East African Scholars Journal of Agriculture and Life Sciences
Abbreviated Key Title: East African Scholars J Agri Life Sci
ISSN 2617-4472 (Print) | ISSN 2617-7277 (Online)
Published By East African Scholars Publisher, Kenya

Volume-8 | Issue-7 | Aug-2025 | DOI: https://doi.org/10.36349/easjals.2025.v08i07.002

OPEN ACCESS

Review Article

Crop Prospects and Food Situation in East Africa: An Overview

Abdullahi Ali Ibrahim[1]*, Md. Sadekur Rahman[2], Md. Rubayet Al Ferdous Noman[3], Ismail Abdullahi Mohamed[4], Abdiaziz Hassan Nur[5]

[1]Former Master's Student, Department of Agricultural Extension, Hajee Mohammad Danesh Science and Technology University, Dinajpur-5200, Bangladesh
[2]Professor, Department of Agricultural Extension, Hajee Mohammad Danesh Science and Technology University, Dinajpur-5200, Bangladesh
[3]Assistant Professor, Department of Agricultural Extension, Hajee Mohammad Danesh Science and Technology University, Dinajpur-5200, Bangladesh
[4]Lecturer Faculty of Agriculture, Zamzam University of Science and Technology
[5]Research Officer at Department of Research and Extension, Ministry of Agriculture and Irrigation of Somalia.

Article History
Received: 04.06.2025
Accepted: 09.08.2025
Published: 12.08.2025

Journal homepage:
http://www.easpublisher.com

Quick Response Code

Abstract: East Africa is a region on the eastern coast of Africa; the region is facing challenges such as droughts, floods, and pests all of which have disastrous effects on crops and food security. The present review paper mainly focuses on the status and intervention of the crop sector, food situation, strategies to develop crops and constraints faced by crop farmers in East Africa. East Africa is experiencing a severe food crisis due to prolonged drought affecting millions of people especially in Ethiopia, Somalia and Kenya. Millions of Somalis, Ethiopians and South Sudanese will face acute food insecurity. With below-average precipitation forecasts the situation is expected to worsen in 2023. Despite drop in maize prices, local food prices remain high and has resulted to limited access to food. The Food and Agriculture Organisation (FAO) reported five strategic pillars (SPs) for crop sector development from 2021 to 2026. The review also pointed out some constraints faced by farmers such as diseases, pests, natural disasters such as drought, declining soil fertility, lack of market access, and lack of adequate infrastructure. In Somalia, major constraints have been reported, such as decreasing groundwater and river levels, and fear of conflict between rebels and the government. These issues need urgent attention by governments, development partners and other stakeholders to address and provide urgent and long-term solutions to food crisis in East Africa.

Keywords: Crop prospects, food situation, East Africa, Strategies, Constraints.

1. INTRODUCTION

Crop prospects and the food situation in East Africa have recently been a topic of concern and debate in recent times. The region has a large agricultural population, which contributes a significant portion of the GDP of the countries in the region. However, East Africa is also well-known for its vulnerability to natural disasters such as droughts, floods, and pests, all of which have disastrous effects on crops and food security (FAO, 2023).

The region is home to 370 million people; approximately 40 percent faced significant food security challenges due to limited access to food (Baquedano, 2020). Due to rapid and sustained population growth, the region's ongoing challenges are likely to worsen. Furthermore, anthropogenic climate change is widely expected to reduce agricultural productivity and local food production, increasing the number of food-insecure people in the near future, though with some regional variations (Adhikari, 2015; Blanc, 2012; Gardi, 2022; Rosenzweig, 2014; Thornton, 2011).

To address the region's challenges, governments and development partners have implemented a variety of initiatives and policies. For example, the International Fund for Agricultural Development (IFAD) launched 2014 new initiatives to improve food security and incomes for small-scale farmers in East and Southern Africa. Platforms for innovation have also been used to improve food security and nutrition in the region (Pangaribowo, 2016).

***Corresponding Author:** Abdullahi Ali Ibrahim
Former Master's Student, Department of Agricultural Extension, Hajee Mohammad Danesh Science and Technology University, Dinajpur-5200, Bangladesh

In this review article, we will discuss previous thoughts, findings and information reported by international organizations such as The Food and Agriculture Organization (FAO) and aims to address the following objectives. Overview the status of crop production prospects and food situation in East Africa, explore strategies to develop the crop sector in East Africa to ensure food security and appraise crop production constraints faced by farmers in East Africa.

2. MATERIALS AND METHODS

This paper is based on secondary data. Several published reports mainly provided input for this article. So, this paper is solely a review. As a result, no specific method was used to prepare this paper. It was created through internet search such as Google scholar, comprehensive studies of various articles published in various journals, books, and latest reports by some international organizations such as FAO etc.

A number of relevant journal articles and books were sourced through extensive searches in databases such as Google Scholar. After gathering all relevant information, it was compiled and logically presented in the current format.

3. REVIEW OF MAJOR FINDINGS, DISCUSSION AND REPORTS

Since this paper is solely a review, the major findings observed along with appropriate discussions and reports are presented here in order of the initially stated objectives.

3.1 Status of Crop Prospects and Food Situation in East African Countries

The overview came from global report conducted by FAO Crop Prospects and Food Situation - Global Report. The challenge of prolonged drought in East Africa raises serious concerns about acute food insecurity. While international prices have risen, local food prices have remained high and continue to hinder access to food.

3.1.1 Dire Food Security Situation in Somalia and In Parts of Ethiopia and Kenya Due to Unprecedented Multi-Season Drought

A prolonged drought that began in late 2020 in Somalia, Northern and Eastern Kenya, and Southern Ethiopia has severely harmed local households' livelihoods. According to the most recent estimated by FAO the drought affects approximately 36.4 million people, including 24.1 million in Ethiopia, 7.8 million in Somalia, and 4.5 million in Kenya. With forecasts indicating average to below-average precipitation during the March to May rainy season in 2023, the acute food insecurity situation is likely to worsen. According to FAO, approximately 6.5 million Somalis (nearly 40% of the total population) are expected to face severe acute food insecurity due to a prolonged drought that began in late 2020.

According to the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA, (2022) the mid-year review of the 2022 Humanitarian Response Plan, approximately 23.6 million Ethiopians were estimated to be facing acute food insecurity, 5.6 million more than the previous year. This includes 11.8 million people in the drought-affected Southern regions (SNNPR, Oromia, and Somali) and 5.4 million in the conflict-affected Tigray Region.

3.1.2 Prices of Grain Crops Remain at Exceptionally High Levels in Some East African Countries

Maize prices in Uganda fell by 20-30% between March and April due to lower exports to Kenya, but then rose by 5-15% in May due to increased export demand in Kenya. In Tanzania, maize prices fell by 10-25 percent seasonally in May with the start of the major 'Msimu' harvest, and they were 20-30 percent lower than the previous year's levels due to adequate domestic availability (Figure 1).

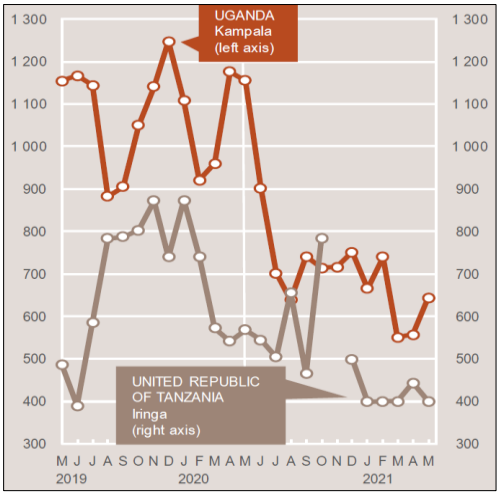

Figure 1: Maize prices in selected East African markets (Uganda Shilling/kg and Tanzanian Shilling/kg)

Sources: Regional Agricultural Trade Intelligence Network

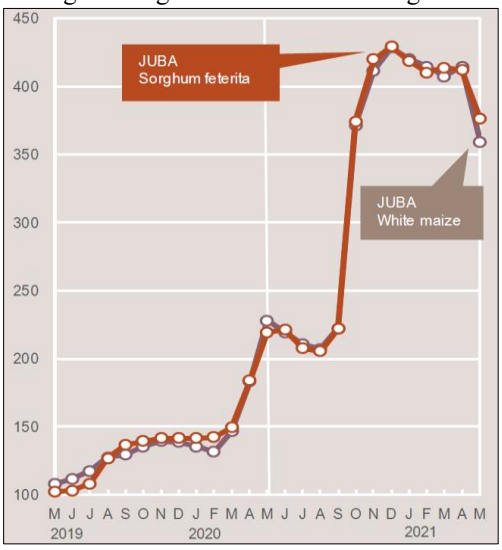

Figure 2: Retail prices of maize and sorghum in South Sudan (South Sudanese Pound/kg)
Source: Crop and Livestock Market Information System (CLIMIS).

