

Situation Analysis of Agricultural Development in Ethiopia

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To cite this article:

Musba Kedir Mohammed, Alemayehu Keba Beyene. (2024). Situation Analysis of Agricultural Development in Ethiopia. *Science Development*, 5(1), 19-30. <https://doi.org/10.11648/j.scidev.20240501.12>

Received: December 12, 2023; **Accepted:** December 29, 2023; **Published:** January 11, 2024

Abstract: Ethiopia's agricultural sector provides 90% of the country's raw materials for manufacturing, 72.7 percent of employment opportunities, and 32.5 percent of the country's gross domestic product. Coffee, oilseeds, pulses, flowers, chat, fruits and vegetables, meat and meat products, and other products are the primary source of export revenue, making up 71.2 percent of the nation's total export value. The wider diffusion of improved technologies has been influenced by a number of factors, including government spending in this sector, particularly on extension services; the road network; lower levels of education in rural areas; and the absence of favorable domestic and foreign pricing incentives. Ethiopia is now creating a framework for investments and policies to match the financial pledges made by the nation's development partners. Analyzing Ethiopia's current state of rural development and agriculture is the goal of this research project. The study was completed in conjunction with a review of the literature. The reviewed material was gathered thematically, condensed, examined, explained, and finally debated. The main factors limiting agricultural productivity and output are limited credit availability, climate change, deforestation and land degradation, lack of integration, lack of irrigation systems, sporadic natural disasters, pests, outdated technology, and limited market support. In this sense, the nation primarily uses the informal seed system, with very little use of improved seeds. Moreover, not every seed that was available was appropriate for the soil and climate types found in rural communities and beyond. However, a small number of households across farms felt that the current cost of fertilizers was high and unaffordable, in part because they had limited financial resources. The risk of low profitability was a concern for those who could afford fertilizers as well, considering the high cost and the unpredictable weather that could result in low yields. The bulk of Ethiopia's farming population consists of impoverished farmers, who generally seem to be shut out of the input supply system, which includes credit and financial services in addition to fertilizers and seeds. Establishing a robust and dynamic results-oriented monitoring and evaluation system is advised in order to eradicate and reduce the issues facing the nation's agricultural sector. Additionally, increased funding is required for agricultural research, the construction of infrastructure (such as roads), and the automation of agricultural practices.

Keywords: Agriculture, Ethiopia, Production System, Improved Technologies

1. Introduction

Ethiopia is one of the largest countries in Africa both in terms of land area (1.14 million sq. km) and human population (102 million) [14]. Agriculture is the life-blood of the Ethiopian economy. The sector contributes 32.5 percent to the GDP, 72.7 percent to employment opportunities, and 90 percent of raw materials for manufacturing industries [8, 9, 15]. Agriculture underpins the livelihoods of more than 17 million smallholder households who depend primarily on the rain-fed

production of food crops [8]. The sector is in a great challenge to feed the ever-growing population. No sector in Ethiopia feels the pressure more dramatically than agriculture, which will expect to feed more people than at present. Hence, transforming a country's agriculture sector like Ethiopia can help to alleviate poverty and improve household food security, as well as increase incomes, create jobs, and jump-start the overall economy [6, 16].

Ethiopia has immense potential for agricultural production because the country has vast areas of fertile land, diversified agro ecologies suitable for growing various types of crops

and rearing different livestock types, and a large labor pool. Despite this contribution and potential, however, Ethiopian agriculture has remained underdeveloped. Domestic agricultural production has not grown in parallel with the population growth and failed to meet the food requirements of the country. It is the most volatile sector, as exhibited in the unevenness of its growth patterns, which is the effect of its heavy dependence on rainfall and the seasonal shocks that are frequently observed in Ethiopia.

Efforts have been made by the GoE to improve the performance of agriculture through agriculture and rural development policies and strategies. The GoE is highly committed to sustainably increase agricultural production and productivity to meet the growing demand for food, industrial raw materials, and foreign currency earnings. Moreover, the combination of GoE, donors, and financial institutions provides the framework to drive continued growth in the agriculture sector. Ethiopia has also signed the country-level CAADP Compact and is currently developing a PIF to align the financing commitments of the country's development partners with GoE and the Compact's strategic plan.

1.1. Research Objectives

This research project aims at analyzing the current situation of Ethiopian agriculture and rural development. The specific objectives of this study are to:

- 1) Analyze current situations in Ethiopia regarding agriculture, livestock, forestry, and rural societies, and their public development strategies and plans;
- 2) To analyze the trend of agricultural growth in Ethiopia.

1.2. Research Methodology

The research was undertaken through a literature review approach. This review involves a qualitative and quantitative analysis of the current state of agriculture and rural development and agricultural value chain analysis in Ethiopia. The research has indeed employed an intensive review of various literatures including government policy and strategy documents, official reports, peer-reviewed articles, books, proceedings, and conference papers that were previously published as the sources of the findings. The reviewed literature was thematically collected, summarized, analyzed, interpreted, narrated, and then discussed.

Different authors and researchers have written on the issue of agriculture, agriculture and rural development, agricultural policy and strategy, the performance of the agriculture sector, agricultural value chain analysis, and challenges of Ethiopian agriculture. Many governmental and non-governmental organizations and agencies have produced reports on the situation of agriculture in Ethiopia. Among all these, those recent sources have been used to assess the current state of agriculture and rural development, agricultural value chain analysis, and the challenges of agriculture and rural development in Ethiopia.

2. The Current State of Agricultural Development in Ethiopia

2.1. Overview and Current Development of Agriculture and Rural Areas in Ethiopia

The GoE has embarked on a ten-year economic development plan (2021-2030) where agriculture is at the top of priority sectors. The agriculture sector is projected to grow at 6.2 percent per annum over the next ten years. Ethiopia's development plan has laid out enhancing agricultural production and productivity as one of the major strategic pillars. The GoE has identified key priority intervention areas to increase the productivity of smallholder farms and expand large-scale commercial farms. In addition, the ten-year development plan aims at boosting agricultural export revenues and substituting imports by reducing production costs. To achieve this, the GoE seeks to leverage on developing huge unutilized arable land, modernizing production systems, and improving the uptake of technology. Furthermore, the ten-year plan envisages building a climate-resilient green economy. In this regard, Ethiopia pursues to expand development efforts to fight land degradation and reduce pollution; reduce greenhouse gas (GHG) emissions; increase forest protection and development; increase the production of electricity from renewable sources for domestic use and for export; and focus on modern and energy saving technologies.

Moreover, efforts have been made by the GoE to improve the performance of the agricultural sector. The government has demonstrated a strong commitment to agriculture and rural development [13]. Moreover, Ethiopia has one of the largest frontline DA-to-farmer ratios in the world [1, 3, 10]. In addition to these, the country established more than 12,500 FTCs located across the national regional states of the country [12, 13].

