitability. Most households in Tanzania have access to mobile phones.
- AGRA and partners could consider rolling out its successful zonal support country-wide, while putting in place sustainable systems as an exit strategy.

Promote Women and Youth Participation in Agriculture

- Women are the key players in agriculture production. The government would need to address cultural bias to support ownership of land and other assets by women. High rural to urban migration by youth in search of work (but resulting in high unemployment for the lack of jobs), could be mitigated by youth participation in agriculture. Youth could be trained at the various established farm demonstration plots (shamba darasa) and supported by establishing agribusiness incubation centres to train them on good agricultural production practices, smart agronomic practices, processing, and marketing. Initially the support could be undertaken in zones supported by AGRA and its partners and then rolled out to other parts of the country in the future.

- AGRA and partners could consider supporting the government's efforts to strengthen the Warehouse Receipts System to increase crop value, reduce damage and enable farmers to access credit while waiting for prices to rise as the harvest season ends.

Long-term measures (5-10 years)

Mechanisation and Processing

- AGRA and partners could consider supporting the government through selected mechanisation and processing in the rice value chain. This may involve collaborating with the government, after the COVID-19 pandemic, to facilitate setting up of farm machinery hire services. Especially tractors, combine harvesters and milling machines.
- The shortage of farm machinery makes smallholder farmers, who mostly use hand implements like the hoe, unable to follow Good Agricultural Practices (GAPs), and post- harvesting practices. For example, the quality of paddy rice is reduced by the traditional threshing methods largely used by women and youth. The method yields nearly 30-50% percent broken rice. However, with good mills, farmers and traders could obtain standard or high-grade rice, with little or no broken rice, which would increase their income and profitability.

Resilience in the Production System

1. AGRA and partners could consider supporting the Government in implementing some aspects of the country's *National strategy for climate change adaptation and resilience of dryland agriculture 2020-2030.* Particularly by improving integration of Climate Smart Agriculture (CSA) in social protection programming and interventions. The rationale is that social protection has a potential of advancing risk resilience and food safety-nets, for vulnerable farming households, in the face of climate change. The interventions are particularly important because over the period 2005 - 2019, about 56 out of 169 (33%) of Local Government Authorities (LGAs), found in the dryland areas were found to be chronically food insecure. This was to the extent of requiring relief food supply at varying rates, and thus undermining the readiness of the country to predictably engage in regional food export trade, even beyond the COVID-19 pandemic.

1. Background and Context

Agriculture is the backbone of Tanzania's economy with over 65% of the 58 million people dependant on agriculture for their livelihood, largely as smallholder farmers. The sector constitutes 23% of the country's GDP, nearly 24% of the country's export earnings per annum, and 65.5% of employment[4]. As such the disruptions associated with COVID-19, in sectors of the economy that have linkages with the rural sector, are likely to affect agriculture and food security. Out of the 44.5 million hectares of arable land in Tanzania, only 11 million hectares are under cultivation, mostly by smallholder farmers (URT, 2017). The country relies mostly on rain-fed agriculture with less than 1% of the cultivated area under irrigation. In the food crop sub-sector, there is low use of yield-enhancing inputs such as fertilisers, seeds, and agro-chemicals. Maize, rice, and horticulture crops are the largest users of farm inputs as discussed subsequently in the appropriate sections of this report. The Agricultural Sector Development Programme (ASDP-II) is the main strategy and guiding framework to ensure effective development of all agricultural value chains in the country.

This study was commissioned by the Alliance for Green Revolution in Africa (AGRA) recognising that countries such as Tanzania, where agriculture is the largest employer and contributes significantly to growth, COVID-19 might impact key agricultural supply chains. The objective of the research was to conduct a rapid assessment of the impact of COVID-19 and to identify measures to be taken in order to mitigate these effects to ensure stability of food supply chains.

Tanzania's first known case of COVID-19 was detected in Arusha on March 16, 2020 and the first recorded death on March 31, 2020. The government's last official update, made on April 29th, 2020, stated that the country had registered 509 positive cases, 178 recovery cases and 21 deaths. Many domestic and international observers believe the statistics are underestimated as reflected in the following quote that: "Despite limited official reports, all evidence points to exponential growth of the epidemic in Dar Es Salaam and other locations in Tanzania."[5] Tanzania's approach to COVID-19 has been "business as usual" with an emphasis on taking precautionary measures discussed further in the text. There has been no lockdown, restrictions on economic activity or actions related to fiscal and monetary plans undertaken.

The main contribution and objective of this study is stated in the Terms of Reference which includes identifying:

- Measures that will support Governments to facilitate evidence-based policy interventions and appropriate implementation through a continued update of Political Economy Analyses, development of National and Regional Food Balance Sheets; Food Monitoring data/systems, Country Intelligence on market logistics and government decisions. And the provision of support to selected Governments affected by border closure through the development and opening of "green channels" for selected imports/export of food products.
- Measures that will support smallholder farmers and ensure stability of food supply chains. Through ensuring minimal disruption of input markets for countries going into planting season and output markets for countries harvesting – post harvest losses and loss of income.
- After the Executive Summary, Background and Introduction, Section 3 discusses the approach and methods used, followed by empirical findings in Section 4. Section 5 provides conclusions and recommendations, followed by references.

[4]Read more World Bank July 2020 country note at: https://tradingeconomics.com/tanzania/employment-in-agriculture-percent-of-total-employment-wb-data.html, Sourced July 17, 2020.

[5]Read more at: https://www.thenewhumanitarian.org/news/2020/05/14/Tanzania-government-hidden-coronavirus-cases, Sourced May 19, 2020.

2. Approach and Methods

The main research methodology used was desk review of various literature, field visits in selected value chain actors' companies. In Dar es Salaam (2 large processors, 2 agro-inputs importers and retailers, distributors and wholesalers, one maize, rice and fruits and vegetable traders) and in the coastal region (two selected value chain smallholder farmers producing maize and rice). These were complemented by online administered data collection tools using emails, telephone calls to one large-scale rice and maize producer, a rice out-grower aggregator; the National Food Reserve Agency (NFRA), the Cereal and other Produce Board (CPB). There were also pre-arranged Zoom meetings in Dodoma with the Ministry of Agriculture Food Security Division. In Arusha pre-arranged Zoom meetings were held with the Tanzania Horticulture Association (TAHA). TAHA has its own company TAHA Fresh, which is an aggregator of horticulture smallholder producers. Information was also sourced from the internet.

Annex 2 lists the people contacted and their associated value chain function. Likewise, officials from ministries, departments, and agencies and selected private sector stakeholders. The main challenge encountered was postponement of pre-arranged Zoom meetings partly due to ongoing Parliamentary sessions during the study period. For example, some high-level officials were recalled to Dodoma by their respective ministries. There were some delays in receiving requested data via email. In some cases, data received was outdated, ending in 2016/17 instead of updated to 2019/20. However, the study eventually managed to obtain more recent data that covers the COVID-19 period.

3. Empirical Findings

3.1 Food Crops/Products Value Chain Analysis

The value chains selected for this study and justifications are discussed below.

Maize: Maize is Tanzania's main staple food crop. It is consumed by over 90% of a population of 58 million Tanzanians. Production is largely rain-fed and over 3.5 million smallholders are engaged in production of maize, the majority of them women. About 57% of maize production is consumed by farming households themselves. The remainder is purchased by traders and millers (16%), used for animal feed (10%), exported (12%), and about 4-5% bought by the food reserve agencies (NFRA and CPB) to be stored and saved for food security purposes and market sales as appropriate. COVID-19 has had a high impact on this value chain because (i) 80% of the agro-inputs used in maize production are imported implying that the disruption in global trade will, and is, exerting country-wide shortage of agricultural inputs supply as revealed by agro-dealers; (ii) although free movement of people is allowed, social distancing and cautious precautions makes maize processors and other value chain actors to work under reduced capacity or use extra shifts; and (iii) the lucrative maize cross-border trade has been disrupted to avoid instances of COVID-19 transmission from one country to another, reducing incomes of key players who are mostly women.

Wheat: Rice is the top imported food crop in Tanzania. Imports in 2018 were 249,000 MT and in 2019 were 176,000MT. The government plans to import 220,000 MT in 2020. Rice is cultivated by 1.5 – 2 million farmers, of whom 70% are smallholders, mostly women. Rice is the third most consumed foodstuff in Tanzania, contributing 13% of the country's food basket, after maize (37%) and cassava (17%) being top two (URT 2019). COVID-19 has several disruptive impacts on rice value chain actors for several reasons (i) there are already shortages of agricultural inputs country-wide for the next planting season and most inputs used in rice cultivation are imported (mostly fertilisers and agro-chemicals); (ii) the MoA forecasts rice imports will drop by 9% in 2020, compared to 2019 levels, due to the government ban on rice imports and COVID-19 restrictions in exporting countries.

Horticulture: Horticulture supports 2-3 million people, including women. It is the highest agricultural growth sub-sector (11-13% per year over the past five years). Fruits and vegetables are consumed by all Tanzanians (about 58 million people), at an average of only 0.164kg per day of fruits and

vegetables, equivalent to only 60kg per capita compared with 146kg per capita consumption recommended by the World Health Organisation (WHO). Horticulture is also the top non-traditional exports revenue earner to the country with earnings reaching US$ 700 million in 2019, up from USD 60 million in 2004. Horticulture is the most affected by COVID-19 because, apart from domestic consumption, nearly all fruits and vegetables are exported fresh to regional markets (70%) and the rest outside Africa. Only 1.5% of the country's horticultural production is processed into final consumption products in-country (Match Maker Associates, 2017). Complying with the COVID-19 precautionary measures that have been put in place, such as social distancing, affects all horticulture value chains, especially TAHA-supported aggregation systems. Regional cross-border trade is the most affected, with long truck queues at Namanga (Tanzania-Kenya border) and Tunduma (Tanzania-Zambia border) causing significant losses of revenue due to spoilage of traders' fruits and vegetables while waiting to cross the borders.

3.2 Market Systems Analysis for the Identified Food Crops/ Products

Maize: The structure of the maize value chain consists largely of smallholder farmers who number about 3.5 million of whom over 2.8 million have small farms (1-3 ha), with the majority of them (65%) being women who mainly produce for household consumption. There are a few private large-scale producers (farm sizes >100ha, such as Kilombero Plantations Ltd (KPL), Farm for the Future). There are many small-scale flour millers and very few private processors (such as Mohammed Enterprises (METL) and Bakhresa Group of Companies), and wholesalers such as METL, Millers Pride). Private agro-dealers (such as Simma General Dealers and Smartflex Company) and companies supply inputs. However, an importer of fertilizer has to win a competitive tender process to procure on behalf of the agro-dealers and other inputs distributors. About 80% of fertilizers and 60% of seeds are imported. Production is largely rain-fed and averages 5 -7 million metric tons per year, but yields are low (about 1.5 metric tons/ha compared with 3.7 metric tons/ha in other East African countries). Harvesting takes place largely between June and November, while post-harvest losses are very high 20-30%. Less than 10% of all value chain actors are aggregated and trade is conducted through retail shops, kiosks, roadside markets, and food supply market towns. Less than 1% of Tanzania's consumers source their maize, or maize flour, from the few supermarkets in urban areas.

Maize smallholder farmers access finance through several channels. First, own household financing. Second, for those supported by government or cooperative schemes under the Warehouse Receipt System (WRS), where they obtain input credit and the loan is recovered upon sale of the maize. Third, a few maize smallholder farmers access credit through in-kind support by government and donor-supported agro-dealer programs. Large farmers, processors, and wholesalers access financing through commercial banks. Extension and advisory services are provided freely by government employees and research institutions located in each agrological zone. Storage is the weakest support function because only recently the government unveiled the National post-harvest management strategy - 2019-2029 (URT, 2019), with the aim of reducing post-harvest losses. Some donors such as AGRA and partners are helping smallholder farmers through introduction and use of Hermetic Storage (HS) systems to reduce post-harvest losses.