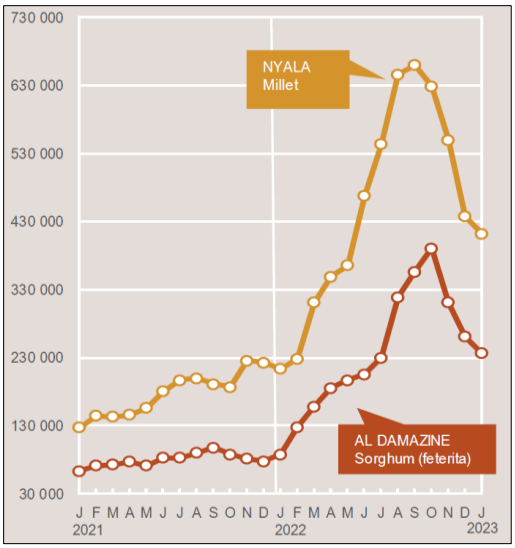

Figure 3: Wholesale prices of selected cereals in the Sudan (Sudanese pound/tonne)
Source: (FAO, 2023)

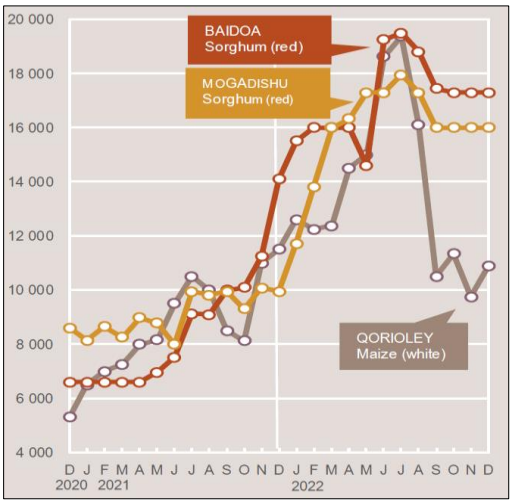

Figure 4: Retail prices of maize and sorghum in Somalia (Somali shilling/kg)

Source: (FAO, 2021)

As shown in Figure 2, Prices for sorghum and maize in South Sudan fell by about 10% and 15%, respectively. In May, due to a significant devaluation of the South Sudanese pound on the official market which resulted in an appreciation of the country's currency on the parallel market However, prices remained high on a yearly basis due to a difficult macroeconomic situation, insufficient domestic supplies and the impact of prolonged conflict.

Figure 3 shows that with the commercialization of the newly harvested 2022 crops, sorghum and millet prices in Sudan fell by up to 50% seasonally between October 2022 and January 2023. However, prices in January 2023 were two to three times higher than in the previous year, due to the ongoing depreciation of the national currency and high production costs due to increased agricultural input prices. Maize and sorghum prices in Somalia were firm or began to rise seasonally between October and December 2022 (Figure 4). Prices were around the already elevated levels of a year earlier by December 2022, reflecting insufficient supplies. Prices in Baidoa market were approximately 25% higher year on year, as the local "Gu" main harvest failed due to the severe drought.

Table 1: East Africa cereal production (million Tones)

	5-year average	Wheat 2021	2022 Est.	5-year average	Coarse grains 2021	2022 Est.	2021	Total cereals 2022 Est.	Change: 2022/2021 (%)
East Africa	6.2	6.2	6.1	46.0	43.7	45.3	55.0	55.3	+0.4
Ethiopia	5.1	5.2	5.2	22.8	22.8	22.1	28.3	27.6	-2.5
Kenya	0.3	0.3	0.3	3.9	3.4	3.6	3.9	4.1	+5.0
Sudan	0.6	0.6	0.5	6.2	4.5	7.2	5.1	7.7	+50.3
Uganda	0.0	0.0	0.0	3.6	3.4	3.3	3.6	3.5	-2.3
Tanzania	0.1	0.1	0.1	7.4	7.6	7.0	11.7	9.9	-15.1

Source: (FAO, 2023)

Notes: Totals and percentage change computed from unrounded data. The five-year average refers to the 2017–2021 period.

[I] Total cereals includes wheat, coarse grains and rice (paddy).

[II] Official production estimates for Ethiopia by the Ethiopian Statistics Service from 2020 onwards do not include Tigray Region.

Table 1 reveals that In East Africa, The 5-year average total cereal production is 6.2 million tons, and in 2021 and 2022 it remained the same at 6.2 million tons and decreased slightly to 6.1 million tons, with a total percentage change of +0.4%. Ethiopia's 5-year average total cereal production is 5.1 million tons, which increased slightly to 5.2 million tons in 2021 and remained the same in 2022, with a -2.5% percentage change. Kenya's total cereal production for the five-year average is 0.3 million tons, which remained unchanged in 2021 and 2022, with a +5.0% percentage change. Sudan's total cereal production for the 5-year average is 0.6 million tons, which remained constant in 2021 and fell to 0.5 million tons in 2022, a change of +50.3%. Uganda's total cereal production for the five-year average is 0.0 million tons, which remained unchanged in 2021 and 2022, with a -2.3% percentage change. The 5-year average total cereal production in the United Republic of Tanzania is 0.1 million tons, which remained unchanged in 2021 and 2022, with a -15.1% decrease.

3.1.3 Poor Rains Severely Affected Harvests in East African Countries

As reported by (FAO, 2023) The recently completed harvests of secondary season cereal crops in bimodal rainfall areas of Uganda, Southern South Sudan, Northeastern United Republic of Tanzania, Southern and central Somalia, and Southeastern Kenya revealed below-average rainfall amounts and an erratic temporal distribution, resulting in reduced plantings, germination failures, and crop wilting. The aggregate cereal production in Somalia is estimated to be 40-60% below average, while maize production in Kenya's southeastern and coastal areas is estimated to be 50 and 80 percent below average, respectively. The outputs of both the "Vuli" harvest in Tanzania and the second season harvest in Uganda are expected to be below average. However, cereal production in Sudan and South Sudan is expected to be above-average due to favorable seasonal rains, though localized crop losses have been reported due to floods and inter communal violence. Overall, total sub regional cereal output were expected to be near-average in 2022, with above-average output in Sudan offsetting production shortfalls in Uganda, Kenya, and the United Republic of Tanzania.

3.1.4 Land Preparation is Underway for 2023 Main Season Crops in East Africa

Land preparation for main season cereal crops has begun in Kenya, Somalia, South Sudan, and Uganda, among other places. Secondary season crops are also being planted in some areas of Ethiopia. However, plantings may be reduced in conflict-affected areas. Tanzania experienced average to above-average rainfall from November to April, but some regions experienced erratic temporal distribution, affecting crop planting. Season crops were harvested in Rwanda and Burundi in January, with below-average cereal and pulse production

due to insufficient late-season rains. Meteorological models predicted average to below-average rainfall for the March to May 2023 season, potentially exacerbating the already severe acute food insecurity in Somalia. Southern Ethiopia and Northern and Eastern Kenya.

3.1.5. Countries Requiring External Assistance for Food

3.1.5.1 Extremely Low Aggregate Food Production or Supply

a) Somalia (Drought Condition and Civil Insecurity)

As a result of consecutive poor rainy seasons since late 2020 and heightened conflict since early 2021, approximately 6.5 million people are expected to face severe acute food insecurity between April and June 2023, including approximately 223,000 people in integrated food security phase classification (IPC) Phase 5 (Catastrophe).

b) Kenya (Drought Conditions)

According to the most recent estimates, approximately 5.4 million people were acutely food insecured between March and June 2022, as a result of consecutive poor rainy seasons since late 2020 that affected crop and livestock production, primarily in Northern and Eastern pastoral, agro pastoral, and marginal agricultural areas.

