

The Importance of Agricultural Development Projects: A Focus on Sustenance and Employment Creation in Kenya, Malawi, Namibia, Rwanda, and Uganda

Benonia Mwahafa Rafael^{1,2}

¹Business School, Beijing Normal University, Beijing, China

²National Planning Commission, Windhoek, Namibia

Email: benoniarafael@gmail.com

How to cite this paper: Rafael, B.M. (2023)

The Importance of Agricultural Development Projects: A Focus on Sustenance and Employment Creation in Kenya, Malawi, Namibia, Rwanda, and Uganda. *Journal of Agricultural Chemistry and Environment*, 12, 152-170.

<https://doi.org/10.4236/jacen.2023.122013>

Received: April 14, 2023

Accepted: May 27, 2023

Published: May 30, 2023

Copyright © 2023 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

The paper on the importance of Agricultural Development Projects focuses on different projects implemented in Kenya, Malawi, Namibia, Rwanda, and Uganda. The paper presents the significance of agriculture in these 5 African economies in its ability to provide job opportunities and sustenance. A large portion of the African population in their different countries resides in rural areas and is fully dependent on agriculture for food and income. Subsequently, the development of many developing economies relies heavily on agriculture, the sector is the highest employer in the region with 60 percent of the total labor force being employed in agriculture and agriculture-related sectors such as manufacturing. The success of the sector means that people will have sufficient food, jobs will be created, and standards of living will be improved. The different projects implemented by local governments in the 5 countries and by the development partners have attained plausible results in providing job opportunities, increasing yield, providing food security, and creating a market for small-holder farmers. Despite these remarkable achievements, the agriculture sector in Africa as a whole is faced with many challenges that hinder its success, such as lack of funding, lack of infrastructure, limited land for farming, and climate change. To overcome these challenges and enable the sector to transform, bold policies need to be implemented. This study recommends that African countries create favorable business environments to attract investment, encourage youth participation in agricultural activities, and employ modern farming practices to increase agricultural productivity.

Keywords

Agriculture, Development, Employment, Hunger, Food Security, Investment,

Africa

1. Introduction

Agriculture has been a fundamental activity for human civilization, providing the necessary sustenance for individuals and communities. In Africa, agriculture has been the backbone of the economy, contributing significantly to the development of the continent. The importance of agriculture to the development of Africa cannot be overemphasized, as it is a source of food and income for many.

A large percentage of the African population lives in rural area and are directly or indirectly dependent on agriculture, the sector plays an important role in the development of the region and makes a significant contribution to the growth of the economy [1]. More than half of the entire workforce in Africa is employed in agriculture, according to the IMF report in 2012. In rural areas, agriculture is the source of livelihood for numerous small-scale producers [2]. The importance of agriculture to rural populations is widely recognized, but recent surveys suggest that it is also the primary source of livelihood for a significant proportion of urban households, ranging from 10 to 25 percent. In many developing economies, particularly those in Africa, the common goal is to achieve high-income status through accelerated economic growth and the development of informal industries. The agriculture sector, which is the backbone of many African countries' economies, serves as a crucial vehicle toward achieving this objective.

Apart from facilitating economic growth, the agriculture sector also plays a vital role in achieving other developmental goals, such as ensuring food security, promoting employment creation, and improving the living standards of people by lifting them out of extreme poverty. The African community relies on paid employment for survival, and a large portion of the population depends on agriculture for income and food. This highlights the sector's significance in many countries. Developing nations' economies experience considerable growth as a result of their agricultural industries. Without a doubt, agricultural progress holds unique promise for creating jobs and alleviating poverty [3].

Increased agriculture productivity will enable governments to achieve their developmental goals and also achieve the Sustainable Development Goals *i.e.* SDGs 1 and 2, no poverty and zero hunger respectively. It is essential to increase agricultural productivity in Africa to put an end to poverty, food insecurity, and malnutrition in the region. These issues are closely linked and can only be solved by improving the production of crops in Africa [4]. According to the Africa Economic Outlook Report 2013, the agriculture sector employs 60 percent of the labor force, however, due to low productivity experienced, the sector contributes only 25 percent to the Gross Domestic Product (GDP) of Africa.

2. Aim of Study

Many African countries have launched agricultural projects to provide a sus-

tainable food supply and create new job opportunities to reduce poverty and hunger. All five of these countries—Kenya, Namibia, Malawi, Uganda, and Rwanda—have begun many agricultural programs to fortify their agricultural sectors. This study will examine the outcomes of agricultural projects in these countries, including their successes and failures. Adopting a qualitative methodology, the study assesses the efficacy of the agricultural programs and emphasizes their value to the nation's progress. To accelerate agriculture's progress, this paper suggests several policy changes. This paper will examine the existing literature on the subject by drawing on a wide range of scholarly sources.

3. Agriculture and Development in Sub-Saharan Africa

Every developing country's top objective is development, and all efforts are directed either directly or indirectly toward achieving this goal. While Sub-Saharan Africa depends on a variety of sectors to accomplish development, the agriculture sector is far more important because it is vital to the existence of the vast majority of populations. Agriculture is crucial to ensuring that people have access to employment and food, and it also contributes significantly to national income, which is a source of economic growth.

3.1. The Role of Agriculture in Employment in Africa

As a result of the high population growth in Sub-Saharan Africa, particularly among young people¹, the labor force is poised to undergo significant expansion in the coming years. The population of Sub-Saharan Africa is expected to double by 2050, and the region's portion of the worldwide population is anticipated to increase to roughly 23 percent, up from 12 percent recorded in 2015 [5]. This demographic shift necessitates the development of a comprehensive and accelerated plan for job creation to keep pace with the rapidly growing workforce. While Africa has made notable progress in economic development in recent years, the challenge of creating jobs for its burgeoning youth population remains a significant concern. As the population continues to grow, the demand for employment opportunities will only increase, making it essential to establish effective policies and initiatives to stimulate economic growth and job creation.