Despite the revitalized focus on agriculture, the performance of agriculture was not satisfactory as poverty and food insecurity continue to be the important features of the country. The agriculture sector has not been performing well to the extent that the country could not sufficiently feed its people from domestic production. Moreover, the aggregate rates and intensities of adoption of improved technologies remain low compared to those realized in Asia's Green Revolution. Moreover, about one-fourth of the population lives below the national poverty line and is unable to attain the daily energy requirements of 2,100 Kcal/ADE/day [15]. More than 20 million Ethiopians now depend on long-term welfare transfer programs [11]. According to the Global Food Security Index 2020 report, Ethiopia ranked 108 out of 113 countries; it was 91 last year.

2.2. Agricultural Research and Extension Development in Ethiopia

The Ethiopian government is convinced that in order to generate and encourage the adoption of agricultural technologies that improve yield and quality, smallholder

subsistence agriculture must be transformed into a commercial agricultural production system through an efficient and effective system of agricultural research and extension. There is great potential for Ethiopia's extension system to assist farmers throughout the nation. Approximately 56,000 of the over 83,000 DAs who have completed their education and graduated thus far work in the agricultural extension system [13]. Additionally, the government constructed about 12,500 FTCs that function at different levels. In addition, the government founded 25 ATVET colleges to provide DAs with training in a range of specializations. However, in spite of the state's promises, the agricultural extension system confronts numerous challenges. Most of these problems have remained year after year and from one government to the next [12]. The increased dissemination of improved technologies has been impacted by a number of factors, such as government spending in the sector, particularly on extension services, the road network, lower levels of education in rural areas, and the absence of advantageous domestic and international price incentives.

Ethiopia's agricultural extension system is still primarily public and unimodal in terms of the services it provides. It takes place in a dynamic bureaucratic government system with a range of interactions and the particularities of the agriculture industry. A strong and active extension system is an essential policy instrument for inducing the required changes in attitudes and behaviors and for applying pressure to national agricultural extension programs. Services provided by agriculture extension are crucial for promoting the use of more productive farming technologies. Experts in development have emphasized its significance in attaining food security, poverty alleviation, and agricultural growth. It plays a significant role in rural area transformation as well [13].

The agricultural research system in Ethiopia did not take off at once, rather its organizational capacity and processes evolved. The formal history of agricultural research is traced back to the establishment of Ambo Agricultural School in 1947, Jimma Agricultural Technical School (now Jimma University) in 1952, and the Imperial College of Agriculture and Mechanical Arts (now Haramaya University) in 1953. They emphasized the triangular functions of teaching, research, and extension designed in the United State of America (USA) Land Grant University archetype [7].

The research system underwent significant reform in the early 1990s following the declaration of a decentralized political system in the country. The NARS has been prearranged as including the federal research institute, the regional agricultural research institutes, and agricultural research undertakings of Higher Learning Institutes (HLIs). In 1993, numbers of IAR research centers were transferred to the regional governments and became independent research centers. With the decentralization of the research system and the emergence of different actors, the need to nationally coordinate the research system emerged and this responsibility was given to Ethiopian Agricultural Research Organization (EARO) along with conducting research that is

of national importance. During 1997, EARO was established with a new set up by Proclamation number 79/1997, and later on 25th October 2005, it was renamed as the Ethiopian Institute of Agricultural Research (EIAR). Although EIAR was mandated to coordinate the federal and regional research institutes, there was no administrative control of the regional research institutions and as a result, loose coordination among the NARS became visible. Therefore, the Ethiopian Agricultural Research Council Secretariat (EARCS) was established in March 2016, poised to provide a national coordination role to the NARS [10].

2.3. Importance of the Agriculture Sector

2.3.1. Contribution of Agriculture to the National Economy

The overall economy of the country is heavily dependent on agriculture as the main source of livelihoods, employment, saving and earning of foreign currency, and supplies of raw material requirements for manufacturing industries. A key role that agriculture has played and will continue to play in government policy and development initiatives is agriculture. Assuming that the industrial and service sectors could flourish without the agriculture sector undergoing significant transformation and effective interactions is implausible, if not unreal [12]. The country's ability to combat poverty and grow economically as a whole would be contingent upon the performance of the agriculture sector. The sector can contribute not only to reduce poverty and increase incomes but also generate jobs, export earnings, and kick-start the overall economy of the country [6, 16].

Agriculture is the life-blood of the Ethiopian economy. Despite the share of agriculture in GDP declining to 32.5 percent, its contribution to GDP growth improved to 29 percent by 2020/21 compared to the preceding years. The service sector continued to dominate the economy in 2020/21 as its share in GDP stood at 39.6 percent and its contribution to the GDP growth was 38.8 percent. According to the National Bank of Ethiopia (NBE), the industrial sector constituted a 29.3 percent share of total GDP and it contributed 33.6 percent to the overall GDP growth in 2020/21. Despite the share of agriculture in the total GDP is declining in recent years, its GDP contribution has increased from 212.5 billion ETB in 2010/11 to 686.4 billion ETB in 2020/21. It provides 72.7 percent of employment opportunities and 90 percent of raw materials for manufacturing industries. In addition, it is the major source of export revenue and accounts for 71.2 percent of the total value of exports in the country [15].

Agriculture grew by 5.5 percent in 2020/21, higher than the 4.3 percent growth recorded in the previous year mainly due to improvements in crop production, animal farming, and hunting. Agriculture provides a living for about 17.7 million Ethiopian households [8]. The sector is still dominant in rural job opportunities, in serving as a base for industrial and service sector development, in serving as a major source of foreign currency earnings, and in supplying economical raw materials for industry. Crop production had a lion's share in agriculture accounting for 65.1 percent whereas animal

farming and hunting accounted for 26 percent, forestry accounted for 8.6 percent and fishing accounted for 0.2 percent by 2020/21. In terms of growth, crop production

expanded by 5.7 percent, animal farming & hunting (including fishery) and forestry registered 3.8 and 3.9 percent expansion, respectively by 2020/21 [14].

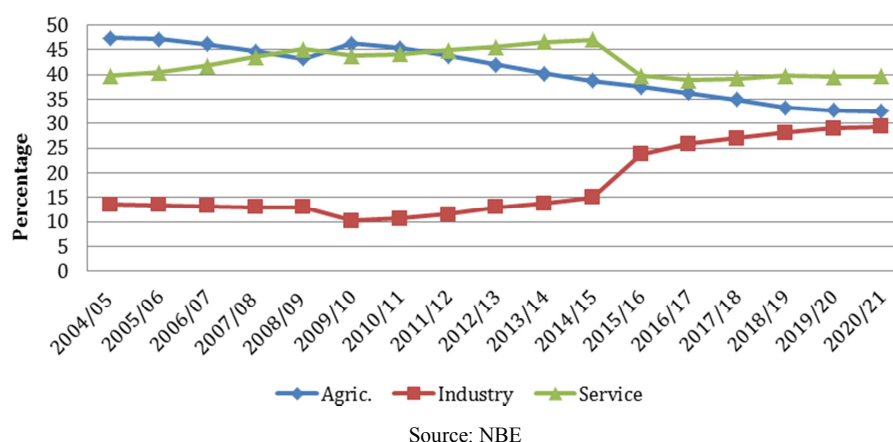


Figure 1. Sectors' share in the total GDP.