3.1.5.2 Wide Spread Luck of Access

a) Ethiopia (Drought Conditions in Southeastern Areas, Conflict in Tigray Region, High Food Prices)

According to the Mid-Year Review of the 2022 Humanitarian Response Plan, over 23 million people are currently facing acute food insecurity. Drought conditions that emerged near the end of 2020 primarily affected the Southern South West, Southern Nations, Nationalities, and Peoples' Region (SNNP), and Somali regions, resulting in food insecurity for a significant proportion of the population. Furthermore, conflict-affected areas such as Northern Tigray, Amhara, and Afar have severely impacted local livelihoods, with an estimated 5.4 million people in Tigray alone facing severe food insecurity.

b) Djibouti (Unfavorable Weather, High Food Prices)

Between July and December 2022, an estimated 192,000 people faced acute food insecurity (IPC Phase 3 [Crisis] and above), due to the impact of insufficient rains in 2021 and 2022, which impacted rangelands and pastoral livelihoods, as well as high food prices.

c) Eretria

Food insecurity has become more common as a result of macroeconomic challenges.

c) South Sudan (Economic Downturn, Floods, Civil Insecurity)

Large segments of the population continue to face food insecurity as a result of factors such as inflation, insufficient food supplies, stagnant agricultural production, and the impact of consecutive years of widespread flooding, as well as escalating violence at the subnational level since 2020. Surprisingly, nearly two-thirds of the total population, or 7.76 million people, are expected to face severe acute food insecurity between April and July 2023.

3.1.5.3 Severe Localized Food Insecurity

a) United Republic of Tanzania (Localized Shortfalls in Staple Food Production, High Food Prices)

The United Republic of Tanzania's Zanzibar Island and 28 mainland districts together with 964, 000 people experienced severe acute food insecurity between October 2022 and February 2023, according to the most recent integrated food security phase classification (IPC) analysis, Low domestic crop production and high food prices are the main causes.

b) Uganda (Weather Extremes, Insecurity, High Food Prices)

According to the most recent IPC analysis, which was carried out in the refugee hosting districts and sub-regions of Teso and Karamoja 1.1 million people experienced acute food insecurity (IPC Phase 3 [Crisis] and above) between September 2022 and January 2023. These circumstances reflect the negative effects of weather shocks, societal unrest, and skyrocketing food prices. Approximately 481,000 refugees from the Democratic Republic of the Congo and 856,000 refugees from South Sudan are housed in camps and rely on humanitarian aid.

c) Sudan (Conflict, Civil Insecurity, High Food Prices, Tight Cereal Supplies)

The most recent estimates place the number of people experiencing acute food insecurity (IPC Phase 3 [Crisis] and above) between October 2022 and February 2023 at 7.7 million, primarily as a result of rising food prices and inter-communal conflict.

3.1.6 Cereal Production in East Africa and Other Parts of the World, 2020, 2021 and 2022

According to Table 2 the FAO's most recent projection, the production of cereal for East Africa increased slightly from 53.2 million tons in 2021 to an estimated 53.9 million tons in 2022, or a 1.2% increase, according to the FAO report (March 2023) shown in Table 2. However, the production of cereals changed significantly in other regions, including South America, North America, and Europe, with a 7.9% increase in South America.

Table 2: Cereal production in East Africa and other parts of the world, 2020, 2021 and 2022 (Million tons)

	2020	2021	2022 est.	Change: 2022 over 2021 (%)
Asia	1 231.6	1 238.2	1 243.1	+0.4
Far East	1 116.9	1 147.8	1 141.0	-0.6
Near East	79.5	59.7	68.5	+14.8
CIS in Asia	35.2	30.8	33.7	+9.6
Africa	199.6	202.1	197.5	-2.3
North Africa	31.4	36.7	31.3	-14.7
West Africa	66.6	63.9	68.4	+7.0
Central Africa	6.9	7.1	7.0	-2.1
East Africa	57.7	53.2	53.9	+1.2
Southern Africa	37.0	41.2	36.9	-10.3
Central America and the Caribbean	42.6	42.9	42.1	-1.7
South America	232.7	227.6	245.6	+7.9
North America	495.4	496.4	473.3	-4.7
Europe	524.5	548.3	516.0	-5.9
Oceania	50.5	55.4	56.2	+1.3
World	2 776.8	2 811.0	2 773.8	-1.3
- wheat	775.1	778.0	794.6	+2.1
- coarse grains	1 483.7	1 508.7	1 462.5	-3.1
- rice (milled)	517.9	524.4	516.6	-1.5

Source: (FAO, 2023)

Notes: Includes rice in milled term. Totals and percentage change computed from unrounded data.

Despite Africa's overall decrease in cereal production of 2.3%, West Africa saw a 7.0% increase while North Africa saw a 14.7% decrease. North America and Europe saw decreases of 4.7% and 5.9%, respectively. With an estimated 1,243.1 million tons of cereal produced there in 2022, Asia will likely continue to be the world's top producer, with South America seeing the biggest increase.

Data for the European Union from the year 2020 (including the 2020/21 marketing year) excludes the United Kingdom of Great Britain and Northern Ireland.

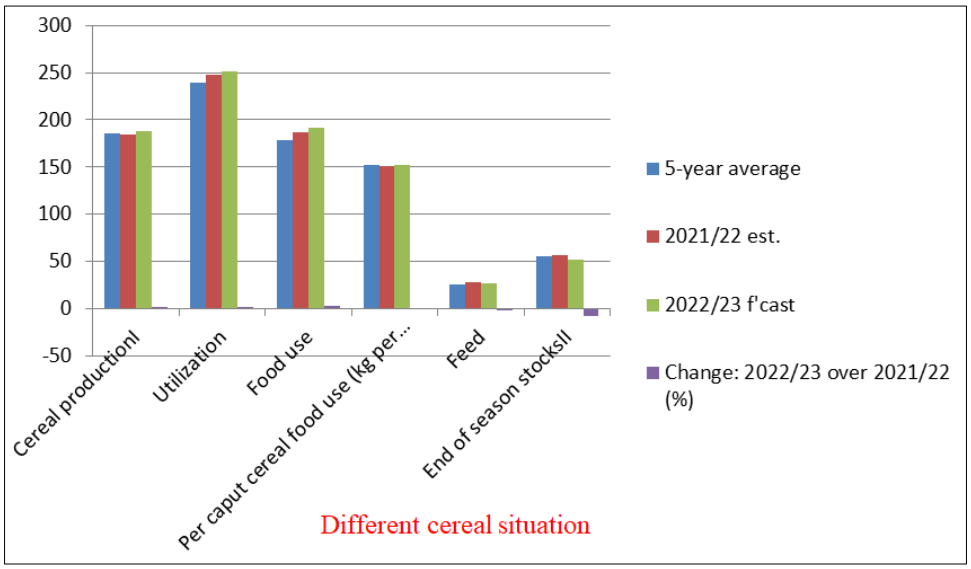

Figure 1: Basic facts of low-income food-deficit countries (LIFDCs) cereal situation (million tons, rice in milled basis)

Source: (FAO, 2023)

Note: [I] Data refer to calendar year of the first year shown.

[II] May not equal the difference between supply and utilization because of differences in individual country marketing years.

Information on the cereal situation in low-income food-deficit countries (LIFDCs) is shown in Figure 5. It displays the 5-year average, 2021–2022 estimates, and 2022–2023 forecast for cereal production, utilization, food use, per capita cereal food use, feed, and end-of-season stocks. The figure also shows that in

2022–2023, cereal production is anticipated to rise by 1.8%, while utilization is anticipated to rise by 1.3%. The amount of food consumed is predicted to rise by 2.9%, with cereal consumption rising by 0.5% per person. It is anticipated that 1.5% less cereal will be used for animal feed. However, it is predicted that in 2022–2023, the end-of-season stocks will fall by 7.2%.

