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A Review of the Strategies for Promoting Sustainable Agricultural Production and Family Food Security in Nigeria

***Okadi, A.O.[1], & Agu, R.I.[2]**

[1]Department of Agricultural Education, University of Nigeria, Nsukka, Enugu State

[2]Department of Home and Rural Economics, Federal Polytechnic, Oko, Anambra State

***Corresponding author:** ashagwu.okadi@unn.edu.ng

Abstract

The need to provide unrestricted access to quality food and ensure nutrition security for all citizens has been at the forefront of the development agenda of all countries across the globe. Considering the cardinal role of agriculture in ensuring sustainable family food and nutrition security, goal number two of the United Nations Sustainable Development Goals (SDGs) is focused on the need to "End hunger, achieve food security and improved nutrition, and promote sustainable agriculture production". This paper reviewed the strategies for promoting sustainable agricultural production and family food security in Nigeria. A literature search was conducted through databases such as Scopus, ISI Web of Knowledge, google scholar, directory of open access journal (DOAJ), and research gate. The search terms included keywords such as food security, strategies for promoting food security, sustainable agricultural production, family food security, sustainable production, and Nigeria among others. A total of 108 results were returned from the search, 72 papers were relevant to the study, while the authors were unable to access 11 of the papers. The authors assessed the full texts of all the available articles through narrative synthesis following laid down eligibility criteria. The results revealed that several studies have been conducted on the strategies for promoting sustainable agricultural production and family food security in Nigeria. Several recommendations were made among which is the need to repurpose agricultural development policies, empower small-scale farmers, adopt sustainable agricultural practices, promote all-season agricultural production, and provide modern agricultural food processing and storage facilities.

Keywords: Food security; Agricultural production; Family, Sustainable strategies; Agricultural promotion

Introduction

Nigeria is one of the largest countries in sub-Saharan Africa in terms of its landmass, population size and economy. According to the United Nations Department of Economic and Social Affairs, Population Division (2022), Nigeria's population is estimated to range from 200.96 million to 206 million. One cardinal challenge faced by the Nigerian government as well as other governments globally is the need to provide unrestricted access to quality food and ensure nutrition security for all citizens and achieve this on a sustainable basis. The threat of hunger and starvation has been on the increase globally, threatening food security at various levels. The FAO (2022) reported that the number of people going hungry and suffering from moderate or severe food insecurity was already on the increase from 2014 until 2019, and took a sharp upturn in 2020 due to the COVID-19 pandemic. The FAO (2022) observed that the Covid-19 pandemic may have pushed up to 210 million more people into the group of those who suffer from hunger. This trend persisted through 2021 and 2022 as the food supply system and food chain were disrupted; coupled with a general slowdown in the economy globally. The agriculture sector which is seen as key to attaining food security has been adversely affected in many parts of the world leaving a gap in the food system.

In Nigeria, the story is not any different as the State of Food Security and Nutrition in the World (SOFI) (2021) reported that about 29.4 million people were undernourished in the 2018-2020 period, with a similar pattern concerning food security where the percentage of the population living under moderate or severe food insecurity has risen steadily from 36.5% in 2014-2016 to 57.7% in 2018-2020. This implies that slightly more than half of Nigerians, or over 100 million people, report at least a moderate form of food insecurity. Nigeria has been suffering from food insecurity and poverty, with a steady increase in the prices of food over the years and deterioration in the living standard, with a consequent decline in the income of most people which can no longer sustain them in families.

Bearing in mind the cardinal place of agriculture in ensuring sustainable family food and nutrition security, goal number two of the United Nations Sustainable Development Goals (SDGs) is focused on the need to "End hunger, achieve food security and improved nutrition, and promote sustainable agriculture production". According to FAO (2018), a sustainable agriculture sector can help achieve multiple Sustainable Development Goals (SDGs), hence according to Mollier et al., (2017); and the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and United Nations Environment Programme (UNEP) (2021), properly nourished children can learn, people can lead healthy and productive lives and societies can prosper. By nurturing our land and adopting sustainable agriculture, present and future generations will be able to feed a growing population.

