



## AGRICULTURAL TRANSFORMATION IN NIGERIA FOR SUSTAINABLE FOOD SECURITY

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### ABSTRACT

In Nigeria, agriculture still remains a crucial sector, employing over 70 percent of the force, serving as a potential vehicle for diversifying the economy and enabling economic development. As a critical sector of the economy that seeks to reduce poverty, attain poverty and food security, agriculture is the principal source of food and livelihood in Nigeria. Other important benefits of the agricultural sector to the Nigerian economy include: provision of food, contribution to the Gross Domestic Product (GDP), provision of employment, provision of raw materials for agro-allied industries and generation of foreign exchange. Agricultural exports were the main source of foreign exchange earnings until the early 1970s. While agriculture and oil composed about 65 percent and 5 percent of GDP respectively when Nigeria got independence in 1960, the sectors accounted for about 32 percent and 37 percent, respectively in 2006. Today agriculture contributes about 45 per cent of our country's GDP and employs around two-third of the workforce, including 90 per cent of the rural population. Sustainable development as a concept has been described as development that meets the needs of the present generation, without compromising the ability of future generations to meet their food requirement. Therefore adoption of developmental policies and practices that will ensure sustainable technologies and resource efficient farming systems are necessary for optimum food production.

**Keywords:** Sustainable, Agriculture, Security, Invasion, Economy, Policy, Transformation.

## INTRODUCTION

Food, according to the Oxford Dictionary of Current English, is defined as a nutritious substance, especially solid in form that can be taken into an animal or plant to maintain life and growth. Security is also defined as a secure condition solid in form that can be taken into an animal or plant to maintain life and growth. Security is also defined as a secure condition of feeling a thing that guards or guarantees the safety of a state, company against theft or other danger. Security also means impregnability which means a fortified position that cannot be taken by force and resistant to attack or criticism (Adeniran, 2013). Food security therefore means a situation where a country or a nation is so secured against political and economic attack or enslavement. A nation that cannot feed herself, her industries with sufficient raw materials and serve as buffer against political and economic attack, imposition and invasion does not have food security (Adedoyin, 2010).

It is a matter of regret however that a country with about 70 percent of her population living in rural areas where farming is the major occupation would have had no course to panic about food crisis or security but the refers is the case. The monocultural economy on oil that had blindfolded us in the past is now leading us to a situation of a disaster waiting to happen (Adeniran, 2013).

Nigeria, the most populous country in Africa, is naturally endowed with millions of acres of arable land, 38.5 billion of barrels of mineral oil reserves, vast gas reserves, a variety of unexpected minerals, and a wealth of human capital resources by virtue of its estimated population of about 150 million (Abubakar, 2007).

Our dear nation is more hit by the neglect and abandonment of the agricultural sector. Going down memory lane, when agriculture alone accounted for over 60% of the nation's income and provided well over 70% job opportunities in the early 70s. Nigeria was making waves in world history for its agricultural feats; the groundnut pyramid in the north, cocoa in the west, palm oil in the east as so on. All these created wealth and made the nation really great but where are the exploit? The grave implication of our unwholesome displacement of agriculture as the hardship prevalent today, poverty, unemployment, starvation high crime rate, high death rate lack of development, infrastructural decay, corruption and many more. This paper therefore focuses on agricultural transformation in Nigeria for sustainable food security.

### **Historical Background**

The need to understand the history of agricultural developmental efforts in Nigeria is important for three main reasons; it provides record of events that took place within agricultural field in the past. Second, it enables current and future professionals in the field to appreciate the statues, strength and weaknesses of the event which took place in the past. Third, it serves as a guide to subsequent professionals in a way to prevent previous mistakes and avoid them while pursuing their discipline to generate novel professional ideas. This is relevant to all of us involved in agriculture, as farmers, extension agents, civil servant and professionals (Boon, 2011). The establishment of the Agricultural Development Headquarters in Moor Plantation and in Northern Nigeria in 1912 laid the foundation for agricultural extension service in Nigeria. A united agricultural department was in 1921 establishment for the country at Moor Plantation in Ibadan

following the unification or amalgamation of Southern and Northern Nigeria in 1914. The Richards constitution of 1954 gave rise to the creation of ministries of Agriculture in Northern, Eastern and Western Regions respectively. Each region then had a research station, school of Agriculture and a field service division to teach farmers the improved techniques in agricultural extension in Nigeria on modern lines (Ewete, 2010).