Table 3: Cereal production of low-income food-deficit countries (LIFDCs) (million tons)

	5-year average	2021	2022 est.	Change: 2022 over 2021 (%)
Africa (36 countries)	112.0	111.6	114.1	+2.3
East Africa	55.0	53.2	53.9	+1.2
Southern Africa	11.4	14.0	11.8	-15.8
West Africa	38.6	37.3	41.6	+11.4
Central Africa	7.0	7.1	6.9	-2.1
Asia (9 countries)	72.3	72.3	73.1	+1.2
CIS in Asia	9.8	9.8	10.2	+3.6
Far East	54.0	56.1	56.5	+0.9
Near East	8.5	6.4	6.4	-0.1
Central America and the Caribbean (2 countries)	1.1	1.0	1.0	-4.3
LIFDCs (47 countries)	185.4	184.9	188.2	+1.8

Source: (FAO, 2023)

Notes: Includes rice in milled terms. Totals and percentage change computed from unrounded data. The five-year average refers to the 2017–2021 period.

Table 3 (FAO, 2023) reported that East Africa produces the most cereal of any African region, with a 5-year average of 55 million tons. However, cereal production in 2022 is expected to be slightly greater than in 2021. West Africa, on the other hand, is expected to see a significant increase in cereal production in 2022 over the previous year. Far East produces the most cereal among Asian countries, with a 5-year average of 54 million tons. In 2022, total cereal production in low-income food-deficit countries (LIFDCs) is expected to rise by 1.8%.

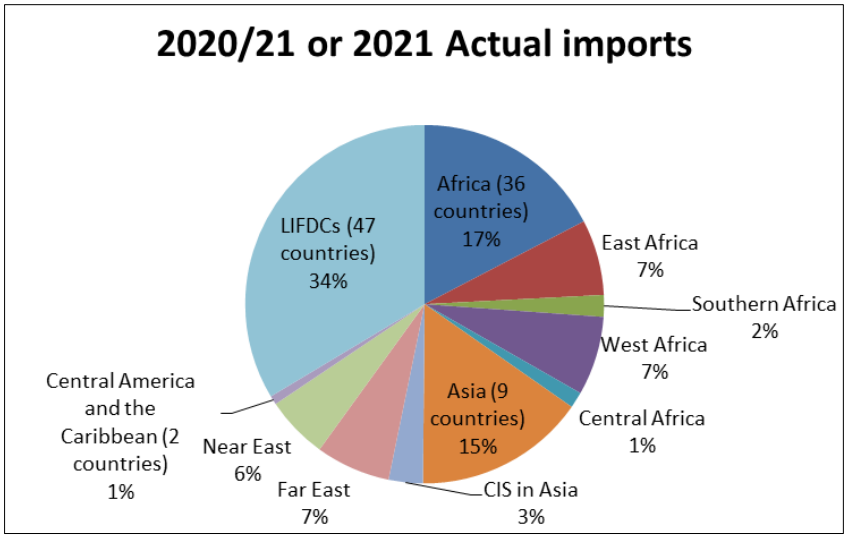

Figure 2: Cereal imports of low-income food-deficit countries (LIFDCs) (thousand tons)

Source: (FAO, 2023)

Note: Totals computed from unrounded data.

[I] The import requirement is the difference between utilization (food, feed, other uses, exports plus closing stocks) and domestic availability (production plus opening stocks).

The Figure 6 shows the cereal imports of low-income food-deficit countries (LIFDCs) for three years, 2020/21, 2021/22, and 2022/23, comparing East Africa to other regions, It is the largest cereal importer among African regions, importing 12,681 thousand tons in 2020/21, nearly four times more than Southern Africa and nearly as much as West and Central Africa combined. East Africa is also expected to import more cereals in the coming years than other African regions, with an estimated import requirement of 13,562 thousand tons in 2022/23, which is higher than both Southern and Central Africa. However, East Africa's cereal imports are lower, but still significant, when compared to Asia, Central America, and the Caribbean, with only Far East

Asia and Near East Asia importing more cereals than East Africa.

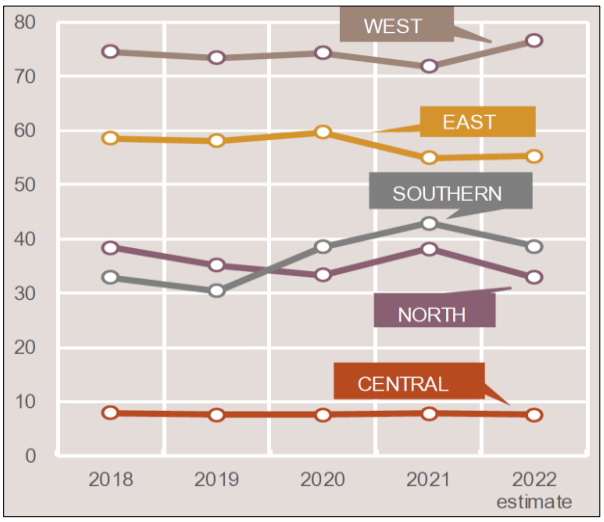

Figure 3: African Cereal production regional reviews (million tons)
Source: (FAO, 2021)

According to FAO (2021) total cereal production in Africa is expected to be 211 million tons (rice in paddy terms) in 2022, a year-on-year decrease and only slightly higher than the five-year average. This production outcome is largely the result of unfavorable rainfall patterns in several North African and Southern African countries, as well as the impact of multi-season droughts in East Africa. Despite widespread flooding, aggregate production in West Africa increased in 2022, while production in Central Africa remained broadly unchanged compared to the previous year and the average. Harvesting of the 2023 cereal crops is expected to begin in April, and while overall conditions appear to be favorable, rainfall deficits in some areas and cyclones that hit Madagascar and Mozambique are limiting production expectations. Droughts in North Africa are lowering the production outlook.

For 2023 crops in Western areas, following a reduced harvest in 2022 The Planting of 2023 crops will begin in April in West Africa, East Africa, and Central Africa.

3.2 Strategies to Develop Crop Sector and Food Production in East Africa to Ensure Food Security

3.2.1 Crop Sector Development Strategies for East Africa 2021-2026

FAO (2022) reported five strategic pillars (SPs) to guide discussions and the articulation of the crop sector development strategy (Figure no.8)

The primary aims of the crop sector development strategy are to enhance food and nutrition security, increase incomes and improve livelihoods through increased crop production and productivity.

Figure 4: Overview of the five strategic pillars (SPs) to guide discussions and the articulation of the crop sector development strategy
Source: (FAO, 2021)

SP1. Policy Environment
Goal:

To harmonize policies, laws and legislation in the development of the crop sector. One of the biggest impediments to large-scale private investment in cross-border trading capability – particularly in Southern and Eastern Africa – is the unpredictable behavior of governments in imposing export bans whenever they fear food shortages in their own markets (Binswanger-Mkhize, 2009).

Challenges:

Lack of consistency between member countries in their current approaches to the crop sector. Different policies, laws and legislation across member countries hinder the free movement of agricultural inputs and outputs. Imported agricultural inputs are expensive and there is little or no private sector involvement in their production and supply at national levels.

Proposed interventions
1.1 Formulate or update policies, laws, regulations and legislation related to the crop-development sector, ensuring closer alignment across the sub region.
1.2 Encourage or support the countries to increase investments in agriculture and fulfill their commitments to the Comprehensive Africa Agricultural Development Programme (CAADP) Malabo declarations.
1.3 Promote incentives to encourage input production and supply with a focus on fertilizer and seed.
1.4 Promote implementation of the International Code of Conduct for the Sustainable Use and Management of Fertilizers.

SP2. Institutional Environment
Goal: Enhance institutional capacity to support the development of the crop sector.
Challenges: The linkages between extension, farmers and research are weak. Inadequate plant health regulations restrict the movement (import/export) of agricultural outputs.

Proposed Interventions
2.1 Strengthen the capacity of the national research systems.
2.2 Strengthen the linkage between research, Agricultural extension and advisory services (AEAS) and farmers.
2.3 Strengthen the national Agricultural extension and advisory services (AEAS).

SP3. Crop Production and Productivity
Goal:

Enhance the nutritional quality of and increase the production and productivity of major crops such as cereals, pulses, roots and tubers, fruits and vegetables by at least 25 percent. To ensure global food security for all, the adoption of crop improvement technologies is no longer just an option – it is an imperative.

Challenges:

Smallholder farmers seldom use fertilizer, improved seed and mechanization practices. Transboundary pests and diseases are highly damaging and risk management is inadequate (or timely responses have limited effect).

