

## Overview of Challenges of Agricultural Production and Food Security in Nigeria

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**ABSTRACT:** The issue of serious food and nutrition problem is now commonly associated with less developed countries. Food is understood as involving interconnected domains with questions of agriculture, socio-political, market and distribution, employment, ecological, roles of women and just to mention a few. It is surprising that most of the problems which international institutions like the World Bank, Food and Agriculture Organization, Economic Commission for Africa, Organization for Economic Cooperation and Development, International Fund for Agricultural Development and governments of developed countries have to deal with supporting the developing countries in the last two decades have revolved around the inability of agricultural sector to provide adequate food and nutrition for their populations. Nigeria government has only been paying lip service to the issue of food security as it is evident in weak policy making in the area of agriculture. For Nigeria to achieve food security, different challenges like political, social, ecological/climate change, institutional weakness, the role of women in food production among others must be taken seriously. It is recommended that all the stakeholders in agriculture: policy makers, scientists, extension workers and farmers be brought together to discuss the challenges confronting food production/security and forage the way forward. Government should consider implementing the views of the stakeholders one after another and continuity of projects and programmes initiated by donor agencies.

**KEYWORDS:** Overview, challenges, agricultural production, food security, Nigeria.

### 1 INTRODUCTION

The Food Summit in 1996 defined food security as being achieved at the community level when all people at all times have access to nutritious, safe, personally acceptable and culturally appropriate foods, produced in ways that are environmentally sound and socially just [1]. There are two key components to food security; the production or availability of nutritionally adequate and safe food and the access or capacity to acquire nutritionally safe and adequate food [2].

The dominant theme at the World Food Conference in 1974, food security was brought to global attention as the ability of a country to produce enough food to feed its population [3]. Since then, the concept of food security has expanded beyond simply the strict biological requirements of sustenance for survival. Food security does include consuming at a level adequate for physical and material health, but also the right to cultural preferences, an appropriate manner in which the food is obtained and sustainable cultivation methods [4]. Food security is presently understood as involving agriculture, society, environment, employment, income, marketing, health and public policy [5].

The two main challenges of food availability and capacity to acquire nutritionally safe and adequate food could be categorized into: political challenges, social challenges, ecological/environmental degradation challenges, weak institutional policies or challenges just to mention but a few. Reasons for hunger in developing countries of the world to include high rate of population growth beyond productive capacities, high rate of income inequality, land degradation and soil erosion as well as host of institutional and economic factors limiting developing societies from achieving food security. Income inequality is one source of food insecurity common to both developed and developing countries of the world [6].

In most developing countries, land and water based occupations consisting of crops husbandry; animal husbandry, fisheries and forestry are the major sources of employment and income in rural areas [7]. In this context, agriculture assumes

a more significant role in development of national and global food nutrition security system than just being the source of food. Therefore, in predominantly agricultural countries, importing food would have the additional consequence of enhancing rural unemployment, when this is done to compensate the inadequate national attention to agricultural development. Thus, food security has to be viewed in the context of food production, job creation and income generation. An additional issue of overriding importance, if we are to ensure that today's progress is not at the expense of tomorrow's prospects, is that of conservation of the ecological base for sustained agricultural production. Because of the dominance of agriculture in the economies of Less Developed Countries (LDCs), much reliance is placed on the sector to provide resources for the development of other sectors. In this context, food production as a major part of agricultural activity is looked upon to supply some essential needs of the economy. These contributions can be broadly classified into groups: the role in feeding the population and the role in mobilizing resources for developing the rest of the economy [8].

Undoubtedly, Nigeria is presently one of the countries in Africa known to be experiencing food problems. On attaining independence from British colonial rule in 1960, Nigeria occupied a pre-eminent position in Africa, at first mainly through her sheer size, accounting for about 20 percent of the total population on the continent. Nigeria also had resources, which if well developed and managed could accelerate her economic growth and development [8]. In the immediate post-independence period, Nigeria featured prominently among the world's leading producers and exporters of many agricultural products from which substantial amounts of foreign exchange were earned and utilized for executing key development projects. With the exception of a few processed food products and items that cannot be commercially produced locally, the country was self-sufficient in the supplies of basic food items [8].