The FAO, IFAD, UNICEF, WFP and WHO (2022) posited that meeting the targets of SDG 2 by 2030 requires that the agricultural food systems must be transformed in ways that ensure they deliver lower-cost and safe nutritious foods that make healthy diets more affordable for all, sustainably and inclusively. According to FAO, IFAD, UNICEF, WFP, and WHO (2022), the agricultural food system encompasses both agricultural and food systems and focuses on both food and non-food agricultural products, and encompasses the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption, and disposal of food products. They comprise all food products that originate from crop and livestock production, forestry, fisheries, and aquaculture, as well as the broader economic, societal, and natural environments in which these diverse production systems are embedded. The transformation of the agricultural food systems for sustainability and inclusivity holds the key to sustainable food security both at national, regional, and global levels.

Despite several studies and efforts by governments at various levels to ensure food security for all, food insecurity continues to be a threat. According to FAO (2022), the world tends to be moving in a different direction with eight years remaining to end hunger, food insecurity, and all forms of malnutrition (SDG Targets 2.1 and 2.2), and promote sustainable agriculture production. This paper posits that agriculture holds the key to sustainable food security at both the family, national, and global levels, and a key driver for the attainment of the other SDGs, hence the need to review the strategies for promoting sustainable agricultural production for family food security. This is expected to generate the required information to guide policy decisions in the agricultural food system and value chain. The objectives of this article are to:

1. Review the concept and need for food security and sustainable agricultural production.
2. Review the challenges to food security and sustainable agriculture in Nigeria
3. identify the efforts of the Nigerian government to achieve food security
4. Review the strategies for promoting sustainable agricultural production in Nigeria

Methodology

This review work adopted a comprehensive literature search/library-based study and dwelt wholly on secondary information sources using descriptive techniques. A comprehensive literature search was conducted using search engines/databases such as Scopus, ISI Web of Knowledge, google scholar, directory of open access journal (DOAJ), and research gate. The search terms included keywords such as food security, strategies for promoting food security, sustainable agricultural production, family food security, sustainable production, and Nigeria among others. A total of 108 results were returned from the search, 72

papers were relevant to the study, while the authors were unable to access 11 of the papers. The authors assessed the full texts of all the available articles through narrative synthesis following laid down eligibility criteria. The authors reviewed the literature and the result of the review is presented in this article under various sub-headings.

Theoretical Framework

The theoretical framework that births this review is the Malthusian theory on population growth. Thomas Robert Malthus (1766-1834) in the 18th century, warned that the population of the world would exceed the earth's capacity to grow food. In his theory on population growth, Malthus posits that population grows in geometrical progression while food production grows in arithmetical progression. This theory has maintained its usefulness over the years in discussions on hunger, the world's population-carrying capacity, and the need for increased agricultural technology to sustain food security. Malthus stressed that population increases most especially among the poor because they breed too rapidly and deprive the rest of the population of food. By implication, famine is seen as a natural defence against overpopulation.

This theory fits into the food situation in Nigeria. According to Ammani et al., (2015), Nigeria's population has increased steadily from 55 million according to the 1963 census figures, to 140 million in the 2006 national census to an estimated more than 170 million in 2015. The FAO (2021) notes that the country's population will reach 400 million by 2050. This rapid population growth has increased substantially the demand for food in the country. Current food production in the country is however far below the increase in the population thus the relevance of the Malthus theory to the Nigerian situation.

Concept and Need for Family Food Security

Food security is a concept that has been variously defined by scholars and authors. According to Economic Intelligence Unit [EIU] (2018), food security is a complex, multifaceted concept usually influenced by culture, environment, and geographical location. According to the FAO (2022), food security connotes a situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life. FAO (2022) describe food security from the above perspective to encompass four dimensions: food availability, economic and physical access to food, food utilization, and stability over time. Perez-Escamilla et al. (2017) citing the Food and Agriculture Organization of the United Nations (FAO) gave a clear definition of "food security at five different levels - individual, household, national, regional, and global levels.