Regarding the regulatory environment, the Tanzania Bureau of Standards (TBS) is the main overseer of all value chains standard development, promotion, and conformity assessment. The Plant Health Services (PHS) undertakes production conformity assessment, offers inspection and phytosanitary certificates, training, development of regulations and participates in standard setting under the Plant Protection Regulations, 1998 (URT, 1998). The Tropical Pesticide Research Institute (TPRI) oversees agro-chemicals inspection and adherence to phytosanitary requirements, is the Certificates Registrar of pesticides and makes follow-up on product quality assurance. The Tanzania Medicines and Medical Devices Authority (TMDA) undertakes value chain inspections of export products and end use products, it participates in revision of food legislation, oversees implementation of the Food and Drug Act and participates in standard setting. The country has no specific regulation governing maize trade

but follows the East African Community Customs Management Act (EACCMA), 2004, (as amended) and regulations. The EAC regulatory framework includes manuals and other customs laws of the Community as specified in Article 39 of the Protocol establishing the EAC Customs Union. In addition, Tanzania is also a member of SADC and is obliged to observe the SADC Protocol on Trade that provides for cooperation in customs matters, trade facilitation, and transit trade matters. The Commissioner of Customs, within the Tanzania Revenue Authority (TRA), manages customs and administers the EACCMA and SADC Protocol, in liasion with the Ministry of Agriculture (MoA) and the Ministry of Industry and Trade (MIT). The Tanzania Official Seed Certification Institute (TOSCI) provides certification of seeds in Tanzania; and the Tanzania Fertilizer Regulatory Agency (NFRA) manages the competitive tender process for importing fertilisers.

There are two challenges in the maize regulatory system: first, delegating fertiliser imports to a single firm, although this has worked under normal circumstances, the government is considering reviewing NFRA legislation to allow free importation of fertilisers due to the ongoing COVID-19 pandemic. Second, frequent export bans. The Government removed export bans in 2018 and is strengthening the Market Intelligence Unit (MIU) at the Ministry of Agriculture (MoA) to support better preparedness and make better evidence-based decisions on future export bans.

Rice: The structure of the rice value chain consists of small-scale farmers (70%) producing paddy under rain-fed agriculture and rain-harvesting using traditional techniques, largely for commercial purposes. The majority of these producers are women who also grow maize for subsistence consumption. The value chain also has large-scale farmers using irrigation such as Mbarali rice farm and Kapunga rice farm. These large-scale farmers also aggregate smallholder rice growers. Then there are many small-scale rice millers and very few private large-scale processors (such as Millers Pride, Basic Element and wholesalers such as Bakhresa Group of Companies and METL), mostly located in cities and urban centres especially Dar es Salaam.

Farmers acquire input supplies from many agro-dealers who sell to individuals as well as few large-scale private companies (importers such as ETG-Inputs Ltd, Doam Ltd, wholesalers and distributors such as Simama General Dealers and Smartflex Company). Over 80% of the fertilisers used are imported by a private company through the competitive tender procurement system. Most smallholders re-use seeds selected from their previous harvest, while a few seed companies such as Seed Co Ltd and Agricom Africa Ltd as well as local agro-dealers supply high-yielding seeds. Annual rice production averages 3-3.5 million metric tonnes, while productivity is low, about 2,500 kg/ha and post-harvest losses are very high at 25-35% (URT, 2016). These occur mostly during on-farm processing using traditional paddy thrashing methods and small-scale millers located in all rice-growing areas. Less than 10% of rice smallholders are aggregated through the WRS, “shamba darasa” or demonstration farms, out-grower schemes such as the Kilombero Plantations Limited (KPL) with over 5,000 rice out-grower arrangement and several NGO schemes such as RUDI association which helps aggregate 15,000 smallholder paddy farmers based in Kilombero, Iringa Rural and Mbarali districts. Trade is either conducted at the local millers or directly through a local market and some small-scale traders accumulate stock and sell to larger-scale traders or wholesalers and processors. The largest rice market is in urban centres, especially Dar es Salaam with over 5.6 million rice consumers.

Access to credit for small-scale growers is largely own household resources or through local credit societies (VICOBA and SACCOS), WRS, and for a few who benefit from donor-supported agro-dealer arrangements. Large-scale producers access credit through commercial banks. Extension and advisory services are provided by government employees, research institutions and through donor-supported programmes. Tanzania Rice Partnership (TARIPA) helps small-scale growers to develop commercial value chain activities intended to improve rice productivity, marketing and processing and quality assurance and the International Rice Research Institute (IRRI) provides advisory services to research organisations. The biggest challenge in the rice support system is poor on-farm storage which results in high post-harvest losses and the traditional paddy milling using thrashing methods which reduces quality of rice because the process produces nearly 30-50% broken rice. The few large processors produce standard and high-grade rice with little or no broken rice.

The regulatory environment is the same for all cereals, with TBS, PHS, TPRI, TMDA, TOSCI and NFRA providing the services to the rice value chain actors as discussed under maize in the preceding subsection. A challenge in the rice regulatory environment relates to the ban of imports of rice in late 2019. The ban was imposed to protect local farmers from a competitive market suffocated by cheap imports. As of July 2020, the ban had not been lifted, considering expected good harvest from the previous season and the current harvest season. [6] Continuing efforts to strengthen MIU and MoA should help the government to make better-informed decisions on exports and import bans, because these hurt regional trade, especially cross-border trade with high participation of women.

Horticulture: The structure of horticulture value chain consists of about 70% small-scale farmers (Mkindi, 2011) who cultivate an average of 0.2 – 2 hectares, while large-scale producers produce for both domestic and exporters markets Tanzania's Minister of Agriculture sums up the structure very well: "Way back in 2004, when TAHA was established, there were less than 50 commercial horticultural companies in the country with insignificant production volumes for export markets. Now 16 years later, TAHA has brought together over four million both large-scale, medium and smallholders' farmers into a single bloc fortified by a common set of business-oriented interests". Horticulture is the fastest growth sub-sector in agriculture (Figure 3-1), growing at an estimated 11-13% per year in the past five years. Current export earnings have reached US$700 million, up from US$ 60 million in 2004, making horticulture a nascent commercial crop creating jobs (especially for women and SMEs) and wealth for the economy.

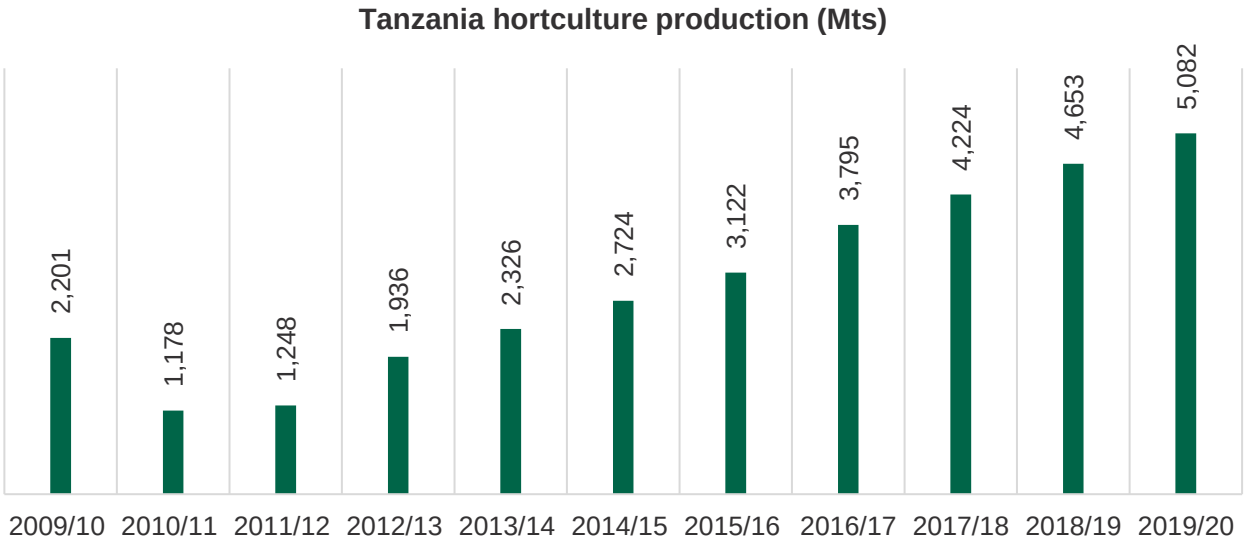

Figure 3-1: Tanzania Horticulture Commercial Production (Tons) – 2009/10 -2019/20

Source: Authors based on data from FAOSTAT (2020), EKN (2017)

Private agro-dealers and companies supply inputs such as seeds and agrochemicals as well as fertiliser which are imported under a competitive tender process. Over 90% of fruits and vegetables are used for domestic consumption, with the rest exported to regional markets and the European market. In 2019/20 commercial production reached over 5,000 metric tons. TAHA is the main aggregator and has trained over 28,500 smallholder farmers (SHFs) and linked about 1,500 SHFs to different exporters between 2012-2015 (URT, 2011) and has intensified support to SHFs to date through country-wide park houses with appropriate handling infrastructure, including bulking, storage and cold chain systems. Over 40 relatively large companies are engaged in marketing of Tanzania's horticulture fresh produce and various processed products, but less than 1.5% of the fruits and vegetables are processed in the country. The most constraining challenge in the horticulture subsector is inadequate in-country processing capacity to add value. Likewise, there is poor

[6] Read more at: https://furtherafrica.com/2020/03/05/tanzania-ban-on-rice-imports-still-in-force/, Sourced March 17,2020

infrastructure at airports and ports for bulking, storage and cold chain systems remedying that would guarantee and preserve quality and credibility of Tanzania's horticulture produce.

Access to credit for SHFs is largely own household resources or through local credit societies (VICOBA and SACCOS) and support from TAHA and donor-supported agro-dealers. Large companies access commercial bank credit. TAHA also provides extension and advisory services through her company TAHA Fresh along with government employee extension staff.

The regulatory environment for horticulture is the same as for other foodstuff, discussed earlier under maize, but as the Deputy Minister for Agriculture stated, in May 2019 (URT, 2020c), the government plans to make the horticulture regulatory environment "simpler and more friendlier" and to expand the mandate of the Tanzania Agricultural Development Bank (TADB) to serve as coordinator of agricultural financing and supply of credit to the growing horticulture industry.

3.5 Key Instruments and Mechanism for Food Security

3.5.1 Commodity Balance Sheets

Tanzania has no official Food Balance Sheet (FBS) or Commodity Balance Sheets (CBS). However, the country has FBS and CBS developed by the National Bureau of Statistics (NBS) with donor support that are used for policy decision making purposes. The Ministry of Agriculture (MoA) food security division has plans to work with NBS to develop an official FBS. The NBS has the mandate to develop a balance sheet in close collaboration with MoA. The NBS FBS supported by FAO is reproduced on Table 3-1. The main commodities included in the balance sheet are common grains (>80% is maize, followed by millet), rice and wheat.