Despite the significant economic growth observed in several African countries, the same cannot be said about job opportunities, resulting in a considerable demand-supply gap in employment opportunities. Fine D. *et al.* [6] argues that considering the current rate of employment growth, only a minority of people will find non-agricultural jobs that pay well. Even if the policies and economic growth improve, at best, only about two-thirds of people will be absorbed into such employment. It is crucial that agriculture and the informal economy, which is heavily reliant on agriculture, offer plenty of job possibilities to the new workforce if Sub-Saharan Africa wishes to prevent growing issues with underemployment and youth unemployment [7]. Improving the efficiency of agri-

¹“Almost 60 per cent of Africa's labour force is aged between 15 and 35 years”-The future of work in African agriculture: Trends and drivers of change (ILO).

culture will play a crucial role in expanding employment prospects both in non-farm sectors and within the agricultural industry².

Figure 1 illustrates the percentage of employment in the agriculture sector in various regions of Africa between 2010 and 2021. Based on the chart, the agriculture industry contributed more than half of the total employment in the regions presented. It is particularly noteworthy that Eastern and Western Africa had the greatest percentage of employment in agriculture, closely followed by Southern Africa.

This trend accentuates the significance of the agriculture sector in creating job opportunities and its potential to foster economic growth while indirectly reducing poverty, a prevalent challenge in Africa. The figures presented in the chart emphasize further the importance of investing in the agriculture industry to boost the growth and development of developing African economies. Therefore, it is crucial to prioritize the progression and prosperity of the agriculture sector to push the agenda of growth and development in Africa.

The role that agriculture plays in the labor force can be observed clearly in **Figure 2**, the figure presents the share of employment in agriculture between 2010 and 2021 in the 5 countries under observation. Among the 5 countries, Rwanda has the highest percentage of its working population employed in the agriculture sector, 79.30 percent of the Rwanda labor force was employed in the agriculture sector in 2010 and 52.70 percent in 2019 the lowest for the country during that period. Namibia recorded its highest rate in 2010 of 31 percent, the country has the lowest share of employment in agriculture. Notwithstanding the great performance of these countries, it is worrisome that the trend depicts a decline in the 10 years, this decline may be attributable to many factors, ranging from a lack of investment in the sector to overall weak economic performance in these countries. This calls for urgent interventions to revive the sector and ensure that its potential is harnessed by the communities that depend on it for survival.

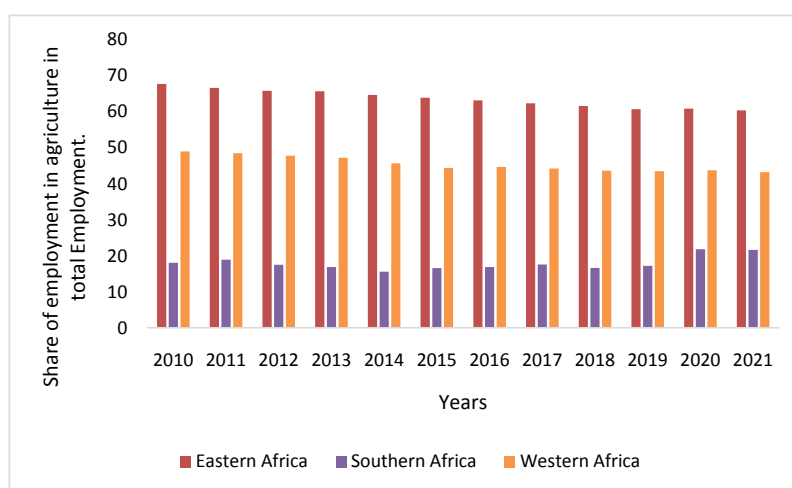


Figure 1. Employment in agriculture (% of total employment). Source: Author's compilation from the ILO Stats.

²Agriculture, Food and Jobs in West Africa-OECD.

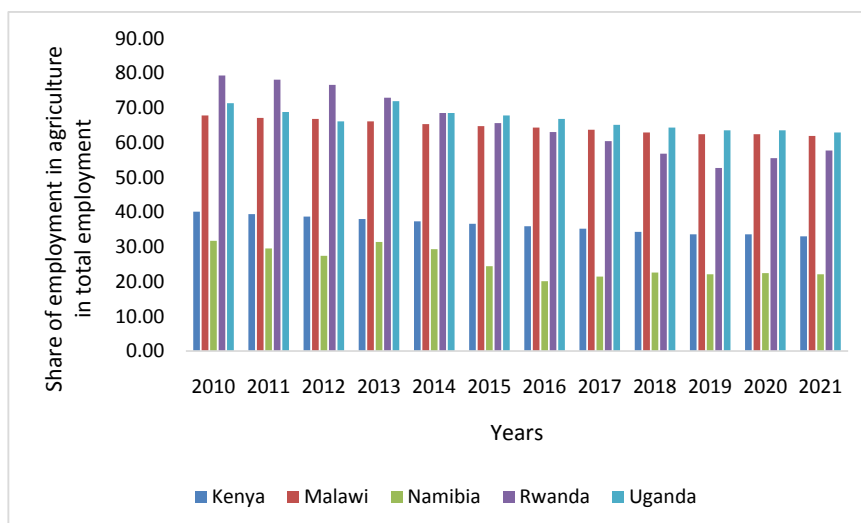


Figure 2. Share of employment in agriculture, forestry, and fishing in total employment - ILO Modelled Estimates. Source: Author's compilation from the FAOSTATS.

Figure 3 depicts the share of government expenditure in Africa that is dedicated to the Agriculture sector and the contribution of Agriculture to the Gross Domestic Product of the region. The government expenditure on Agriculture has been minimal between 2001 and 2019, for 18 years the share of expenditure on agriculture has been below 5 percent. This confirms the finding of [8] in which the author states that less than 10 percent of the public finances of most African nations are allocated to agriculture. While the contribution of agriculture isn't exceptional it has always been above 15 percent. Notable is the fact that the latter has been declining since 2009, this decline could be attributed to different factors, as the challenges facing the sector in the region are vast. Weak investment in the sector is one of the major contributing factors to weak agricultural production, another factor is the lack of advancement in farming techniques. The outdated farming techniques have long impeded the success of the agriculture sector.

