

## Historicizing Nigeria's Agriculture and food Security Challenges

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### Abstract

Nigeria is a developing country, with significant population in the rural areas. The agricultural activities, rests on the smallholder farmers who experiences slow growth in agricultural and food production. This has resulted to growing food imports and food insecurity. This study examines the strategies adopted to raise agricultural productivity and increase food security. The country has available natural resources and potential for increasing the volume of crop production towards meeting the food nutritional requirements of the rapidly increasing population and guarantee food security. However, the once dominant subsistence-oriented farm economy is at risk of gradual marginalisation due to insecure land tenure, urbanization, scarcity of funds and credit, labour scarcity despite overall high unemployment and stagnant technology have crippled its further development as identified in this study. Utilizing information through desk study of relevant literatures on agriculture and food security, the paper identify policy inconsistency and too much emphasis on production without due consideration to value chain requirements as an impediment of low productivity in agricultural sector. We recommend among others, the non-politicisation of food security and the need to imbibe strong political will and kill corruption to grow the agriculture economy.

*Keywords: Agricultural productivity, Smallholder farmers, Food security*

*JEL Classification Codes: Q10, Q14, Q18*

### Introduction

Nigeria, essentially an agrarian economy, during the independent and civil war era. The population of Nigeria in rural area is put at 51.1% (NBS, 2018). This makes agriculture and the rural sector a major policy concerns for the government and policy makers. During this era, Nigeria was self-sufficient in staple food crops such as cowpea, rice, maize, cassava, cocoyam, yam, plantain etc that were exported and depended on as a source of foreign exchange earnings and government revenue (Wilson and Wilson, 2010) has since the oil boom in the 1970s neglected its agricultural sector, which culminated in the displacement of agriculture as the primary driver of the nation's economy. This is because Nigerian economy during the first decade after independence contained to be described as an agrarian economy because agriculture then served as the engine of growth of the overall economy of Nigeria within independent and civil war era (Ogen, 2003). During this period Nigeria was the world's second largest producer of cocoa, largest exporter of palm kernel and largest producer and exporter of palm oil. Subsequently, the agricultural sector was relegated to the background when Nigeria become an oil exporting country in the sense that the huge inflows of foreign exchange revenues that accompanied it diverted the attention of the government and agricultural producers into other activities aimed at reaping the economic boom created by the huge oil revenues (Polycarp, 2008). Within a decade up to 1981 however, Nigeria blessed as it is with abundant agro-ecological resources and diversity, had become one of the largest food importers in sub-Sahara Africa (Idachaba, 2009). Agricultural output in Nigeria declined and she began to import major staple food such as rice, wheat, sugar, and fish to argument local supplies. Since then, Nigeria has been spending substantial amount of its foreign reserve on importation of staple foods. Massive importation of food has caused distortion in the structure of the Nigerian economy and eroded the country's industrial base as well as imported inflation into the country following rising world food prices. The country is also faced with a looming food security crises with a growing population that is increasingly dependable on imported food (Nwajiuba, 2011). Literature reported that in 1960<sup>55</sup> and up to 1970<sup>55</sup> Nigeria<sup>55</sup> agriculture sector flourished that food never appeared in the country<sup>55</sup> import list (Okowa, 1986). As an agricultural power house, Nigeria is endowed with large fertile agricultural land, rivers, streams, lakes, forests and grass land for the cultivation of crops and rearing of animals (Anyanwu, Oaikhenan, Oyefuse and Dimomo, 2013). Regardless of the vast potentials the agricultural sector possesses, the industry endowment has not been fully harnessed. This implies that despite positive accomplishments, agriculture has not been used to its full potential because of anti-agriculture policy biases and underinvestment; often compounded by misinvestment, policy

somersault and inconsistent as well as donor neglect (Nwaobi, 2014). Thus, the once dominant subsistence oriented farm economy is at risk of gradual marginalisation. This started when oil was discovered in 1956, and exportation of it in 1958, things started changing gradually, and later furiously in early 1970<sup>5</sup>. It was like declaring holiday for hoes and machetes. As oil prices went up, interest in agriculture waned which marked the beginning of decline into the abyss as a polity (Ojo and Adebayo, 2012).

The realization by successive governments that unless the country's industrial base is supported by a strong agricultural sector, no effort towards achieving sustainable economic growth for the nation would ever come to fruition. Government responded through various intervention strategies and policies aimed at strengthening the sector in order to continue to perform its roles (Ewetan, Fakile, Urhie and Oduntan, 2017) and restore the agricultural sector to its pride of place in the economy (Manyong, Ikpi, Olayemi, Yusuf, Omonong, Okoruwa and Idachaba, 2005). Indeed, literature reported that agricultural policy in Nigeria has witnessed several changes since the colonial and post-independence years (Yusuf 2014) cited in Tiri, Ojoko and Aruwayo (2014). Moreover, Tiri et al (2014), states that before independence, policy emphasis was on the production of cash crops, such as rubber, cotton, groundnut, palm produce and cocoa, but after independence, the rising food shortages shifted attention to food crops production. Given the choice, young people from the rural areas rather try their luck in urban centres.

However, the dynamics of the economic policies later shifted, from agricultural sector to manufacturing sector and now focused on oil sector. As a matter of fact, petroleum production and export played a dominant role in Nigeria's economy now and account for about 90% of her gross earnings. This dominant role has pushed agriculture, the traditional mainstay of the economy, to the background. The petroleum industry is now central to the Nigerian economic profile. It has placed Nigeria the 12<sup>th</sup> largest producer of petroleum products in the world (Nwanosike, Kalu, Ogbuabor, Uzoechina & Ebenyi, 2016). Tracing the causes for shift from agriculture to oil, Abogan, Akinola, & Baruwa (2014), pointed out poor implementation of agricultural policy measures by the various government agencies. Most of the institutions involved in policies implementation were very ineffective and were not particularly oriented to the needs of majority of the smallholder farmers. Such inadequacies were common in key institutions like credit agencies, research institution, commodity board, River Basin Development Authority and institution which handled input procurement and distribution.