The High-Level Panel of Experts (HLPE) (2020) of the Committee on World Food Security described in detail the four key dimensions of food

security and added two additional dimensions – agency and sustainability. The availability dimension addresses whether or not food is actually or potentially physically present, including aspects of production, food reserves, markets and transportation, and wild foods; while access – describes whether or not households and individuals have sufficient physical and economic access to that food. Food utilization considers whether or not households are maximizing the consumption of adequate nutrition and energy; while stability is the condition in which the whole system is stable, thus ensuring that households are food secure at all times. According to the HLPE (2020), stability raises issues related to short-term instability which can lead to acute food insecurity, or medium to long-term instability which can lead to chronic food insecurity. Agency refers to the capacity of individuals or groups to make their own decisions about what foods they eat; what foods they produce; how that food is produced, processed, and distributed within food systems; and their ability to engage in processes that shape food system policies and governance. Sustainability refers to the long-term ability of food systems to provide food security and nutrition in a way that does not compromise the economic, social, and environmental bases that generate food security and nutrition for future generations (HLPE. 2020). The issue of sustainability calls to question the sustainability of the entire agricultural food system.

The absence of one or more of the dimensions or components of food security may technically be referred to as food insecurity. According to FAO (2008) and Jones et al. (2013), food insecurity is conventionally classified into two categories; chronic and transitory, while seasonal food insecurity falls in between the two. Chronic food insecurity is a long-term or persistent situation where people can no longer meet their minimum food requirement over a sustained period while transitory food insecurity is commonly short-term or temporary and it relates to short periods of extreme scarcity of food availability and access (Barrett and Sahn, 2001; Hart, 2009; Afolabi et al. 2018).

Food security at all levels is essential because food is a necessity for human beings. According to FAO (2018), properly nourished, children can learn, people can lead healthy and productive lives and societies can prosper. Food security can thus be said to form the basis for human prosperity. When a society has ample food, the citizens tend to lead a happier and more fulfilling life and an enhanced standard of devoid of health and societal ills. According to Amaechi (2018), food security presents a favourable image of a people and country to the international community and contributes to creating a veritable atmosphere for healthy governance.

Concept and Need for Sustainable Agriculture Production in Nigeria

The principal goals of agricultural production globally are to produce adequate foods, fibres, and industrial raw materials to satisfy the needs of the increasingly growing population.

Several strategies, methods, and techniques are devised to achieve the goals. These strategies, methods, and techniques vary from one community or nation to another but generally may encompass increasing the area under cultivation, adopting higher yielding varieties of crops, increasing the use of chemical fertilizers and other forms of manures, developing and use of irrigation technologies, mechanization of agricultural processes, and the practice of multiple cropping among others.

Agricultural production generally depends on the environment for the basic resources required and in turn produces varying effects on the resources in the process of their utilization. According to Xu et al. (2021), agriculture plays key roles in the health of the environment such as driving climate change, by accounting for about 37 per cent of anthropogenic greenhouse gas emissions. Benton et al. (2021) added that agriculture production contributes to deforestation and declining biodiversity; while Kanter et al. (2020) observed agriculture's contribution to air and water pollution. The contributions of agriculture production to soil degradation; driving the emergence and/or spread of disease and the role in antimicrobial resistance have been respectively identified by Lal (2019) and Amuasi, Lucas, Horton, and Winkler (2020).

To minimize the deleterious consequences of agriculture on the environment and ensure sustainable food production, target 2.4 of the SDGs is focused on ensuring sustainable food production systems and implementing resilient agricultural practices that increase productivity and production, help maintain ecosystems, strengthen capacity for adaptation to climate change, extreme weather, drought, flooding, and other disasters and that progressively improve land and soil quality (FAO, 2018). Sustainable agriculture, therefore, helps to promote the quality and health of the critical resources required for agrifood production and is central to the 2030 Agenda for Sustainable Development. According to Zero Hunger Challenge, 2016), sustainable agriculture is a key aspect of the food system that contributes to enhancing farm incomes and household food security, especially in developing countries.