Due to the poor economic performance of many African nations, their national budgets are constrained and distributed among numerous priorities set to raise the standard of living for citizens and advance development, with agriculture receiving a very small portion of the total national budget. Because local investment is insufficient, developing economies look to foreign capital for new sources of funding. So, it is difficult and not strategically sound to finance increased agricultural investment through domestic sources alone [9]. As a result, foreign direct investment can significantly contribute to meeting the investment needs of the African agricultural sector. This necessitates the encouragement of Foreign Direct Investment not only for the agriculture sector but for other sectors such as the service and industry sector and education. These are some of the sectors crucial to the development of the Agriculture sector and will improve its productivity.

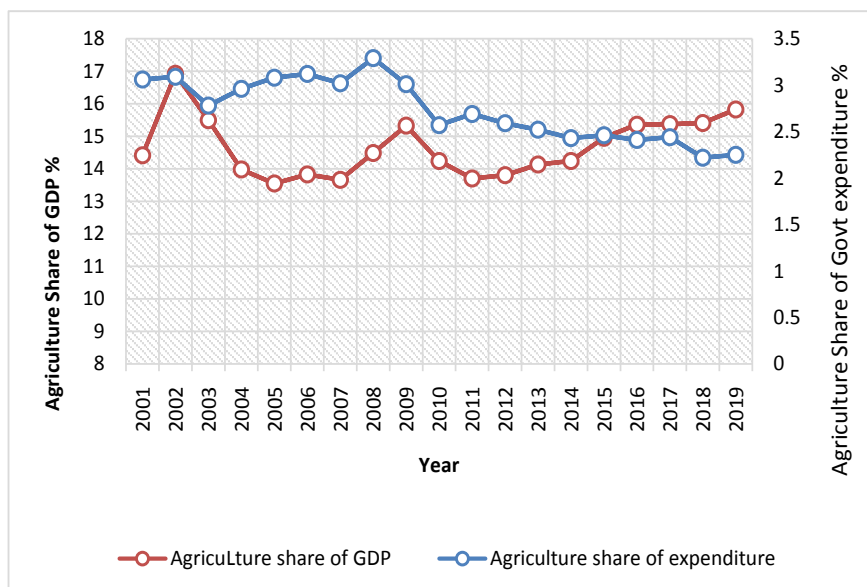


Figure 3. Agriculture share of gov't expenditure and share of GDP in africa. Source: Author's Compilation-Food and Agriculture Organization Statistics (FAOSTAT).

3.2. Agriculture for Food Security

While not applicable in all cases, the Food and Agriculture Organization has defined food security, "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food for a healthy and active life" according to the definition adapted at the World Food Summit Plan of Action, held in 1996.

Although food security is important regardless of political and socioeconomic circumstances, it is particularly urgent in developing regions where population growth and environmental challenges like floods, droughts, and extreme weather can threaten the availability of food [10]. The agricultural industry has a significant impact on enhancing the accessibility of nourishment and strategically attaining food safety. Throughout human history, agriculture and food security have been closely linked. The expansion of agriculture is essential to enhance food security, primarily by raising food production and supply. Agriculture involves cultivating crops and rearing animals for both food and raw materials, serving as the primary source of calories for the global population. Although food availability is a prerequisite for food security, it alone is not enough to ensure it [11]. **Figure 4** presents the number of people who are severely food insecure, the portion of food insecure people is highest in Kenya with over 15 million people recorded as having severe food insecurity. Although it may be attributed to its low population, Namibia has the lowest number of people who are food insecure followed by Rwanda. As referred to in the literature, food availability does not directly translate to food security. It is therefore important for policymakers to ensure that the policies implemented address harmoniously the high rate of food insecurity experienced in these countries.

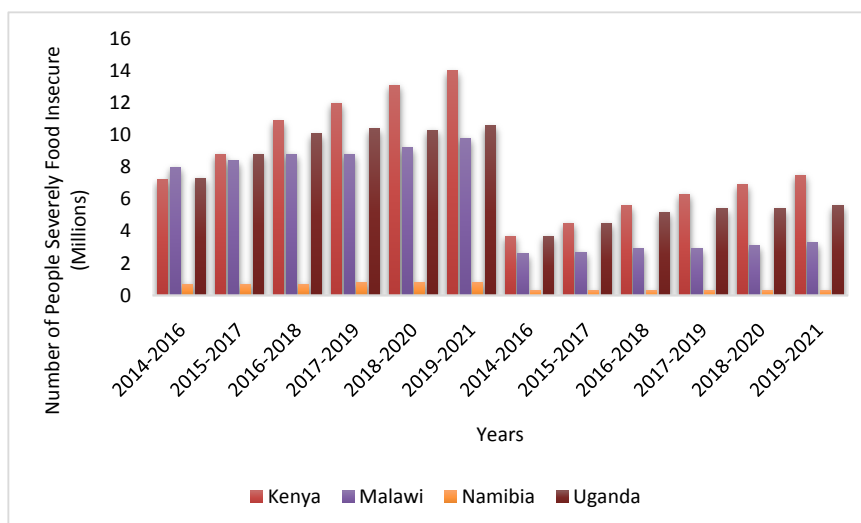


Figure 4. Number of people severely food insecure (Millions) (3 Years average). *Data on the subject is not available for Uganda. Source: Owners compilation form FAOSTATS.

According to the World Health Organization [12], despite the significant strides made in the last few decades to reduce hunger, 800 million people still suffer from chronic undernourishment as of 2015. Additionally, 161 million children under the age of five are stunted³. Approximately 45 percent of deaths in children below the age of five are associated with malnutrition. This is predominantly observed in countries with low- and middle-income levels. In contrast, 500 million people are obese. Likewise, two billion people do not have the necessary micronutrients to lead healthy lives. The Food and Agriculture Organization (FAO) predicts that food production must increase by 60 percent by 2050 to meet the demands of population growth and dietary changes [13]. Furthermore, FAO [13] states that a large number of smallholder farms in the developing world, approximately 500 million, are providing sustenance for almost two billion people. In Asia and sub-Saharan Africa, these small farms are responsible for the majority of the food consumed, with an estimated 80 percent. **Figure 5** further places an emphasis on the crisis at hand in the continent, it presents the prevalence of Undernourishment in Kenya, Malawi, Namibia, and Rwanda. While it was previously revealed that the share of employment in agriculture was the highest in Rwanda, the country is again leading in being the one with the most undernourished people. While agriculture appears to be functioning well for the employment of Rwandan citizens, the same cannot be said for food security, suggesting that appropriate planning and policy review may be required.