### **Conceptual Framework**

Agriculture is as old as history of man and serves as the life blood of the economy. Nigeria is an agrarian economy, dominated by small-scale farmers who employed rudimentary tools such as hoes, cutlass, axes and shovels among others and the use of largely fragmented land to cultivate the crops and rear animals for man's advantage (sortoglu, ugural & Bekun, 2017). The farming practice in much of the cultivated land is the bush fallow system, such that the land is left idle for the soil to naturally regenerate its fertility over a period of time. Accordingly, most of these peasant farmers dwell in the rural communities in Africa, signifying that agricultural growth is more pro-poor, primarily because it allows for greater participation of the poor in the growth process (Diao, Xinshen Hazell, Peter & Thurlow, 2010) cited in Nwankpa (2017). These small-scale farmers account for the overwhelming 80% of the labour force, 95% of the export and 90-95% of Nigeria's total food production. The size of the land used by small scale farmers are determined by the size of their family, land available and the number of the size of the family interested in agriculture.

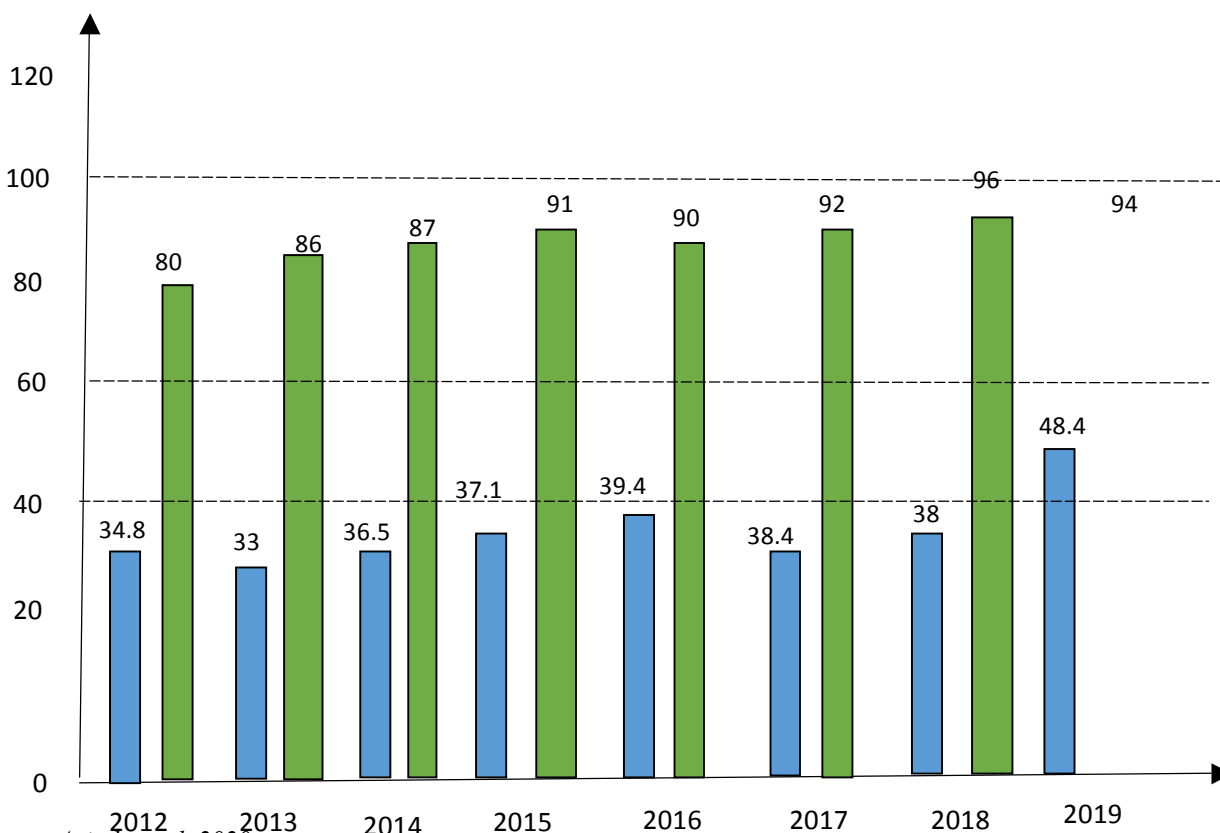
Another system of agriculture is the plantation agriculture, which involves the use of a large estate of land permanently planted with economic or commercial crops. These crops planted on plantation farming land could be owned by either government, private individuals or cooperate bodies. In plantation farm, mechanized equipment and modern inputs are mainly used in their operational activities (Yusuf, 2014). While Mechanization involves the expensive use of machines and other advanced and labour saving devices in agricultural production. Mechanized agriculture ensures large scale production because the use of human labour is been replaced with that of machines such as tractors, ploughs, excavators, harvesters and other engine driven devices that is highly capital intensive (Yusuf, 2014).

Nigeria generally is endowed with abundant resources that are necessary for the development of agriculture. According to Akinboyo (2008) agriculture is seen as the science of making use of land to raise plants and animals while Anyanwu, Oyefuse, Oniwenan & Dimo (1997) sees agriculture as involving the cultivation of land, raising and rearing of animals for the purpose of production of food for man, feed for animals and raw materials for industries. Therefore agriculture is the essential source of food supply for all countries, whether they are underdeveloped, developing or industrialized (Murad & Boz, 2018). The implication is that agriculture contributes significantly to national food self-sufficiency by accounting for 80% of total food consumption requirements; helps to maintain a healthy and peaceful population and also serve as a source of food and nutrition for households (Oji, Okoro, 2011). To showcase the pivotal role the sector plays in the Nigerian economy, sertoglu

et al (2017) reported that the agricultural sector was part of the millennium development goals program of poverty reduction in Nigeria. Timmer (1995) cited in Odetola & Etumma (2013) reported that agricultural sector contributes to economic growth through provision of better caloric intake and food availability. Therefore, the attainment of global food security and reduction of hunger hinges on this singular role and one of the sectors expected to act as a catalyst towards the realization of this goal is agriculture (Obiechina, 2007).

Nigeria is grossly an agrarian state because the primary aim of the British Government in amalgamating the protectorates was simply economical. According to Ogbonna, (2014), the amalgamation was necessitated because the entire south was very viable and richly endowed with surplus resources. Within this period, the Nigerian development programmes and policy bearing were still between trade and agricultural, which was reflected in the fact that over 70% of her economically active population is employed in the agricultural sector (Muhammad – Lawal, Salan, & Olawusi, 2015). For any developing country, the development of agricultural sector is crucial for the supply of adequate and affordable food to its people. The alternative to this is food importation, which is not sustainable because export earnings are often exogenously determined and erratic with generally stagnating trend. However, food importation is not a viable option in a situation of foreign exchange scarcity and so agricultural sector food supply becomes inevitable (Fashola, 2005) cited in Fakiyese & Akano (2005).