Forests, as one sub-sector of agriculture, generated economic benefits in the form of cash and in-kind. The share of forestry sub-sector accounts to 8.6 percent in 2021. The contribution of forest ecosystems (including carbon sequestration, crop pollination, conservation of agricultural soils and control of water discharge to streams and rivers) to

other sectors, particularly agriculture, is valued at 6.77 percent of GDP. The fodder livestock farmers obtain freely (by allowing their animals to graze on forest land) worth about 3.5 percent of GDP. Wood fuel's value added is estimated at about 4.5 percent of GDP [17, 18].

Table 1. Growth and percentage share of the agriculture sub-sectors.

	Sub-sectors	2016/17	2017/18	2018/19	2019/20	2020/21
Growth rate	Crop	8.2	4.7	3.0	4.7	5.7
	Animal farming	4.2	0.6	6.0	3.3	5.8
	Forestry	3.6	3.5	3.8	3.9	3.9
	Fishing	0.5	11.3	2.3	2.8	1.7
Share in agriculture	Crop	64.5	65.3	64.8	65.0	65.1
	Animal farming	26.4	25.6	26.2	25.9	26.0
	Forestry	8.8	8.8	8.8	8.8	8.6
	Fishing	0.2	0.3	0.3	0.3	0.2

Source: Planning and Development Ministry, and NBE

2.3.2. Export Revenues from Agricultural Commodities

Even with low agricultural productivity, Ethiopia's economy is still largely dependent on agricultural commodities export to earn foreign currency. Agriculture is the major source of export revenue in Ethiopia including coffee, oil seeds, pulses, flower, chat, fruits & vegetables, and meat & meat products, etc. Total merchandise export in 2020/21 amounted to USD 3.6 billion showing a 21.1 percent annual growth owing to higher export earnings from agricultural commodities. Despite an 8.3 percent decline in export volume, the gain in coffee export revenues, which totaled USD 909.4 million, was driven by a 15.9 percent increase in the commodity's worldwide price. However, coffee's contribution to total merchandise export revenue fell from 28.6 percent to 25.1 percent from the previous year. Moreover, despite a 3.8 percent increase in export volume, revenue from oilseeds export fell by 2.7 percent to USD 335.5 million due to the 6.3 percent drop in the world price. Notwithstanding a 25.6 percent increase in the international

price of pulses, export volume fell by 20.7 percent, resulting in a minor loss in revenue of 0.4 percent and USD 233.8 million. As a result, its percentage of global merchandise export fell from 7.9 percent to 6.5 percent. However, fruits and vegetables export revenues grew by 17.7 percent due to a 16.0 percent increase in export volume and a 1.5 percent increase in global prices. However, from a year earlier share of 2.0 percent, their share of all merchandise export receipts marginally decreased to 1.9 percent in 2020/21.

Receipts from meat and meat products export went up by 11.7 percent over last year wholly driven by a 14.1 percent increase in export volume despite a 2.1 percent drop in international price. However, their share in total export revenue constituted just 2.1 percent. Likewise, earnings from exports of leather and leather products recorded a 49.4 percent decline due to the fall in export volume (35.5 percent) and international price (21.5 percent). Consequently, the share of leather and leather products in total merchandise export shrank to 1.0 percent from 2.4 percent last year.

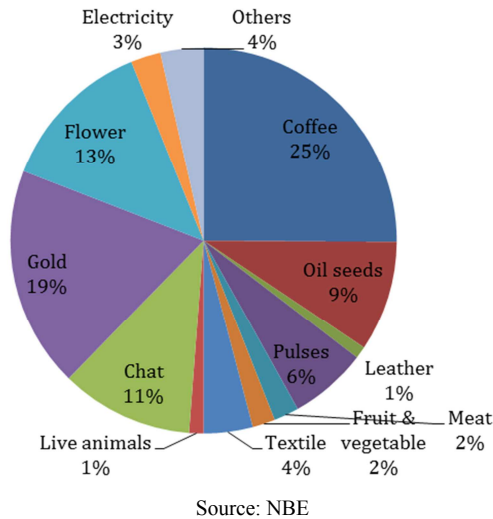


Figure 2. Export shares of selected commodities (2020/21).

2.4. Area, Agricultural Production and Productivity Trend in Ethiopia

2.4.1. Trends of Cropland Area in Ethiopia

In the 2020/21 cropping season, the total cropland area cultivated by major crops of the private peasant holdings was estimated to be 14,727,917.54 hectares. *Meher* (main) season accounts for 12,979,459.91 hectares (88.13 percent) and *Belg* season accounts for 1,748,457.63 hectares (11.87 percent) of grain crops area cultivated. Among the total cropland area, cereal production accounted for 80.62 percent, pulse accounted for 14.10 percent and oil seeds accounted for 5.28 percent [9]. From the total cropland *teff*, maize, sorghum, and wheat accounted for about 20, 22.2, 11.9, and 13.9 percent of the total crop area, in the same order. The trends of area allocation for cereal crop increased between 2009/10 and 2020/21, except barley, that reduced from 1129.112 to 926.107 thousands of hectares.

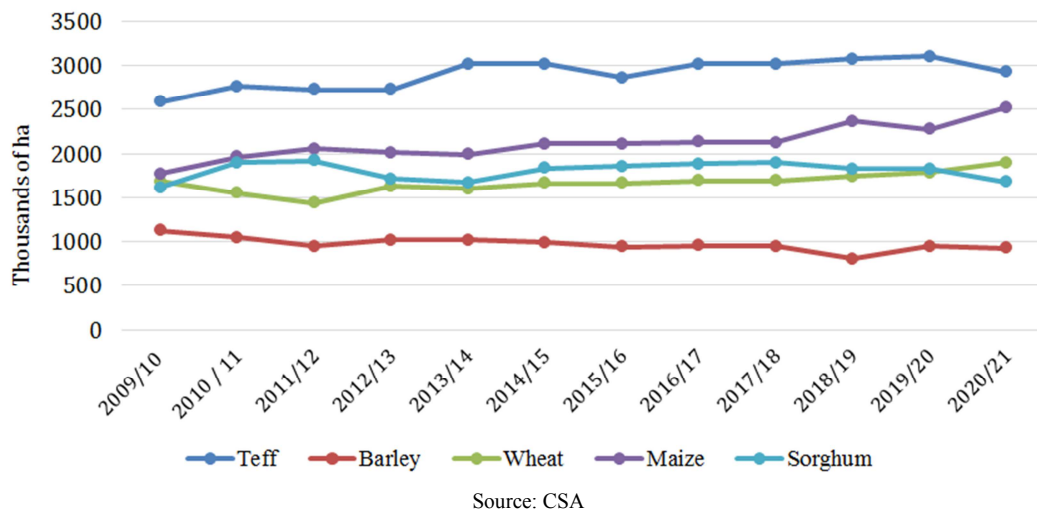


Figure 3. Area allocations for cereal production.