Proposed interventions
3.1 Enhance production and supply of fertilizer and agrochemicals in the sub-region.
3.2 Improve farmers' access to rural finance.
3.4 Establish schemes for emergency seed banks.
3.5 Promote technologies to ameliorate problematic soils (e.g. high salinity, acidity).
3.6 Promote private sector involvement in agricultural mechanization service investments. .

SP4. Processing and Value-addition
Goal:

Reduce post-harvest losses of major crops by at least 50 percent by 2030 and improve the quality of produce and products through expanded use of more effective and efficient processing and handling methods.

Challenges:

The weak link that exists between small-scale farmers and agro-processors, lack of quality standards and guidelines for agricultural products, and significant postharvest crop losses.

Proposed Interventions
4.1 Create partnerships of farmers with small scale agro-industries.
4.2 Promote efficient technologies on postharvest management.
4.3 Develop local standards and guidelines for quality assurance.

SP5. Market Access
Goal:

Improve input and output market access for smallholder farmers. Adoption of technologies and productivity enhancements is being driven by an improved access to input and output markets, linked to increasing accessibility of rural finance. (Delve *et al*., 2016).

Challenges: Farmers have limited access to market information and farmer organizations are weak or non-existent.

Proposed Interventions
5.1 Strengthen market information systems.

5.2 Promote contract farming through commodity producer groups and cooperatives.
5.3 Strengthen farmer-based organizations.

3.3 Crop Production Constraints Faced by Farmers in East Africa

3.3.1 Crop Productivity in East Africa and Other Parts of the World

In comparison to other regions of the world, Eastern Africa's crop productivity is significantly lower (Figure 9). According to a report by the African Development Bank, without the proper use of fertilizers, irrigation, and seeds, staple cereal crop yields are only about half to one-third of what they could be (Salami, 2010).

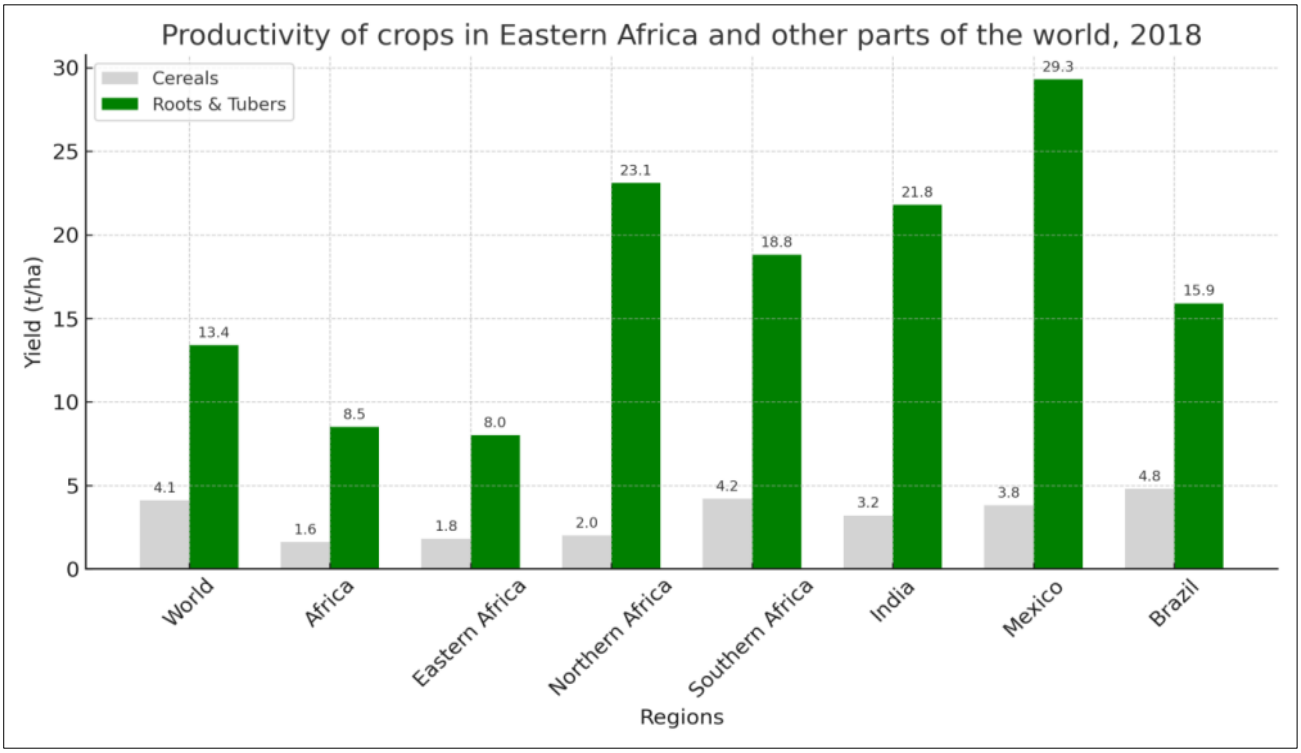

Figure 5: Productivity of crops in Eastern Africa and other parts of the world, 2018

3.3.2 Production Constraints Faced by Farmers in East Africa

Findings from a study conducted by (Abdilahi Ali *et al*., 2023) revealed that Constraints Faced by small-scale farmers in the production of major crops sorghum and maize in Awdal Region, Somaliland. According to Table 4, the 'attack of diseases and pests in crop field' (CFI 276) is the major constraint faced by small-scale farmers in the production of major crops sorghum and maize. (FAO, 2019; Karim *et al*., 2020; Omotayo, 2009; Sarmin, 2019) reported similar results.

The second constraint faced by farmers is "crop damage due to natural disasters such as drought." (CFI 275). According to FAO, (2017) farmers face floods, which severely damage their crops and have a direct impact on their level of food security, according to FAO, (2019) and Moreda, (2012), current drought shocks, which cause severe harvest failure and livestock loss, have a negative impact on both immediate consumption and long-term (poverty persistence) effects on household livelihoods.

Third-ranked constraint was ‘declining soil fertility’ (CFI 273). Depletion of soil fertility is the primary cause of declining per capital food biomass, particularly in developing countries (Omotayo, 2009).

The fourth-ranked constraint was “lack of market access.” (CFI 264). According to (Chowdhury, 2005) there are a number of reasons why smallholder farmers are unable to effectively participate in the market due to a lack of market information. First, the dependability of information can change over time. Previously correct information may now be out of date. Second, gathering relevant data for production and marketing may be costly. Third, smallholder farmers may be unable to adapt the information to their specific circumstances.

The fifth-ranked constraint faced by farmers was ‘Absence of adequate infrastructure’ (CFI 254). According to (Randela, 2003) farmers suffer as a result of having to transport their products from the farm to the consumer during rainy seasons, when roads are frequently impassable.

Table 4: The rank order of selected constraints faced by the farmers

Sl. No.	Constraints	Not at all	Low	Medium	High	CFI*	Rank Order
Economic							
1.	Lack of money or necessary fund	6	9	43	34	197	7th
2.	Insufficient credit support	3	9	61	19	188	9th
3.	High cost of production	9	7	44	32	191	8th
4.	The high price of food items	3	35	26	28	171	12th
Social							
5.	Lack of cooperation from family members	44	40	8	0	56	18th
6.	Rapid population growth	24	53	9	6	89	17th
7.	Lack of employment	3	21	44	24	181	10th
Natural							
8.	Crop damage due to natural calamities such as drought	0	0	1	91	275	2nd
9.	Attack of diseases and pests in crop field	0	0	0	92	276	1st
10	Declining soil fertility	0	0	3	89	273	3rd
Marketing of produce related							
11.	Lack of market access	0	4	4	84	264	4th
12.	Absence adequate infrastructure	0	5	12	75	254	5th
Input related							
13.	Inadequate farm tools and equipment	4	7	75	6	175	11th
14.	Lack of irrigation water in dry Season	12	16	59	5	149	14th
15.	Unavailability of quality seed	3	5	5	79	252	6th
Technological							
16.	Lack of storage/processing facilities	6	78	4	4	98	16th
Information access							
17.	Lack of information related to food and nutrition	10	67	9	6	103	15th
18.	Lack of contact with communication media	10	18	57	7	153	13th

CFI= Constraint Facing Index*
Source: Abdilahi *et al*., (2023)

On the other hand, Table 5 shows the distribution of respondents based on the observed scores. According to the findings, the majority of farmers (65.2%) faced medium constraints, while 22.8 percent and 12.0 percent faced low and high constraints, respectively. The majority of farmers in the selected area faced medium constraints in the production of major crops Sorghum and Maize. This demonstrates that there are a number of constraints that could lead to food insecurity in the selected area. These findings are similar to those found by (Abdi-Soojeede, 2018).