Table 3-1: Tanzania Food Balance Sheet 2019/20

	Wheat	Rice	Coarse grains	Total cereals
2019/2020 Domestic availability (000 tonnes)	183	2,099	7,401	9,683
2019 production	63	2,009	6,946	9,018
Expected stock drawdown	120	90	455	665
2019/2020 Utilisation (000 tonnes)	893	2,359	7,416	10,668
Food use	847	1,789	5,199	7,835
Non-food use	16	360	1,917	2,293
Export	30	210	300	540
Expected stock build-up	-	-	-	-
2019/2020 Export requirement (000 tonnes)	710	260	15	985
Per caput consumption (kg/year)	15	31	90	135
2019/2020 Comparison with the previous year's and the recent average				
Production (000 tonnes)				
Previous year's production	57	2,220	7,273	9,550

	Wheat	Rice	Coarse grains	Total cereals
Previous five year's production average	84	1,936	7 423	9,443
2019 Production compared to average (%)	75	104	94	95
Import requirement (000, tonnes)				
Previous year's imports	700	250	15	965
Previous five year's average imports	782	215	16	1014
2019/2020 Imports requirements Compared to average (%)	91	121	91	97

Source: FAO (2020c)

The national maize demand was about 5,199,000 metric tons (Mt) in 2019, while production was 6,946,000Mts during the same year; indicating a surplus of 1,747,000Mts. Under normal circumstances, Tanzania rarely imports maize, implying 100% of the maize requirements comes from domestic production.

National rice demand was about 1,720,000Mts in 2019, while national production was 1,505,000Mts; indicating a deficit of 220,000Mts which must be imported as the COVID-19 pandemic abates. Tanzania imports an average of 10%-15% of rice to cover domestic requirements. Over the past five years the country has been importing rice from outside Africa, largely from Pakistan, Vietnam, India and China.

The use of the FBS has not changed during the COVID-19 pandemic; however, expected imports of rice have been suspended due to a ban imposed by the government in late 2019 which had not been lifted as of July 2020.

3.5.2 Strategic Food Reserves

Tanzania has Strategic Food Reserves (SFR). Tanzania's SFR is managed by the National Food Reserve Agency (NFRA). NFRA has its own workforce which goes to the regions during harvesting period and procures the cereals for the reserve. The NFRA and the Cereals and Other Produce Board (CPB) are mandated, by their establishment regulations, to perform "commercial functions, safeguard the interest of growers by ensuring that the growers sell their produce at competitive price and are assured of market," (URT 2011). In 2020, the main cereals procured for the SFR are maize, rice and millet. Maize takes up over 80% of the cereals stored, followed by millet and rice. The SFR levels for the past four years are shown on Table 3-2.

Table 3-2: Tanzania Strategic Reserves, 2016-2020 (metric tons)

	2016	2017	2018	2019	2020
January	125,668	86,833	91,947	93,037	43,597
February	88,414	86,444	91,313	85,521	41,231
March	68,727	86,278	83,350	78,336	39,597
May	64,825	74,826	73,468	68,748	38,053
June	63,441	70,393	68,893	68,058	38,290
July	61,837	68,697	63,844	67,336	
August	49,632	78,434	62,288	67,410	
September	59,832	85,403	62,317	68,407	
October	86,545	89,248	78,224	61,710	
November	90,905	93,354	87,435	55,852	
December	89,692	92,674	96,534	52,498	

Source: National Food Reserve Agency

The Government plans to purchase an additional 435,000 metric tons of cereals beginning July 2020 to ensure the national strategic reserves continue to have an adequate amount of stocks to cover national food requirements and take advantage of opportunities available in regional trade. In 2019/20, carry-over stocks were 505,274 metric tons, of which 68,057 metric tons and 5,616 metric tons were held by NFRA and CPB premises, respectively; while 93,760 metric tons were held by private stockists and 337,840 metric tons was estimated to be farm retention, (URT, 2020c).

Currently the Government does not have a restrictive policy on food operations in the country except the rice import ban. Strategic grain reserves are managed by the two food reserve agencies NFRA and CPB. With regards to pricing and subsidies, the NFRA and CPB agencies use several disbursements channels, namely: grain provided free or at a discount to targeted vulnerable households; subsidised sales to millers; and sales to prisons or nongovernmental aid programs, typically at market-related prices as well as release to the market at prevailing prices. There are perceptions that these activities of the NFRA and CPB are distortive to good functioning of food markets, but the time-series econometrics model for maize undertaken by FEWS NET Famine Early Warning Systems Network for Tanzania in August 2018 shows the NFRA disbursement mechanism has little impact on the operations of the maize market (FEWS Net 2018).

During the COVID-19 period, Tanzania has not used the NFRA reserves to undertake sales to the domestic or regional exported market, due partly to large carry-over stocks by farmers and traders. The government continues to encourage stockholders to take advantage of the opportunity offered by COVID-19 to engage in regional trade and cross-border trade. However, the Cereals and Other Produce Board (CPB) exported 500 metric tons of maize flour to DRC in April 2020 and sold 6,000 metric tons of maize and 1,500 metric tons of beans to WFP in April and May 2020.

3.6 COVID-19 Pandemic Impacts on Agricultural Market Systems

3.6.1 Government Interventions to Contain Spread of COVID-19

To contain the spread of the COVID-19 pandemic, the government undertook the following measures:

General Measures

- Suspension of all international flights, except for cargo planes and for repatriation, humanitarian aid, medical and relief flights, and technical landings, which are allowed with a special permit.
- Mandatory isolation for 14 days for citizens and non-citizens arriving from countries severely affected by COVID-19.
- Screening of travellers, including body temperature measurements, conducted at the ports of entry.
- Prohibition of all sports, arts and musical events, workshops, seminars and recreation places and other unnecessary gatherings of people.
- Mandatory observation of social distancing.
- Closure of all schools and universities.
- Supported the setting up of a Mobile Lab Project by the East African Community to aid in testing potentially infected persons in Tanzania's rural and remote regions.

Food and Nutrition (In)Security

- Directed local government authorities to implement appropriate measures in response to the outbreak including provision of public awareness creation through campaigns on COVID-19 containment by the public, households as well as individuals.
- Advised citizens to restrict unnecessary movements to the search of food and stocking food items because the government had no intention of implementing lockdown.
- The government provided guidelines to various sectors of the economy in particular Ministry of Agriculture (MoA) and Ministry of Health to take precautionary measures, and to especially identify pockets of food shortages in areas affected by floods due to excessive rainfall and take necessary steps to help the needy.
- Distributed maize and rice seed for replanting in the next season which begins in July 2020 in areas affected by floods and in irrigation schemes after rainfall had receded.

National Food/Imports Logistics

- Government took steps to strengthen ports of entry within the country to prevent importation of the virus. According to the Ministry of Health, they have installed thermal scanners and deployed health workers to all ports of entry in the country.
- In May 2020 the government announced the continuation of the rice imports ban, instituted late 2019to protect local farmers from a competitive market suffocated by cheap rice imports, partly due to good harvest from the previous season and expected good harvest this season.[7]

[7]Read more at: https://furtherafrica.com/2020/03/05/tanzania-ban-on-rice-imports-still-in-force/ Sourced in April 7, 2020.

- Established an Agricultural Advisory Committee which was placed under the Agricultural Council of Tanzania. The committee was mandated to conduct rapid assessment of the impact of COVID-19 to agriculture and to advise the government on short-term actionable mitigation measures that can be implemented by government, private sector and supporting development partners. The committee was also mandated to build the case to the government, financiers, and other regulatory bodies on how to jointly allay the shocks and revitalise the agriculture sector. The committee was also mandated to prepare shock recovery proposals for the agriculture sector in Tanzania, especially for the badly hit sectors. The committee has already submitted their recommendations that will enhance food security in Tanzania and foster unrestricted regional and global food trade.
- MoA in collaboration with other stakeholders including the private sector, Non-Governmental Organization (NGOs), and development partners initiated several studies to assess the impact of COVID-19 on food security and nutrition and farmers' income and livelihood as well as other impacts. Some of these COVID-19 impact assessments are yet to be made public.
- Released funds to NFRA to undertake early procurement of emergency stock immediately after harvest.

Cross-Border Food/Inputs Logistics

- Government encouraged farmers and private sector to take advantage of market opportunity offered by COVID-19 to freely undertake cross-border trade in cereals (maize, rice and other foodstuffs) while taking precautionary measures of social-distancing in marketplaces, transport corridors and border posts.
- Strengthened the Market Intelligence Unit (MIU) at the Ministry of Agriculture to support better preparedness and advice on regional trade and cross-border trade.
- The government allowed fertilisers to be imported without following the normal procedure of importing through the Bulk Procurement System. However, tight commercial bank credit could affect timely delivery of inputs for the next planting season, especially those needed early in the season starting in July 2020.
- Government directed Ministry of Agriculture and high-level regional authorities to diplomatically engage in negotiations with neighbouring countries of Kenya, Uganda, Rwanda, Burundi, Zambia, and the DRC to create an enabling environment for food trucks to cross borders without much hustle and long queues of trucks.
- Made limited success to resolve border crossing as Tanzanian and Kenyan government came into a number of agreements including: (i) issuing a 14-day COVID-19 free certificate, (ii) releasing public data on the status of COVID-19 without releasing the driver's nationality, (iii) and replacing driver crews who may be at high risk of COVID-19.

Gender Inclusion and Inequality

- Government advised MoA and Ministry of Industry and Trade (MIT) to take into consideration urban food supply to vulnerable populations, including women, in case of lockdown. They also instituted a safety net program under the Tanzania Social Action Fund (TASAF) to cater for targeted vulnerable populations such as urban poor as food prices could rise in case of a decision to lockdown is made.
- Encouraged women participation in cross-border trade and commended TAHA for aggregating small-scale horticulture producers, many of whom women and SMEs for connecting them into regional and international markets.

Resilience to Shocks:

The Government plans to seek donor support to implement some aspects of the country's *National strategy for climate change adaptation and resilience of dryland agriculture 2020-2030 (*URT, 2019*).* In particular to improve integration of Climate Smart Agriculture (CSA) in social protection programming and interventions. The rationale is that social protection has a potential of advancing risk resilience and food safety-nets of vulnerable farming households in the face of climate change. The interventions are particularly important because, over the period 2005 - 2019, about 56 Local Government Authorities (LGAs) mostly found in the dryland areas out of 169 total LGAs (33%)[8] were found to be chronically food insecure – to the extent of requiring relief food supply at varying rates. This undermined the country's readiness to predictably engage in regional food export trade even beyond the COVID-19 pandemic.

3.6.2 Summary of Impacts of Government COVID-19 Measures on Supply Chains

Although Tanzania has neither implemented lockdown, limited productive economic activity due to COVID-19, nor implemented any socio-economic mitigation measures, precautionary measures taken impacted labour as follows:

Table 3-3: Summary of Government COVID-19 measures being implemented that could have or have a disruptive impact on selected supply chains

Government COVID-19 measure	Potential impact of government COVID-19 measure*				
	Cross-border food/ input logistics	National food/input logistics	Food & nutrition (In)security	Gender inclusion & inequality	Resilience to shocks[9] (e.g. climate etc.)
Lockdown:[10]	1	1	1	1	1
Governance:[11]	2	2	2	2	1
Socio-economic:[12]	2	2	2	2	1
Public health:[13]	3	3	3	3	1
Social distancing[14]**:**	2	2	2	2	1

*Potential impacts: 1. No impact 2. Negatively affect 3. Positively affect

Cross-border food/input logistics: The rice imports ban, instituted to protect farmers from what the government calls "cheap rice imports", is expected to adversely affect rice importing companies who might have placed import orders before the COVID-19 pandemic. The fertiliser competitive bulk procurement tender system, where one importer procures on behalf of other agro-inputs dealers and distributors, might not work efficiently due to disruption of international trade. This could lead to scarcity of agricultural inputs for the coming planting seasons in 2020/21 and 2021/22. The

[8]URT (2019), op. cit.

