

## **Towards Achieving Food Security in Nigeria: The Economic Strains and Strategies for Way Forward**

**AKINYETUN, Tope Shola**

ARUBAH Consultancy

Adeniran Ogunsanya College of Education

Otto/Ijanikin, Lagos State, Nigeria.

### **Abstract**

*Concerns about food security in Nigeria and indeed Africa has consistently grown in the past decades and has thus become a contemporary issue requiring the urgent attention of government at all levels. This dire requisite is predicated on the proviso that food security is one of the indicators of a country's development and as such Nigeria cannot afford to regard the subject-matter as every other undeserving phenomenon. For one, the population of the world is increasing at a progressive, if not alarming rate which means that the circulation and equitable distribution of available resources will be arduous. This coupled with the irrefutable socio-economic responsibilities of the government has made nations of the world take feeding their teeming population seriously. More so, more than ever, providing food; a basic necessity of life, has become pressing in the face of migration which has not only engendered population explosion but has made migration and emigration easy. This is not to undermine the role of globalization otherwise villagization or breaking down of barriers, which has brought nations together and abrogated borders in some cases, and created porous borders in others. It is against this backdrop that this paper seeks to assess strategies for ensuring food security in Nigeria whilst reviewing the economic strains it has placed on Nigeria and appraising a way forward.*

**Keywords:** Food security, food insecurity, climate change, agriculture, Neoliberalism, underproduction, deregulation

### **Introduction**

The Nigerian economy prior independence and the discovery of oil was largely agrarian and dictated the pace of Nigeria's economy from this period to post-independence. In spite of fluctuations in world prices, agriculture remained the mainstay of the economy and contributed about 45 per cent of GDP, represented almost 70 per cent of total exports and provided the foreign exchange that was applied in importing raw materials and capital goods. The agriculture sector actively employed about two-thirds of the country's total labour force and provided employment for about 90 per cent of the rural population. Nigeria, the world's largest producer of cassava, yam and cowpea – all staple foods in sub-Saharan Africa was also a major producer of fish. The peasant farmers produced enough to feed the entire population. The various Marketing Boards generated much revenue, the surplus of which was used by government to develop the basic infrastructure needed for long term development. The policy was hinged on maximizing the profits of the export-led development scheme. Thus, raw materials, which basically comprised minerals and agricultural produce were exported to industrialized nations (Akpan, 2012).

Import Substitution Industrialization (ISI) strategy was adopted. Consequently, various consumer items, which were previously imported, were thence produced domestically. More so, measures like tariffs, quotas, etc. were in place for protection and to ensure that domestic industries were allowed to grow and in a short while, jobs were created. As a result of this, unemployment, rates of inflation and productivity were moderately acceptable. Policy favoured tight demand management. Amplified productivity kept prices rationally stable within the economy. The unemployment rate was around 1.5 per cent and was most visible among primary and secondary school leavers (Akpan, 2012).

Attention was also paid to agricultural development during colonial administration in Nigeria. This extended to research and extension services which birthed the establishment of a botanical research station in Lagos by Sir Claude McDonald in 1893 followed by the acquisition of 10.4 kilometers of land in 1899 by the British Cotton Growing Association (BCGA) for experimental work on cotton and named the experimental area Moor Plantation in Ibadan. From the late 1930s to the mid-1940s, there were significant intensification and expansion of research activities, and extension and training programmes of the Agricultural Departments (Nwachukwu, 2006).