Sustainable agriculture is principally focused on actions intended to protect the environment, natural capital, and the ecosystem from deterioration, and at the same time ensure maximum and consistent crop yields. According to Iniodu (1997), sustainable agriculture aims at resource improvement and at preventing long-term reduction in the productivity of resources and promoting intergenerational equity. Sustainable agriculture promotes natural processes, minimizes waste, conserves the environment, and ensures profitability. When an agriculture system is sustainable, the products will be nutritious, and free from contamination by substances that may be unsafe for human consumption. Sustainable agriculture promotes an eco-friendly environment which is achieved largely by avoiding the use of dangerous inputs that have

damaging effects on the agriculture production resources and promoting their long-term usefulness and productivity.

The Challenges to Achieving Food Security and Sustainable Agriculture in Nigeria

1. Decreasing farm sizes – the decrease in the average farm sizes is a result of the rapid increase in population growth (Barbier & Hochard, 2018). As the population increases as foretold by Thomas Malthus in his theory of population growth without a corresponding increase in the area available for agricultural production, the available land will become fragmented.
2. The impacts of climate change – have caused the degradation of the environment, poor yields, lower farm incomes, food insecurity, and poverty among others (Dillon & Barrett, 2017).
3. Drought - according to the Ministry of Agriculture and Water Resources, a key factor that accounts for the food crisis in Nigeria is the total reliance on rain-fed agriculture. The contribution of irrigation agriculture is very minimal as the country has not taken full advantage of its irrigation potential estimated between 2.0 - 2.5 million hectares".
4. Flooding - excessive rain has also contributed significantly to the current hike in food prices.
5. Low and inappropriate use of fertilizers, and other farm inputs
6. The neglect of the agricultural sector. The agriculture sector in Nigeria has been largely neglected and has not received up to 10 per cent allocation in the federal budget in any given year as stipulated in the minimum requirement according to the Maputo Declaration of sufficient food production. The budgetary allocation has been significantly lower than this at 1.7% in 2017, 2.0% in 2018, 1.56% in 2019, 1.34% in 2020, and 1.37% in 2021 (Izuaka, 2021).

Ekpu (2009) presented the following as obstacles to sustainable agriculture and food security:

- Policy instability, that is, the frequent changes of policies on agriculture as one government replaces another. On each occasion, Nigeria has always had to start afresh.
- Agriculture is still regarded as a vocation for the illiterates in rural areas who have nothing better to do. The big farmers – politicians, retired generals, and businessmen – engage largely in crops or animal cultivation that are not common staples. They have pineapple plantations, ostrich, and other exotic farms that add nothing to our quest for food security. The lack of mechanized farming is certainly something to worry about.
- Improper administration of the agriculture credit scheme
- Corruption which has been a serious problem in the country has not left agriculture untouched. The river basins, dams, silos, and fertilizer

contracts have, over the years, been dripping with corruption.

- Many women are small-scale farmers; in fact, they form the bulk of the farming constituency but hardly are they consulted on policy and or gender issues that affect agriculture, land ownership, and or usage.
- Farmers are not well remunerated for their products. Nigeria produces the largest quantities of cassava, yams, and cocoyam in the world, but the impact on their income is minimal and this tends to discourage them.
- Fertilizer is an important ingredient for improved yield but Nigeria plays politics with it. The people who get fertilizer allocations hardly have farms; they only have party cards.