[9]No measures taken with regards to resilience to shocks, except the precautionary measures.

[10] No lockdown undertaken.

[11] No measures on governance taken except the precautionary measures which we assume are having negative effects but due to lack of data on COVID-19 people tested, affected, recovered, deaths, etc., our assessment should be taken with a "grain of salt". The last official update was made on April 29th, 2020.

[12]No social-economic measures put in place, but we assume the precautionary measures announced by government are having negative impact.

[13]We assume health-related precautionary measures are having desired positive effects although as comment 25, we have no verifiable data.

[14] Both positive and negative effects, although we have little data to verify, but overall, we rate negative impact.

government is considering relaxing the legislation to allow open fertiliser import due to the continuing COVID-19 pandemic.

National food/inputs logistics: COVID-19 precautionary measures put in place by the government to mitigate the pandemic have several adverse impacts. Limited regional movement is affecting the delivery of inputs for the July planting season. Restricting public gatherings of more than 10 people continues to present challenges to Agricultural programs as well as restricts truck movements to and from Burundi, Rwanda and Uganda. According to a recent study (WFP, May 2020), close to three quarters of the households in the study survey (72%) rely on petty trade as their main source of income/livelihood, followed by casual labour and self-employment services. About 83% of the households indicated that their main sources of income decreased in 2020 compared to 2019. A total of 44% of those households attributed the loss of income to COVID-19, since most of the households depend on petty trade largely in food related services. The main trade includes the value chains actors of maize, rice and horticulture and other consumables undertaken by SMEs in various shops, kiosks, roadside markets, local markets, district and regional markets, as well as agro-dealers.

Food & Nutrition (in) Security: Although there are no direct government interventions on food and nutrition, COVID-19 is having an adverse impact on the domestic market. In particular to the many SMEs who supply fresh horticultural products and to a lesser extent rice to the tourism hospitality industry. Disruption in international travel due to COVID-19 has led to partial closure of most tourist hotels and tourist attraction areas. The impact is yet to be documented, but with the tourism sector which generates 12% of the country's total employment (over 1 million jobs), the majority being women, and directly employing 467,000 Tanzanians of which over 70% are women. The impact on the well-being of the retrenched workers and the economy is likely to be severe ([15]although the government does not support retrenchments necessitated by COVID-19.

Gender Inclusion & Inequality: Precautionary measures taken by government due to COVID-19 and the risk of contracting the virus have a severe impact on women who are the main producers and traders of food commodities, including maize, rice and horticulture products. The semi-closure of regional cross-border trade particularly affected women who constitute 70% of the traders; although part of the challenge relates to the authenticity of Tanzania government's COVID-19 diagnostic results of people who have contracted the virus. The impact of precautionary measures and the scare of contracting the pandemic announced by the government in March 2020 are reflected well on in a story by UN Tanzania. In that story some women lamented: "Times are hard, people are not buying as they used to before this coronavirus." (UN, 2020). The women expressed the sentiment of many women entrepreneurs and SMEs all over the country that have seen a remarkable slowdown in business activities, including agro-dealers – critically affecting the consumption patterns of many Tanzanians. Fortunately, maize and rice and fruits and vegetables continue to be readily available in local retail shops and kiosks at affordable prices (although prices are expected to rise as the COVID-19 pandemic continues to bite unabated).

Resilience to shocks: Government has not taken measures to address resilience to shocks except initiating plans to solicit donor support to implement some aspects of the country's *National strategy for climate change adaptation and resilience of dryland agriculture 2020-2030* as key to assure food security in those dryland areas of the country. The government has not put in place any recent measures to build and or strengthen resilience of households and or smallholder farmers and other actors along food value chains, but has resolved to implement the recommendations put forward by the recently established Agricultural Advisory Committee on strategies to assure the country's food security and unrestricted regional and international trade.

[15]Read more at: https://www.tanzaniainvest.com/tourism, Sourced July 17, 2020

3.6.3 Interventions by Development Partners Towards COVID-19 Mitigation

Expected/Committed Resources

1. UNDP Tanzania has reprogrammed its unspent and uncommitted resources from existing projects in Tanzania and set aside US$600,000 against the total budget of US$6.5 million required by the government to support the proposed interventions in response to COVID-19 pandemic. The UNDP COVID-19 programme will be implemented for a duration of 12 to 18 months pending unforeseen evolutions in the pandemic. UNDP anticipated the impact on agriculture due to the COVID-19 pandemic may affect food security countrywide in Tanzania because the local economies rely largely on agriculture. UNDP has been supporting the government in building the capacity in the horticulture business, which is among the fastest growing sectors in Tanzania (growing at an average rate of 11 percent per annum and contributing about 43 percent of foreign earnings). The main targets of the intervention are youth and women. UNDP will build on its pilot project on agri-business mainly in and around horticulture value chains and market systems (UNDP, 2020).
2. The United States has announced US$1 million in health assistance to help provide risk communication, water and sanitation, infection prevention and control, public health messaging, and more due to COVID-19. Overall, the United States has invested nearly US$7.5 billion for Tanzanian development over the past 20 years and nearly US$4.9 billion in health alone, including more than 200,000 Tanzanian Shillings for every Tanzanian man, woman, and child to combat HIV and AIDS in Tanzania (US Embassy, 2020).
3. The French ambassador to Tanzania has disclosed that plans are underway to support the fight to combat the impact of COVID-19 in Tanzania. About USD 542,000 (500,000 euros) will be directed at epidemic prevention, food security and economic assistance to high risk and vulnerable rural populations. Also, the French government's development arm AFD is working on the possibility of rerouting some available grant funds (around 500,000 euros) towards prevention, training of health workers and supply of medical materials. The ambassador further disclosed that Tanzania is among the African countries that will receive part of the USD 1.3 billion (1.2 euros) provided by the G20 for Africans to address and cope with the COVID-19 pandemic.[16].
4. The Financial Sector Deepening Trust (FSDT) on behalf the trust's donors[17] has contributed TZS 225 million (about US$100,000) towards the National Relief Fund for COVID-19 (FSDT News (2020).
5. UNESCO has launched a communication campaign to reinforce UN and national efforts against the coronavirus in partnership with a popular Kiswahili online social media platform in Tanzania and Eastern Africa to provide public education on COVID-19. Free access to UNESCO resources for actions to support media, enhance access to information and leverage digital technologies in the fight against the corona pandemic are also available under the UNESCO country support.
6. In Tanzania, the normal function of regional markets for crops such as maize and rice and other cereals has been interrupted, due to adverse effects from COVID-19 mitigation efforts. AGRA and partners are linking farmers with agro-dealers, off-takers and processors to mitigate some of the COVID-19 impacts, with a current commitment of USD 100,000.
7. Novo Nordisk Foundation contributed DKK 5 million (about USD 800,000) to provide urgently needed support to the COVID-19 response in Tanzania, starting in the densely urbanised city of Dar Es Salaam with a population of more than six million. Activities to be funded will include awareness raising and access to care with focus on people with diabetes and other non-

[16]The Exchange, COVID-19 Tanzania: French to fund fight against virus. Read more at: https://theexchange.africa/countries/covid-19-in-tanzania-french-to-fund-fight-against-virus/. Sourced June 19, 2020.
[17]Embassy of Denmark, Embassy of Sweden, Global Affairs Canada and the Bill and Melinda Gates Foundation.

communicable diseases, but also on wider protective measures and capacity building of the health system.[18]

Table 3-4: Summary of interventions by development partners

Development Partner	Summary of interventions		Highlight any specific focus on gender and inequality
	Main goal and focus of intervention	Amount (USD)	
UNDP	Horticulture industry and capacity building	600,000	Youths and women
United States of America	COVID-19 mitigation measures associated with communication risk, water and sanitation, infection prevention and control, public health messaging.	1,000,000	General public
French government	Epidemic prevention, food security and economic assistance to high risk and vulnerable rural populations.	542,000	General population
Financial Sector Deepening Trust (FSDT)	Funds channelled to National Relief Fund for COVID-19 to be used in Covid-19 measures being implemented by government	100,000	General public
UNESCO	COVID-19 related communication campaign in reinforcement to UN and national efforts against the coronavirus	Amount not disclosed	General public
AGRA and partners	Linking farmers with agro-dealers, off-takers and processors to mitigate some of the COVID-19 impacts	100,000	All programme beneficiaries, including women SMEs
Novo Nordisk Foundation	Awareness raising and access to care with focus on people with diabetes and other non-communicable diseases (NCDs)	800,000	Vulnerable populations especially people with diabetes and NCDs

3.6.4 Disruption and Impact of COVID-19 on Different Populations

3.6.4.1 Smallholder Farmers

As discussed in the text in studied value chains, over 80% of Tanzania's agricultural production is carried out by small-scale farmers. Therefore, the COVID-19 pandemic is substantially affecting smallholder producers' access to markets. Immediate impacts have been seen in the horticulture value chain, as witnessed by spoilage of their perishable products due to Covid-19 interruption of regional trade and partial border closure between Tanzania's regional trading partners. Further, the shortage of agricultural inputs country-wide as inputs importers fail to supply due to disruption of international trade, with fewer cargo landing in Tanzania's Dar es Salaam port; lack of farm inputs is likely to reduce the smallholder farmers' already low yields, affecting both productivity and production. Further, precautionary measures put in place due to COVID-19 are restricting movement hindering smallholder producers' access to markets as most sell to local markets, roadside and urban centres. Some farmers also transport their maize and rice produce to distant markets, and COVID-19 is exerting impact due to disruptions in collecting and transporting agricultural products to areas of

[18]Read more at: https://www.worlddiabetesfoundation.org/news/wdf-receives-grant-assist-covid-19-response-tanzania, Sourced on July 23, 2020.

consumption, especially in lucrative urban markets such as Dar es Salaam with nearly 6 million consumers.

3.6.4.2 Women and Youth

In Tanzania, women constitute over 70% of the agricultural workforce partly due to cultural biases and own over one third of small and medium enterprises (SMEs). As such, women are the main suppliers of the country's food systems in the value chain studied. Restrictions related to COVID-19 are affecting women's livelihoods and their business activities. In the horticulture value chain, for example, they are the main actors and disruption of international trade has seriously affected exports and reduced their income. This in turn is affecting household food and nutrition supply as most of women's income is spent to feed their family. Further, women and youth are the main actors in cross-border trade and partial closure in regional trading countries is hurting them in terms of lost revenue and incomes, pushing them further into poverty. Women and youth SMEs are also facing difficulty to access agricultural inputs due to unavailability of inputs country-wide due to COVID-19, threatening productivity and production for the next planting season starting in July. If the COVID-19 pandemic does not abate soon, women and youths' livelihoods will be further threatened and could reduce their standard of living. Financing of their enterprises is also becoming harder due to unavailability of commercial bank credit. Thus, the lost income due to interruption of normal retail trade where women and youths effectively participate, combined with inability to freely access resources required to conduct primary production activities, and lack of flexible financing to keep their SMEs afloat or earn wage income in rural markets by selling their food-grains and horticulture products, are likely to have severe impact on household food security as well as wellbeing of their families. Further, closure of schools and higher learning institutions due to COVID-19 is having an impact on private suppliers of food items such as maize, rice and fruits and vegetables, thus reducing their incomes; but also, negatively affecting the youths whose poor parents cannot afford good meals provided in schools.