The agricultural extension workers in those days traveled on feet and bicycle from farmer's farm to another farmer's farm, from village to village to advice farmers mainly on expert crop production, pre-independence, which was the priority of the colonial masters. The extension staff was also responsible for enforcing government regulations in respect of these crops. The establishment of Ahmadu Bello University in 1962 saw the research of Northern Ministry of Agriculture transferred as Institute of Agricultural Research (I.A.R.) with a section known as National Agricultural Extension Service. Similarly, the establishment of the University of Ife (now OAU) in 1965 gave birth to the institute of agricultural Research and Training (IAR&T) in 1972 from the Western Region, Ministry of Agriculture and Natural Resources Research farm.

It is pertinent to note that pre-independence focus was on special commodity development for the raw materials needed by the factories in Europe. It is however noteworthy that the discussion of the history of agricultural development is interwoven with that of agricultural extension. This is due to the fact that agricultural extension deals with all areas of agricultural modern techniques.

## **Food Security**

According to the world food summit in Rome in 1996 food security exist when all people, at all times have physical and economic access to sufficient, safe and nutritious food to meet the dietary needs and food preferences for an active and healthy life (FAO, 2001). Tracking trends in food security requires two interrelated variables per capital availability of food for direct human consumption and the consumption and the distribution of food supplies within each country (Adeniran, 2011).

Concretely, food security implies that provision of safe, nutritious and quantitatively and qualitatively adequate food, as well as access to it by all people. FAO (1996) gave three dimensions of food security to include:

- Availability of sufficient quantities of food of appropriate quality, supplied through domestic production to imports
- Access by households and individual to appropriate foods for a nutritious diet and
- Optimal uptake of nourishment, sustaining diet, clean water and adequate sanitation together with health care.

## **Characteristics of Nigerian Agriculture.**

Nigerian agriculture, according to Ekong, (2010) can be characterized as follows.

- It is regarded as "a way of life occupation" rather than a multi-faceted industry and business towards food security, employment generation, wealth creation, livelihood enhancement and even national economic development
- Less than 50% of cultivable land is under cultivation because of manual operation, said to employ about 70 percent of the labour force but contributes about 32% of the GDP and less

than 79% of the nation's foreign exchange earnings (Adedoyin, 2010).

- Dominated by small holders and aged farmers who still mostly use rudimentary and antiquated production techniques.
- Total farm mechanization not practiced even in government and large commercial farms.
- Export commodities still exported in raw materials form with no value added through processing
- Excessive post-harvest losses because of inadequate storage and timely exit to market and end users
- Input supply not under genuine farmers control but under the control of 'political farmers and middle actor thereby increasing costs and delays to timely frame operations.
- Bedeviled by inconsistent government policies and or policy implantation instrument
- Very poor infrastructural support roads, railway, haulage, electricity, portable water, suitable marketing arrangement etc
- Most farmers do not specialize in what they produce most farmers do not have expertise in management accounting, record keeping marketing and finale.
- Most children and youth particular those of farmers parentage and graduates of agriculture are not attracted to agriculture in its present state.
- Government still undecided or yet to take concrete action on what to do with the 1978 land use decree. Whether to repeal, retain or reform it
- There are few large-scale farmers who use tractor to open up the land but carry out other operations through manual labour.

- Practice of partial mechanization thereby frustrating the ideal gain of full mechanization
- Abound with plantation farms with over 50 years old cocoa, oil palm and rubber trees.
- Lacking in deliberate value change in favour of agriculture relevant and appropriate marketing structure
- Leaking in deliberate value change in favour of agriculture relevant and appropriate marketing structure and partnership that works well in favour of agricultural development.
- Proliferation of parastatals in the agricultural sector of the economy
- Cannot meet the FAO recommendation level of food security (20kg/person for 3 months).

### **Previous Efforts by Government to ensure food security**

The successive governments in Nigeria have implemented many agricultural developmental strategies such as:

- **Special commodity:** - The pre-colonial approach has nothing specific on food security but raw materials for the factories and industries in Europe
- **Crop Demonstration:** The emphasis here in the early sixties was on crop demonstration especially on food crops. This strategy was implemented with the cooperation of USAID farmers were taken to see operational techniques on the demonstration farms. The approach was on sole cropping which was at variance with the farmers cropping pattern which was mixed cropping system. The technique and extension strategy could not stand the test of time.
- **Farm settlement scheme (1960):** This was strategy designed to get youths who were graduates of free primary education programme of the Awolowo Action Group

Government in 1955 employed after primary six certificate to avoid unemployment of the youths. A lot of constraints and limitation forestalled the success of this agricultural programme, from working for food security.