Additional facilities for training of junior staff in agriculture were provided, as well as scholarships for agricultural students in Yaba Higher College and Imperial College of Tropical Agriculture in Trinidad. The Department of Agriculture was set up, WAIFOR (West African Institute for Oil Palm Research) in Benin commenced and the research on cocoa was increased at Moor Plantation, Owena near Ondo and at Onigambari near Ibadan. There were also notable improvements such as the development of 'Alien Cotton' in the south; rice cultivation in Sokoto, Niger, Ilorin, Abeokuta Colony and Ondo provinces; the introduction of wheat cultivation in the more northern parts of the northern provinces; the expansion of production of such export crops as cocoa, oil palm and groundnut; development of agricultural implements as well as designing farm buildings; intensification of horticultural activities; the development of a marketing section of the Department; the extension of the Produce Inspection Service to cover all principal export crops; investigations into the possibilities for organized land settlement schemes; and investigations into the possibilities of irrigation in northern Nigeria (Nwachukwu, 2006).

As opined by IFAD (2011), in spite of Nigeria's abundant agricultural resources and oil wealth, poverty remains prevalent in the country and has spiraled since the late 1990s. Over 70 per cent of Nigerians are now classified as poor, and 35 per cent of them live in absolute poverty (IFAD, 2011). Poverty is expressly severe in rural areas, where up to 80 per cent of the population lives lower than the poverty line and social services and infrastructure are inadequate. The country's poor rural women and men depend on agriculture for food and income. About 90 per cent of Nigeria's food is produced by small-scale farmers who cultivate small plots of land and depend on rainfall rather than irrigation systems. The deprived clusters eke out a subsistence living but often go short of food, particularly during the pre-harvest period. The productivity of the rural population is also hindered by ill health, particularly HIV/AIDS, tuberculosis and malaria, low GDP, low per capita income, high cost of importation of food items, and government neglect of agricultural sectors all of which has strained food security and culminated into food insecurity in Nigeria. Thus, ensuring food security is not just a necessity in Nigeria, but remains the only way to guarantee the continued survival of her teeming population.

Igbinedion and Aihie (2015) aver that food security remains an elementary and basic requisite for national development and as such, has been used by different people to convey different thoughts. The duo further reiterate that the rapid annual population growth in Nigeria, particularly in the last decades has seen food insecurity spiraling to become the norm in many homes, a trend which has furthered the intensity of poverty and lack of access to food. They also submit that there is an interplay of population growth, bad policies of government, lack of infrastructural development, rural-urban drift, lack of incentives, poverty of peasants as well as under-capitalization to fuel the fangs of food insecurity in Nigeria.

From the foregoing, it is deducible that Nigeria is not immune to food security challenges. To be sure, circa 70 percent of the Nigerian population live on less than N100 (US\$ 0.70) per day, thus entrenching suffering, hunger and poverty culture (Nwajuiba, 2013). In spite of its status as oil-dependent, Nigeria remains an agrarian economy. The sector provides over 40% of gross domestic product (GDP) with between 60 and 70% of the population productively engaged in farming. Yet, enormous subnational differences exist. For instance, in the southeast, 22% of the people live in rural areas with most of them engaged in non-farming activities (Akinsanmi, 2005). Out of about 79 million hectares of arable land it possesses, Nigeria has been able to cultivate a mere 32 million hectares of land. In the same venv, over 90% of agricultural production is rain-fed while smallholders, mostly subsistence producers account for 80% of all farm holdings. Both crop and livestock production are virtually below potentials. This shortfall is as a result of maladies such as low fertilizer, inadequate access to quality seeds, inefficient production systems as well as low uptake of high quality seeds. Despite a seven percent growth rate in agricultural production (2006–2008), Nigeria's food import bill has constantly risen. The growing population is dependent on imported food staples, including but not limited to wheat, fish and rice (Nwajuiba, 2013).

As observed by IAASTD (cited by Nwajuiba, 2013), the findings on level of agriculture in sub-Saharan Africa as documented in the international assessment of agricultural knowledge, science and technology shows that agriculture in Nigeria not only contributes to a small extent to global warming through bush burning and other poor land management practices, but that it also bears first and foremost the full impact of climate change waves. However, not to be oblivious of government's past efforts, it is worthy to note that strategies have been put in place to address food supply through agricultural production, though with little or no successful outcomes. Explicitly, the programmes established further maligned the peasants; the major food producers in the country.