3.6.4.3 Small and Medium Enterprises

In Tanzania, Small and Medium Enterprises (SMEs) have been heavily affected by the COVID-19 pandemic, either as producers in the value chain, or traders, small-scale processors, transporters and agro-dealers. SMEs account for over 70% of the employment in the country and contribute a significant share in household income and food security. Disruption in regional trade and cross-border trade are having adverse impacts on SMEs, including those owned by women. Traders are particularly affected by COVID-19 precautionary measures put in place through reduced transport to lucrative markets in distant urban centres and effective participation in cross-border trade. SMEs agro-inputs dealers are finding it difficult to source inputs due to their unavailability from suppliers, thus losing income and pushing them into poverty. Credit to run their businesses is becoming tighter as explained in the text constraining them further, particularly those who need credit to purchase stocks as COVID-19 abates.

3.6.4.4 Blue Collar Workers

The COVID-19 pandemic is affecting all workers, partly because of the need to observe social distancing procedures. In Tanzania, processors contacted were operating an extra shift which is having an undesirable impact for those who are not used to working at night and have no own transport means. Social distancing measures are also likely to increase social inequality amongst workers partly due to some "silent" lay-offs by some businesses that are unable to pay salaries to all workers due to reduced business sales, caused by interruption in international trade. Some private schools have also failed to pay salaries to their teachers due to closure of schools, making their lives unbearable as most have to support their families. Further, COVID-19 is having an adverse impact on professionals, especially those working to provide essential services to the society, such as extension staff in all study value chains, workers who sell groceries, health professionals and the like whose nature of duties cannot comply with social distancing regulations. Few measures have been taken to minimise their risk of infection.

3.6.5 Disruption and Impact of COVID-19 on Labour as a Factor of Production

Labour as a factor of production was adversely affected by COVID-19. Since the outbreak of COVID-19 in Tanzania, in March 2020, the labour force in all studied value chains has been adversely affected through a number of global, regional, and domestic channels. For example, the retail and wholesale trade workers have been affected due to disruption in international trade as global manufacturing comes to almost a standstill. Furthermore, Tanzania's regional trading partners partially closed their borders in an attempt to reduce further spread of the virus and since the sector employs about 2,528,771 people in the labour force - largely in the informal sector and with a high proportion of women, (URT (2014),- the impact is likely to be high if the COVID-19 pandemic does not abate. Further, as discussed in the text, all study value chains employ many workers as farmers in the large farming operations. For example, one of the surveyed farms, Kilombero Plantations which produces rice and maize employs 830 permanent workers and 418 seasonal employees. Although, none have been laid off, precautionary measures and operating with additional shifts is affecting some employees. Similarly effects result from the interruption of the tourist industry which employs a large number of workers and generates about US$ 2.557billion (Bank of Tanzania (2019). COVID-19 is having serious impact on laid-off workers, but also on workers and traders in the study value chain who supply the tourism industry with food, especially maize, rice fruits and vegetables.

3.6.6 Disruption and Impact Of COVID-19 and Government Measures on Food Value Chains

3.6.6.1 Supply and Access to Key Agricultural Inputs (Seed, Fertilizer, Chemicals)

Although Tanzania did not undertake lockdown of economic activities, most of the agro-inputs are imported (80% of the fertilisers, 60% of the seeds, nearly all agro-chemicals). In this regard, COVID-19 has potential to adversely affect input supplies in several ways due to disruption in international trade. The country has no separate supply systems for maize, rice and horticulture. Normally agro-dealers and most other agricultural inputs distributors procure and sell inputs according to demand of the farmers. As such, COVID-19 impact on supply and access to agricultural inputs are as follows:

- COVID-19 is adversely affecting agricultural inputs supply country-wide. Agro-inputs dealers and companies importing agricultural inputs contacted as part of this survey confirmed a shortage of supplies of fertilisers, seeds and agrochemicals. Importers claim part of the reason is increased panic buying demand following the outbreak. However, ordered inputs have not arrived in Dar es Salaam port as docking of ships continued to decrease due to continuing COVID-19 disruption of international trade (Figure 3-2).

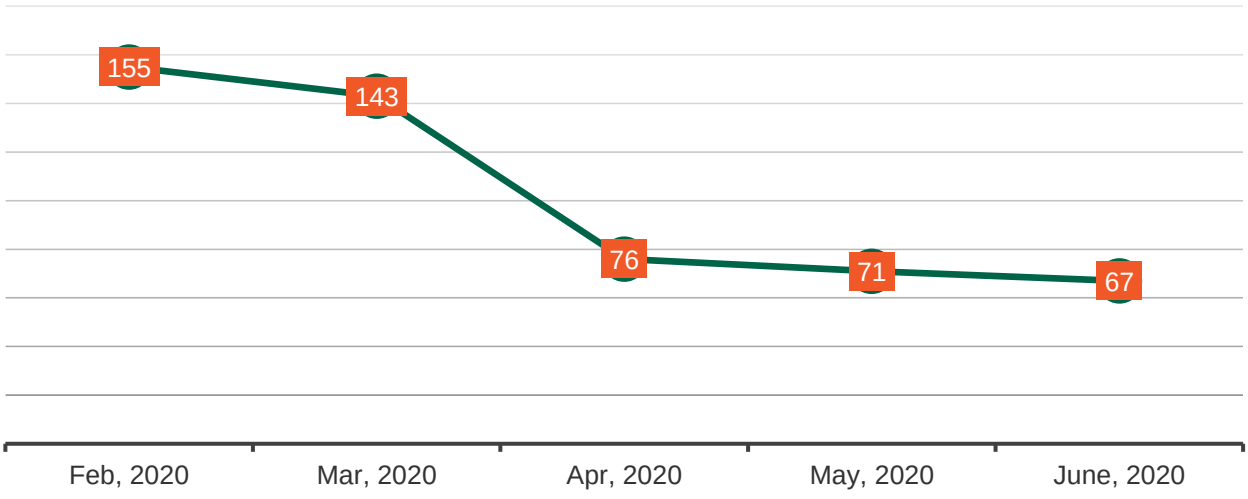

Figure 3-2: Number of Ships docked in Port of Dar es Salaam

Source: Authors based on Tanzania Port Authority Shipping list

- The assertion above is confirmed by the study conducted by African Fertilizer and Agribusiness Partnership (AFAP, 2020), on the impact of COVID-19 on Tanzanian agricultural inputs. One of the findings shows that over 60% of the Agricultural SMEs surveyed reported significant negative impact on their ability to source agricultural inputs for sale. Additional findings from the study include:
    - ✔ All agricultural SMEs surveyed reported significant negative impact on their business operations and performance.
    - ✔ Ability to reach farmers with all services has been reduced due to COVID-19 precautionary measures. Over 50% of the surveyed agricultural SMEs reported significant negative impact on their ability to reach farmers with all services.
    - ✔ Most agro-dealers surveyed reported unavailability of agricultural inputs (seeds, fertilizer, agro-chemicals) from main suppliers.
    - ✔ There was also an observation that at access distribution points the main retail traders were not coming to buy inputs as they used to do before the COVID-19 pandemic.
- Some agro-dealers and main inputs suppliers, contacted for this study, were having difficulty securing credit from the commercial banks. These claims are confirmed by a report from the Bank of Tanzania (BOT) that there is declining commercial bank credit to the private sector (Figure 3-3). The inputs dealers, importers and distributors claim that if COVID-19 does not abate "soon" there will be nation-wide shortages of agricultural inputs for the coming planting season starting in July 2020 and even worse for the 2021/22 seasons. However, for the coming planting season some large-scale farmers contacted had stocks of inputs. For example, Kilombero Plantations Limited (KPL), which produces rice and maize under irrigation in about 4,700 hectares, also aggregates over 5,000 out-grower small-scale rice farmers, revealed that COVID-19 so far had little impact on production because the company had already procured all agro-inputs before the pandemic and intends to supply some to the rice out-growers on credit for the coming planting season if COVID-19 does not abate soon, but cautioned if the pandemic continues, input supplies country-wide even to large farmers will be severely affected in 2020/21 and beyond.

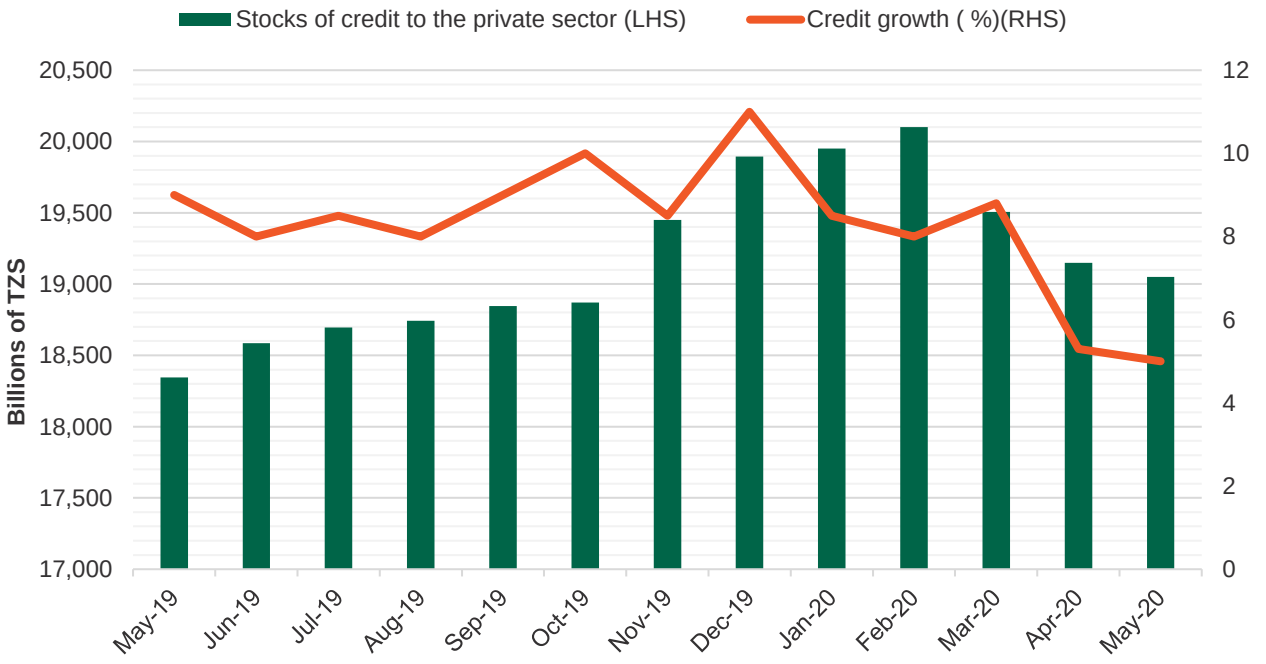

Figure 3-3: Credit to Private sector by Banks

Source: Authors based on Bank of Tanzania (BOT) data

To ease the tight credit, the government, through BOT is adopting various policies to ease liquidity and safeguard the stability of the financial sector. In this regard, the bank has reduced the discount rate, lowered the minimum reserve requirement ratio, incentivised the restructuring of loans for severely affected borrowers, and relaxed limits on mobile money users as an initial step towards addressing the shortage of credit to businesses.[19] Further, the Ministry of Finance has expedited domestic payment arrears and VAT refunds, giving specific priority to the Small and Medium Enterprises (SMEs) sector as well as verified domestic payment arrears amounting to TZS 916 billion were paid in March 2020[20] in an effort to increase liquidity in the economy.