**Figure 1: Nigeria's GFSI Scores and Rank (2012 - 2019)**



Source: Ayinde et al, 2020.

In the same vein, in the 1960s the country was self-food sufficient to the extent that crops seedlings were exported to other countries. Nigeria was the largest producer and exporter of groundnut and palm fruit to country like Malaysia, the second largest exporter of cocoa after Ghana and the largest exporter of cotton in West Africa (Nigeria elite forum, 2012) cited in Tiri et al, (2014). Nigeria current status of food security may not be unconnected with the consequences of a very long neglect of the agricultural sector by various governments in Nigeria. The global food security index which evaluates a country's ability to feed its people on the basis of the key determinants of food security via-affordability, availability and quantity in 2011, however ranked Nigeria as the 80<sup>th</sup> food insecure nation out of 105 countries studied.

About 65% of Nigerians are food insecure, that is, do not have sufficient access to the amount and variety of food for a healthy and productive life; 64% of its population is reported as living below the international poverty line of \$1.25 per day (UNICEF, 2010) cited in Tiri et al (2014). About 40% of children under the age of five are stunted, 9% are wasting and 25% are underweight, owing to widespread deficiencies in vitamin A, Iron and Iodine and general poor food lifestyle (Abubakar, 2010). Thus, the conceptual perception of food security emphasis such components as 'availability', 'access', 'entitlement' and 'utilization'. This is because food is the most basic need of man. Its adequacy, affordability and security have been the pursuit of every human community over the decades. On this basis, the food and agricultural organization (FAO, 2004) argued that food security exists, when all people at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Food insecurity in Nigeria is currently at alarming rate, calling for urgent and immediate intervention. The illustration in figure 1 shows that Nigeria's ranking in Global food security index (GFSI) has continued to increase since 2013 (ranked 86 among 107 countries with 33/100 score) and reached a disturbing rank of 94 (with 48.4/100 score) among 113 countries behind Ethiopia, Niger and Cameroon in 2019 GFSI overall ranking table (the closer to 100 score the better) (EIU, 2019).

Furthermore, Ayinde, Otekinrin, Akinbode & Otekinrin (2020) reported that Nigeria overtook India which was previously regarded as the country with the highest number of people living in extreme poverty globally. But in May, 2018, Nigeria overtook India to become the world poverty capital with the highest number of population living in extreme poverty reached 86.9 million people. It is quite alarming that the poverty situation in Nigeria is increasing. As of May, 6<sup>th</sup>, 2020, 102.3 million Nigerians live in extreme poverty implying that an additional 15.5 million Nigerians have plunged into poverty in 24 months (world Data Lab, 2018, 2020) cited in Ayinde et al (2020).

The precarious state of acute food insecurity in Nigeria is occasioned by chronic and hidden hunger, extreme poverty, corruption, conflict events (insurgency in the North-East) and unfavourable climate change. In addition, the failure of agricultural sector in Nigeria to provide adequate food for the people is reflected in the slow production of staple crops at 2.2% per annum between 1970 and 1999 (CBN statistical Bulletin, 1999) broken down into – 3.3% per annum before SAP (i.e.1970-1985) and 8.5% per annum post- SAP (i.e 1985- 1999). This slow production rate secularly below population growth rate is reflected in rapidly rising food price index at the rate of 26.1% per annum, between 1980 and 1998 (African Development Indicators, 2002) cited in fashola (2005). Even though, international fund for agricultural development (IFAD) rated Nigeria the highest producer of cassava, yam and cowpea globally in 2012 and currently, the highest producer of cassava and yam globally. The country still persistently remained food insecure and heavily import-dependent. Nigeria is blessed with abundant land suitable for agriculture but unfortunately; only 40% is used for agricultural purposes. A vast majority of the rural household population still engages in subsistence farming which can barely feed their immediate families. This is an indication that agricultural production failed to keep pace with the countries rapid population growth rate of about 3.2% resulting in perennial food shortage, continuous soaring of food prices and massive importation of food by government while food demand increases at a rate of more than 3.5% (FOC, 1996). Thus, it is not an overstatement to assert that the growth and development of Nigeria depend to a large extent on the development of the agricultural sector. Lack of infrastructural facilities such as good roads has heightened rural poverty, disconnecting rural farmers from needed inputs and markets for their produce (IFAD, 2012; Otekinrin and Sawicka, 2019) cited in Ayinde et al (2020). In addition, financial access in rural Nigeria where farmers predominate has however, remained largely far and apart with a high level of financial exclusion (Polycarp and Jirgi, 2011). While other factors undermining production include reliance on rainfed agriculture, small holder land holding, and weak agricultural extension system amongst others.

Further evidence of food insecurity and high rate of hunger in Nigeria is revealed by high rate of children undernourished 27% in 2003-2009, under 5 mortality rate per 1,000 live births was 155, 151, 147, 143 in 2007, 2008, 2009 and 2010 respectively (UNICEF, 2010), owing to nutritional deficiencies and illness particularly malaria, diarrhea, acute respiratory infections and vaccines preventable disease (Brya, 2005) cited in Tiri et al (2014). Nigeria is also one of the largest importers of food in the world, spending over \$10 billion annually. Imported foods include wheat ₦165 billion, fish ₦105 billion, rice ₦75 billion and sugar ₦60 billion. This is an evidence implying that the country is yet to be food self-sufficient capable of undermining food security (Tiri et al, 2014).

### **Analysis of Nigeria Government's Intervention in Food Insecurity**

Food insecurity persisted in Nigeria and many developing countries because of inefficient policies especially with respect to agriculture. If governments fail with these policies, hunger will naturally persist or even worsen. This

problem arises sometimes when the focus on policies objectives, structures and institutions were designed without adequate consultation and consideration of the critical stakeholders (i.e, the farmers and public interest) (Matemilola and Elegbede, 2017). The strategies adopted for agricultural development in Nigeria in the last 6 decades have varied with the change of governments and trends in government revenues. Many agricultural development institutions, special programmes and projects were launched in line with the agricultural policy which is targeted at an expanded food production. This was partly in response to the deterioration in the agricultural sector after thirty months of civil war (Ukeje, 2012).