- **National Accelerated food production Project (NAFPP, 1972):** This brought together workable concepts and techniques of research, extension and agro-services. The general operations of NAFPP involved specialized bodies handling the system which are autonomous of one another. The result was not effectively coordinated due to the ineffective management system and the Nigeria factor.
- **River Basin Development Authorities (RBDA, 1973):** These authorities spread all over the country should have been an agricultural programme towards revolutionizing agriculture but failed. The institution sees themselves as separate organization, specially created without necessary coordination with the ministries of agriculture and other stake holders in their domain. Nigeria factor crept in to make the programme ineffective.
- **Operation Feed the Nation (OFN, 1976):** To reduce the high rate of migration of able bodies people, particularly youths from rural to urban areas which further aggravated food shortage and insecurity, the Obasanjo military regime introduced OFN in 1976. This was to accelerate food production, agricultural development and food security by identification of constraints and harnessing those areas of potentialities that can affect increased food production. The programme increases the interest of rural and urban masses in agriculture. Many institutions and retired civil servants went into food production OFN did not also have effective management approach, coordination, direction and



evaluation criteria which made its strategy defective and of no effect.

- **Green Revolution (1980):** OFN gave way to the Green revolution during the Shagari Civilian Administration and second republic in 1980. The lack of political will coupled with insincerity of purpose, reduced green revolution to inter and intra parties politicking and providing cake and jobs for the boys without necessary management approach which could realize the dream of Green Revolution.
- **Directorate of Food, Roads and Rural infrastructure (DFRRI):** This was an approach designed by Gen. Babangida military regime in 1986. As glamorously designed and presented to the public, the technique was consumed by the Nigerian factor.
- **Agricultural Development programme:** With the assistance of the World Bank, three enclave ADP'S Functual (Kaduna/Katsina) Gusau (Sokoto) and Gombe (Bauchi/Gombe) were identified in 1975 but launched into operation in 1975. These were followed by seven more ADPs in 1981 and 1982 respectively, which were; Lafia, Ayangba, Boda, Ilorin, Oyo North, Ekiti Akoko and Sokoto form the success stories of the enclave ADPs, Nigeria now has 37 ADP's following the country's states administrative structure and the Federal Capital Territory
- **Unified Agricultural Extension System (UAES):** At the inception of the ADP's, the main focus and emphasis were on the development of major crops that are ecologically and location specific. As time progressed, it became imperative that emphasis should be laid on all aspects of agriculture including livestock, fisheries, agro-forestry and land use planning. Also included are aspects like apiary snailry and grass cutter farming. The agricultural extension in the

ADP'S is based on the principle of training and visit system of agricultural extension. Unified agricultural extension system is the dissemination of agricultural extension messages on all aspects of agricultural production with a view of effectively transferring required technologies that will lead to agricultural development and make Nigeria food secured. The strategy is to bring into focus all the features of the Training and visit (TIV) system in such a way that duplication of efforts and conflicting roles are eliminated from the parallel system of extension as witnessed hitherto.

The unified Agricultural Extension system (UACS) has other points of strength by putting in place the following.

- (i) A well-defined organization with clear structure for mode of operation along a single direct line of technical information to, administrative control of staff
- (ii) A professional agricultural extension services devoid of dilution of efforts but with agents main role of educating and organizing farmer for increased food production and improved productivity per land area
- (iii) Effective coverage and mobility of extension agent with maximum of eight groups to be visited every fortnight on a schedule visit for purpose of dissemination of improved production recommendation
- (iv) The involvement of famers in the planning, establishment and management of small plot adoption techniques (STAT) replacing the demonstration hitherto in which the farmers do not participate
- (v) The continuous training and retraining of extension staff to upgrade and update their knowledge and skills in order to prepare them to cope with the duty of identification of production constraints and effective dissemination of

production recommendations evolving from research finding regularly

- (vi) Effective two-way, linkage with research which assists in the production of timely and appropriate production recommendation and adaptable to the farmers field conditions and available resources.
- (vii) The improved status of the extension personnel through professionalism that give credibility to their services and integrity to their personalities
- (viii) The effective coordination of financial human and material resources that focus only on extension service. There is effective coordination among research, extension, input supply, credit and marketing agencies.

The major constraints that critiques can identify in the system is the issue of human factors peculiarly Nigeria factor that slow down the rate of implementation of a well laid out plan of work as in UAES along T&V system.

### **National Fadama Development Programme (NFDP)**

Fadama is a Hausa Word which means seasonally flooded or floodable plains along major Savannah Rivers and depression on the adjacent low terraces. The desire to improve the Fadama resulted in development of small irrigation pumps wash bores, tube wells for small scale irrigated farming system under the project.

The project monitors community mobilization efforts and relevance of priorities. The components of the project include the following;

- Capacity building
- Fadama Asset Acquisition support
- Demand responsive Advisory Services
- Fadama infrastructure investment

- Project management, monitoring and evaluation

The project in Oyo State recorded remarkable achievement in the area of capacity building, infrastructure, investment, assets acquisition, advisory services, project management, monitoring and evaluation.