3.6.6.2 Production and harvesting of identified food crops and others

Maize: During the January and February harvesting period (for vuli/bimodal crop), COVID-19 had no effect because the first reported case in Tanzania was on March 16, 2020. For the May/June (Msimu/bimodal) and July-August maize harvest (Masika/bimodal crop), COVID-19 might not have exerted much impact on production because farmers had already procured inputs before the onset of COVID-19 and since most of the maize is grown by smallholder farmers precautionary measures being undertaken will not affect harvesting in the May-August period. Discussions with large producers of maize (Farm for the Future and Kilombero Plantations Ltd) confirm that the May/June and July/August harvest is expected to be good and will not be affected by COVID-19. However, going forward, COVID-19 will have an adverse impact on production as there is already inadequate supply of inputs from agro-dealers and importers as discussed in the preceding sections. The impact will be felt by out-grower smallholder farmers due to shortages of agricultural inputs for the coming planting season starting in September 2020. COVID-19 is also expected to have adverse impact on maize production and productivity beginning in July/August as farmers begin to source agricultural inputs for the next planting season which also starts in September 2020. The maize and rice production season in Tanzania are shown in Figure 3-4.

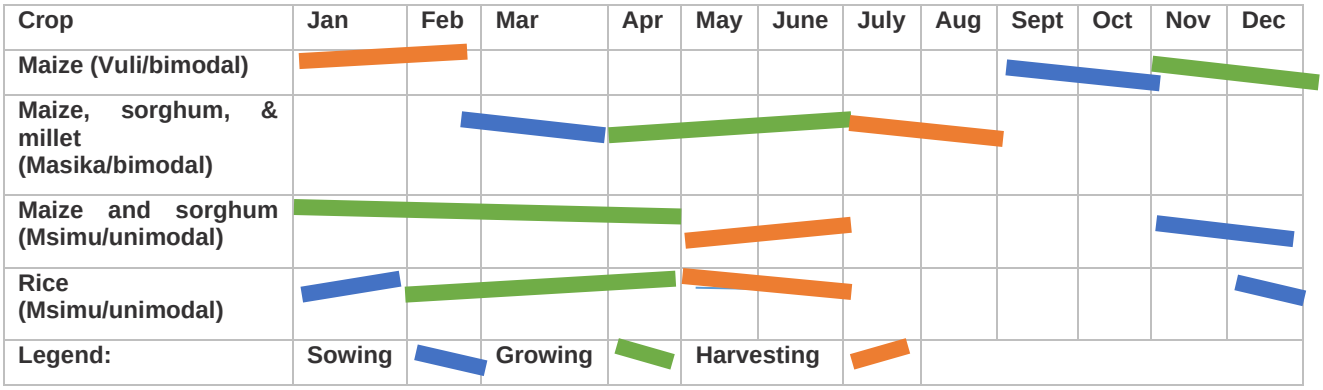

Figure 3-4: Maize and Rice Production Season

Source: Authors based on FAO (2020)

Rice: COVID-19 is expected to have little or no impact on rice production because agricultural inputs had already been procured before the pandemic. Precautionary measures taken have not affected harvesting in May/June, as reported by the rice farmers contacted. Going forward, COVID-19 will have an adverse effect on planting season, which starts in December 2020, because the farmers both small and large contacted have no inputs (except Kilombero Plantations Ltd), and agro-dealers and importers are facing challenges accessing agricultural inputs due to the pandemic.

Horticulture: Production and harvesting takes place almost throughout the whole year and discussions with TAHA officials who work closely with small and large horticulture producers indicate that COVID-19 has, so far, had little impact on horticulture production because producers had already

[19] https://www.theigc.org/blog/COVID-19-in-tanzania-is-business-as-usual-response-enough/. Sourced June 23, 2020

[20] Op. cit. (footnote 32).

acquired agro-inputs before the pandemic. These officials commented that the future of continued good harvests in the next planting season and beyond is worrisome because there are already shortages of agro-inputs from suppliers and agro-dealers and they were hoping that the pandemic abates soon.

3.6.6.3 Aggregation, storage and trade (domestic and regional trade)

Maize and rice value chains have had several challenges due to COVID-19, especially in the trade area due to border closure in neighbouring countries as discussed earlier. Although Kenya and Tanzania have not closed their border, the stringent controls at Namanga (Kenya-Tanzania) one-stop-border-post, for example, halted the movement of people and vehicles. According to BlueBox GmbH, (BlueBox GmbH, 2020), the border challenge has already caused an estimated loss of US$38 million per week in bilateral trade between the two countries.

In addition to what has been discussed so far, a UNDP COVID-related study (UNDP, 2020) observes that due to COVID-19, Tanzania's transportation and storage sector which employ 521,698 people and contribute 6.48% and 3.2% of Tanzania mainland and Zanzibar GDP respectively, will continue to be under stress, largely because of inadequate storage capacity as bumper crops this season coincide with large carry-over stocks from last year and NFRA does not have enough storage capacity. The government is aware of this constraint and recently announced it will increase funding to NFRA to expand its storage capacity.

The horticulture subsector is the most affected by COVID-19. As discussed earlier this sector has over 2-3 million small-scale farmers, provides direct jobs to about 51,000 people, mostly women, and the industry's value-chain impacts the lives of over 297,000 dependants. To rescue the sub sector from collapse due to flight cancellations, TAHA undertook several actions to help horticulture producers in the aggregation of supply, storage and eventually partly resolving the horticulture exports hurdle. TAHA worked in partnership with the government, Kuehne+Nagel, the Kilimanjaro Airport Development Company (KADCO), National Aviation Services (NAS) and development partners - to secure reliable air cargo services to save the horticulture industry from collapsing. As TAHA Group CEO Ms Jacquiline Mkindi stated that: "*Today, we are extremely happy to witness our dream come true as air cargo services to ferry our horticultural crops to overseas markets is here - and will be coming twice a week,*" (The Citizen, 2020). This was observed after an Ethiopian Airways cargo plane landed at the Kilimanjaro International Airport (KIA) on April 9, 2020. The airline airlifted 28 metric tonnes of fruits, vegetables, spices and herbs to Belgium from where they were ferried to other European countries. Earlier, Ethiopian Airlines had demanded availability of at least 15 metric tonnes of cargo to do the job in these difficult times, but TAHA's logistics company, TahaFresh Handling Ltd, through aggregation of small-scale fruits and vegetable producers, was able to mobilise 28 metric tonnes. The government, with support from TAHA, is hopeful that the country will be able to airlift 55 tonnes of horticultural products every week to international markets, earning the country nearly $200,000 in foreign currency. Tanzania's horticulture products have markets in Europe, America, Asia and the Middle East.

3.6.6.4 Processing

Maize and rice: In Tanzania most millers, small or large, process both maize into flour and paddy into rice. The few large processing companies in addition, process also other cereals and other finished products for the domestic and export market. Since the country has not locked down economic activity, discussions with two large processing companies (Bakhresa Group of Companies and Mohammed Enterprises Tanzania Limited Group), all said they have been operating "as usual" under COVID-19, with all workers observing the precautionary measures directed by the government. None of these companies have faced breakdown of machinery and equipment needing imports, as most spare parts in Tanzania are imported. However, as the UNDP study observes, due to high dependence on imported spare parts in the country, in case processing machines and equipment requires such intermediary inputs, certainly continued a COVID-19 pandemic will exert stress on these

agro-processing industries due to restrictions in air travel and reduced shipment of goods by sea[21]. Further, additional shifts introduced by large processors to comply with social distancing have negatively affected employees in those factories, some of whom were not used to work night shifts. Processed food products particularly maize flour and refined whole grain rice earmarked for exports to regional markets were adversely affected by COVID-19 due to partial closure of regional trade, a situation which has led to these companies holding more stocks than normal, and the situation could be worse if the pandemic does not abate soon because some products have a short expiry date.

Horticulture: Tanzania has low processing capacity, particularly in relation to end-market products for the domestic and export market. Estimates show that only 1.5% of the fruits and vegetables are processed to final products with large companies such as those mentioned above. Processors contacted as part of this survey have continued to work almost normally under COVID-19, with workers observing the precautionary measures directed by the government. Processed fruits and vegetables earmarked for exports to regional markets have been disrupted by COVID-19, necessitating processors to hold greater stocks than normal – a situation that can become worse if the COVID-19 pandemic does not abate soon as most products have a short shelf-life.

3.6.6.5 Wholesale, Retail, and Distribution (End Markets)

Maize: Because of the government's approach not to lock down and allow "business as usual", COVID-19 appears to have a negligible impact on domestic retail and distribution channels as well as final consumption outlets. Consumers and retailers contacted as part of this study in Dar es Salaam revealed there are plenty of foodstuffs, including maize being brought to the main markets at Tandale, Tandika, Temeke, Buguruni, Ilala and Kariako, to mention but the large markets. However, with regards to regional and cross-border trade, COVID-19 has a high impact, particularly to wholesalers and cross-border trade actors. For example, according to FEWS NET (2020) maize is the main traded commodity in the East African region and partial disruption in regional trade will have a very high impact (Figure 3-5).

[21] See, for example UNDP (2020), op.cit.

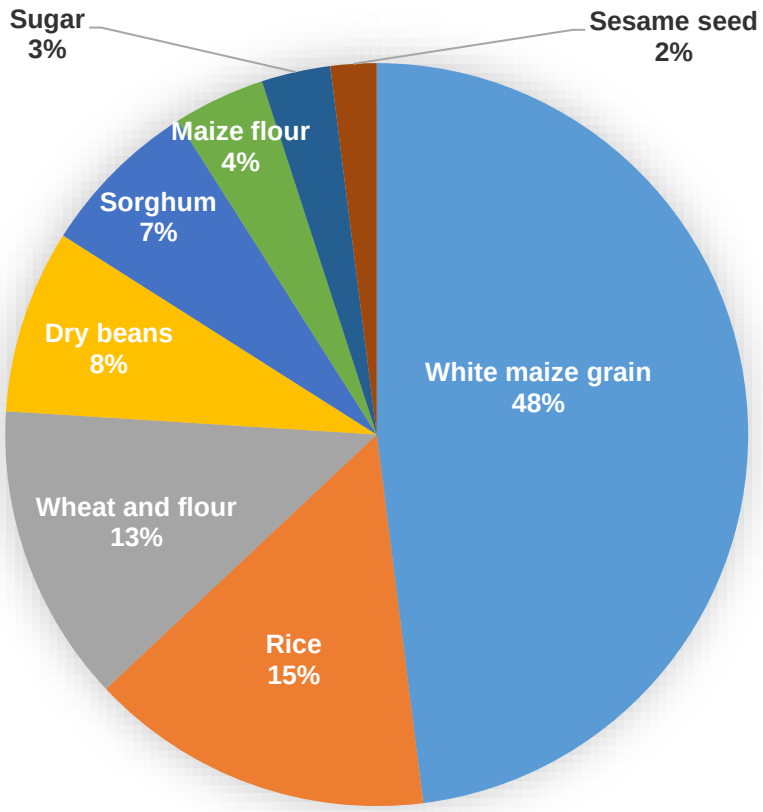

Figure 3-5: East African Region Food Crops Traded share

Source: Authors based on FEWS Net (2020)

Although Kenya and Tanzania have not closed their common border, the stringent controls at Namanga border post (Kenya-Tanzania) is causing serious revenue losses for both countries. Women, who form most traders in the cross-border trade, have been most affected with partial closures of the border reducing their incomes and impacting heavily on their livelihoods and their dependants.

Government's decision not to lockdown any activity has moderated the impact of COVID-19 on distribution, wholesale and retail. However, a continued COVID-19 pandemic should be expected to exert stress on this sector, as international trade continues to slow down, greatly affecting the livelihoods of many men and women in this sub-sector. A FAO study (FAO (2020b*)* analysing COVID-19 channels of transmission to food and agriculture, observed that the impact on the value chain for food producers and workers in those food chains and for exporters is high, implying continuing stress on the subsector if COVID-19 does not abate. There is no evidence to date that prices of food products have risen due to COVID-19, but if the pandemic continues, the impact on distribution and trade are expected to be high, exhibiting progressive rises in food prices, pushing the poor and vulnerable further into poverty.