To that effect, several policies and projects that are nutrition-sensitive with efficient frameworks to tackle food insecurity and all forms of malnutrition have been developed. Thus, efforts are being made by Nigerian government to return agriculture to its enviable position in the Nigerian economy (Ayinde et al, 2020).

This was evident in the First National Development Plan of 1962-1968 which was designed to put the economy on the path of accelerated growth by prioritizing agricultural and industrial development as well as trumpeted industrialization and the exploitation of the nation's abundant natural resources to improve living standards as against the more setting of a GDP growth target of 4% per annum for agriculture (Fed. Min. Eco. Development, 1983) cited in Jerome, (2012). The focus of development was on the provision of infrastructural facilities which serve as the pivotal of development, had a share of 50% share of the nation's investible fund while investment into the primary (i.e agriculture) was not focused. This is attributed to the emphasis placed on political expediency over economic rationality and military intervention in 1966 and its subsequent prolonged rule in Nigeria became the genesis of truncating the process of adhering to national development planning as a strategy for economic and social development (Fika, 2004).

The Second National Development Plan (1970-74) outlined a more defined approach towards food production as the main nexus of the plan because of the Nigerian civil war which brought hardship due mainly to food shortages (Jerome, 2012). The military government, headed by Gen. Yakubu Gowon, in desperation embarked on massive importation of rice in the early 1970's to stave off hunger. The period was described as Rice Amada because the ports were choked by rice, yet the massive importation of rice could not tackle the long term problem of food security (Ojo and Adebayo, 2012). But Shimada (1991) criticized this arrangement stating that government's pretence towards agriculture was obvious since real budgetary spending on agriculture was a mere 7.7% against the 23.1% expenditure on transportation sector alone. While in the same vain, Shimada (1983) and Murio (1989) cited in Jerome (2012) stated that government choose to rely more on food importation rather than address measures to strengthen the capacity base for food production. It is this inability of the government led to the pre-mature extinction of the farm settlement and school to land projects.

In the other hand, government also embarked on the establishment of National Accelerated Food Production Programme (NAFPP) in 1974 aimed at making the country self-sufficient and food secured. The policy NAFPP, had also focused on assisting the supply of agricultural inputs and education of farmers that could not achieve its objectives due to poor planning and the untimeliness in the provision of these extension services to farmers. The failure of this policy led to the birth of Agricultural Development Project (ADP) in 1975; that has a more comprehensive outlook of the NAFPP (Jerome, 2012). ADP was designed to increase crop production through rural development. it focused on improved technology, increased supplies of farming inputs, and improvement of infrastructure (Tiri et al, 2014). To achieve these, 470 agro-service centres was set up in 1985 in all over the country to meet the challenges of extension services provision to farmers that was impossible with NAFPP project.

The other ambitious agricultural projects that were initiated includes; the operation feed the nation (OFN) in 1976 and Green revolution in 1980, were the agricultural policies captured in the Third National Development Plan (1975-1980). These intervention strategies at their nexus pursued a policy shift of joint partnership between government and citizenry participation in food production to build a stable and self-sufficient socio-economic system, where there would be a lowering of the food import dependency ratio. For this policy shift, everyone was asked to be involved to plant something, anything, and anywhere. Those who do not have farms or gardens reverted to flower pot farming. For various reasons, these efforts did not produce the bumper harvest that was expected (Ekpu, 2009) cited in Ojo and Adebayo (2012) even though the policy advocated the issuance of various types of subsidies and incentives to farmers and citizenry alike towards boosting food production (Jerome, 2012). These prescriptions according to Shimada (1999) were a mirage based on results. This was due to the ad-hoc nature of planning and principally bad governance. Therefore, it is not surprising that these policies have not achieved the food self-sufficient, self-reliance, reduction in poverty and rural development goal. This is because, apart from inadequate capital base and shortage of skilled labour, the major constraints of this policy were political influence and political instability, which discouraged investment in the country (Nwanosike, et al, 2016). Also, these policies failed due to policy inconsistencies and corruption (Ifeanacho, Nte & Nwagwu, 2009).

The Fourth National Development Plan (1981-1985) is a deliberate instrument for harnessing the country's national resources for the benefit of her people. It sought to strengthen the self-sufficiency in food production through the green revolution of 1985 and as such ascribed 13.5% of budgetary allocation to agricultural sector development, which had the largest share of priorities of the plan. For instance, there is still a large rural population in need of agricultural policy support with a development focus, of which consideration should be given to the twin challenges of population growth and climate change (Nwajinba, 2012). This plan was to be achieved through partnership of agencies such as ministries of agriculture, water resources, labour and commerce, the River Basin Development Authorities (RBDAs) and Agricultural Development Project (ADP). Despite these comprehensiveness these projects (OFN and GR) could hardly be implemented in positive light because (Jerome, 2012) cynical Nigerians nicknamed the project operation fool the nation (Ekpu, 2009) while others contend that the green revolution was a mere change of name, without any significant change in conception, content or context of the policy, hence the programme could not make any appreciable impact because the government in power then was weighed down by corruption that it could not achieve much in all fronts (Ojo and Adebayo, 2012).

In 1975, the River Basin Development Authorities (RBDA) was established to undertake the construction of dams, dykes, as well as to arrange for seed certification. During this period, the Nigerian Agricultural Cooperative Bank was established and in 1977, Agricultural Credit Guarantee Scheme (ACGS) was floated to provide guaranteed loans granted by banks to farmers to boost agricultural production and agro-allied processing. The aim was to ensure the flow of credit to the agricultural sector. Also in 1978 the land use act was lunched to remove the bottle neck in land acquisition for intended farmers, while in 1993-1997 witnessed a lot of policy reversals in the agricultural sector. The importation of fertilizers was banned and then un-banned. There was banned in importation of many foods, including fresh milk, vegetables, roots and tubers, fruits etc. There was different tariff regimes applied to the commodity. The period, also witnessed the removal of subsidy on fertilizers and the re-introduction of fertilizer subsidy later. The importation of day old chicks and parent stock were banned and later unbanned. Within the period increased funding was provided to research institutes and universities of agriculture (Ukeye, 2012).

In 1986 the Directorate of Food, Road and Rural Infrastructure (DFRRI) was established. It was supposed to be a comprehensive integrated programme for massive food production and rural transformation. But the implementation of this rural development plan was more of rural roads rehabilitation than food production. However, on paper, the programme was great in actual practice, the programme was infested with massive corruption and eventually frustrated (Ojo and Adebayo, 2012). Equally, marketing boards were used exclusively for trade and to export agricultural goods was abolished, preparatory to the Structural Adjustment Programme (SAP) regime.