Nigeria witnessed the first sign of food problem during the civil war of 1967-70 when agriculture was neglected. The effects of the civil war on food situation were compounded by occurrence of the Sahelian drought which adversely affected agricultural output in the northern parts of the country from about the outbreak of the civil war. The beginning of the serious food problem was 1974/75, the period in which windfall gains in crude oil export earnings were monitored to expand government spending and personal income. At the same time, there was yet no clear strategy for effective utilization of part of the available resources for the transformation of agricultural sector. The consequence was a terrible resource waste and by 1985 the terminal date of the fourth national development plan, food production growth was significantly lagged behind population and income growth. Food import bill had also become an unbearable burden on the economy [8].

The last 15 years have witnessed arm conflict and civil strife which remains the major sources of food insecurity and cause agricultural output losses estimated very high. The economic losses and disruption to food supply and access caused by war and civil strife is very disastrous, especially in low-income country like Nigeria where there are no effective social safety nets. Destruction of crops and livestock results at best reduced food security and at worst, in famine and death [9].

## **1.1 FOOD PRODUCTION AND NUTRITION**

Human bodies require a constant supply of energy and raw materials to maintain vital functions and build cellular structures and tissues worn out in the day to day processes of living. The Food and Agriculture Organization (FAO) estimates that the average minimum daily caloric intake over the world is about 2,500 calories per day. People who receive less than 90% of the minimum intake on a long-term basis are considered to be malnourished. While not starve to death, they tend not to have enough energy for an active productive life [10]. Lack of energy and nutrients also tends to make more susceptible to infectious diseases. People who receive less than 80% of their minimum daily caloric requirements are considered seriously undernourished. Children who are seriously undernourished are likely to suffer from permanently stunted growth, mental retardation, and other social and development disorders. Infectious diseases that are only inconveniences for well fed individuals but threats to those who are poorly nourished, for instance, diarrhea.

## **1.2 POLITICAL CHALLENGES**

After many years of political independence, Nigeria has experienced an atmosphere of political uncertainty. These uncertainties and outright disruptions of national life can be attributed to many years of military rule and lack of political direction. Continuous changes of military administration have undermined the ability of many governments to establish realistic agendas and follow them for reasonable periods. There is no question that only sustained political stability is likely to ensure proper economic planning and thus attract the business community: both domestic and foreign. Careful economic planning has not been a strong point of many governments. The country depends entirely on crude oil, there is a tendency to leap into every ambitious development programme, especially when there is an increase in revenue. The establishment of much ill-conceived state owned enterprises have become the hallmark of governments. As soon as world prices of crude oil

begin to fall our country enter into acute liquidity crises, the governments become extremely unstable. Another point that makes a negative impact in food security is the withdrawal of subsidies on agricultural inputs [11].

Suffice to mention that Nigeria is a country where agriculture accounts for higher percentage of foreign exchange earnings and employments, the amount of resources allocated or appropriated it by governments hardly reflects this. It is very clear from its budget allocations and policies on fertilizer, that agriculture has not been top on its priority list. Also government's attitude of turning blind eyes to escalating food imports into the country did not show any serious measure to promote food security. Just few years ago, analysts have cried against the escalating food imports into Nigeria running to over 200 billion US Dollars annually. Also looking at the federal capital appropriation to agriculture, the figures have shown that percentages in comparison to the capital budget have not been encouraging [12].

Within the agricultural sector itself policies are also inappropriate often favouring the large-scale farmers who operate using most of the time foreign capital. The majority of agricultural producers are small-scale farmers and often than not agricultural policies have ignored them. Neglecting the small-scale farmers in any agricultural policy formulation, this means the strategies that define the local circumstances will often meet passive resistance, as they will be top-down policy approach [13].