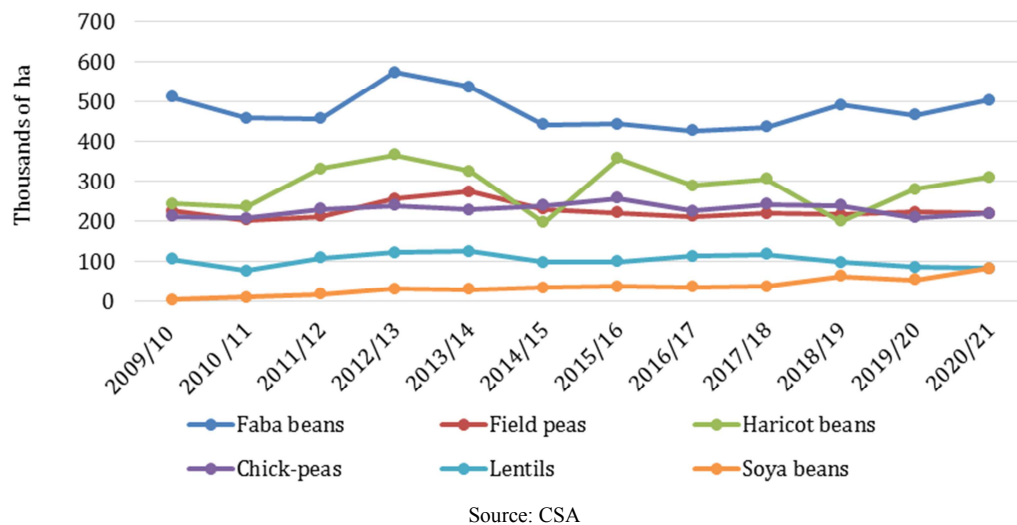
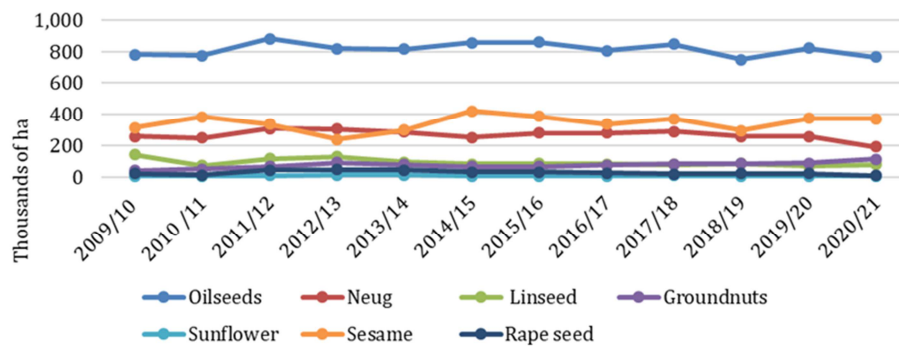


Figure 4. Area allocations for pulse production.

Area allocation for pulse crops is highly volatile since 2009/10. However, the trend of the area allocated for faba

bean, field pea, and lentils increased by 7,497.21, 6,604.98 and 21,444.41 hectares, respectively between 2009/10-2020/21. However, the area allocated for haricot beans and Chick-peas reduced by 67,570.70 and 7,532.06 hectares, respectively in the same period. Area allocation for soybean is the lowest of all pulse crops. Between 2013/14 and 2017/18 area allocation for soybean is relatively stable; however, since 2018/19 it is increasing, and reached 83,797 in 2020/21 from 5,679 hectares in 2009/10.

The trend indicates that smallholders' total area allocations for oilseed decreased over the past 12 years, reducing from 780,916 to 766,168 hectares. The area allocated for sesame was the highest of all other oil crops; however, the area increment for the crop was 17 percent over the past 12 years. Contrary to this the area allocated for *neug* was reduced between 2009/10 and 2020/21 by 25 percent. The area allocation for sunflowers is the lowest of the oilseed crops.



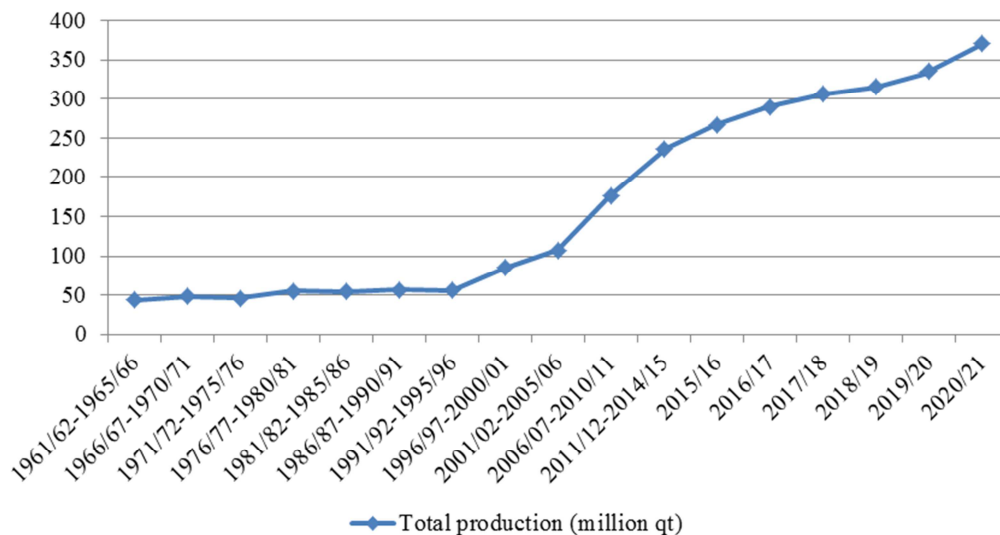
Source: CSA

Figure 5. Area allocations for oil crop production.

2.4.2. Agricultural Production Trend in Ethiopia

Agricultural crop production in Ethiopia increased from 110.4 million quintals in 2000/01 to 370.7 million quintals in 2020/21. Among the total production in 2020/21, cereals amounted to 314.2 million quintals, pulses 34.6 million

quintals, and oil crops amounted to 7.8 million quintals. Cereals including *teff*, maize, wheat, sorghum, and barley are the most important crops for Ethiopian agriculture. Maize, *teff*, wheat, and sorghum constituted 31.7, 15.2, 16.8, and 13 percent of the total grain production, respectively [9].