In 1986, SAP was introduced with a major policy thrust anchored on the redirect from inward-looking import substitution strategy to outward looking export promotion strategy. Other objectives of SAP includes the reversal of the low trend in agricultural production, increasing the availability of food to the people at reasonable price and increasing farm incomes and agricultural materials to industries. Beside this, the main strategies of SAP included the adoption of a realistic exchange rate policy, diversify the production base of the economy so as to reduce the over dependency on the oil sector and imports (Tiri et al, 2014) coupled with the liberalization of external trade and payment system, as well as, greater reliance on market forces and reduction in administrative control (Ukeye, 2012). In spite of this policy shift, Nigeria is yet to witness any measurable progress. This, in effect suggests that Africa economists and the world bodies have a poor perception of the African economic problem which they have hinged on demand management rather than supply and so designed SAP, a program which is more political than economical (Nwonosike, et al, 2016).

Similarly, the National Center for Agricultural Mechanization (NCAM), a government parastatal was established for manufacturing tools, importing machinery and training of farmers. Beside, in 1992 the National Seed Policy (NSP) was created to provide guidelines for the development of seed subsector, seeks to support varietal improvement, testing, registration, release, multiplication of released seed varieties, and improve the quality of seeds sold to farmers (Tiri et al, 2014). Also, the Nigerian Agricultural, Cooperative and Rural Development Bank (NACRDB) was established in 2000 and tasked basically with financing at both the micro and macro levels. NACRDB was mandated to meet the funding requirements of Nigerians in the agricultural sector to foster increase food production and subsequent food security (Titi et al, 2014). In addition, better life for rural women, Family Economic Advancement Programme (FEAP), National Special Programme for Food Security (NSPFS) and National agricultural development fund (NADF) were established in 2001 and 2002 respectively.

NSPFS main objective was to improve national and household food security while NADF was tasked to promote agricultural research and development. Research institutes established by government could not make any significant impact as research scientists are neither committed nor motivated to contributing to agricultural productivity growth generally or to the empowerment and success of farmers. At the end, Nigeria still imports

substantial food items while it exports little or no food (Fashola, 2005). Frequent policy change and poor performance of Nigerian monitoring and implementation agencies also has its toll on food crises (Matemilola and Elegbede, 2017).

Finally, the Nigerian government in an effort to achieve sustainable agricultural development and food security, Bello (2004) cited in Ojo and Adebayo (2012) reported that government initiated a number of food security initiatives, which includes but not limited to;

- **Special Programme for Food Security (SPFS)** was initiated to seek the assistance of the food and agriculture organization (FAO). The SPFS was intended to accelerate and disseminate information on new accessible agricultural technologies that has been tested to 109 farming communities country wide with the aim to enhance food production and substantially increase income levels of the poor farmers.
- **Root and tuber expansion programme:** this agricultural intervention project was supported by international fund for agricultural development (IFAD). The affected farmers were encouraged to leverage on the necessary information on improved processing technology and techniques to raise their capacity in the processing of tuber and root products particularly cassava products.
- **Fadama development project:** the fadama development project was well funded from various international organisations with the intention to support farmers of various shades scattered all over Nigeria. The activities of the programme focused on the development of infrastructure, embark on large-scale irrigation system, improving farmers capacity and creating a healthy environment that will encourage farmers cultivate a good number of crops, plants, fruits and vegetables.
- **Community-based agricultural and rural development schemes:** This scheme is community based put in place to encourage cluster farming in other to boost agricultural production. The community centre scheme operates as farm settlement, back-to-land, school to land, aimed at encouraging everyone to be involved to farm including the young school leavers, who could have roam the streets aimlessly, creating unnecessary nuisance in the society. The participants who are mostly adults are encouraged by the government to take to farming instead of endlessly waiting for non-existent white collar job by providing them with various farming implements, financial support and other incentives as well as selling their produce to government designated agency.
- **Provision of infrastructures:** Government intention with this scheme was to open up the rural communities with network of roads linking up with farming communities. Besides construction of network of roads, government embark on grading of old existing roads, carryout operation zero pot holds, electrification of the rural settlements, supplying farmers with necessary farm inputs as fertilizer, high breed seedlings, pesticides and equipment; leasing tractors and harvesters to farmers to encourage mechanized farming and providing improved storage facilities to reduce post-harvest loss.
- **International centre for soil fertility and agricultural development (ICSFAD):** The Nigerian government in an attempt to have adequate knowledge on the type of fertilizer that will be appropriate for farmers on each soil type inaugurated the international centre for soil fertility and agricultural development (ICSFAD) in collaboration with the United States of America. The centre was to under study the problems militating against increased agricultural production in Nigeria. The main objective of the centre is to determine the type of farming inputs such as fertilizer, pesticides and other agro-chemicals that will be applied on each soil type in the various locations within Nigeria.
- **Policy instrument and direction of government action:** This explains the policy instrument and direction of government action towards the possibility of realizing its objectives in improving agricultural productivity and the challenge of food security in Nigeria. Some of those policy instruments includes;
- Imposition of ban on the importation of some agricultural products which the country can conveniently produce in large quantity locally. The operationalization of this ban greatly helped to boost livestock production and other variety of agriculture produce.
- Government must hold firm strong political will to make fertilizer available to farmers at a subsidized rate to boost their farm yield.
- Enhanced investment in agriculture by strengthening the financial capacity of state owned agricultural banks to enable them grant willingly soft-loans to potential farmers and at the same time appeal to the private commercial banks to extend friendly interest loan facilities to large-scale and small-scale farmers. The appeal with the banks were ignored probably because of the perceived risk in agricultural financing, since farmers are at the mercy of weather as well as the negative consequences of volatile agricultural market (Larson Et al, 2004) cited in Ojo and Adebayo (2012).

These are the efforts being made by the Nigeria government to return agriculture to its enviable position and at the same time reduce the level of food insecurity.