Efforts of the Nigerian Government to Promote Food Security

Several agricultural development projects and empowerment programs have been initiated all aimed at providing a conducive environment for players in the agricultural food production value chain to increase their productivity. Some of the efforts according to IITA (2017); Olomola (2017); Olomola and Nwafor (2018) and Otekunrin et al. (2019) are summarized below:

- **National Accelerated Food Production Programme (NAFPP) –** the NAFPP was introduced by both the Federal and state governments to facilitate the production of grains such as maize, rice, guinea corn, millet, wheat, cassava, and cowpeas among others (Daneji, 2011). The programme was based on the notion that when these are produced bountifully, it will help to address the problem of hunger and related food crisis.
- **River Basin Development Authority (RBDAs) -** The RBDAs were designed to provide irrigation facilities through the construction of dams for all-year-round agricultural production, provision of potable water to people in rural areas for increased production, assisting to bring more land under cultivation by increasing the farm size of small-scale farmers through the provision of land clearing services using government tractor hiring services at minimum charges, construction of feeder roads to the rural areas for good transportation, improving the rural areas infrastructures, generally to help stem the rural-urban migration.
- **Green Revolution Programme (GR)** – under the GR, farmers were provided with several incentives to boost their production level. The programme covered both livestock and crop components and the reorganization of the research institutes to make them more responsive to the need of the sector.
- **Operation Feed the Nation (OFN) –** The OFN was designed to address the issues associated with the rising food crisis, rural-urban migration, and increasing food imports. The OFN mobilize and motivated the general public to participate actively in agricultural production through the subsidization of production inputs, increased bank credit to farmers, the establishment of commodity boards, and the fixing of

attractive prices for agricultural produce.

- **Agricultural Development Projects (ADPS):** The Agricultural Development Projects came in 1975, after a bilateral agreement between the Federal Government of Nigeria and the World Bank. The two Basic aims and Objectives that ADPS were meant to achieve include, increased food production and raising of income of the small-scale farmers, with the ultimate goal of improving their standards and welfare.
- **Directorate for Food and Rural Infrastructure (DFFRI)** - The programme was designed to improve the quality of life and standard/level of living of rural dwellers. Its focus was on the improvement in nutrition, housing, health, employment, road, water, industrialization, etc. through the use of resources that exist in the rural areas and mass participation of the rural people in productive ventures.
- **National Agricultural Land Development Authority (NALDA)** - NALDA was aimed at providing strategic support for land development, assisting and promoting better uses of Nigeria's rural land and its resources, boosting profitable employment opportunities for rural dwellers, raising the level/standard of living of rural dwellers, target and assist in achieving food security through the promotion of self-reliance and sufficiency.
- **National Fadama Development Project (FDP)** The first national Fadama Development Project (NFDP-1) was designed in the early 1990s to promote simple low-cost improved irrigation technology under World Bank financing. The main objective of NFDP-1 was to sustainably increase the incomes of the Fadama users through the expansion of farm and non-farm activities with high value–added output. The scheme was designed to improve the flooded plains of Savannah (Fadama). The relative success of Fadama – 1 led to the establishment of Fadama II and Fadama III.
- **National Special Programme for Food Security. (NSPFS) -** The programme aimed to attain food security and alleviate rural poverty in Nigeria. It is aimed at helping farmers to increase output and income, strengthen extension service delivery, promote simple farm technologies, and utilize land, water, and other resources for food-productive ventures (Iwuchukwu and Igbokwe, 2012).
- **Nigerian Agricultural and Co-operative Bank –** the NACB was developed to provide credit for the development of agriculture and other agro-allied industries, including the marketing of agricultural products. Unlike other financial institutions, NACB assists all its clients "to adopt modern agricultural technologies and good management practices through advice from specialists among its staff" (NACB, 1986).
- **Root and Tuber Expansion Programme (RTEP)** - was designed to address the problem of food production and rural poverty. At the

local farmer's level, the programme hopes to achieve economic growth, improve access of the poor to social services and carry out intervention measures to protect poor and vulnerable crops. At the national level, the programme is designed to achieve food security and stimulate demand for cheaper staple food such as cassava, garri, yam, potato, etc. as against more expensive carbohydrates such as rice