Table 5: Distribution of farmers according to the extent of constraints (N=92)

Range		Categories	Respondents		Mean	Standard deviation
Possible	Observed		Frequency	Percent		
0 –54	28 – 42	Low (up to 34)	21	22.8	36.36	2.663
		Medium (35-39)	60	65.2		
		High (>39)	11	12.0		

Source: (Abdilahi Ali *et al.,* 2023)

(Abdi-Soojeede, 2018) found that Somali farmers face major and minor constraints. The top concerns for Afgoye farmers were fear of gunmen/thieves (75% strongly agreed) and fear of conflict between rebels and government (61.7% strongly agreed, Figure 10).

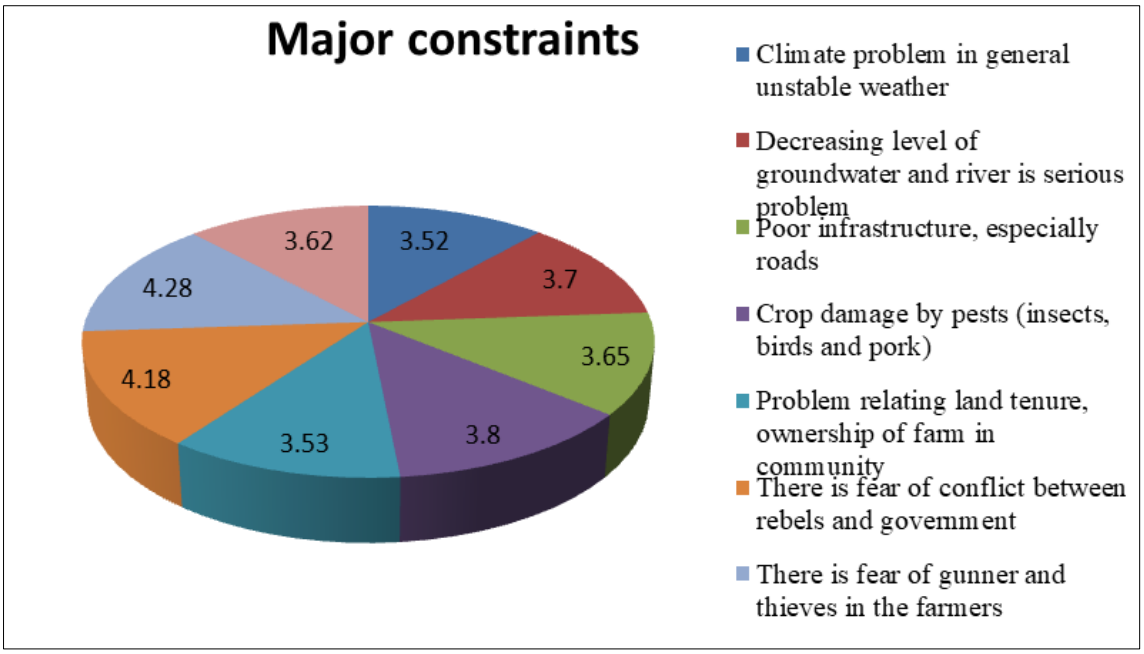

Figure 10: Major constraints of crop production
Source: (Abdi-Soojeede, 2018)

The study findings indicate that weather conditions were rated at an average score of 3.52 out of 5. Decreasing groundwater and river levels were seen as a significant problem for crop production, with 60% of respondents (11.7% agreed, 48.3% strongly agreed) expressing concern and giving it a mean score of 3.70 out of 5. Poor infrastructure particularly roads, received agreement or strong agreement from 63.4% of respondents, with a mean score of 3.65 out of 5. Crop damage caused by pests was prevalent, as 70% of respondents agreed or strongly agreed (31.7% agreed, 38.3% strongly agreed) with a mean score of 3.80 out of 5. Other issues included problems with land tenure and farm ownership, fear of conflict between rebels and the government, fear of civil unrest and thieves in farm areas, and the use of outdated technologies, all of which were highlighted by the respondents.

Table 6 reveals that 76.7% of respondents agreed or strongly agreed on the inability to access and use seeds and fertilizers. Lack of capital for agricultural inputs was indicated by 71.6% agreeing or strongly agreeing. Inadequate investment in irrigation, leading to vulnerability to drought, was agreed or strongly agreed by 66.6% of respondents.

Table 6: Minor constraints of crop production

Contraints	n	Mean	SD
Inability of farmer to access and use such as seed and fertilizers	60	4.00	1.207
Lack of capital to buy seed or fertilizers or other farm operations	60	3.68	1.214
Inadequate investment in irrigation which makes farmers very vulnerable to drought	60	3.65	1.388
High postharvest crop losses caused by poor storage structure and in adequate access to pesticide	60	3.53	1.228
Inadequate market access for both crops and vegetable products	60	3.48	1.396
Unavailability of crop chemicals	60	3.28	1.263
There is less knowledge and skill of all farmers	60	3.45	1.199
Inadequate investment in processing of crop and other grains	60	3.55	1.048
Marketing process of crop is difficult and complex	60	3.43	1.254

Source: (Abdi-Soojeede, 2018)

Furthermore, 53.3% of respondents agreed or strongly agreed on high postharvest crop losses caused by poor storage structures and inadequate pesticide access. Inadequate market access for crops and vegetable products received agreement from 53.3% of respondents. 45% agreed or strongly agreed on the lack of crop chemical availability in the market. Limited knowledge and skills were acknowledged by 28.3% of respondents. Insufficient investment in crop processing and the complexity of the marketing process were agreed or strongly agreed upon by 50% of respondents.

3.3.2. Constraints Faced by Farmers in Production and Marketing of Tomato

Ddamulira, (2021) found that smallholder farmers in Uganda faced constraints in tomato production and marketing.

Production Constraints

Farmers identified high pest and disease burden (20%), high input (11%), high seed costs (10%), and seasonal variability (9%) as the primary production constraints affecting tomato production in the country. (Fig.10). the high pest and disease incidence and severity were caused by warm conditions that allowed pathogens to sporulate and insect pests to breed. The use of susceptible tomato varieties, such as Tengeru97 and Moneymaker, which were more susceptible than Riogrande, Novella F1, and Rambo, was also attributed to the high disease incidence.

The cost of inputs was high, due to in part to market liberalization and trade policies that raise input prices relative to commodity prices. Farmers are thus denied the opportunity to use improved and high-quality inputs. Poverty and cash constraints amidst poor credit markets also limit farmers' purchase of inputs claiming that they are expensive Ibeawuchi, Izuchukwu Innocent, *et al.,* (2009). However, availability of high cost seed leads to smallholder farmers' preference for traditional varieties as an alternative to expensive variety, which contributes to low productivity of tomato (Bezu, 2014; Kassie, 2013).

Poor soil fertility was also cited as one of the major tomato constraints by farmers interviewed. This is consistent with observations in which a decreasing or non-existent fallow period in the tropics and subtropics was identified as the primary cause of soil fertility decline.

The drought had a significant impact on tomato production in the study area. Drought reduces tomato yield and quality (Pervez, 2009). Similarly, drought is estimated to cause about 50% reduction in yield of tomato (Cantore, 2016). See other reported constraints in Figure 10.