Source: CSA

Figure 6. Total grain production trends in million quintals.

According to the Central Statistical Agency (CSA) data from smallholder farmers, cereal production in the main season has been in increasing trend between 2009/10 and 20120/21. Maize production is the highest of all cereal crops in the country which increased from 3.9 to 10.56 million metric tons (MT) (171 percent increment). *Teff* is the main staple food in Ethiopia, it increased from 3.18 million MT to

5.51 million MT (about 73 percent increment) in the same period. Similarly, wheat production increased in the decade from 3.08 to 5.78 million MT (about 88 percent increment). Despite the positive trends of wheat production over the past decade, it is unable to meet the ever-increasing demand for food and industrial raw material, hence food insecurity, malnutrition, and raw material shortage remain a challenge.

Thus, the GoE has been importing the crop and dispersed through subsidy.

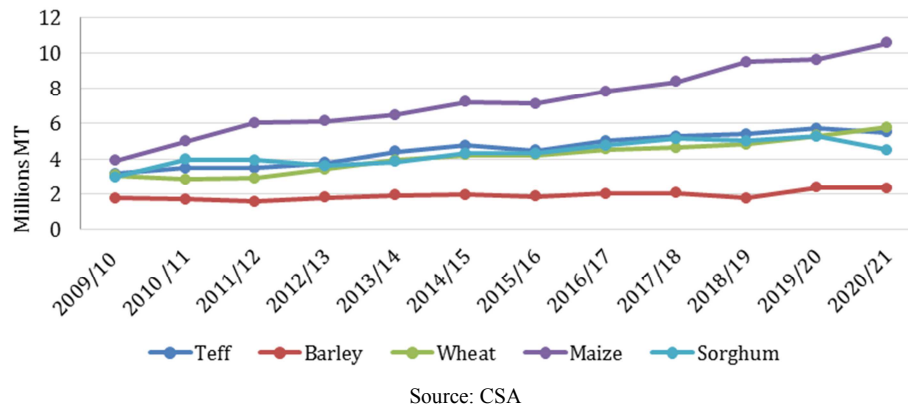


Figure 7. Production trends of cereal crops.

Between 2009/10 and 2020/21, except for lentils, the pulse production indicates increasing trends; the rates of production growth for faba bean, field peas, haricot beans, chickpeas, and lentils were 65 percent, 66 percent, 34 percent, and 53 percent, in the same order while lentil

production was decreased by 4 percent due to newly infested diseases. Soybean production was the smallest of pulse production which was 15.824 thousand MT in 2010/11; it unexpectedly increased to 208.68 thousand MT in 2020/21 (964 percent increment).

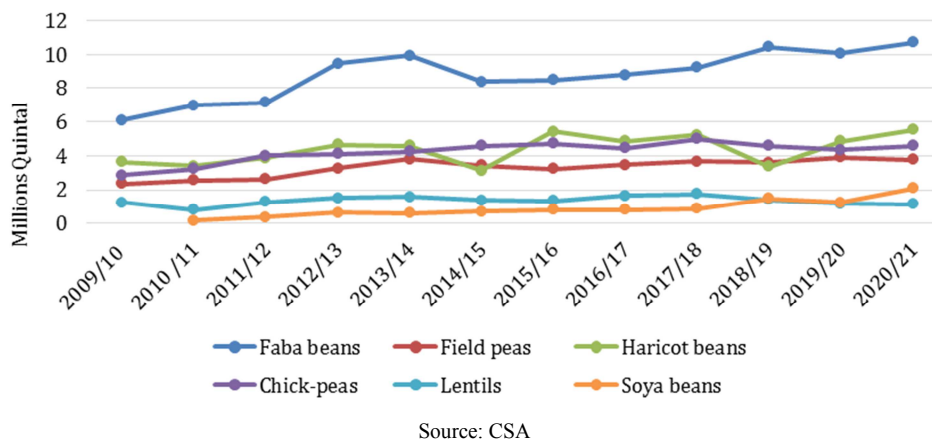


Figure 8. Production trends of pulse crops.

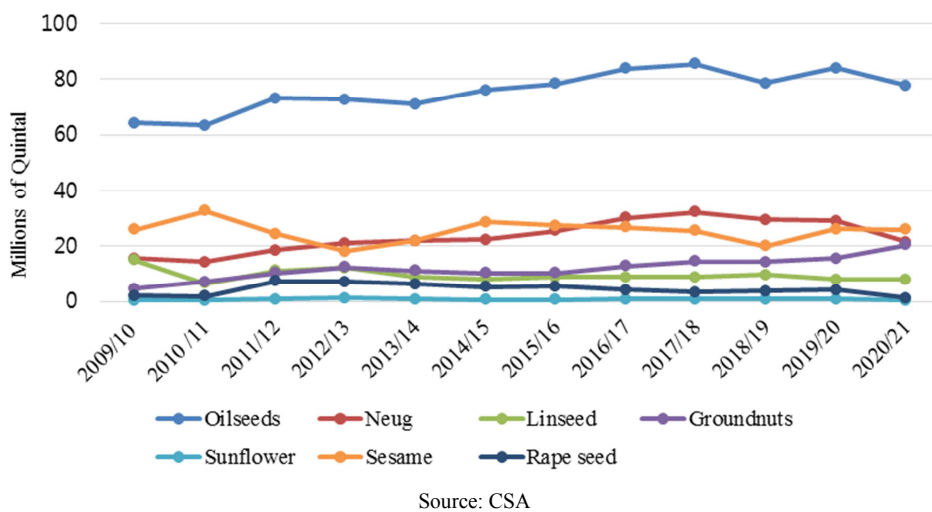


Figure 9. Production trends of oil crops.

Total oil seed production increased over the years between 2009/10 and 2020/21 by 21 percent, with neug and groundnut

growth rates of 36 percent and 342 percent in the same years, however, linseed and sunflower decreased by 47 and 23 percent, respectively. Sesame and *neug* are competing in production across the years. On average, 235,913.8 MT of *neug* and 253,832.1 MT of sesame were produced during the period; however, sesame is stagnant throughout the period. The lowest production among oilseeds was sunflower between the same years.

2.4.3. Agricultural Productivity Trend in Ethiopia

Agricultural productivity growth in Ethiopia lags behind and the actual supply has not been sufficient for the demand of the population. Despite some improvements, agricultural

productivity in Ethiopia remains low as compared to most sub-Saharan Africa countries and the crop's potential. For instance, the national average of agricultural productivity has increased from 7.3 quintals per hectare (qt/ha) in 1961/62-1969/70s to about 24 qt/ha in 2020/21 [9]. Although there is an increasing trend in agricultural productivity, there is a considerable yield gap between the current actual yields and the potential yields with improved technologies. Thus, it is important to exploit the opportunity to increase productivity through the widespread adoption of improved technologies that brings significant benefits for smallholders.