These statistics call not only for improved farming techniques but also for better and sustainable agriculture. The sustainability of the agriculture sector will

³Stunting is defined as low height-for-age. It is the result of chronic or recurrent undernutrition, usually associated with poverty, poor maternal health and nutrition, frequent illness and/or inappropriate feeding and care in early life. Stunting prevents children from reaching their physical and cognitive potential.”-World Health Organization (WHO).

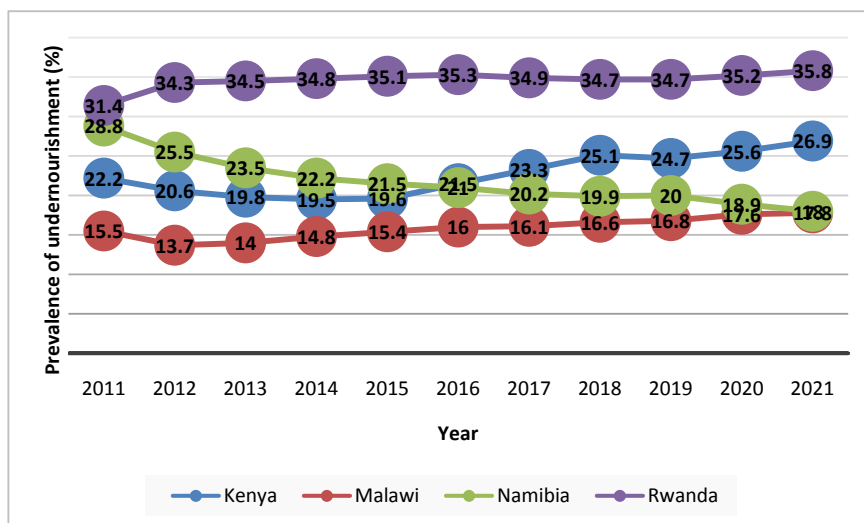


Figure 5. Prevalence of undernourishment (%). *Data on the subject is not available for Uganda. Source: Owners compilation form FAOSTATS.

ensure that better farming techniques are implemented that ensure the protection of the ecosystem, human health, and environment while continuing to provide adequate food and jobs for the increasing population [14].

According to the Food and Agriculture Organization (FAO), “Undernourishment means that a person is not able to acquire enough food to meet the daily minimum dietary energy requirements, over one year.” The second Sustainable Development Goal (SDG2) is Zero Hunger, the first target under this goal is “end hunger and ensure access by all people by 2030, in particular, the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round”. Observing the statistics presented in the table, it is evident that the goal that should be reached in less than 10 years may not be reached if urgent measures are not taken. Over 200 million people in Sub-Saharan Africa were undernourished from 2018 to 2020, this number is alarming and is continually increasing. This issue necessitates the formulation of policies that will ensure that sufficient food is available to all people and especially the marginalized. Sub-Saharan Africa is one of the poorest regions in the world [15], and it has the highest number of people living in extreme poverty. Deprived in a different dimension of poverty such as Nutrients, as is evident from the table presented.

4. Literature Review

4.1. Empirical Literature

Agriculture is a crucial sector in the global economy that provides employment and food security to billions of people. Scholars have extensively explored the role of agriculture in employment creation and food security, resulting in a wealth of literature on the topic.

Diao *et al.* [1] examined the role of agriculture in modern African develop-

ment and found that the agricultural industry is advantageous since it offers increased job prospects for the underprivileged. Additionally, while the industrial sector is significant for enhancing the economy, it falls short in providing ample employment opportunities for indigent and untrained laborers.

Mubita [16] investigated the causal relationship between agricultural productivity and economic growth in Namibia using Granger causality analysis. The findings confirmed the significance of agricultural productivity for the development of economies, highlighting that the two variables are causally related. These results confirm the findings of Diao *et al.* [1] that, agriculture has the potential to have a positive impact on economic growth by providing stability in domestic food production, thus increasing food security. In addition, Diao *et al.* [1] find that agricultural growth has a positive effect on both rural and urban consumers, as it leads to a decrease in food prices. This is especially beneficial for those who are economically disadvantaged, as they often spend a large portion of their income on food, and can thus benefit from the lower prices. Another scholar [17] argues that certainly, agriculture can significantly contribute to the process of industrialization through various factors such as maintaining low food prices, generating foreign exchange earnings through exports, and creating a higher demand for non-agricultural products and goods in rural areas.

Literature has also argued that agriculture can be a perfect tool for ending poverty and inequality in Africa. Pretty *et al.* [18] estimated that a 10 percent increase in yields in Africa leads to a 7 percent decrease in poverty, while a similar effect is not observed in the growth of manufacturing and services. According to a report released by the World Bank in 2008, agricultural growth is more efficient than growth in any other sector of the economy in reducing poverty. The report indicated that a 1 percent increase in agriculture leads to about a 1.5 percent increase in non-agricultural sectors [19].

Derek *et al.* [20] explored the causes of the divergence between agricultural employment in Asia and Africa and found that. There are numerous ways in which agriculture provides advantages, such as generating more jobs and income, improving nutrition and reducing poverty, boosting the earnings of small farmers who purchase more food than they produce, and promoting non-farming economic growth in rural regions. Furthermore, research has demonstrated that hunger has only diminished in places where agricultural expansion has occurred.