### **Agricultural Transformation Agenda and Food Security Challenges**

The agricultural transformation agenda (ATA) was designed, launched and implemented by the federal ministry of agriculture in 2011, having food security and agricultural productivity as the focal targets of the project. The ATA project aimed at a proactive change in the practice of agriculture and its perception in the country. For the first time in post-civil war, agriculture is being treated as a purely business oriented economy activity rather than a development programme (Osinowo, 2012) cited in Tiri et al (2014). This is because agricultural production failed to keep pace with the country's rapid population growth rate of about 3.2% resulting in perennial food shortage, continuous soaring food prices and massive importation of food by government while food demand increases at a rate of more than 3.5% (FOS, 1996). Thus, it is not an overstatement to assert that the growth and development of Nigeria depend to a large extent on the development of agricultural sector. Indeed, it is still believed that agriculture is the life wire of Nigerian economy, contributing between 30-40% to gross domestic product (GDP) and providing employment for the vast majority of the populace especially those in the rural areas (Tiri et al, 2014). However, a policy framework put in place to enable agriculture to unleash its vast potential for employment generation, economic development, food security and poverty alleviation was elusive (Osinowo, 2012). On this note, Idachaba (2009), posited that Nigeria blessed as it is, with abundant agro-ecological resources and diversity, has become one of the largest food importers in sub-Sahara Africa. Nigeria needs not be spending a large chunk of her foreign exchange on food importation, considering the vast potentials of agriculture.

Thus, the agricultural transformation agenda (ATA) with its core critical objectives of a value-chain approach and its linkages with key changes in food and trade policies appear to be making an impressive impact since its inception (Osinowo, 2012).

Despite this reported ugly scenario, the Nigerian government is not relenting but poised at enhancing efficiency through competition and creation of friendly environment for a private sector led survival and modernization of Nigeria agriculture, as they aimed at reducing extreme poverty, hunger and food insecurity among her ever-growing population (Ayinde et al, 2020). The development of agricultural key value-chains such as provision and availability of improved inputs, increased productivity and production, establishment of staple crop processing zones, reduced post-harvest losses as well as improved linkages with the markets are all anchored on increased productivity (Tiri et al, 2014).

In an effort to achieve food security and improved nutrition, and promote sustainable agriculture, the main components of ATA as highlighted in Omonaola and Nwaafor (2018), Otuekunrin et al (2019) and Ayinde et al (2020) were stated as follows;

- The Growth Enhancement Support Scheme (GESS) was commissioned and designed for the specific purpose of providing affordable agricultural inputs like fertilizer and hybrid seeds to farmers at subsidized prices in order to increase their yield and make it comparable to world standard. GESS is a pilot scheme which seeks to remove the difficulties usually associated with the distribution of fertilizer and hybrid seeds among potential farmers. The success of the programme depends largely on reforming the complains of diversion, exorbitant cost and adulteration of various inputs, which ultimately led to low productivity, increased poverty, unemployment and inadequate interest in farming. This complain about sharp practices in fertilizer supply mechanism reflects a history of large-scale corruption in Nigeria. Therefore GESS is targeted directly at beneficiaries through the use of electronic system as well as encouraging the engagement of the private sector in the distribution and delivery of the fertilizer and other critical inputs directly to the farmers (Tiri et al, 2014). However, Tiri et al (2014) asserted that the main trust of the scheme was to enhance the capacity of the farmers who could not afford a bag of fertilizer and seedlings, and;
- To remove the usual complexities associated with fertilizer distribution.
- To encourage critical stakeholders in the fertilizer value chain to cooperate and work together to improve productivity.
- To improve farmers income and promote food security.
- To shift the provision and delivery of subsidized fertilizer away from the politicians and arm chair farmers to genuine small-scale farmers.

The system so designed is to enable genuine potential farmers receive fertilizer allocation notices through their mobile phones, which is meant to make the commodity easily accessible and by-pass the middlemen.

- **The stable crop processing zone (SCPZ):** As it is envisaged in the ATA plan is to seek to develop the value chain of five key commodities, i.e. rice, cassava, sorghum, cocoa, and cotton. This entails reforming the input supply regime, a targeted region-specific increase in the output of the five priority commodities and post-harvest systems development. Therefore SCPZ is aimed at enhancing clustered food production based on the comparative advantage of each zone.
- **Agricultural commodity value chain development (ACVCD):** This is designed to improve and harness key commodities to crop and live-stock sub-sectors in different agro-ecological zones. That is, it has a strong orientation towards agri-business, supporting the large population of smallholders and promoting value-addition in the product chain. This is critical to rural food security, social cohesion and poverty alleviation.
- **Agricultural marketing and trade development corporations (AMTDCs):** This is designed to improve and enhance smallholder farmers access to markets by providing the needed necessary infrastructure.
- **The agricultural extension transformation agenda (AETA):** This is designed to enhance diffusion of information through which innovations spread to the members of the family. It focuses largely on spreading messages that contain new ideas about agricultural practices. It increases the flow of information to farmers about new agricultural technology and how tradition-bound farmers will make more economically rational management decisions about the use of resources, credit facility and new institutional arrangements in order to succeed.
- **The Nigeria incentive-based risk-sharing system for agricultural lending (NIRSAL):** This is established to provide credit to Nigeria farmers, who at one point or the other were having serious challenges associated with agricultural commodity and financing value chains. NIRSAL is a joint initiative program targeted at mitigating against the impact of natural disaster on losses of agricultural investments by enhancing low-interest credit to farmers through commercial banks and liberalization of the insurance sector to increase farmers access to cost effective agricultural insurance (Tiri et al, 2014).

### Challenges to Increasing Agricultural Productivity in Nigeria

Nigeria arguably is the largest economy in Africa, with Gross Domestic Product (GDP) of about \$510 billion (NBS, 2014) The Agricultural sector has been growing at a low rate. Productivity is low and basically stagnant farming systems, which are mostly small in scale, are predominantly subsistence based and for the most part depend on the vagaries of the weather. Even though less than 50% of the Nigeria's land is under cultivate, smallholder and traditional farmers use rudimentary production techniques with resultant low yields, cultivate most of this land. The smallholder farmers are constrained by many problems including those of poor access to modern inputs and credit, poor infrastructure, poor human capital development. Also the inability to capture the financial services requirements of farmers and agribusiness owners who constitute about 70% of the population is inclusive (Lawal, 2011).