### 1.3 MARKETING AND DISTRIBUTION CHALLENGES

Improving the distribution system requires the development of adequate infrastructure such as markets, roads, transport and storage; establishment of market intelligence information and provision of incentives to both producers and traders. The income of households will be improved depending on government's policies regarding employment and transfers. These three components necessary for improving food security are interlinked in that improved marketing system which in turn will contribute to the rising incomes of majority of population. In view of this close relationship of the three components, the importance of marketing system in food policy is great as it can promote dependable supplies of low cost food both for rural and urban population [14]. The major problem inhibiting the development of adequate marketing system includes government policies regarding food, trade, pricing and storage. Besides, the handling of part of direct human value, such as gain, efficient to every component of the business with particular stress on the preparation of value added products from each of the components. Recent advances in bio-processing, microbiological enrichment of cellulosic materials and chemical engineering have opened up new opportunities in business utilization [14].

### 1.4 THE EMPLOYMENT CHALLENGES

The farm sector plays a dominant role in providing employment. In order to attract and retain youth in agricultural occupations, farm technologies should be both intellectually satisfying and economically rewarding. Agricultural system that can generate downstream employment in the secondary and tertiary sectors will be necessary to create more skilled jobs for rural men and women. An integrated approach to on-farm and off-farm employment and blending traditional and frontier technologies is urgently needed unless this is done otherwise graduate of agriculture from tertiary institutions will continue to move to other disciplines [11].

### 1.5 THE SOCIAL CHALLENGES

With political independence, Nigerian government began to introduce its own strain of insecurity, state-owned enterprises filled with bureaucratic inefficiencies and heavy doses of corruption among politicians (civilian and military) who amassed wealth and freedom from punishment at the expense of the poor and indeed of our nation. Ironically, these same people are the one who use their political position to formulate laws which prevent progress in many areas. The economic and political structure of Nigeria ignores the fact that food and agricultural production takes place in the rural areas while policies are oriented in the favour of urban constituency. As a result, the bulk of foreign exchange earnings from the cash crops produced by the rural folks are used in the urban sectors and especially in the non-productive sectors of the economy [11].

Land tenure systems with associated customs and traditions have played a dominant role in Nigeria agriculture. Most subsistence farmers operate within the system of communal tenure where individual farmers use portion of land available to them. The land continues to belong to the community [11]. However, in many instances such community land end up the property of landowner who exercise form of feudal tenure whereby the subsistence farmers are given the right to use portions of the land so long as some dues are paid either in the form of labour, providing food or some other forms. It is obvious that in such situation there is little protection of rights of subsistence farmers and for the most part they live under

the shadow of uncertainty. Also this biasness in policy within agriculture sector resulted in the failure of Green Revolution to meet the needs of the small farmers [11].

## **1.6 THE ECOLOGICAL CHALLENGES**

Although the problems we face today to promote sustainable nutrition security are staggering, we will have to be prepared to face the challenges of the future, particularly in relation to probable change in climate. These include changes in precipitation and temperature, induced by increasing concentration of carbondioxide (CO<sub>2</sub>) and other industrial gases in the atmosphere. Also with damage to the ozone layer, the incidence of ultra-violet (UV) radiation will continue to increase. We do not know the potential impact of the higher levels of UV radiation on yield of crops. These changes will have more visible impact in the near future. Whatever the magnitude of the change may be, it will be prudent to make the scientific investment necessary to face difference climate scenarios [7].

Ecological security implies the conservation and sustainable management of the basic life support systems of land, water, flora/fauna and atmosphere. It involves concurrent and integrated attention to all components of the biosphere and geosphere. Ecological security is the foundation on which enduring edifices of food and livelihood security can be built. Studies on climate change have assumed great significance within the last 15 years since Villack meeting Austria in 1985 [14]. The scientists attending the conference announced that as a “result of increasing concentration of greenhouse gases it is now believed that in the first half of this century a rise in global mean temperature could occur which will be greater than any in man’s history”. The rise in temperature they predicted is now been observed globally, while there is a consensus on the nature of global climate change, the nature of climate in the country is not well understood. In Nigeria, climate is already excreting control over development programmes; the future of Nigeria will have to be planned carefully bearing in mind the sensitivity of the country to climate change [14].