The following companies as noted by Otaha (2013) were instrumental to the food production drive:

1. The national Grains Production Company.
2. National Root Crops Production Companies.
3. North-east, Western and National Livestock Production Companies.
4. The Nigerian National Shrimp Company.
5. The Nigerian National Fish Company.

The afore-mentioned companies were established in 1989 by the Federal Government to engage in direct food production. They targeted cassava, millet, maize, sorghum, wheat and rice. There was also establishment of eleven (11) River Basin Development Authorities for development of river basins for the sake of making Nigeria self-sufficient in food production through agriculture. Other transient programmes adopted includes Green Revolution and Operation Feed the Nation (OFN). These were also targeted at revamping agriculture, give it a new face and buoy up land owners to embrace farming as a way of life beyond the hitherto way of treating it as a mere occupation (Otaha, 2013). However, these programmes favoured capital intensive and large-scale commercial farmers more, at the expense of poor peasants. This process led to what Ogbuide termed 'Proletarianization of Peasantry' and created brief-case farmers who corruptly enriched themselves.

### **Theoretical Framework**

The achievement of food security in a society falls under the purview of the state. The state majorly through privatization, deregulation and disengagement with areas of social provision is able to engender policies that favour agricultural production, expansion and sustenance. The state is duty bound to set up a proper environment for effective trade relations and hands-off market forces. As a result, this research work adopts Neoliberalism as its theoretical underpinning. This becomes relevant considering that neoliberalism favors private and economic markets rather than the public ones and authority of the state. More so, the fact that neoliberalism advocates reduction in deficit spending, open markets to trade, abolishment of fixed exchange rates, permission for private property as well as permission for privatized businesses run by the state. Significantly, neoliberalism for ensuring food security refers to a freeing of the economy by eliminating regulations and barriers that restrict what actors can do.

The structural distortion of Africa's agrarian system since independence has been socially reconstituted through neoliberal policy regimes that have undermined agricultural production structures and have led to low productivity. The post-1980s market-oriented reforms were designed to reverse the productivity decline but have had the opposite effect, increasing the development of industrial agriculture at the expense of smallholder farming. It was the reversal of agricultural and wider interventionist policies under structural adjustment and the fiscal crises peasants experienced that halted the growth of peasant productivity (Patnaik, 2008). The decline in Africa's food production per capita was a consequence of both limited access to land by small producers and various on-farm production constraints, including the exploitative input and output markets. Low levels of state investment to support small-scale farmers, who are vulnerable to extreme weather volatility, also played a critical part. The deceleration of agricultural technological transformation, through reduced per capita utilization of inputs (improved seeds, fertilizer, etc.) has constrained land and labour productivity, particularly among small producers. Fertilizer use, in terms of kilograms used per hectare on arable and permanently cropped land, is also low compared with that in other continents.

On average, African farmers apply about 20 kilograms per hectare (nine in sub-Saharan Africa) compared with 150 kilograms per hectare in Asia and 90 kilograms per hectare in Latin America (FAO, 2005). The productivity decline is also caused by the dramatic reduction in government investment in critical infrastructure such as rural roads, irrigation, research and development. Less than 2 per cent of Africa's 1 billion hectares of cropped area (and only 13 million hectares of 43 million hectares of potentially irrigable land) is irrigated.