Government measures to improve regional trade have seen diplomatic discussions with EAC counterparts on the need to resolve ongoing border trade challenges and strengthening the MoA intelligence unit to facilitate making evidence-based decisions on regional and international trade.

Rice: The impact of COVID-19 on wholesalers, retailers and traders has been low, partly because of "the business as usual" approach. Since Tanzania is a net importer of rice, planned importation of 220,000 metric tons has been shelved for now due to an import ban imposed by the government to protect the expected good harvest in the May-July period. Going forward, if the import ban is not lifted and the COVID-19 pandemic does not abate, the impact could be high due to the expected gap between national rice requirements and domestic production.

Horticulture: Although large wholesalers of horticulture products obtain their supplies largely from many traders who buy from farmers and village/market towns, COVID-19 has reduced the pace of aggregation due partly to observation of the precautionary measures put in place. In particular, social distancing and avoiding unnecessary travel to avoid risk of contracting the virus. Some of the wholesalers are also exporters who increasingly integrate Tanzania's horticulture produce to regional and global value chains which have been adversely affected by the pandemic. About 40% of the various fresh fruit and vegetable products destined for the regional markets within the East African Community (EAC) and an additional 32% destined for SADC markets have also been seriously affected by partial border closures and border crossing at Namanga (Kenya-Tanzania border) and Tunduma (Tanzania-Zambia border) resulting in high losses of their fresh products as queuing trucks failed to cross the borders. The remaining 28% exports of fruit and vegetables which goes to high value markets in Europe[22] also have been adversely affected by COVID-19 disruption of international trade. Recent measures by government and TAHA to airlift horticulture cargo from Kilimanjaro and Dar es Salaam airports have ameliorated the situation somewhat, but a continued COVID-19 pandemic can be expected to exert substantial stress to the horticulture subsector.

Horticulture is one of the top export foreign exchange earners in the country. Continued global economic downturn associated with COVID-19 is already resulting in reductions in Tanzania's foreign exchange reserves generated through export earnings (from horticulture, cash crops, livestock, and metals) and remittances. This results in depreciation of the Tanzania Shilling, contributing to increased prices for imported commodities and local substitutes and could increase food insecurity if the pandemic does not abate (Figure 3-6 and Figure 3-7).

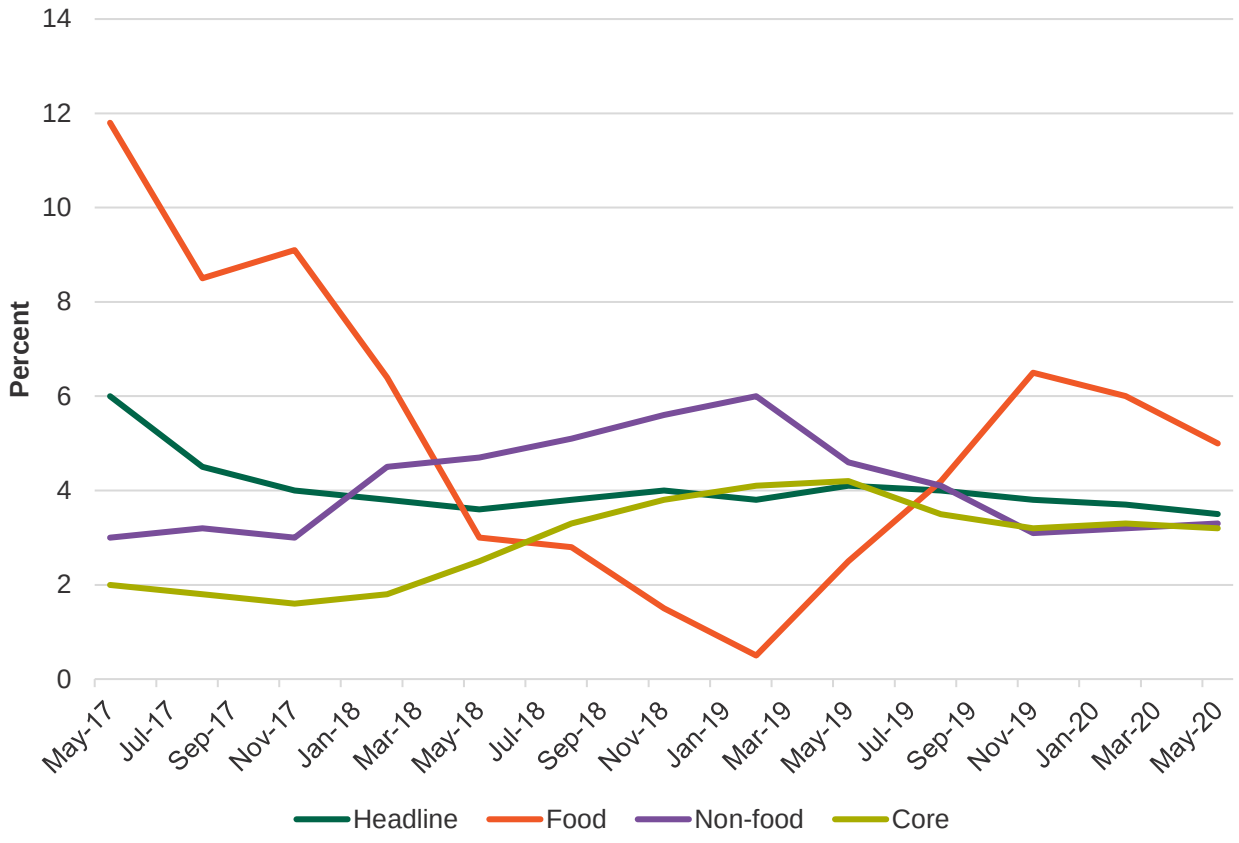

Figure 3-6: Tanzania Trend in Inflation Rates (May 2017 – May 2020)

Source: Authors based on National Bureau of Statistics data

[22] ITC Trademap. 2017.

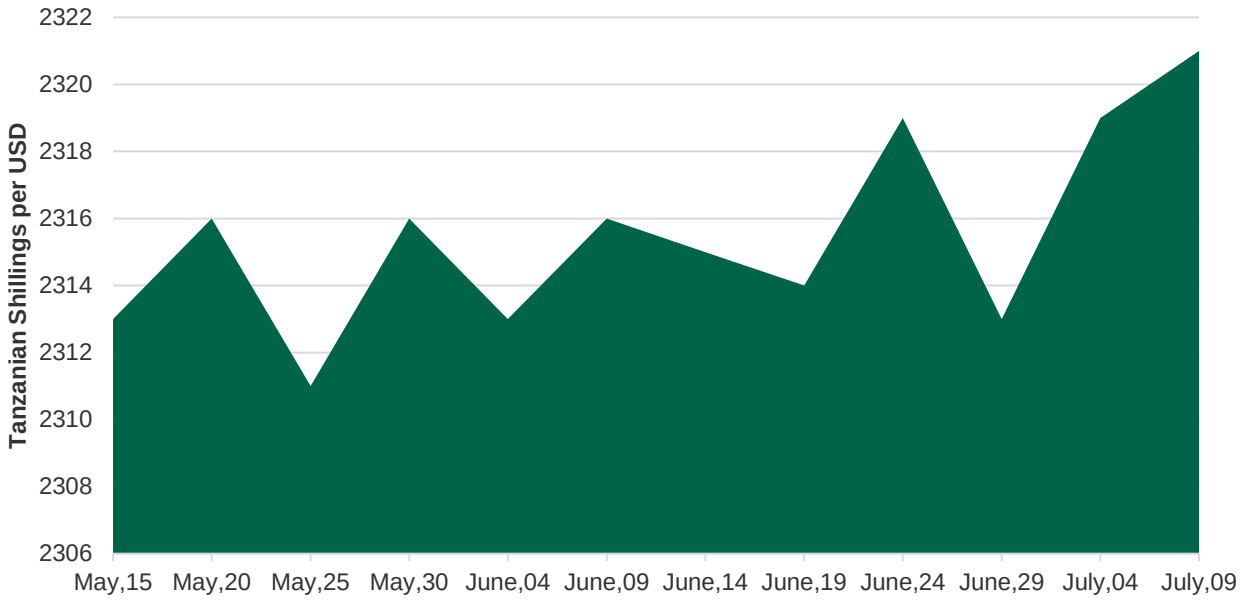

Figure 3-7: Tanzania Exchange Rate (TZS to USD) May – July 2020

Source: Authors based on National Bureau of Statistics data

Tanzania's wholesale, retail and distribution subsector is one of the largest in the country, employing about 2,528,771 people in the labour force mostly in the informal sector with a high proportion of women and SMEs. The sector contributes about 9.12% to GDP and TZS 71.6 billion in domestic revenue earnings. Given the large employment generated largely by the agriculture sector, COVID-19 impact should be expected to be very high. But government's approach not to lockdown and allow normal economic activities might have moderated the impact somehow. However, a continued COVID-19 pandemic should be expected to exert stress on this sector as international trade continues to slow down, greatly affecting the livelihoods of many men and women in this sub-sector. As a FAO study, (FAO (2020b*),* analysing COVID-19 channels of transmission to food and agriculture, observed the impact on the value chain for food producers, workers in those food chains and exporters is high, implying continuing stress to the subsector if COVID-19 does not abate.

4.6.6.6 Consumption

Maize and rice: Tanzania's over 58 million people nearly all are consumers of maize flour and about 70% are consumers of rice. As such, the country has not been spared from the consumption effects of COVID-19, despite taking a "business as usual" approach. According to the World Bank's 14th Tanzania Economic Update (TEU), the pandemic is expected to reduce economy-wide consumption, impacting lives and livelihoods of many people, largely women, youths, children and vulnerable people. Using simulations on the recent Household Budget Survey data, released in December 2019, the report shows the crisis could push 500,000 more Tanzanian citizens below the poverty line, particularly those in urban settings relying on self-employment and informal/micro enterprises[23].

According to analysis by WFP (May, 2020), Tanzania already has a number of districts that are facing food consumption challenges, despite the country having substantial amounts of carry-over stocks of maize and rice and good harvests this season. WFP estimates nearly one million people, 20% out of the 4.8 million in the sample of 16 districts of Tanzania, were estimated to be experiencing severe food insecurity and an estimated 760,600 people (16%) were in a crisis. WFP projections between May and September 2020, show nearly half a million people (10% of the population analysed) will

[23] Read more at: https://www.worldbank.org/en/country/tanzania/publication/tanzania-economic-update-amid-pandemic-tanzania-has-an-opportunity-to-sow-the-seeds-of-future-resilience Sourced July 16, 2020

likely be in a crisis and 7,600 (0.2%) people will likely be in an emergency situation, while around 1,845,800 (38%) people are projected to be in a stressed situation. The main reasons cited include a prolonged dry spell in dryland areas, coupled with Fall Armyworm infestations and erratic rainfall in the 2018/19 planting season, leading to decreased production in both the Masika and Msimu harvests. The poor harvest resulted in limited food availability and a reduction of casual on-farm labour opportunities related to post-harvest activities.

Another recent Urban Food Security Assessment by WFP focusing on Dar es Salaam observed that most of the (sampled) households (80%) have acceptable food consumption while 12% have borderline consumption and 8% poor food consumption. Male-headed households have a slightly better food consumption compared to female-headed households. In the event of a shock, particularly the impact from COVID-19, the population in the borderline food consumption group is likely to fall into 'poor' food consumption, resulting in 20% of the population being in need of assistance. It is estimated that up to 2.1 million people may need food assistance because of the socioeconomic impacts of COVID-19 in Tanzania.