One school of thought argument agrees with Derek *et al.* [20] that, agriculture can drive economic growth, especially in the initial phases of development. This is because agriculture typically requires more labor than non-agricultural sectors, which means improvements in agricultural productivity can lead to increased employment and income, improved nutrition, faster poverty reduction, and reduced migration from rural to urban areas in search of employment [21].

According to Njonjo [22], over fifty percent of Kenya's labor force is employed in the agriculture sector. This comprises both direct and indirect employment opportunities, with the majority of agricultural employees in the country

being smallholder farmers. Contributing to food security, these farmers cultivate maize, beans, cassava, and vegetables for subsistence and commercial uses. Large-scale farms provide job prospects for both skilled and unskilled laborers in addition to small-scale agriculture. The transfer of agricultural technology and expertise from industrialized nations to large-scale farms has enhanced the sector's output and efficiency. The agro-food business provides employment prospects for skilled and unskilled people in management, engineering, accounting, and marketing, among others.

4.2. Agricultural Projects Implemented

4.2.1. Malawi's Agricultural Input Subsidy Program (AISP)— "Green Revolution"

Malawi is a low-income nation characterized by a high population growth rate and extreme poverty. According to UN data, the population estimate for Malawi in 2021 was 19 million individuals. Malawi is a landlocked country with a total area of 118,484 square kilometers, only 20 percent of which is covered by water. While 5,738,000 hectares are suitable for agriculture, only 2,500,000 hectares are currently under cultivation.

The AISP was created in response to a severe famine during the 2004/05 growing season and was implemented during the following season (2005/06). The program targeted 1.5 million maize and 200,000 tobacco farmers through a voucher system. Maize farmers received one 50 kg bag of basal and top-dressing fertilizers for MK950 each and had access to 3 kg OPV maize at MK150/3 kg. Tobacco farmers were entitled to one 50 kg bag of CAN and D compound each at MK1450 per bag.

The AISP has been successful in improving crop yields and ensuring surplus maize production in Malawi. In the 2007/08 season, Malawi produced a record-breaking 3,444,655 metric tons of maize, which exceeded the annual food requirement by 1.5 million metric tons. The program has evolved since its introduction and was initially implemented solely by two parastatal bodies due to a lack of support from donors [23].

Chinsinga [23] stated that Malawi has been consistently generating more maize than its estimated annual demand of 2.1 metric tons ever since the program was initiated. The program's primary objective was to encourage farmers to use high-yielding hybrid seed and inorganic fertilizers to escape the low maize productivity cycle [24]. Additionally, according to [25], it has also served as a social safety net, reducing the reliance on food assistance

4.2.2. The Case of Kenya

The total area of Kenya, including its territorial waters, is roughly 582,646 square kilometers⁴. According to the Ministry of Lands and Physical Planning, there are 2.2 water surfaces and 97.8 percent dry land in the area. Only 20 percent of the dry land area is suitable for agriculture, with the remaining 80 percent being

⁴Ministry of Lands and Physical Planning. (2017). Sessional Paper No. 1 of 2017 on National Land Use Policy. Nairobi: Ministry of Lands and Physical Planning.

desert and semi-arid regions. The agricultural sector is the economic foundation of Kenya. The agricultural sector employs more than 40 percent of the population and contributes 30 percent to the Gross Domestic Product (GDP)⁵. The Food and Agriculture Organization in Kenya reports that more than 40 percent of the workforce and more than 70 percent of Kenya's rural residents are employed in this sector [26].

Given the importance of agriculture to the Kenyan economy, the government has implemented various projects aimed at accelerating the productivity of the sector. One of these is the Kenya Agricultural Productivity and Agribusiness Project (KAPAP) which was implemented between 2010 and 2016 and has also been very effective. The government-led initiative known as the Kenya Agricultural Productivity Project (KAPP) was aimed at increasing the productivity and income of smallholder farmers through the introduction of modern technologies and practices. With this initiative, 70,000 farmers received training, 1200 agribusinesses were launched, and over 20,000 individuals were provided with the chance to find gainful employment. Modern agricultural technology adoption was boosted, and farmers' access to new markets was strengthened thanks to this program. Smallholder farmers saw considerable gains in both their yields and their incomes as a result of the project. For instance, yields of maize climbed by 78 percent, and yields of potatoes increased by 83 percent over the same period. Farmers have also reported improvements in their access to markets and financing, both of which have led to increased incomes and a poverty reduction.

Another notable agricultural project in Kenya was initiated by the National Irrigation Board of Kenya to boost agricultural output and generate new jobs. The Mwea Irrigation Scheme is one of Kenya's largest irrigation systems, the scheme covers 30,000 hectares and irrigates a total of 6000 hectares only. According to [27] the irrigation scheme which caters to approximately 50,000 people in 36 villages has provided employment opportunities to more than 20,000 individuals, and improved rice production in the country.

4.2.3. Namibia Green Scheme Program (GSP)

The Republic of Namibia lies on the southwestern coast of Africa, it is an arid country with a total land area of 824,268 km² and a population of 2.5 million inhabitants. In the majority of the country, drought is a perennial problem, and the dearth of water is an ever-present constraint. This climate limits the potential for arable agriculture, limiting the agricultural potential to livestock farming and high-value commodities such as dates and grapes, which are targeted for export. Over the years the country has relied on the agriculture sector for employment creation and food security, and consequently, the sector makes a significant contribution to GDP.

The green scheme initiative aims to maximize irrigation prospects in the central, northern, and north-eastern regions by utilizing the Kunene, Zambezi, and

⁵Kenyan Ministry of Agriculture, Livestock, Fisheries and Irrigation, "Agricultural Sector Transformation and Growth Strategy".

Kavango rivers, and to develop agro-projects in the south by utilizing the Orange River and the Naute, Hardap, and Neckartal dams. With the promotion of small-scale irrigation agriculture, the Green Scheme Program (GSP) further aims to promote food security and decrease poverty. According to [28] who investigated the difficulties small-scale farmers experience in the Namibian Green Agricultural Schemes (GAS), the Namibian government embarked on GASs to boost the productivity of agricultural resources, the primary source of income for the vast majority of the poor.