Livestock productivity trends are equally low. The failure of the state to promote food security and agricultural production has resulted in an increased dependence on food imports, which negatively affects the terms of trade. In addition, many African countries became even more dependent on food aid in order to fill the food supply gap. Food aid deliveries to the African continent increased sharply in 1990–92 due to drought in most regions of Africa and then declined thereafter. Food aid shipments to Africa were over 5 million tonnes in 1990–92 before declining to less than 3 million tonnes in 2004–06. However, total aid increased to over 3.5 million tonnes in 2006, reaching 115 million people at a cost of over US\$2.4 billion (WFP, 2007). In Southern Africa, food aid increased sharply from 2001 until 2007, when it returned to the 1998 levels. Between 2001 and 2003, US\$1 billion was provided (an average of US\$333 million per year). Import dependency means that food prices within Africa are influenced by the vagaries of global markets, as well as by various shortcomings of intra-regional trade. In the Southern African Development Community (SADC) region, for example, consumers of imported foods and farming inputs have been captive ‘price takers’ of food and inputs produced in South Africa and elsewhere because of South Africa’s pivotal role in the region. The unequal regional food trade and food import dependence, therefore, shapes the SADC region’s agrarian system, including underinvestment in domestic food production.

Underproduction in agriculture is directly correlated with under-consumption of food and increased poverty. Over the past decade, food prices have been volatile across Africa. The situation has been more severe since the 2008 food and fuel crisis, which has put basic food out of reach of the poor while the middle classes are spending more and more of their earnings on procuring basic food items. The consumption and production of high-value foods (meat, milk products and pulses) are relatively low. However, per capita consumption of higher-cost protein-rich foods varies significantly across regions, and differences in access to these foods are even more pronounced than those in access to staple foods (UNECA, 2009). This under-consumption has resulted in complex food and social crises whereby the relative unavailability and high cost of food have affected millions of people for decades (Wiggins, 2005). This was exacerbated by the 2001–03 droughts and the rise in world food prices since then. The debilitating health and social effects of reduced consumption (calorific intakes) or consumption behaviour changes (for example, switching the types of food consumed or reducing the number of meals) have long been apparent. Absolute numbers of undernourished people between 1990–92 and 2005–07 in Africa ranged from 171.3 million to 208.5 million (FAO, 2010). Family assets are eroded, resulting in weak resilience and failing livelihoods. Morbidity and mortality also rise because of increased vulnerability to waterborne diseases such as malaria, cholera and diarrhoea.

Almost 30 years after African countries first embarked on neoliberal agricultural reform, many countries face chronic food insecurity, especially among the poor, and food production remains inadequate. Cereal deficits in domestic regional production on the continent are common, while food prices have been volatile. These vulnerabilities persist because of the distorted agricultural production system, which emanates from a lack of integration into the speculative world food market and the farm-input capital markets. The expected benefits of liberalization of agricultural/technological transfer and the availability of infrastructure finance and scientific know-how have so far not materialized to transform African agriculture. Instead, neoliberal policies undermined the capacity of small producers, failed to increase technological transformation and led to income deflation through wage repression (Patnaik, 2008).

### **Food Security**

As noted by Adebayo (2010), the idea of food security was presented for the first time at the World Food Conference in 1974 viewed solely from the perspective of having adequate availability of food on a national scale. Today, it is a condition in which all people have access at all times to enough food of an adequate nutritional quality for a healthy and active life. To the writer, there are four dimensions to this: (i) availability of sufficient amount of food which is a function of food production (ii) stability of supply over time which depends on the ability to preserve/store produced food and supplement available food through imports if necessary (iii) access to the available food which depends on income levels and its distribution and (iv) food utilization which encompasses procurement, ingestion and digestion all of which are dependent on nutritional quality, education and health.

According to Idrisa (2008), food security has to do with having at all times an adequate level of food and food products to meet increasing consumption demand to mitigate fluctuation in output and price. Meanwhile, Ladele and Ayoola (cited by Adegbola et.al, 2011), see food security as a function of food production level, that is, high level of food production is equals to food security.

However, to Oriola (2009), food security entails producing food that will go round every citizen both in quality and quantity. To achieve this, agricultural production needs to be enhanced with adequate knowledge of the environment, climatic condition, the market and its operation, and be aware of price and price mechanism, good transportation system, storage, fashion modality to check glut and be well prepared in case of disasters. Abudullahi (2008) defined sustainable food security as when people have physical and economic access to sufficient food to meet their dietary needs for a productive healthy life at present as well as in the future. This definition outlines some indices for measuring the extent or degree of food security to be achieved by any country and the indices are adequate national food supply, nutritional content, accessibility, affordability and environmental protection.