## **1.7 FACTORS AFFECTING WOMEN’S ROLE IN FOOD PRODUCTION**

Given women’s crucial role and contributions to food security, any efforts to reduce food insecurity worldwide must take into consideration constraints affecting women’s ability to carry out these roles and make their contributions, with a view to removing the constraints and enhancing women’s capacities [15]. Various in-depth studies carried out so far in the field of agriculture indicate that in spite of key role of women in crop production, animal husbandry, forestry and post-harvest technologies, services and public policies for rural areas have often tended to neglect the productive role of women. Consequently, the development of technologies specifically tailored to women-specific occupations and the involvement of women in technology development and transfer have received inadequate attention from both scientific and administrative department of governments. The same is true for training, women farmers play a predominant role in food security; they often lack access to agricultural services. For instance, lack of land ownership restrict women farmers access to credit as land is often used as collateral, membership in cooperative organization, training and extension services have been predominantly directed towards men, many agricultural development policies and programmes are yet to address adequately the needs of small-scale farmers particularly women [15].

## **1.8 INSTITUTIONAL WEAKNESS/CHALLENGES**

Institutional weaknesses with unfavourable effects on food security are present in many areas of Nigeria; manpower development, research and extension, local institutional proliferation, etc. Several factors have hampered the development of local institutions and the active participation of people in the activities that affect their lives. Projects designed to increase incomes and improve living standards of the rural people are often designed and implemented without involving them at planning stage and decision about what to do, how to do it and who should do it. Lack of adequate resources to invest in rural infrastructure and agricultural credit is largely as a result of failure to develop an appropriate institutional policy that brings about the gradual evolution of rural financial markets. Development strategies have more often intended to depend excessively on cheap capital provided by both multilateral and bilateral donors to build infrastructure. In so doing, mobilization of domestic financial institutions that would provide financial intermediation for mobilizing rural saving and distributing credit for local development undertakings have hardly received the attention it deserves [16].

Nigeria is face with a double tragedy of either feeding its population or paying its debts. By the way of inherited production and consumption structures, the country has been conditioned to emphasize the production of raw materials. What is worse as the population pressures have increased; imported foodstuffs have joined the list of essential import items of the country even though their prices continue to increase and money to buy them harder to obtain [16]. The central challenge of scientific research is how it can help to mobilize and build in home grown human capacities so as to make

common sensible personal, family and national development decisions on a sustained basis; such a policy standpoint requires that there be a vigorous and continuing interaction between the research community, the policy makers, the implementers of policies and the users of research result. This interactive relationship is absent in Nigeria; we need to deliberately bring these four groups of actors for the economic well being of the country together in a common future. Nigeria agriculture is now at crossroad, not sure of which path to follow in preparation for the even more problematic and severely competitive future [17].

### 1.9 DATA CHALLENGES/THE ROLE OF DATA

In order to measure the attainment of the expected objectives and outcomes of several programme and project, data are required. The data collected, when analyzed, provides information for programme management and stakeholder in ascertaining the level of objectives achieved. The information can guide both current decision-making and future planning. It can assist in rendering accountability to programmes implemented. It can equally provide lessons of experience and awareness of the positive and negative factors affecting programme implementation sustainability [18].

However, the lack of data and other information in Nigeria is evident in many areas. Even though this has been a feature of developing economy for many years, the problem has tended to increase because only very few positive steps have been taken to solve this situation. It is not exaggeration to claim that the actual situation from year to year is not known. The little available information is also not comprehensive, and a good proportion of this is obtained not from regular recording of information but from exercises carried out by adhoc committees or through private research, conferences and workshops. Consequently, the reliability of the information can hardly be guaranteed. The information most affected includes basic food production data, food trade data, food consumption data, population data and the actual impact of government policies [8].

## 2 THE IMPORTANCE OF WATER IN FOOD SECURITY

Human food requirement consists of four principal sources; water, agricultural crops, livestock and fisheries. Essentially, the demand for food depends on population and dietary habits/per capita daily calorie intake of the people under consideration. On the other hand, the food requirement of the nation is dependent on an additional factor; food import and export. Consequently, there are basically three ways to produce these food requirements: through rain fed agriculture, irrigated and food import. In all cases water is the most important determinant to increased food Production and rural development [19].