In addition, Shapi [28] asserts that the presence of nearby perennial rivers such as The Zambezi River, Kunene River, and Okavango 5 River presented opportunities for the GASs in the Northern regions, and the presence of the Orange River, Naute Dam, Hardap Dam, and Neckartal Dam in the Southern region.

From 2005 to 2015, the initiative sponsored the building of small-scale irrigation systems for subsistence and commercial agriculture. However, the project faced numerous obstacles, including insufficient funding, a lack of infrastructure, and limited market access. Notwithstanding these obstacles, the project was effective in providing over 5000 people with work possibilities and enhancing food security in rural areas. The initiative taught vital lessons on the necessity of proper infrastructure and market connections to support the sustainability of agricultural projects [29].

4.2.4. Rwanda's Land Husbandry, Water Harvesting, and Hillside Irrigation (LWH)

According to FAO, Rwanda has the second-greatest population density in Africa, with 441 people per square kilometer, as such the country has limited space for farmland. The country experiences a long dry season from June to August with heavy rainfall between March and May. Despite the IS, 70 percent of Rwanda's populace is engaged in agriculture, and approximately 72 percent of the country's labor force is employed in the sector. The agricultural sector contributes 33 percent to the national gross product. Since 2014, Rwanda's GDP has grown on average by 7 percent per year (FAO).

The Land Husbandry, Water Harvesting, and Hillside Irrigation (LWH) project sought to enhance soil and water conservation, boost agricultural output, and alleviate poverty. The project was executed between 2000 and 2010 and funded the construction of terraces, water collection structures, and hillside irrigation systems. According to Global Agriculture and Food Security, at project completion, the World Bank rated LWH "satisfactory." LWH helped 280,000 farmers, half of whom were women, over five years and increased productivity and commercialization. The project also irrigated 1356 hectares, safeguarded 88 percent of steep terrain from soil erosion, and reduced sediment yield or soil washed down from mountainous slopes during heavy rain by 89 percent. LWH significantly improved access to formal financial products, such as committed savings accounts; by mid-2016, about 80 percent of beneficiaries were utilizing

formal financial services, up from 20 percent at baseline. Helping to develop and build 2624 self-help groups with 15 - 25 farmer members each, the initiative bolstered farmer organizations so that they could more effectively assist farmers in their transition to higher value chain activities. Through nutrition awareness training and the construction of 47,611 kitchen gardens, the project improved the composition of people's diets and, by extension, their nutritional status. As a result, by mid-2016, around 83 percent of households were consuming a diet consisting of foods from multiple food groups⁶. The project encountered numerous obstacles, such as inadequate funding and a lack of adequate infrastructure.

4.2.5. Uganda

Located East of Africa Uganda is a landlocked country that is home to 45.7 million people according to a 2020 World Bank report. Uganda's agricultural potential is among the finest in Africa due to the country's low-temperature variation, fertile soils, and two rainy seasons, which result in multiple crop harvests per year⁷. Although about 80 percent of Uganda's land is arable, only 35 percent is being farmed. According to the Food and Agriculture Organisation of the United Nations (FAO), Uganda's agricultural land is capable of feeding 200 million people. Agriculture contributed approximately 24.1 percent of GDP and 33 percent of export revenues in FY2021/22. The Uganda Bureau of Statistics (UBOS) estimates that approximately 70 percent of the working population of Uganda is engaged in agriculture.

To improve oilseed production and processing in Uganda, the Vegetable Oil Development Project (VODP) was developed in 1997 and ran until June 2012. The project's overall purpose is to boost the cash income of smallholders by rejuvenating and expanding domestic vegetable oil production in collaboration with the business sector [30]. The project has successfully increased oilseed output and created employment opportunities. According to the evaluation conducted by (IOE) in 2009, over 6000 hectares of arable land were made available for the project, of which 5600 hectares were planted with oil palm. Infrastructure and approximately 1500 laborers were in place on the plantation. The project gave farmers training in better farming techniques and market access for their produce. The project was also successful in increasing the earnings and productivity of the participating farms, with some farmers claiming a 60 percent rise in incomes. However, IOE [30] revealed that the project has encountered obstacles such as insufficient finance, low adoption of modern technology, and inadequate infrastructure upkeep.

Another successful project in Uganda is the Agricultural Cluster Development Project (ACDP), which aims to increase agricultural productivity and market access for small-scale farmers. The project equipped more than 100,000 farmers through training and created 1000 farmer associations. The project also supplied

⁶Global Agriculture Food Security Program (GAFSP).

⁷International Trade Organization: Uganda-Country Commercial Guide, 2022.

infrastructure such as roads, water points, and market centers, thereby enhancing farmers' access to markets. According to a 2017 World Bank report, the project has enhanced agricultural output and created jobs for more than 20,000 people.

The projects analyzed in the 5 countries under study, revealed the impact that agricultural projects have on food security and employment creation, and the potential that agriculture has in improving the living conditions of poor and vulnerable communities. While the initiatives analyzed have been successful in enhancing the productivity and incomes of small-scale farmers, they have also encountered difficulties in gaining access to funding and infrastructure, sustaining the advantages beyond the duration of the project, and entering the market. The lessons learned from these projects provide invaluable insight into the elements that contribute to the success or failure of agricultural projects, such as the necessity for continued assistance beyond the duration of the project and access to financing and infrastructure. This paper will provide policy implication recommendations that can equip policymakers and all agents of development in the region with decisions related to solving the issue of food insecurity and unemployment.

5. Challenges in African Agriculture

Although the importance of agriculture to developing economies cannot be overstated, the sector faces several challenges that hinder its ability to reach its full potential. One of the most significant obstacles is *financial constraints*. Many African countries experience weak economic performance, resulting in limited national budgets that must be divided among several other developmental priorities aimed at improving the living standards of the people and accelerating development. As a result, only a small portion of the national budget is allocated to agriculture, which is crucial to the sector's success. Investment is critical to the sector's growth and determines its production. As analyzed in the case of Malawi, investment into agriculture improved the maize production of Malawi and resulted in improvement for the sector.