Food security is also defined as a condition where 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 (World Food Summit, 2003). For Siamwalla and Valdes (2004), food security is the ability of the countries, regions or households to meet target levels of food consumption on a yearly basis. In a similarly vein, the Committee on World Food Security posited that food security connotes physical and economic access to adequate food for all household members, without undue risk of losing the access. The Food and Agricultural Organization (FAO) (2008) also defined food security as a state of affairs where all people at all times have access to safe and nutritious food to maintain a healthy and productive life. This implies: availability, accessibility, and proper utilization. Food security means ensuring that sufficient food is available; maintaining sufficient supplies through domestic production at relatively stable levels; allowing access to food for those in need of it; and ensuring biological utilization of food. This implies adequate storage against spoilage, disease and ensures nutrient balance. In addition, the World Bank (2007) looked at food security as access by all people at all times to enough food for an active, healthy life. Food security is thus people oriented and it implies a situation in which all households have both physical and economic access to adequate food for all members and households are not at risk of losing such.

Odey (2002) articulates food security system definition as the availability and accessibility of foodstuff in desired quality to all consumers throughout the year. Gokum (2007) while acknowledging that the food security concept took its roots around the mid-1970s in the discussions of International food problems at a time of global food crisis he adopted the definition of the World Food Summit in 1974 to say, food security is the availability at all times of adequate world food supplies of basic food stuff to sustain a steady expansion of food consumption and to offset fluctuation in production and prices. Carter (cited by Eme et. al., 2014) opined that food security may be defined as the ability of food-deficit regions or countries, or households within these countries, to meet target levels of consumption on a yearly basis. They noted that what constitute target consumption is being referred to as two central issued of a country's food policy. For Adisa (cited in Okpanachi, 2004), food security can be defined simply as access by all people at all times to enough food for an active and healthy life. Accordingly, Eboh (cited in Idachaba, 2004) described it thus: food security simply refers to the ability of individuals and households (especially the rural and urban poor) to meet staple food needs all year round'. Continuing, Eboh further states that the above description is essentially intra-generational food security as opposed to inter-generations to meet their food needs, on season and off season.

Abudullahi (cited by Eme et. al., 2014), adds that food is not only a basic need; it also provides the physiological foundation upon which other considerations and human activities are structured. He noted that for us in Nigeria, food security is both a national objective and a challenge. Food security is not simply having sufficient and adequate quantities of our various staple foodstuffs but it also entails access to the entire citizenry to these food items at affordable prices. It further means that not only must we engage in mass food production, but also we need to ensure that most Nigeria have sufficient purchasing power to acquire food items that guarantee good feeding and nutrition.

Food security for a household means access by all members at all times to enough food for an active, healthy life. Food security includes a minimum of

1. The ready availability of nutritional adequate and safe foods and
2. An assured ability to acquire acceptable foods in socially acceptable ways, that is without resorting to emergency food supplies, scavenging, stealing or other cropping strategies.