- **National Economic Empowerment and Development Strategy (NEEDS).** The key elements of the development strategy included poverty eradication, employment generation, wealth creation, and value reorientation. NEEDS provided help to agriculture, industry, small and medium-scale enterprises, and oil and gas.
- **National Policy on Food and Nutrition (NPFN)** - The National Food and Nutrition Policy is designed to address the problems of food and nutrition insecurity in Nigeria, from the individual, household, community, and national levels. It provides a framework for the identification, design, and implementation of intervention activities across different relevant sectors (IITA, 2017; Olomola, 2017; Otekunrin et al. 2019).
- **Agricultural Transformation Agenda (ATA)** The ATA (2011-2015) was designed and implemented by the Federal Ministry of Agriculture with a focus on food security and agricultural productivity. According to Olomola and Nwafor (2018) and Otekunrin et al. (2019), the main components of ATA include:

a. The commissioning of the Growth Enhancement Support Scheme (GESS) to enhance the availability of modern-day agricultural inputs to farmers at subsidized rates.
b. The development of the Staple Crop Processing Zone (SCPZ) to facilitate clustered food production in regions considering the comparative advantage of each agroecological zone or region.
c. The introduction of the Agricultural Commodity Value Chain Development (ACVCD) to promote the development of crop and livestock sub-sectors in different agroecological zones.
d. The introduction of the Agricultural Marketing and Trade Development Corporations (AMTDCs) to advance smallholder farmers' access to markets.
e. The promotion of the Agricultural Extension Transformation Agenda (AETA) aimed at enhancing the dissemination, diffusion, and adoption of innovations by smallholder farmers.
f. The establishment of the Nigerian Incentive-based Risk-Sharing System for Agricultural Lending (NIRSAL) to address the challenges in the agricultural commodity and financing value chains.

Strategies for Promoting Sustainable Agriculture Production and Food Security

1. Application of sustainable agricultural practices (SAPs) in food crop production - One way of maintaining the quality of the environment and improving crop yields, farm incomes, and food security at the same time is to promote the adoption of sustainable agricultural practices. According to Issahaku and Abdulai, (2019), the adoption of SAPs correlates with food security. Morugán-Coronado et al. (2020) showed that various combinations of sustainable agricultural practices (SAPs) including minimum tillage, use of organic fertilizers, and alley cropping resulted in positive crop yield response, as well as soil organic carbon and nitrogen accumulation.
2. Repurposing agricultural and food policy support – according to a joint report published by the Food and Agriculture Organization of the United Nations (FAO), United Nations Development Programme (UNDP), and United Nations Environment Programme (UNEP) (2021), repurposing entails the reduction of support measures that are inefficient, unsustainable and/or inequitable, to replace them with support measures that are the opposite. In other words, support is not eliminated but reconfigured. In this way, repurposing will always imply reforming. According to FAO, IFAD, UNICEF, WFP, and WHO. (2022), rethinking the allocation of public spending to repurpose food and agricultural policies is urgently needed.
3. Development of post-harvest technology – according to Amaechi (2018), this assumes particular importance, especially in the case of perishable commodities like fruits, vegetables, milk, egg, fish, and other animal products and processed food. There must not be a mismatch between production and post-harvest technology if the goals of promoting sustainable agriculture, eliminating hunger, and ensuring food security at all levels are to be achieved. Promoting the post-harvest sector also has multiplier effects on rural income and poverty reduction.
4. Systematic development of the farming system - It is important to consider the composition of the farming system such as soil components, water availability, agro-climatic features, home needs, and above all marketing facilities and opportunities in the choice of crops, farm animals and unique culture systems to adopt.
5. Climate resilient practices should be integrated into agricultural and food system policies and programs. Efforts should be made to promote climate-smart agriculture through targeted extension services, improved crop choices, investment in machinery, and increased access to improved animal feed and breeds to protect soils and biodiversity, conserve water, and limit land-cover change. Donor support should be

targeted to greenhouse gas emissions-reduction efforts, thus contributing to the more ambitious mitigation target reflected in Nigeria's updated nationally determined contribution, which is conditional on such support (FRN, 2021; 2016)