African agriculture further faces the challenge of *climate change*. Due to changing climate conditions and depleted land nutrients, many families are struggling to maintain a consistent food supply. Most agricultural lands are rainfed, making productivity dependent on the season's rainfall. This results in a decline in farmers' productivity during seasons of drought, which not only affects crop farmers but also livestock farmers, whose livestock often die due to harsh climate conditions and a lack of water and food. Moreover, the ever-increasing food prices are a significant concern for African economies as many individuals are unable to afford the food necessary to lead healthy lives. This highlights the urgent need to address the root causes of these issues, such as climate change and unsustainable farming practices, to ensure food security and economic stability in these regions.

There is a prevailing perception among young people in Africa that agriculture is unappealing, and as a result, few are interested in taking on the responsibility of farming. This negative perception of the industry has led to a lack of investment and attention being directed toward it, ultimately contributing to the poverty that many African farmers are currently experiencing.

6. Opportunities in African Agriculture

Despite the immense potential that the agriculture sector holds, it remains underutilized, with many of its benefits left unexplored. One of the key areas where agriculture can be improved is through the adoption of modern farming practices. For instance, the use of precision agriculture, which involves the use of technology to optimize crop yields, reduce waste, and minimize environmental impact. Precision agriculture has been proven to increase productivity and reduce the use of resources such as water and fertilizers.

Another area that requires improvement is the distribution and access to agricultural inputs such as seeds, fertilizers, and pesticides. Many small-scale farmers in developing countries face challenges accessing these inputs due to high prices and inadequate infrastructure. Governments and development partners can play a critical role in addressing these challenges by investing in agricultural extension services and supporting the development of efficient supply chains.

Furthermore, investing in agriculture can lead to increased productivity, value addition, and profitability. Modern agricultural practices, such as improved seeds, irrigation, mechanization, and better farming techniques, can increase yields and improve the quality of crops. This can lead to higher incomes for farmers and reduce the reliance on food imports, which is a significant drain on the economy. By promoting agricultural development, African countries can also create a favorable business environment, attract investments, and build resilience against external shocks such as climate change.

Agriculture is a major force in many African economies, yet it is not given the same political support and financial investment as the mining sector. If it were, it could create more jobs with better wages and provide nutritious meals to millions of people⁸.

7. Policy Recommendations

Agriculture is critical to the economic development of many developing economies, but financial constraints pose a significant challenge. To overcome this challenge, developing economies must prioritize agricultural investment and create a favorable investment climate that encourages private investment and attracts foreign investment. African governments spend less than 10 percent of their public budgets on agriculture [8]. Hence, additional agricultural investment financing through domestic sources alone is not only difficult but also not

⁸Africa Renew. United Nations Department of Public Information 2014.

strategic [9]. As such Foreign Direct Investment (FDI) can play an important role in supplementing the investment need in African Agriculture.

Investing in the agriculture sector is a key strategy for achieving sustainable economic development in these countries. By improving productivity, diversifying crops, increasing access to markets, and adopting modern agricultural practices, the sector can be made more efficient and profitable. This will not only benefit farmers and other stakeholders but also contribute to broader economic growth and poverty reduction. The case study of Malawi serves as a compelling example of how investment in the agriculture sector can yield positive outcomes not only for the economy but also for the overall well-being of the population. Through a series of bold policy initiatives and innovative programs, Malawi was able to transform itself from a country plagued by food insecurity to a food-sufficient nation.

Additionally, it is important to challenge the negative stereotypes associated with agriculture and highlight its potential as a profitable and sustainable industry. Governments and other stakeholders must invest in policies and provide support to farmers to help them modernize their practices and increase their yields. This can be achieved through initiatives such as training programs, access to finance, and improved market linkages.

It is also crucial to promote the sector as a viable career option for young people, by emphasizing the opportunities for innovation and entrepreneurship in agriculture. By changing the perception of agriculture and investing in its potential, we can create a more sustainable and prosperous future for farmers and communities across Africa. New and creative methods for encouraging young people to participate in agriculture could greatly reduce poverty among both youths and adults. By adopting a comprehensive strategy that tackles issues such as education, land ownership and usage, financial services, market access, green employment opportunities, and policy involvement, the agricultural industry could become more appealing to young people. This approach could provide the extra incentive necessary for them to join the sector [31].

Improve credit access, credit availability can assist farmers in investing in advanced farming technologies, boosting output, and expanding their operations. Governments can give commercial banks guarantees to increase smallholder farmer loans. The government of Kenya has created a credit guarantee program for smallholder farmers.

Building infrastructure, and improving rural infrastructure such as roads, irrigation systems, and storage facilities can assist farmers in transporting their produce to markets and minimizing post-harvest losses. To increase access to markets and services in rural areas, the Zambian government has begun constructing rural roads.

To increase market accessibility, farmers must have access to marketplaces to sell their products and generate cash. To add value to agricultural products, governments can assist in the establishment of market links, give farmers market information, and support the growth of agro-processing enterprises. In Nigeria,

the government has created the Presidential Fertilizer Initiative to raise crop yields and improve fertilizer distribution to farmers.

Encourage climate-smart agriculture, Climate-smart agricultural strategies, such as conservation agriculture, agroforestry, and crop diversification, can assist farmers in adapting to climate change and reducing greenhouse gas emissions.

8. Conclusions

The importance of Agriculture to African countries cannot be overstated, it is a source of income and food for many in these countries. The sector employs more people in all the countries analyzed than any other sector, making it a crucial sector for the development of the region. Despite its importance and the role it plays in the course of human development, the sector is faced with various challenges that hinder it from reaching its full potential. Given the economic status of these countries, they are unable to acquire all the needed equipment and technology necessary for better farming practices.