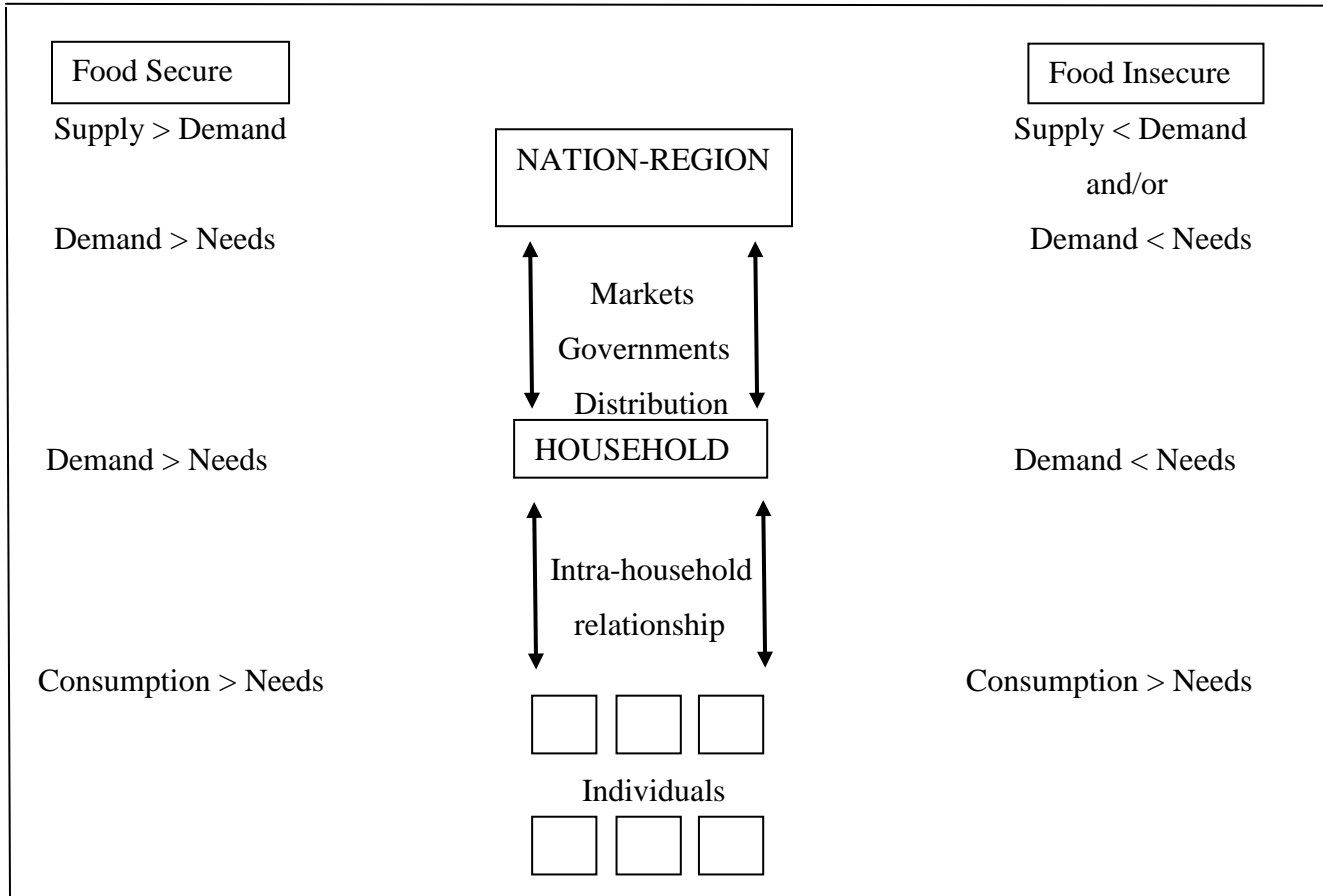
In the World Bank Policy Study (2006) food security is defined as access by all people at all times to enough food for an active healthy life. To the Economic commission for Africa (2009) food security involves not only food availability through storage, and trade but also more importantly food access through domestic or home production (Otaha, 2013). The main goal of food security therefore, is for individuals to be able to obtain adequate food needed at all times, and to be able to utilize the food to meet the body's needs. Food security is multifaceted.

As observed by Ojo and Adebayo (2012), food security has been promoted by the United Nations as the most basic human need and as a central indicator of absolute poverty and physical wellbeing. Food security refers not only to an adequate aggregate supply of food, but also means that all people at all times have both physical and economic access to basic food. This requires not just enough food to go around. It requires that people have ready access to food. This is measured using two indicators: (1) food supply is measured as the mean daily per capita supply of calories and protein and (2) the child hunger rate is measured by the percentage of children under age 5 who are undernourished.