Yet the agricultural sector plays a pivotal role in the Nigerian economy by being part of the millennium development goals (MDGs) for poverty reduction and the United States of America president initiative to end hunger in Africa (IEHA) targeted smallholder farmers. The project ignited economic growth in the agricultural sector, with the aim of rapidly raise rural incomes and subsequently reduce poverty and hunger (Manyong, Ikpi, Olayemi, Yusuf, Omonong, Okoruwa and Idachaba, 2005). Equally important Ukaye (2003) asserted that in the 1960s agriculture contributed up to 64% of the total GDP, but gradually declined in the 1970s to 48% and it continues in 1980 to 20% and 19% in 1985 and crashed to less than 2% in the 1990s, as a result of the oil glut of the 1980s. Sequel to this backdrop, agriculture has not kept pace with the rapid population growth in the nation and Nigeria, a once large net exporter of food now imports most of its food requirements. Thus, the agricultural sector is at the moment unattractive, not only to the entrepreneurs and investors but most particularly to youths (Kenny, 2019). This is the reason why a large number of youths are now moving away from the rural communities to urban areas and other geo-political regions; on the account that the once dominant subsistence-oriented farm economy is at risk of gradual marginalization. This is on the basis that the subsistence farmers are experiencing insecure land tenure, scarcity of funds and credits, Labour scarcity despite overall high unemployment and stagnant technology have crippled its further development (Nwajiuba, 2012).

Consequently, on a general observation, economic development should not place heavy emphasis on rapid industrialization but must consider as indispensable sound agricultural development that would be capable of

arresting excessive rural-to-urban migration, eradicate hunger and ensure food security and a source of cheap and abundant raw materials for the promotion of international competitiveness, and rapid growth of the industrial sector (Todaro, 2000) cited in Fashola (2005). The challenges to the fulfillment of these roles are not only limited to economic, political, social organization but included amongst others;

- **Minimize excessive migration to urban centres:** This is a serious problem that characterizes agriculture in Nigeria, results in creating slums and serious environmental problems in the urban cities (Todaro, 2000). This phenomenon is largely the failure of rural and agricultural development. For instance, Griffin & Enos (1970) cited in Fashola (2005) emphasized the need not only to embark on agrarian reform for the promotion of output expansion and productivity growth in rural agriculture but also to stimulate industrialisation of rural agricultural.
- **Eradication of hunger and promote food security.** This is a major role of the agricultural sector and requires the development of rural agriculture which has been found to be very effective for poverty reduction. To this extent, the development of agricultural sector is crucial for the supply of adequate and affordable food to the citizens. According to Fashola (2005), the alternative to this is food importation, which is not sustainable because export earnings are often exogenously determined and erratic with generally stagnating trend.
- **The challenge of low-productivity technology:** It is on record that the peasant farmers that account for 95% of agricultural output in Nigeria, continue to patronize the use of crude rudimentary implements such as the hoes, shovels, axes and cutlasses, while relying on manual labour for bush clearing and ridges for planting. The culture of subsistence farming had not motivated the peasant farmers to seek better technology to raise productivity and output beyond family requirements. Also the problem of wastage after harvests for lack of proper storage facilities, the problems of diseases and pest infestation, the problem of packaging and semi-processing for marketing are all connected to the challenge of primitive training.
- **Inadequate government support.** Government ineffective fiscal support and facilitation of credit to agriculture constitutes a major bottleneck for the failure of agricultural transformation in Nigeria. A cursory analysis of the first national development plan (1962-68) shows that government focus was on research for the promotion of cash crops that was the major earner of foreign exchange for the development of landmark projects. Thus, government deliberate research support even if effective for the promotion of cash crops production will not promote value-added growth of the sector. Equally too, in the second National Development Plan (1970-74) and the third National Development Plan (1975-80) government focus was on how to expand its scope of support to agricultural activities in areas of; facilitation of credit to farmers at concessionary interest rate, input subsidy, manpower development, agricultural extension for the dissemination and demonstration of appropriate agricultural technology via agricultural development projects (ADPs), income and price stabilization policy, irrigation facilities for farmers through River basin development authorities, as well as expansion of research institutes for all kinds of agricultural activities. Besides other intervention policies, the establishment of community banks and peoples' bank were undertaken with the objective of making credit available to the rural sector and informal sector. These policies and institutions created for agricultural support are not in themselves inappropriate but has the problem of implementation, adequate monitoring, and lack consultation with the critical stakeholders who are to benefit from the policy, poor management and duplication of functions.
- **Land tenure challenge.** This traditional land tenure system as practiced in Nigeria was characterized by feudal system in the northern part of Nigeria while in the southern part it is characterized by family ownership, where members of the extended family share and cultivate a small plot of land at a time, on account of labour intensive primitive technology. As the land loses its fertility, farmers shift to other plots of land. Hence, it becomes difficult to acquire large acreage of land for commercial farming because of the land fragmentation and inheritance nature. It is not also easy to lease land for long-term use in Nigeria land tenure setting. However, with the land use reform (i.e. land use decree of 1978 which was later renamed land use act of 1980 in Nigeria) aims at alleviating the various challenges vested in land ownership in the state. In the other hand, the state to which the ownership of the land is invested can issue certificate of occupancy to a landholder, who can use and dispose of the land without interference from the community or family. But the traditional practices still persists, such that those who acquire land from the state and has been issued with the certificate of occupation, are still expected to negotiate the acquisition of the land with the traditional owners of such ancestral land.

- **Political instability challenge.** Nigeria the largest black race in the world, continued to experience political unrest, incessant military coups, civil wars, unending inter-ethnic hostilities, conflict and insecurity, kidnapping, banditry and terrorism, as well as farmer/herder conflict have been a major challenge to agricultural sector in Nigeria and sub-sahara Africa in general. With such hostilities and insecurity, people run away from rural areas and abandon farming. For instance, farmer/ herder conflict is regularly disrupting the ongoing agriculture season, trade flows, movement of farmers to their fields to harvest crops and face difficulty accessing land and agricultural inputs. In another instance, investors in rural agriculture and even in the whole country are scared away due to incessant kidnapping and terrorist acts. Consequently food production within the area remains significantly low as farming activities are increasingly impacted by insecurity, military operations and fear of attacks on the farming communities. Some farming households were unable to access their land for planting and weeding, and now more farmers cannot access their farmland to harvest crops as the security environment has deteriorated. It is on this note that we suggest adoption and implementation of true federalism and genuine re-structuring of Nigeria federation; for such will alleviate the bane of political instability while genuine restructuring will ensure justice, equitable income distribution, progressive poverty reduction and general socio-economic development (Fashola, 2005).