The sector has the potential that if harnessed can help lift people from extreme poverty and help countries reach their development goals. Improved agricultural efficiency and output have the potential to alleviate hunger and malnutrition on the African continent. This, in turn, can boost the general population's health and well-being, laying the groundwork for economic expansion. To keep up with the rising demand for food and contribute to long-term economic growth, agriculture is a crucial industry that must undergo constant refinement. The agricultural sector can be made more efficient and sustainable by the implementation of modern farming practices, the expansion of access to agricultural inputs, and the increase of investment in R & D.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- [1] Diao, X.S., Hazell, P. and Thrown, J. (2010) The Role of Agriculture in African Development: Implications for Sub-Saharan Africa. *World Development*, **38**, 1375-1383. <https://doi.org/10.1016/j.worlddev.2009.06.011>
- [2] International Monetary Fund (2012) International Jobs Report, Economist Intelligence Unit. Washington DC.
- [3] Forsyth, D.J.C., Ross, A.C. and Huq, M. (2019) Development Economics. McGraw-Hill Education, Glasgow.
- [4] Rukuni, M. (1995) Getting Agriculture Moving in Eastern and Southern Africa and a Framework for Action. The 2020 Vision for Food, Agriculture and the Environment in Sub-Saharan Africa, Washington DC.
- [5] United Nations (2017) World Population Prospects, 2017 Revision. New York.
- [6] Fine, D., *et al.* (2012) Africa at Work: Job Creation and Inclusive Growth. McKinsey

Global Institut, Boston.

- [7] Jayne, T., Yeboah, F.K. and Hendy, C. (2017) *The Future of Work in African Agriculture: Trends and Drivers of Change*. International Labor Organization (ILO), Geneva.
- [8] Cleaver, K. (2012) *Investing in Agriculture to Reduce Poverty and Hunger: Scaling up in Agriculture, Rural Development, and Nutrition*. International Food Policy Research Institute, Washington DC.
- [9] Brzeska, J., *et al.* (2012) *Strategies and Priorities for African Agriculture: Economy-Wide Perspectives from Country Studies*. International Food Policy Research Institute, Washington DC.
- [10] Sibhatu, K.T. and Matin, Q. (2017) Rural Food Security, Subsistence Agriculture, and Seasonality. *PLOS ONE*, **12**, e0186406. <https://doi.org/10.1371/journal.pone.0186406>
- [11] Mankombu, S.S., Rajul, P.L. and Sivan, Y. (2013) *Agriculture and Food Security*.
- [12] World Health Organization (2021) *Malnutrition*. Geneva.
- [13] Food and Agriculture Organization (2015) *Climate Change and FOOD Security: Risks and Responses*. Rome.
- [14] Tilman, D. and Clark, M. (2014) Global Diets Link Environmental Sustainability and Human Health. *Nature*, **515**, 518-522. <https://doi.org/10.1038/nature13959>
- [15] Akolgo, A.I. (2018) Agenda 2030 in Sub-Saharan Africa: What the Millennium Development Goals' Narrative Teaches about Poverty Eradication. *African Review and Economic Finance*, **10**, 3-22.
- [16] Lydia, M. (2018) *Is Agriculture the Engine of Economic Growth?* National Planning Commission, Windhoek.
- [17] Johnston, B.F. and Kilby, P. (1975) *Agriculture and Structural Transformation: Economic Strategies in Late-Developing Countries*. Oxford University Press, New York.
- [18] Pretty, J., Toulmin, C. and Williams, S. (2011) Sustainable Intensification in African Agriculture. *International Journal of Agricultural Sustainability*, **9**, 5-24. <https://doi.org/10.3763/ijas.2010.0583>
- [19] World Bank World Development Report (2008) *Agriculture for Development Policy Brief*. Washington DC.
- [20] Headey, D., Bezemer, D. and Hazell, P.B. (2010) Agricultural Employment Trends in Asia and Africa: Too Fast or Too Slow? *The World Bank Research Observer*, **25**, 57-89. <https://doi.org/10.1093/wbro/lkp028>
- [21] Schultz, T.W. (1966) Transforming Traditional Agriculture: Reply. *Journal of Farm Economics*, **48**, 1015-1018. <https://doi.org/10.2307/1236629>
- [22] Njonjo, M.W., Muthomi, J.W. and Mwang'ombe, A.W. (2019) Production Practices, Postharvest Handling, and Quality of Cowpea Seed Used by Farmers in Makeni and Taita Taveta Counties in Kenya. *International Journal of Agronomy*, **2019**, Article ID: 160753. <https://doi.org/10.1155/2019/1607535>
- [23] Chinsinga, B. (2011) Seeds and Subsidies: The Political Economy of Input Programmes in Malawi. *IDS Bulletin*, **42**, 59-68. <https://doi.org/10.1111/j.1759-5436.2011.00236.x>
- [24] Dorward, A. and Ephraim, C. (2011) The Malawi Agricultural Input Subsidy Programme: 2005/06 to 2008/09. *International Journal of Agricultural Sustainability*, **9**, 232-247. <https://doi.org/10.3763/ijas.2010.0567>

- [25] Brooks, S. and Loevinsohn, M. (2011) Shaping Agricultural Innovation Systems Responsive to Food Insecurity and Climate Change. *Natural Resources Forum*, **35**, 185-200. <https://doi.org/10.1111/j.1477-8947.2011.01396.x>
- [26] Food and Agriculture Organization (n.d.) Food and Agriculture Organization of the United Nations Kenya at Glance.
- [27] Wanjiku, M.W. (2013) Irrigation System Management and Food Security in Kenya: Case Study of Mwea Irrigation Scheme.
- [28] Shapi, M.K. (2017) Contemporary Challenges Facing the Small Farmers in the Green Scheme Projects in Namibia. *Sustainable Agriculture Research*, **6**, 1. <https://doi.org/10.5539/sar.v6n3p1>
- [29] Haushiku, S.F.R. (2021) An Assessment of Agricultural Green Schemes in Kavango East Region In Namibia. Ph.D. Thesis, University of Free State, Bloemfontein.
- [30] Independent Office of Evaluation (2011) Vegetable Oil Development Project. International Fund for Agricultural Development, Rome.
- [31] Food and Agriculture Organization, Technical Centre for Agricultural and Rural Cooperation, and International Fund for Agricultural Development (2014) Youth and Agriculture: Key Challenges and Concrete Solutions. Food and Agriculture Organization Publications, Rome.