Despite the observed pockets of food consumption shortages, both maize and rice harvests have been good this season and food prices appear to be decreasing since April 2020 (figure 8), although severely affected areas with floods and food insecurity might be experiencing a rise in food prices.

Government has not, so far, released any NFRA stocks to districts affected by food shortages related to COVID-19. However, there is an ongoing program since mid-2019 to supply food, largely maize to affected food shortage districts in the country. The government is also strengthening the Market Intelligence Unit at the Ministry of Agriculture to support better preparedness and advice on domestic, regional, and cross-border trade. This to facilitate evidence-based decision making on trade and release of emergency foodstuffs from NFRA.

4. Conclusions and Recommendations

Conclusion

The food value chain crops discussed in this text, namely maize, rice and horticulture are the most important foods, consumed by nearly all Tanzanians. This summary provides a snapshot of the discussions in the text.

Adequate Agro-Input Supplies: These are critical for enhancing productivity and increasing production in all the value chains under review. Tanzania imports about 80% of fertilisers and 60% of seeds through private companies. An importer imports fertiliser on behalf of the others under the fertiliser bulk importation competitive bidding scheme. COVID-19 has seriously derailed importation of agro-inputs for the coming two planting seasons, due to reduced air and sea travel. The input importers, agro-dealer distributors and farmers contacted for this report confirmed nationwide shortage of agricultural inputs supply. Due to the expected slowdown in economic activity, the country may require external help from agro-inputs donors such as the World Bank, AGRA and its partners, FAO, IFAD, USAID, and JICA to meet input requirements for 2020/21 and 2021/22 planting seasons.

Production and Harvesting: Production and harvesting for all the value chains in this study were satisfactory for the past two growing seasons and were largely not affected by COVID-19 because inputs were already procured. The producers contacted observed that, going forward, the scarcity of agricultural inputs nationwide caused by the COVID-19 disruption of international trade is likely to reduce productivity and production over the 2020/21 and 2021/22 period. Particularly if COVID-19 does not abate and the scarcity continues without urgent government, donors and private sector efforts to ensure adequate inputs supply for the next planting seasons which begins in September 2020.

Aggregation, Storage and Trade: Less than 10% of all value chains studied are aggregated. Horticulture is the most aggregated value chain due to support from TAHA's park houses, which help smallholders in transporting, sorting, storing and marketing. Storage is the greatest challenge in all value chains, with post-harvest losses ranging between 20-30%. Efforts to reduce losses through introduction of hermetic storage systems is yet to achieve much success. Maize is largely grown for domestic consumption and the surplus is exported to EAC and SADC countries. Horticulture trade is mainly with regional markets (40% EAC, 32% SADC) and the rest to European markets. COVID-19 has derailed exports due to the disruption of international trade, partial border closure by regional trading partners and cross-border challenges. These have caused significant losses to Tanzania, its trading partners, as well as women and SMEs who are the majority actors in cross-border trade.

Processing: Tanzania does not have adequate processing capacity for horticulture products - less than 1.5% of all fruits and vegetables are processed in-country. Maize and rice are processed by local millers largely for domestic consumption, with a few large processing companies processing for both the domestic and export market. Discussions with millers and processors show that COVID-19 has, so far, had an impact related to social distancing, which necessitated introducing extra working shifts and holding above normal stocks due to disruption of regional and international trade. Going forward, if COVID-19 does not abate soon, products with short expiry dates will exert huge losses to companies due to failure to export as planned.

Wholesale, retail and distribution: For all three food value chains, the domestic market is their main outlet, followed by the regional and international markets. COVID-19 so far has not exerted much impact on consumption because of good harvests in the previous and current seasons. However, the country has a few, largely dryland, areas facing food shortages and there is an on-going program since late 2019 to supply food to those areas. Food prices show a slight downward trend since April 2020, but this may change as the harvest period wanes. This would lead to increases in food prices, thus hurting the poor and most vulnerable populations. Estimates by WFP shows nearly 2.1 million Tanzanians may need food assistance if COVID-19 does not abate.

Rules and regulations: Tanzania has adequate rules, regulations and enforcement institutions. However, frequent export and import bans of food trade, ostensibly to protect rice farmers from cheap imports - such as the ban on rice importation in late 2019 – need to be reviewed. This would enable the government to make evidence-based decisions to safeguard national food security and adopt a policy of unrestricted domestic, regional and international trade. The impact of COVID-19 on shortages of agricultural inputs has made the government relax its policy on single importer of fertilisers under the competitive bulk procurement system to allow free private importation. They have also reversed the suspension on international flights to revive the tourism and horticulture industries which were adversely affected by the COVID-19 pandemic.

Supporting functions: All three value chains have adequate supporting functions, however due to the impact of COVID-19 on the entire economy, commercial bank credit is becoming tighter. Likewise, sourcing agricultural inputs from agro-dealers and importers is becoming difficult countrywide. The national food reserve agencies (NFRA and CPB) have inadequate storage capacity to be able to assure the nation adequate food security, even while releasing surplus to domestic markets to stabilise food prices and participate more effectively in regional markets.

Food/Commodity Balance Sheet: Tanzania does not have an official FBS and CBS. However, the National Bureau of Statistics (NBS) with donor help unveiled the 2014-2017 FBS and the NBS/FAO FBS of 2019/20. The FBS shows national maize demand was about 5,199,000Mts in 2019, while production was 6,946,000Mts during the same year; indicating a surplus of 1,747,000Mts. National rice demand was about 1,720,000Mts in 2019, while national production was 1,505,000Mts; indicating a deficit of 220,000Mts. Overall, for the 2018/19 and 2019/20 season the country was about 115% to 120% food self-sufficient.

Strategic Grain Reserves: In 2019/20, carry-over stocks were 505,274 metric tons, of which 68,057 metric tons and 5,616 tons were held on NFRA and CPB premises, respectively. Remaining stocks were held by private stockists and farm retention. During the COVID-19 period Tanzania has not released any food grains from NFRA, instead they have recommended that farmers and traders with

carry-over stocks and purchases from recent harvests take the opportunity, during COVID-19, to engage in regional and cross-border trade. Only CPB exported 500Mts of maize flour to DRC in April 2020, and sold 6,000Mts of maize and 1,500Mts of beans to WFP in April and May 2020.

COVID-19 Economy-Wide Impact: The COVID-19 pandemic is exerting unprecedented impact on Tanzania's economy. Projections from several studies show that annual real GDP growth could decline from 6.9% in 2019 to 6% of GDP in 2020. This would push over 500,000 Tanzanians below the poverty line, particularly those in urban settings relying on self-employment and informal/micro enterprises, including those owned by women.

Government Response to the Adverse Impact of COVID-19: The stimulation of private sector investment and business performance through monetary policy to ensure liquidity to private enterprises, as the country's engine of growth. Designing safety net programs to cushion impact of COVID-19 to the most vulnerable populations of the society. Allowing unrestricted importation of fertilisers to address critical shortages of this agricultural input. Reversing its suspension on international flights in order to revive the tourism and horticulture industries, which are significant earners of foreign exchange, and a major source of employment and tax revenue.

Recommendations

Short Term Measures (1-2 years)

Input Supply and Production

- AGRA and partners are urged to support the government in the supply of adequate agricultural inputs for the 2020/21 and 2021/22 planting season – all value chain actors will benefit.
- Almost immediately AGRA and partners could consider committing to distribute 30,000 tons of maize seeds (25kg/ha or USD 20/ha) to farmers through agro-dealers and the government to encourage farmers to plant immediately after the current harvest.
- AGRA and partners could consider supporting the government to develop strategies to reduce post-harvest losses in maize and rice, especially through widespread use of Hermetic Storage (HS) systems.
- AGRA and partners could consider supporting climate smart strategic agriculture production of maize and rice during the dry season targeting 420,000 hectares and 650,000 hectares of irrigation schemes would bring the total off-season planted area to over one million hectares. This would result in an additional two million tons of maize and rice and, potentially, over USD 400 million annually in regional export earnings.

Aggregation, Storage and Trade

- AGRA and partners could consider supporting TAHA expand its aggregation offtake park houses countrywide in an attempt to reduce horticulture post-harvest losses, improve cold chain transportation of horticulture produce as well as entice private sector investments in cold storage systems at major airports.
- AGRA and partners could consider supporting expansion of storage capacity of the strategic reserve agencies (NFRA and CPB) to stock more food grain supplies for emergency and regional market demand. Such support could enable NFRA to procure and store an additional 200,000 metric tons of food.
- NFRA should be advised to maintain strategic stocks for import substitutes such as sugar and edible oil to mitigate price shocks as supply chains are disrupted and consumers make panic purchases. This implies increasing funding to NFRA to be able to implement this action soonest.

Distribution, Wholesale and Retail

- The Ministry of Agriculture and high-level authorities should continue to diplomatically engage neighbours Kenya, Uganda, Rwanda, Burundi, Zambia, and the DRC to create an enabling environment for improved regional trade and resolve food trucks hindrance to cross borders without much hustle and long queues of trucks.
- Consider reviewing the rice imports ban based on evidence-based domestic rice supply and demand.

Medium-Term Measures (2-5 years)

Support ICTs Approaches in Extension Service Provision

- Information and telecommunication technologies (ICTs) can help smallholders' maize, rice and other food-crops producers to improve productivity through use of appropriate inputs, availing information on how to reduce post-harvest losses, increase access to prices information in various markets to enable them make informed decisions, as well as provide information on credit outlets, extension services and improve food security and profitability. Most households in Tanzania have access to mobile phones.
- AGRA and partners could consider rolling out its successful zonal support countrywide, while putting in place sustainable systems as an exit strategy.

Promote Women and Youth Participation in Agriculture

- As discussed in the text, women are the key players in agricultural production. The government now needs to address cultural bias to support women ownership of land and other assets. Young men and women who complete school rush to towns in search of jobs only to find none. These youths need training through the various established farm demonstration plots (shamba darasa) and support by establishing agribusiness incubation centres to train them on good agricultural production practices, including smart agronomic practices, processing, and marketing. Initially the support could be undertaken in AGRA and partner's supported zones and rolled out to other parts of the country in the future.
- AGRA and partners could consider supporting the Government efforts to strengthen the Warehouse Receipts System to increase crop value, reduce damage and enable farmers to access credit while waiting for prices to rise as the harvest season ends.

Long-Term Measures (>5 years)

Mechanisation and Processing

- AGRA and partners could consider supporting the Government through selected mechanisation and processing in the rice value chain. This may involve collaborating with the government post-COVID-19 to facilitate setting up of farm machinery hire services, especially tractors, combine harvesters and milling machines. The shortage of farm machinery makes smallholder farmers, who mostly use the hand implements like the hoe, unable to follow Good Agricultural Practices (GAPs), and post-harvest practices. For example, the quality of paddy rice is reduced by the traditional threshing methods largely used by women and youths. The method yields nearly 30-50% broken rice. However, with good mills, farmers and traders could obtain standard or high-grade rice, with little or no broken rice which would increase income and profitability.

Resilience in the Production System

- AGRA and partners could consider supporting the government in implementing some aspects of the country's *National strategy for climate change adaptation and resilience of dryland agriculture 2020-2030.* In particular, to improve the integration of Climate Smart Agriculture (CSA) in social protection programming and interventions. The rationale is that social protection has the potential of advancing risk resilience and food safety-nets for vulnerable farming households in the face of climate change. The interventions are particularly important because over the period 2005 - 2019, about 56 out of 169 (33%) of Local Government Authorities (LGAs) in the dryland areas were found to be chronically food insecure. This to the extent of requiring relief food supply at varying rates, and thus undermining the readiness of the country to predictably engage in regional food export trade even beyond COVID-19 pandemic.

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