6. Introduction and adoption of modern sustainable farming practices- The agricultural system need to accept and adopt modern sustainable farming such as planting better seeds and seedling, the use of safe chemical for pest and insect control, as well as disease control among others. Oni (2013) recommended the promotion of sustainable cultural practices with various technologies recommended by experts; the adoption of new technologies use for post-harvest work to improve productivity and minimize waste as well as control environmental pollution.
7. Monitoring of weather and market events - Real-time actionable intelligence, such as weather and climatic conditions, should be provided to farmers through a specialized channel of the Nigerian Meteorological Agency. According to World Bank cited in FAO, IFAD, UNICEF, WFP and WHO (2022), farmers should in addition to climate and weather events, be made aware of labour data and market conditions so that they can protect themselves and their products from price volatility which impacts their earning abilities.
8. Upward review of budget allocation to the agriculture sector - The budget for the agriculture sector should be revisited and increased to reflect the current situation of the sector. Nigeria is a signatory to the Maputo Declaration of 2003 where African countries committed to spending at least 10% of their annual budget on agriculture. However, the budgetary allocation has been significantly lower than this at 1.7% in 2017, 2.0% in 2018, 1.56% in 2019, 1.34% in 2020, and 1.37% in 2021 (Izuaka, 2021).
9. Reactivate dead agro agencies - The government should immediately revisit dead or dilapidated agro-agencies. Most of these agencies were the powerhouse driving progress within the agro-sector of Nigeria but have unfortunately become neglected and abandoned (Voh Jr, 2017).
10. Research institutes should be reequipped and repositioned to carry out their mandates effectively. Further, efforts should be made and strategies evolved for effective communication of research findings and innovations to stakeholders in the agricultural and food system. These institutes, such as the Institute for Agricultural Research, offer extension services to farmers and other stakeholders in the agricultural value chain and drive the utilization of green and sustainable approaches in agricultural production,

processing, and research (Voh Jr, 2017).

Conclusion and Policy Recommendations

Agriculture holds the key to sustainable food security at both the family, national, and global levels, and is a key driver for the attainment of the other SDGs. This is so because when people are properly nourished, children can learn, households can lead healthy and productive lives and societies can prosper. By nurturing our land and adopting sustainable agriculture, present and future generations will be able to feed a growing population. This will introduce intergenerational equity in the agriculture food system and promote the long-term productivity of agricultural production resources. Agricultural development policies and programmes of the government are efforts aimed at reducing the challenges of food insecurity and hunger and combating the menace posed by the threats of climate change and related environmental crises. However, the threats of food insecurity continue to thrive as the percentage of the population who are food insecure continues to rise annually. The following policy recommendations can guide the development of policies and actions of stakeholders in the agriculture sector for more sustainable agricultural production and food security.

- All stakeholders in the design and implementation of agriculture development policies should be involved through all stages and phases of the programme lifespan to promote acceptability and greater success in the implementation
- The agricultural extension agents and other organizations tasked with the education of farmers should educate farmers on the adoption of sustainable agriculture practices to promote sustainability of their production practices and reduce the cost
- There should be regular monitoring and evaluation of agricultural policies and programmes to observe lapses, modification of the programmes, and reduce the rate of programme failures. Monitoring and evaluation should be integrated into all stages of the programme development and implementation.
- There should be greater stability and consistency in the formulation and implementation of agricultural policies and programmes. The lifespan of agricultural policies and programmes should not be tied to the tenure of the administration that designed such policies. Measures should be integrated into the design of such policies to promote sustainability.
- There should be greater involvement and participation of the private sector in agricultural development efforts. Government should therefore provide an enabling environment for private sectors to get directly involved in areas like processing, preservation, exportation, tourism, and recreational and environmental services.

- Environmental impact assessment should be carried out for all agricultural development programmes and policies. The formulation of agricultural development policies and programmes should take into consideration the peculiarities of farmers and the environment so that all concerned can make appropriate and necessary contributions to maintaining environmental quality and promoting sustainable agriculture.

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