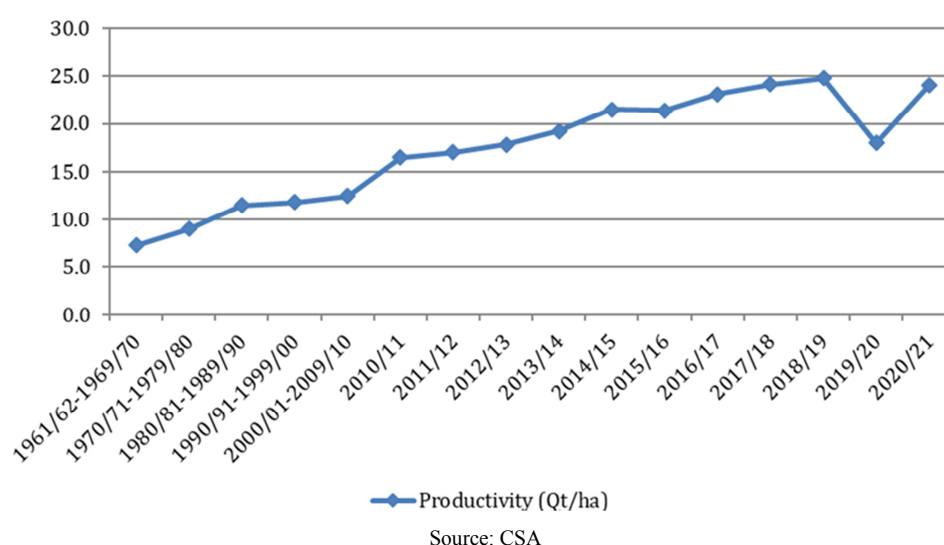


Figure 10. Productivity trends (quintal/hectare).

The yield of cereal crops shows an increasing trend. Maize gives the highest yield of other cereal crops which increased from 22 qt/ha to 42 qt/ha between 2009/10 and 2020/21 which is below the potential of 50 qt/ha (EIAR unpublished document). The productivity of wheat and sorghum are competing over the decade, however recently sorghum yield

decreased while wheat yield increased. *Teff* gives the lowest yield (18.8 qt/ha) compared to other cereal crops such as maize, sorghum, barley, and wheat [9]; however, the yield performance indicated an increasing trend, which increased from 12.3 to 18.8 qt/ha (35 percent increment) in the same period.

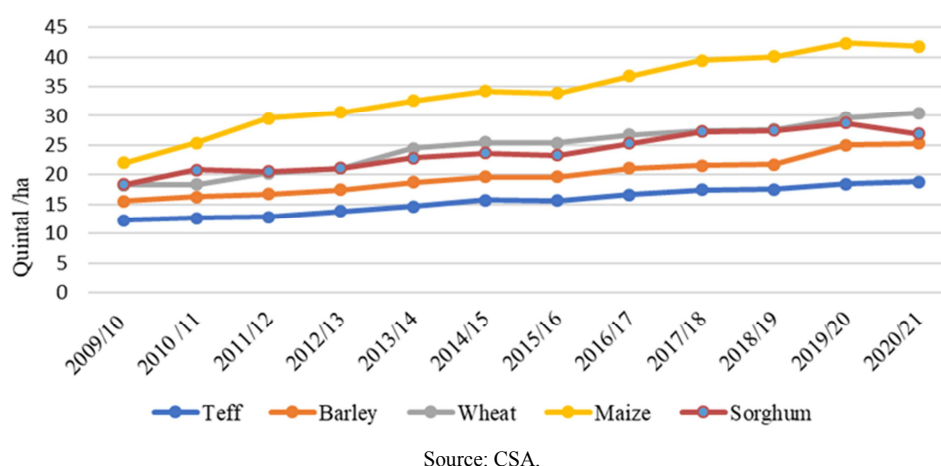


Figure 11. Cereal yield trend (quintal/hectare).

The yield level of the majority of pulse crops are increasing over the years, but the increment of soybean was

the highest of all pulse crops, which accounted for 25qt/ha in 2020/21. The yield increment between 2009/10 and 2020/21 was 77 percent for soy bean followed by faba beans (40 percent), field pea (36 percent), chick-pea (34 percent),

lentils (28 percent) and haricot bean (24 percent) [9]. However, lentil yield decreased since 2018/19 due to the prevalence of the diseases.

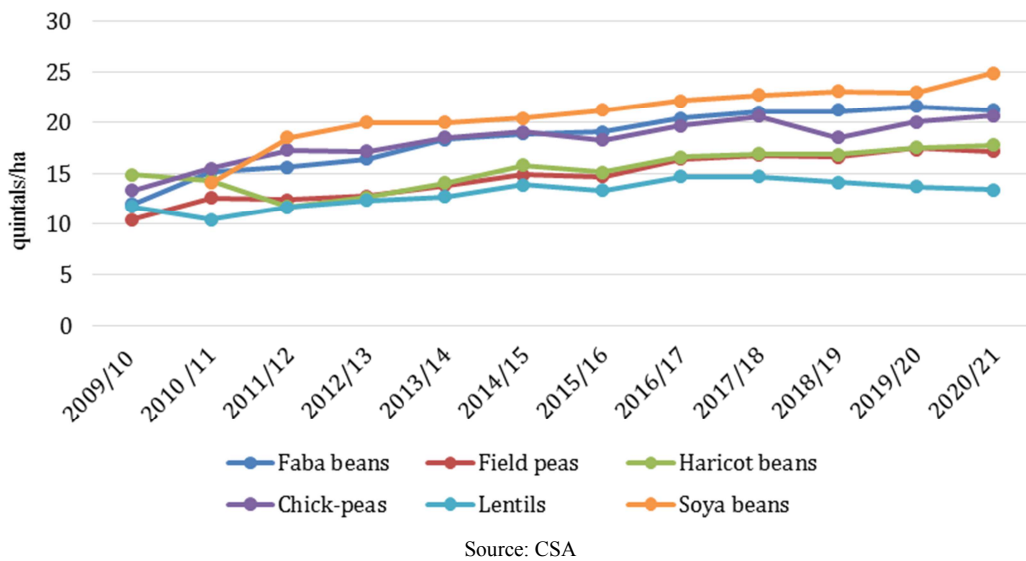


Figure 12. Pulse crops yield trend (quintal/hectare).

The yield performance of rape seed is the highest of all oilseeds that increased from 11 qt/ha to 18 qt/ha over the years followed by groundnut with the same amount between 2009/10 and 2020/21. The productivity of *neug* also

increased from 6 qt/ha to 11 qt/ha recently, while the yield performance of sesame fluctuated and reduced from 8 qt/ha in 2009/10 to 7 qt/ha in 2020/21. Sesame has the lowest yield of all oilseeds.