### **Prospect of Food Security in Nigeria**

In the *Vanguard* newspaper of August 12, 2002, the federal government of Nigeria has sought the assistance of the Chinese government in finding a solution to the nations deepening food crises, suggested that government recognizes the enormity of the problem. The choice of the Chinese can also not be totally faulted because of that country's large population and its ability to feed her population for centuries, even during the cold war without external assistance. From this perspective, there is a lot we can learn from Chinese?

However, we strongly believe the problem of sustainable food security is more of will than of expertise. The primary problem at the federal, state and local government levels is how to develop plans and execute them to the letter. In this regard, the federal government is the guiltiest. This is because in the extant literature, there is a wide difference between food policy and agricultural policy. While agricultural policy is targeted at an expanded food production. For instance, the agricultural transformation agenda (ATA), that has as its component, growth enhancement support scheme (GESS) was designed for the specific purpose of providing affordable agricultural inputs like fertilizer and hybrid seeds to farmers in order to increase their yield per hectare and move subsistence farming from their high poverty level through market oriented, facilitated by Nigeria incentive-based risk sharing system for agriculture lending (NIRSAL); as well as the development of staple crop processing zones (SCPZ) in the country, that focused on attracting private sectors, improve investment frameworks for agricultural and setup processing plants in zones of high food production to process commodities into food products. Those programmes were meant to avail the agricultural sector the opportunity to use better production technology to pave way for increased agricultural productivity (Aihensu, 2001).

In the other hand, food policy has as its goal consideration for minimum multinational standards that will guarantee food security. While expansive agricultural policy is being pushed, there is also the need for a national food policy which seeks to assure all citizens access to food supply that is reasonably period, relatively safe, adequate in quantity and nutrition (Unffey & Stucker, 1982) cited in Ojo & Adebayo (2012). As it is today, Nigeria food policy has been abandoned or subverted by government officials while Ojo & Adebayo (2012) concluded that Nigeria presently has no food policy. A food policy that is properly formulated will encompass diet policy that shows the relationship of good diet with good living as well as causal link between inappropriate or insufficient diet and major common debilitating diseases. In view of the prevailing knowledge of human nutrition, Ojo & Adebayo (2012) argued that food policy will be guided by what the human body requires and which particular food items provide it, all of which are necessary for effective food choices by the people.

Moreover, Ojo & Adebayo asserted that unlike agricultural policy, food policy should stipulate safety guideline for food production in food manufacturing organization, by highlighting food safety regulations such as the minimum requirements of basic nutrients that must be present in the food, the conditions under which the food is produced, packaged and even advertised to promote the consumption of the food. Also, safety guidelines built-in, in food policy should prohibit critical harmful practices that may occur in the dairy industry and meat processing factories as well as the use of carcinogenic food additives and food enhanced that are regularly used by bakers to preserve food or improve its taste (Davis, 2009) cited in Ojo & Adebayo (2012) including preservation of beans, rice, apple, fish etc. Therefore, it is imperative that Nigeria gets a comprehensive food policy as it will go a long way in boosting life expectancy.

Subsequently, the goal of food security will remain a mirage if all that concerns the government is simply making food available in the quantity desired by the people without considering the quality, then its consumption is capable of causing the consumers all sorts of ailments, such country cannot be listed among those that have achieved food security. It is against this background that the National Food and Drug Administration and Control (NAFDAC) and Standard Organisation of Nigeria (SON) focused at preventing food poisoning, fake drugs, adulteration and empowered to set standard for all consumer products respectively.

On the case of subversion, it should be placed on record that Nigeria had a sugar policy developed in the mid-1980s, which if implemented rigorously should have made the country not only self-sufficient in sugar, but as an extra dividend, should have made the country a net-exporter of sugar as well. Presently, Nigeria is a net-importer of sugar, spending almost 300billion naira annually on sugar alone. Similarly, the civilian government of President Shehu Shagari drew up a plan that would make the nation self-sufficient in rice by the end of the 1980's. The government went as far as to establish three mills at Badeggi, Makurdi and Sokoto each of which was capable of producing about 10 tonnes of parboiled rice per hour. As at today, rice and sugar policies have been abandoned not because the potentials are no longer there but because government officials whose mindset was actively on enriching themselves (i.e. corruption) subverted the ambitious policies. Hence imported rice and sugar were allowed to flood the country wiling off the infant agro-allied efforts with cheaper subsidized products from Brazil, Europe and Thailand.

Also on record, the rice mill at Badeggi was wasted because it was not utilized. It was a known fact that the rice institute had developed different varieties of rice for different zones of Nigeria. And equally developed rice species which can be grown and cultivated under irrigation as well as those that are rain-fed.

From the analysis, what the nation badly needs is sustainable political will to stick to a policy during the most difficult period. By opening the food-gate to importation of rice, the government have undermined its own rice self-sufficiency programme. However, while we welcome the assistance from Chinese, we strongly believe that the lesson to be learnt are here at home and from our own history. Therefore, failed agricultural and food policies and unrepentant neglect of a sector that was once bread winner has resulted in a situation whereby the country a large net exporter of food in the 1960's, is now an importer of food (Ammuchie, 2006).

### **Conclusion/Recommendations**

Nigeria has reached a very critical point in agriculture and food security which is linked to the nation's poor human capital development, the inattention given to infrastructure development, productive inputs technical and vocational education and corruption. Therefore, Nigeria should see agriculture as the gateway to several desired ends which includes poverty reduction, rural transformation, employment and income generation, food security and improved national health profile of the populace. As we recommend, let us heed the advice of Robert Macnamara (1973) that any society that seek to achieve adequate military security against the background of acute food shortage, population explosion, low level of production and per capita income, low technological development, inadequate and inefficient public utilities and chronic problem of unemployment has false sense of security.

- Agriculture and food security should not be politicized because the problem of sustainable food security is more of a will than expertise.
- Public policy makers must see food as a component of welfarism. They should remove their mindset on how to enrich themselves but to ensure that agricultural policy implementation is consistent in order to grow the economy.
- Government, investors, multinational corporations and stakeholders should develop critical infrastructure need in the agricultural sector and support adequate budgetary allocation to farmers.
- Government policy needs to create incentives and send signals that encourage private sector participation in developing rural economies.
- Government should encourage farmers to form farmers' cooperative society for easy identification, accessing of credit and other farm inputs when the need arises.

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