The water resources of Nigeria are estimated to be 250,000 million cubic metres (MCM) comprising 190,000 MCM of surface water with the balance in the form of ground water. This notwithstanding, water is still a limiting factor to agriculture in many countries but most especially in the semi-arid and dry sub-humid zones above latitude 11<sup>o</sup> north [19]. Water is vital and necessary for food production as such it has played a vital role in the prevention of famines and widespread starvation and in the rising standard of living of millions of farmers. Nevertheless, the performance of many irrigation and drainage system is significant below potential due to variety of shortcomings. These include initial design, use of inappropriate technology, distribution system layouts that did not adequately reflect existing conditions, unsupportive governance environment and poor management system [19].

### 2.1 INAPPROPRIATENESS OF LOCATION AND SCALE OF FOOD RESERVE STATIONS/SILOS

The fact that government decides to bear the responsibility of managing food reserve stocks have come to be determined more by political forces rather than economic or operational consideration. Stocks are usually constituted either in the neighbourhood of cities or inaccessible area based on the interest to political leaders. Although it seems reasonable to established reserve stocks near cities to cope with emergency needs of the unemployed urban poor, the problem is that in cases of severe crop failures in the rural areas, the stocks are hardly transferred in time to the affected areas [16]. The ambitious large-scale silos and warehouse that have been established by government have also brought about additional problems. In some cases the public parastatals that are responsible for the procurement of grains lack the financial resources to procure a corresponding volume of food and as a result the large silos or warehouse are often kept more than half empty.

Food reserves are now exclusively constituted with grains while other staple food such as root tubers, meat and dairy products are left out. Cereals grains are durable commodities and are more appropriate for long term storage without special conditions. In Nigeria, tuber crops constitute a larger share to the per calorie intake. Thus, in view of the importance of these food commodities and production potentials in Nigeria, they cannot rationally be excluded in any national food security

policy. Their perishability cannot prevent Nigerians from looking at ways of preserving them, more particularly as traditional processing methods are known to exist [16].

## **2.2 GOVERNMENT ASSISTED PROGRAMMES FOR FOOD SECURITY**

The Federal Government of Nigeria (FGN) in collaboration with States and Local Governments as well as external agencies such as World Bank, International Fund for Agricultural Development (IFAD) and African Development Bank (ADB) always initiate several programmes and projects in order to assist farmers by providing an enabling environment for effective productivity [18]. The Agricultural Development Bank (ADB), for example, commenced as enclave project: Agricultural Development Project (ADP) in Nigeria in 1975. It started in a few states but late 1980s went nation-wide including the Federal Capital Territory (FCT). Each ADP has a number of frontline staff disseminating information on agricultural technologies to farmers. The ADP system progressed from the state-wide project to the multi-ADPs (MSADPs 1, II and III). The ADPs have implemented a number of specific sub-sector focused projects such as the Cassava Multiplication Programme (CMP) sponsored by IFAD, which later progressed to the Roots and Tubers Expansion programme (RTEP). There is also the National Fadama Development Programme (NFDP) of which is been implemented in stages. The National Agricultural Technology Support Project (NASTP) was also implemented in the late 1990s. The National Special Programme for Food Security (NSPFS) among others. The major problem concerning sponsorship of these projects and programmes by the donor agencies in Nigeria is that immediately the donor agencies withdraw their assistance the project will collapse [18].

## **2.3 CONCLUSION AND RECOMMENDATIONS**

Recent approaches to agricultural production and food security have failed to achieve the absolute number of food insecure or to ensure environmental sustainability. But the view on how to improve global security vary greatly, the global inequality in people's ability to acquire food remain one of the biggest obstacle to achieving food security for all. The important consideration for food is whether the food production, distribution, accessibility and affordability would remain higher than population growth rate. Furthermore, food security cannot be achieved without significant improvement to people's availability and the ability to acquire food. Food production is an important area of food production security but not the only part, approaches to achieving food security should focused on both technical aspects of food production and aspects that shapes the local farming practices and access to food. For us to achieve food security, different challenges/factors like political, social, ecological/climate change, institutional weakness, the role of data in food security, government programmes and the role of women in food production among others must be taken seriously. It is recommended that government should have the political commitment to implement policies that will ensure food security, interaction between the research community, policy makers, implementers of policies and the users of research result on continue basis and government should consider implementing the views of the stakeholders one after another and there should be continuity in projects and programmes initiated by donor agencies.

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