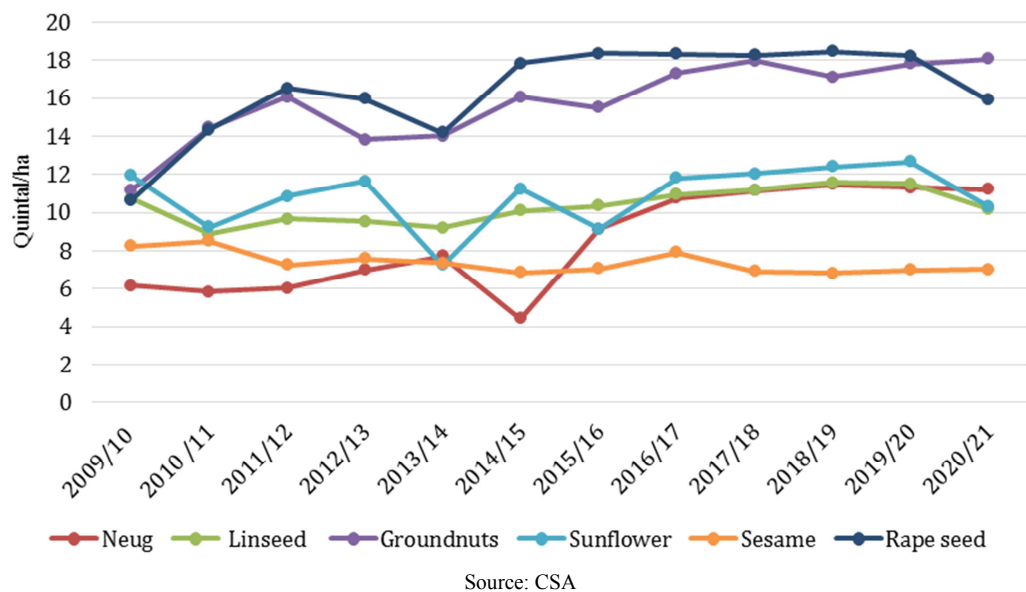


Figure 13. Oilseed crops yield trend (quintal/hectare).

2.4.4. Livestock Production Trend in Ethiopia

Ethiopia has the largest livestock population in Africa, with 70.3 million cattle, 42.9 million sheep, 52.5 million goats, 8.2 million camels, and 57 million poultry in 2020/21 [9]. Of the total cattle population, 98.24 percent are local breeds and the remaining are hybrid and exotic breeds. About 78.85 percent of poultry is indigenous and

the rest are exotic (12.02 percent) and hybrid (9.11 percent). About 99.52 percent of the sheep and nearly all goat population of the country are local breeds [9]. Despite the endogenous livestock population in Ethiopia holds the lion share of the total livestock population, the production of all livestock types increased between 2004/05 and 2020/21.

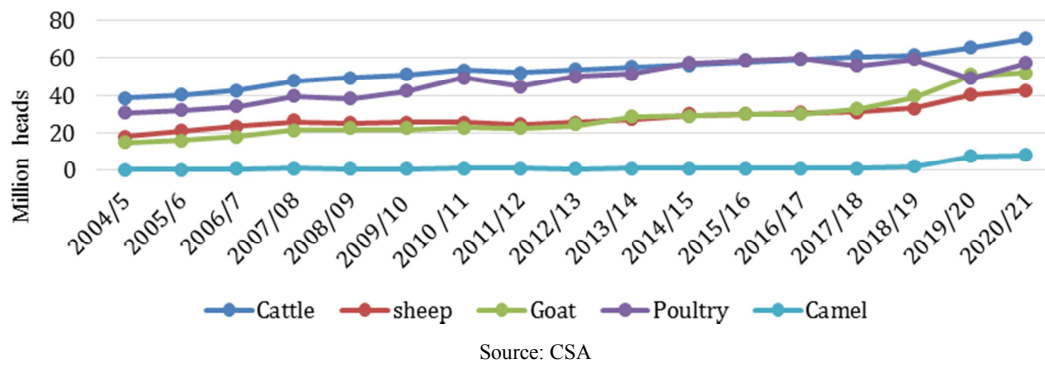


Figure 14. Livestock production trend of Ethiopia (heads).

In terms of share of types of livestock population, cattle accounted for the highest share (30 percent) of the total number of livestock in Ethiopia, followed by poultry (25 percent), goat (23 percent), sheep (19 percent), and camel (3 percent) in 2020/21.

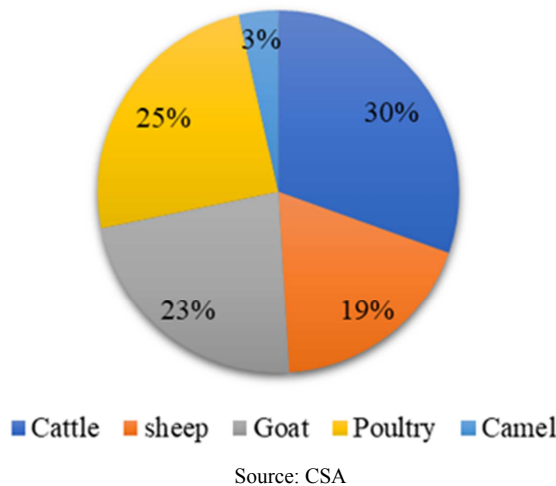


Figure 15. Share of livestock production of Ethiopia (Percentage).

2.5. National Agriculture and Rural Development Policies and Strategies (With Their Strengths and Weaknesses)

Cognizant of its significance and potential in the country's overall economy, the governments of Ethiopia have shown strong commitments and put in place policies and strategies fostering growth and development of the agriculture sector. The agricultural policies and strategies in Ethiopia aim to reduce poverty through improving accessibility and use of improved technologies and practices by farmers/pastoralists to realize the growth of agricultural production and productivity. Ethiopia has undergone a series of policies, strategies and institutional changes during the last several years towards improving the performance of the agriculture sector. However, the policy support for agriculture has been different among the three major political regime changes in the country's recent history. Food crises and food insecurity was persistent in Ethiopia for decades, it has been widespread and most devastating, and also famines that have costed the lives of many people for the last and present regimes have

occurred. In response to these, various agricultural development policies and strategies have been brought in to practice by the successive regimes that ruled the country which had in most of the cases ended up with bare minimum impacts in reversing the prevailed development bottlenecks of the country [4].