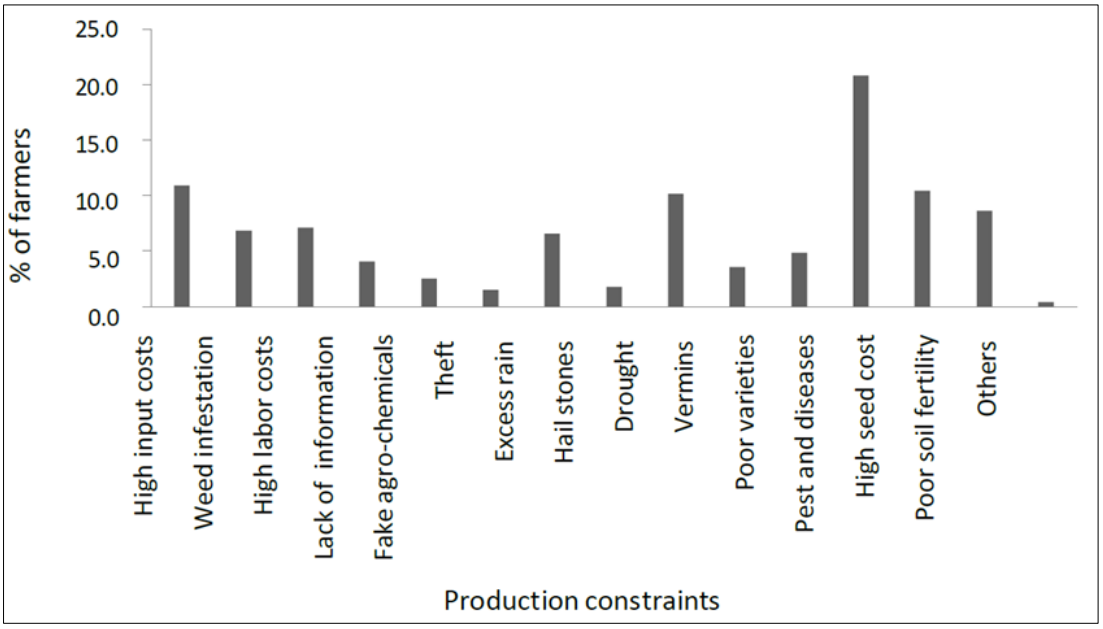

Figure 6: Tomato production constraints in Uganda
Source: (Ddamulira, 2021)

Marketing Constraints Faced by Farmers

In figure no 11 showed that Ugandan tomato farmers faced market constraints such as price fluctuations, low prices, high transport costs, and poor market access. Market prices for tomatoes were very significant reaching as low as USD 0.054 per kilogram during bumper harvests and rising to USD 1.12 per kilogram during off-seasons or periods of scarcity. A similar study in Ghana's Upper East Region highlights the challenges of price fluctuation and low prices as market constraints Ddamulira, G., *et al*., (2021). Similarly, during peak production periods, low prices offered to farmer's limit tomato marketing, making it difficult for them to break even. Poor road networks in rural tomato production zones contribute to high transport costs, acting as a marketing constraint.

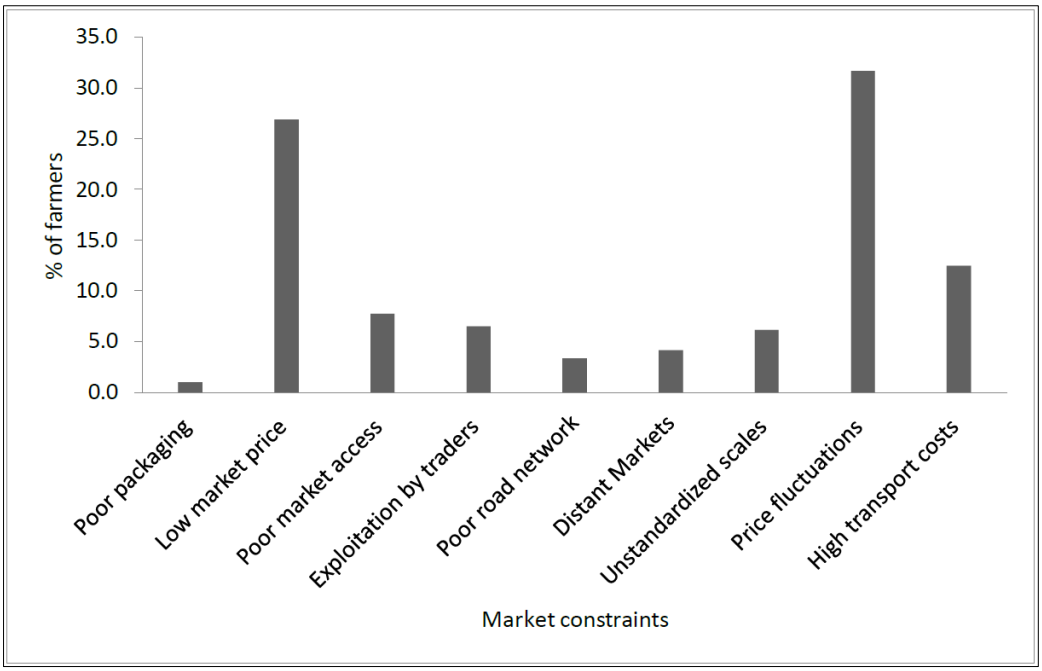

Figure 7: Tomato market constraints in Uganda
Source: (Ddamulira, 2021)

3.3.3 Long-Standing Constraints to Smallholder Agriculture

A study conducted by (Salami, 2010) reported Smallholder agriculture has faced numerous challenges in four East African countries. While some are unique to each country, the majority of the constraints discussed below are not new, but rather long-standing and possibly chronic.

Long-Standing Constraints

A) *Climate Change*

Climate change, primarily caused by global warming, has severely impacted agricultural production in East Africa, where rain-fed crop farming is prevalent, leaving it vulnerable to weather fluctuations, resulting in increased occurrences of droughts and floods and subsequent crop failures.

b) Access to Input and Output Markets

On the input side, the average fertilizer application rates for arable crops in four countries are estimated to be 30 kg/ha/year in Kenya, 14 kg/ha/year in Ethiopia, 5kg/ha/year in Tanzania, and 1 kg/ha/year in Uganda - far less than the global average of 100kg/ha/year, (Ariga *et al*., 2006). There is also the issue of high input costs and waste such as seed and fertilizer. As a result, farmers have significantly reduced their use of quality inputs such as seed, fertilizer, and pesticides. In 2006 it was reported by UNDP that improved seeds, fertilizers, agrochemicals, and manure were used on only 6.3 percent, 1.0 percent, 3.4 percent, and 6.8 percent of Uganda's agricultural land, respectively. In addition, the 2007 Tanzania Poverty and Human Development Report revealed that 87 percent of Tanzanian farmers did not use chemical fertilizers, 77 percent did not use improved seeds, and 72 percent did not use pesticides, herbicides, or insecticides (agrochemicals) due to high agricultural input and service costs.

On the output side adequate storage facilities are another constraints to both marketing and food security: In Africa, large quantities of agricultural commodities produced by farmers rot away unmarked while smallholder farmers lack the technology for timely consumption (Kamara, 2002).

c) Infrastructure

In the four case study countries, inadequate market facilities and transportation systems, such as road and rail, present major challenges. Previous infrastructure investments proved ineffective due to poor design, maintenance, and inconsistent donor funding. Farmers resort to inefficient transportation methods, including animal-based transport, due to a deficient road network. Moreover, East Africa's irrigation facilities are insufficient with irrigation contributing less than 4% to total agricultural output, in contrast to Asia's approximately 33% (AfDB/IFAD, 2009). In Sub-Saharan Africa, including East African countries, average post-harvest losses are estimated to be more than 40%, with some fruits and vegetables losing up to 70% (UNIDO, 2007).

d) Agricultural Extension and Innovation

Countries spent less than 0.7% of agricultural GDP on research; developed countries spend up to 3% of their GDP (Karugia, 2009). In Ethiopia, smallholder efforts focused on improving access to modern inputs, but delivery systems faced delays in distribution. The

UNDP Technology Achievement Index (TAI) confirmed Tanzania and Kenya's low levels of technology diffusion and innovation with both countries classified as marginalized with 0.080 and 0.129 scored respectively (UNDP, 2001).

4. CONCLUSIONS

Based on the findings and their logical harmonization the present paper makes the following conclusions.

1. The prolonged drought and challenging conditions in East Africa, including Somalia, Kenya, and Ethiopia, have severely affected food security, with millions facing acute hunger. The situation is exacerbated by high food prices, insufficient domestic supplies, and unfavorable rainfall, leading to below-average cereal production in many areas. Despite some localized increases in production, such as in Sudan, the overall regional cereal output remains near or below average, while reliance on imports grows. Addressing these challenges requires targeted interventions to improve resilience, mitigate conflicts, and support sustainable agricultural practices.
2. FAO has reported five strategic pillars (SPs) to guide discussions and the articulation of East Africa's crop sector development strategy from 2021 to 2026. These include the policy environment, institutional environment, crop production and productivity, processing and value addition, and market access. The primary goal is to improve food and nutrition security, increase income, and improve livelihoods. To achieve these goals, the FAO has recommended several interventions, including updating crop-development policies, laws, regulations, and legislation, as well as strengthening the capacity of the national research system.
3. There are number of constraints that farmers confronted in crop production. These range from disease and pest infestations in crop fields, crop damage caused by natural disasters such as drought, declining soil fertility, a lack of market access, and a lack of adequate infrastructure. In Somalia, in particular, major constraints have been reported, such as decreasing ground water and river levels, fear of conflict between rebels and the government, poor infrastructure, particularly roads, and climate problems in general. As a result, while these constraints may differ across East African regions, they highlight common challenges faced by farmers in the region.