**National Programme for Food Security (NPFS):** This is on an expanded phase of the National Special Programme for Food Security (NSFPS) which terminated in June 2007. This is being jointly implemented by the FMAWR and FAO. The objectives and strategies of NPFS are to foster the development of small holder agriculture and income generation in the rural areas, improve national food security and reduce poverty on an economically and environmentally suitable bases (UNEP,2002).

The specific objectives were to

- (i) Improve household food security and income through increases in agricultural productivity, diversification and sustainable, use of natural resources
- (ii) Enhance food security of consumer through improved availability of food and access to a variety of goods and increase income of producers through more efficient marketing
- (iii) Enhance farmers' and consumers' access to support services such as extension credit nutrition and health education and
- (iv) Foster participation of the poorer section of the rural population and the development of the community.
- (v)

**Root and Tuber Expansion Programme (RTEP):** RTEP was designed to address the major constraints which prevented the maximization of the benefits of Cassava Multiplication

Programme (CMP) of 1995 - 1999. These constraints are post-harvest losses, inappropriate processing technologies, and lack of product utilization and marketing opportunities for cassava and other food and tuber products. The major objective of RTEP is to enhance national food security, income and livelihoods of rural dweller through improved root and tuber crops production, processing and marketing in the southern and north central region of Nigeria.

The philosophy and strategies framework of TREP is that production of root and tuber crops will be viable and sustainable if all the activities in the root and tuber commodity value chains are based on the concept of market driven technology transfer and commercialization. Conceptually, the strategic framework of RTEP comprises five mutually reinforcing components.

- (i) Multiplication and distribution of improved planting materials
- (ii) Improved adaptive research and extension
- (iii) Diversification of procession options and products
- (iv) Programme management, monitoring evaluation
- (v) Diversification of improved roots and tubers production technologies.

### **Establishment of Research and Training Institutes**

Further changes came in with the Research institutes establishment order in 1980, under which many research stations and departments were upgraded to national institutes. Today Nigeria is fortunately endowed with a strong and well developed national agricultural research institutes comprising

- 18 National Agricultural Research institutes
- 3 universities of agriculture

- 19 Federal colleges of agriculture
- 40 faculties of agriculture
- 8 faculties of veterinary medicine Research centers present in Nigeria
- Several NGO, CBOs, FBO, OPSs etc.

### **Agricultural Transformation Agenda (ATA)**

Recently, the past Nigerian president launched Agricultural Transformation agenda in line with the strategy of using agriculture as a key driver of the national economic transformation agenda. The three prong approaches are agro-input distribution, development of improved seedlings to farmers and agricultural financing. A key element of the agricultural transformation initiative is the promotion of agricultural financing through the Nigeria incentive-Based Risk Management system for Agricultural Lending (NIRSAL), which focuses on de-risking the entire agriculture value chain and there by attracting the desired flow of investments from the private sector and foreign investors ( Okebukola, 2010) .

Apart from the above agricultural projects or techniques. There are other presidential initiatives on production of cotton, cassava and rice. Others are coca Rebirth, maize Doubling etc. one basic feature common to all is that they are established to promote the production of a particular crop of interest towards attaining food security.

### **CONCLUSION**

All the modern agricultural techniques enumerated above are all designed to ensure food sustainability and security for the country. If all policy guidelines formulated for the techniques are implemented without diversion and duplication of efforts,

we shall have a short distance to reach the attainment of food security in Nigeria. The following should also be critically observed, if food security should be attained in Nigeria in the nearest future.

- It is the small scale farmers that are feeding the population. Emphasis should be laid more on agricultural developmental strategies that will improve their production and increase their productivity
- Agriculture must be recognized as a profession and as the only way to achieving economic greatness that will make us join the developed economy by 2020. Our national priorities must be reoriented towards development of agriculture and agro-allied industries.
- Local fabricators must be empowered to make appropriate and accessible agricultural implement available for the use of peasant farmers
- Credit facilities for agricultural purposes must be directed to peasant farmers with heavy penalty to defaulters
- Efforts must be directed at sensitizing mobilizing and forming of farmers in local communities into viable cooperative groups to advance development of agriculture to attain food security
- Agricultural research must be well funded and budget on agriculture faithfully released and implemented
- Reform of institutional arrangements and mechanism
- creation of additional research institutes and centers
- Strengthening of research institutes. Sub-stations
- Review of research funding in NARI/NARS
- Application of emerging technologic
- Agricultural biotechnology and bio-safety
- Information and communication technology (ICT).

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