Among the various agricultural and rural development policies and strategies implemented by GoE since 1991, the most prominent and enduring economy-wide strategies to guide the development effort have been Agricultural Development-Led Industrialization (ADLI), the Sustainable Development and Poverty Reduction Program (SDPRP), Participatory and Accelerated Sustainable Development to Eradicate poverty (PASDEP) and successive Growth and Transformation Plans One and Two (GTP I and II). These strategies intend, among others, to attain food self-sufficiency at national level by increasing productivity of smallholders through research-generated information and technologies, increasing the supply of industrial and export crops and ensuring the rehabilitation and conservation of natural resource base with special consideration of package approach [5]. Moreover, during this time the government abolished all subsidies and price support measures to agriculture. A structural adjustment program reduces the role of the government and increases the role of demand and supply forces in the allocation of resources in the Ethiopian economy. All these policy interventions have been implemented to increase agricultural productivity and production which, in turn, reduce poverty and food insecurity.

Furthermore, the GoE has embarked on a ten-year economic development plan (2021-2030) where agriculture is on the top of priority sectors. The agriculture sector is projected to grow at 6.2 percent per annum over the next ten years. Ethiopia's development plan has laid out enhancing agricultural production and productivity as one of the major strategic pillars. In addition, the ten-year development plan aims at boosting agricultural export revenues and substituting imports by reducing production costs. To achieve this, the government seeks to leverage on developing huge unutilized arable land, modernizing production systems, and improving uptake of technology. Furthermore, the ten-year plan envisages building a climate resilient green economy. In this

regard, Ethiopia is looking to expand development efforts to fight land degradation and reduce pollution; reduce GHG emissions; increase forest protection and development; increase production of electricity from renewable sources for domestic use and for export; and focus on modern and energy saving technologies.

3. Conclusion and Recommendations

3.1. Challenges in an Institutional Framework

Agriculture is one of the pillars of the Ethiopian economy and the overall economic growth of the country is highly dependent on the success of the agriculture sector. And thus, the GoE shows strong commitments to improve the performance of the agriculture sector and sustainably increase agricultural production and productivity to meet the growing demand for food, industrial raw materials, and foreign currency earnings. Moreover, within the framework of the ADLI strategy, the GoE has made huge efforts to transform the agriculture sector.

Although efforts have been put in place to transform the agricultural sector, domestic agricultural food production has not met domestic demand for food and the number of food insecure population has increased over time. The agricultural sector is dominated by low-input, low-output and low productivity rain-fed smallholder production. Rainfall is the chief determinant of Ethiopia's economic performance. The dominance of agriculture has not changed over time mainly because of its poor performance in terms of generating surplus that could be invested in other sectors of the economy. Fluctuations in food availability and consumption, caused by drought, crop failure and other factors, have increased the risk of consumption shortfall.

Moreover, limited land rights, inadequate access to water, insufficient access to credit, underdeveloped rural roads and transport infrastructures, shortage and landlessness of arable farmland in the highlands, climate change (droughts), land fragmentation, land degradation and deforestation, lack of integration, lack of irrigation facilities, sudden outbreaks of natural disasters, pests, political unrest, shortage of technological advancement, narrow market support, underprivileged agribusiness activities, and underinvestment in research and extension are some of the major constraints in the agriculture sector of Ethiopia.

Furthermore, despite agricultural production in value chain system is an important component, agricultural value chain is complicated by substantial problems including low yield, poor quality supply, limited use of improved technologies, the weak linkage among actors, lack of production and marketing skills, lack of capital, lack of market information, brokers hindering fairness in price, volatile pricing, the problem of rural road access, storage problems that lead to losses, improper shading, as well as weeds, diseases and pests.

3.2. Recommendations

Although there are encouraging initiatives, it was

acknowledged that still a lot has to be done to improve the performance of agriculture and rural development and to strengthen efficient value chain in the agriculture sector. Among those initiatives to improve performance, the following can be mentioned as the major ones: -

3.2.1. Establish Result-Based MEL for Continuous Improvement of the Performance of the Agriculture Sector

Monitoring and Evaluation (M&E) is a key tool to identify constraints, assess the progress, and generate relevant and timely information to make informed decisions. Currently, there are some efforts in the agriculture sector to carry out M&E activities through field visits, meetings and report exchanges. However, there is no consistent, organized, planned, and coordinated M&E within the sector. The sector simply focuses on what has been achieved rather than giving equal attention to the problems and their root causes. Similarly, focus is also given to collect a bulk of data that cannot be analyzed and be used for feedback, learning and decision-making. Therefore, reviewing the current M&E system, identifying the gaps and then developing, institutionalizing, and implementing result-based M&E at national and regional levels is urgent and necessary. In relation to this, sustainable, appropriate and effective accountability as well as a reward and punishment system should be established and strengthened within the country's public service institutions in particular.

3.2.2. Investing More in Agricultural R&D

Investments are becoming so critical in the agriculture sector to improve the performance of the sector. According to the Maputo Declaration, Ethiopia has demonstrated its commitment to agricultural and rural development by allocating 10% of the national budget to this area over the past ten years. Ten percent of the budgets of signatory nations, including Ethiopia, are earmarked for rural and agricultural development. Despite the fact that a number of nations failed to meet this goal, Ethiopia ranked among the top 10 nations between 2003 and 2011. Nonetheless, since 2012, the average spending share on agriculture has decreased to less than 5.2 percent, a significant decrease from the previous 10 percent. When agricultural development and food security expenditures are further divided, the percentage allotted to agriculture is even lower. Furthermore, as measured by Agricultural Gross Domestic Product (AgGDP), agricultural research expenditures produced much less than the 1 percent benchmark set by the CAADP [2]. The nation has some of the lowest research expenditures in Africa and continues to be far below the sub-Saharan African average [11]. Hence, the government should continue to invest more on agricultural R&D through allocation of adequate budget in order to improve the performance of the sector. In this regard, the continuity of the relatively lower share and growth rate of the non-crop sub-sectors as well as the relatively lower share in area and yield of the non-cereal crops of the crop sub-sector should be given higher emphasis as the country has huge potential in those sub-sectors and in those crops in

terms of food and nutrition security and foreign currency savings and earnings. Moreover, appropriate and effective ways should be devised to improve the amount of foreign support funds being provided for Ethiopia's agriculture sector.

3.2.3. Establish an Appropriate Institutional Framework to Strengthen Agribusiness

Interventions can create different scenarios in agricultural production in a country. For example, investment in agribusiness can help in increasing productivity, improving market opportunities for smallholders, delivering reasonably priced, nutritious, and healthy foods to growing urban and semi-urban populations, increasing employment opportunities, and eventually improving food security may contribute to rural and regional economic growth. Thus, the government and the country's development partners should further and systematically encourage the establishment as well as efficient and sustainable operation of agricultural outputs processing industries to promote the growth of the agricultural sector in the short to medium run as well as transform the country's economy in the medium to long run. In this regard, primary cooperatives as well as their unions and federations can have significant roles and should be further supported with regard to effective organizational structure and business processes, well capacitated and motivated managers and key employers, better and accessible availability of finance as well as effective monitoring and support services.

Conflicts of Interest

The authors declare no conflicts of interest.

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