REFERENCES

- Abdilahi Ali, M., Karim, Md. R., & Osman, M. A. (2023). Constraints Faced by the Small-Scale Farmers in the Production of Major Crops Sorghum and Maize in Awdal Region, Somaliland. *Asian Journal of Research in Crop Science*, 1–10. https://doi.org/10.9734/ajrcs/2023/v8i2159
- Abdi-Soojeede, M. I. (2018). Crop production challenges faced by farmers in Somalia: A case study of Afgoye district farmers. *Agricultural Sciences*, *9*(8), 1032–1046.
- Adhikari, U., N. A. P., & W. S. A. (2015). Climate change and eastern Africa: a review of impact on major crops. *Food Energy Secure*, *4*, 110–132.
- African Development Bank (AfDB) & International Fund for Agricultural Development (IFAD). (2009). *The roles of infrastructure and incentives in enhancing rural development*. In *African Agriculture: The Case for Investment* (pp. 56–72). Tunis and Rome: AfDB and IFAD.
- Ariga, J., Jayne, T. S., & Nyoro, J. (2006). Fertilizer policies, incentives and distribution systems in Kenya. Nairobi: Tegemeo Institute of Agricultural Policy and Development, Egerton University.
- Baquedano, F., C. C. , A. K. , & B. J. (2020). *International food security assessment, 2020-30. Electronic Outlook Report from Economic Research Service*. *4*, 74.
- Bezu, S., & H. S. (2014). Are rural youth in Ethiopia abandoning agriculture? *World Development*, *64*, 259–272.
- Binswanger-Mkhize, H. P. (2009). Challenges and opportunities for African agriculture and food security. *In Proceedings of the FAO Expert Meeting on How to Feed the World*, *2050*.
- Blanc, E. (2012). *The impact of climate change on crop yields in Sub-Saharan Africa.*
- Cantore, V., L. O., K. E., S. M. H., A. R., B. F., . . . & T. M. (2016). Combined effect of deficit irrigation and strobilurin application on yield, fruit quality and water use efficiency of “cherry” tomato (Solanum lycopersicum L.). *Agricultural Water Management*, *167*, 53–61.
- Chowdhury, S. K., N. A., & T. M. (2005). *Market institutions: Enhancing the value of rural-urban links*.
- Ddamulira, G., I. O. , K. M. , A. R. , A. M. , L. M., . . . & R. I. (2021). Practices and constraints of tomato production among smallholder farmers in Uganda. . *African Journal of Food, Agriculture, Nutrition and Development*, *21*(2), 17560–17580.
- Delve, R. J., Proietti, C., Khisa, G., & Lyatuu, G. (2016). Improving input and output market access for smallholder farmers in Africa. International Center for Tropical Agriculture (CIAT). Retrieved from https://cgspace.cgiar.org/handle/10568/76622
- FAO. (2017). *The impact of disasters and crises on agriculture and food security.* .
- FAO. (2019). *Plant pests and diseases.*
- FAO. (2021). *Crop Prospects and Food Situation. Quarterly Global Report No. 2, July 2021.*
- FAO. (2023). *Crop prospects and food situation – Quarterly global report no. 1, March 2023.*

- Food and Agriculture Organization of the United Nations. (2023). *The state of food security and nutrition in the world (SOFI): Building resilience for food security and nutrition in times of crisis.* Retrieved from https://www.fao.org/publications/sofi/en/
- Gardi, M. W., M. E., Z. E., & G. S. (2022). Simulating the effect of climate change on barley yield in Ethiopia with the DSSAT-CERES-Barley model. *Agronomy Journal*, *114*(2), 1128–1145.
- Kamara, A. B. , van K. B. , & M. L. (2002). Economic viability of small-scale irrigation systems in the context of state withdrawal: the Arabie Scheme in the Northern Province of South Africa. *Physics and Chemistry of the Earth, Parts A/B/C*, *27*(11–22), 815–823.
- Karim, R., Muhammad, N., Ahmed, K., Huda, S., Mohammad, H., Karim, M. R., Nahid, M., & Nayan, A. (2020). Constraints Faced by the CCDB Beneficiaries for Biochar Promotion Ministry of Agriculture (MOA) Bangladesh Article 03 Constraints Faced by the CCDB Beneficiaries for Biochar Promotion. *Bangladesh Rural Development Studies*, *23*(1), 31–41. https://www.researchgate.net/publication/344865858
- Karugia, J. T. , W. M. M. , F. H. A. , P. R. , S. B. , G. S. , & M. E. (2009). Responding to food price crisis in Eastern and Southern Africa: Policy options for national and regional action. *ReSAKSS Working Paper*.
- Kassie, M., J. M., S. B., M. F., & M. M. (2013). Adoption of interrelated sustainable agricultural practices in smallholder systems: Evidence from rural Tanzania. *Technological Forecasting and Social Change*, *80*(3), 525–540.
- Moreda, T. (2012). *Vulnerability, land, livelihoods and migration nexus in rural Ethiopia: a case study in South Gondar Zone of Amhara Regional State. PhD research design.* International Institute of Social Studies.
- Omotayo, O. E., & C. K. S. (2009). Soil fertility restoration techniques in sub-Saharan Africa using organic resources. *African Journal of Agricultural Research*, *4*(3), 144–150.
- Pangaribowo, E., & G. N. (2016). *Innovations for food and nutrition security: impacts and trends. Technological and institutional innovations for marginalized smallholders in agricultural development*. 41–64.
- Pervez, M. A. , A. C. M. , K. H. A. , S. M. A. , & A. I. (2009). Effect of drought stress on growth, yield and seed quality of tomato (Lycopersicon esculentum L.). *Pakistan Journal of Agricultural Sciences*, *46*(3), 174–178.
- Randela, R. (2003). The incidence of post-harvest problems among small farmers surveyed in three regions of the Limpopo province. *Agrekon*, *42*(2), 163–180.
- Rosenzweig, C., E. J., D. D., R. A. C., M. C., A. A., . . . & J. J. W. (2014). Assessing agricultural risks of climate change in the 21st century in a global gridded crop model intercomparison. *Proceedings of the National Academy of Sciences*, *111*(9), 3268–3273.
- Salami, A., K. A. B., & B. Z. (2010). *Smallholder agriculture in East Africa: Trends, constraints and opportunities*.
- Sarmin, S. (2019). *Food Security Status of Farm Households under Government and Non-government Agricultural Extension Services*. Hajee Mohammad Danesh Science and Technology University, Department of Agricultural Extension.
- Thornton, P. K., J. P. G., E. P. J., & C. A. J. (2011). Agriculture and food systems in sub-Saharan Africa in a 4 C+ world. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, *369*(1934), 117–136.
- UNDP. (2001). *Human Development Report 2001: Making New Technologies Work for Human Development. New York: United Nations Development Programme.*
- UNIDO. (2007). *Food Processing Pilot Centres: An approach to productive capacitybuilding for trade and poverty alleviation in Africa, Document prepared by Dr. A. Ouaouich, Chief of the Food Processing Unit, Agro-Industries and Sectoral Support Branch, United Nations Industrial Development Organization (UNIDO)*.
- United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA 2022). *To the mid-year review of the 2022 humanitarian response plan. Ethiopia: Humanitarian Response Plan 2022 (July 2022)*.

Cite This Article: Abdullahi Ali Ibrahim, Md. Sadekur Rahman, Md. Rubayet Al Ferdous Noman, Ismail Abdullahi Mohamed, Abdiaziz Hassan Nur (2025). Crop Prospects and Food Situation in East Africa: An Overview. *East African Scholars J Agri Life Sci, 8*(7), 173-188.