According to Omonoma and Agoi (2007) there are four major elements of food security; food availability, food access, food utilization, and not losing the excess. Again, the exploitation by middle men i.e. middle men's share of total market margin indirectly leads to loss of interest in farming and subsequently food insecurity in the country. The dearth of knowledge in techniques for storage and or turning fruits and vegetable force farmers to sell produce at ridiculous price at harvest to avoid post – harvest losses, this lessens their income, reduce their purchasing power and subsequently their lack of interest in crop production (Babatunde and Oyatoye, 2005). Food wastage has also been indicated as a bane of food security in Nigeria, according to Igberaese and Okojie-Okoedo (2010), Nigeria experienced food wastage of 0.81 million metric tonnes between 1995 and 2000 and this would reduce greatly if storage facilities are in place. Food security cannot be achieved in a culture of wastage; Igberaese (2004) maintained that food wasted at ceremonies in Nigeria on weekends in a month is enough to feed the state for a month. Export of staple food has also been indicted by Igberaese and Okojie-Okoedo (2010) as a cause of food insecurity, the export of staple food crops should be de-emphasized. The prospect for increased agricultural production and food security in Nigeria is good because of these factors; the abundance of land for crop production, livestock and forestry products, and large domestic and international markets. Agricultural production and food security will require a comprehensive strategy to reduce some important constraint as discussed earlier.

Food security exists at both the macro and micro levels. National Food Security (NFS), the macro dimension, is possession by a nation of the capacity to procure enough food through production or imports to feed its population. This is a necessary condition but not a sufficient condition for Household Food Security and Individual Food Security since food availability on a national scale does not preclude the lack of adequate access to such food by many of the inhabitants due to weak markets, poor infrastructure and information system, and inequality in resource and income distribution. Various composite indices have since been developed to measure Food Security incorporating all the dimensions of food security. Popular among these are the Aggregate Household Food Security Index (AHFSI) by the United Nation's Food and Agricultural Organization (FAO) and the Food Security Index (FSI) of the United States Agency for International Development (USAID) (Adebayo, 2010).

**Fig. 1 Levels of Food Security**



*Source:* adapted from Igbenedion and Aihie (2015)

The United Nation Millennium Development Goals are of the initiatives aimed at achieving food security in the World. In its list of goals, the first Millennium Development Goals state that the UN is to eradicate extreme hunger and poverty or to half it by 2015 and that agricultural productivity is the key player if this is to be achieved. Dahlberg (cited by Ojo and Adebayo, 2012) identified four global threats that has significant implications for the food security of cities. First, there are three different types of incipient population explosions: human, livestock and cars. The threats of increasing human numbers and urbanization are clear. Less often considered is the explosion since World War II of livestock numbers – today some 38 percent of the world’s grain crop is fed to livestock. Second, there is global warming – an issue beset by uncertainty and confusion. While a few regions may benefit from global warming, the latest projections suggest African agriculture is the most vulnerable, while many agricultural areas in the temperate zones will suffer from more frequent storms, droughts, and floods as well as temperature extremes. Third, the loss of biodiversity is perhaps the greatest long-term threat to global sustainability. The fourth one is the threat of poverty and globalization of injustice. Whatever one understands the sources of this to be, the weak, and the poor (including poor cities and states) are becoming more vulnerable than ever to powerful economic forces and structures. For instance, significantly, after 50 years, average grain prices over the last three years have increased 12 percent a year for wheat, a percent for rice, and 16 percent for maize.

**Concept of Food Insecurity**

The absence of food security is food insecurity; food insecurity on the other hand represents lack of access to enough food and can either be chronic or temporary. Adeoti (cited by Metu et al, 2016) opine that chronic food insecurity arises from lack of resources to acquire and produce food thereby leading to persistent inadequate diet. FAO (2010) refers to food insecurity as the consequences of inadequate consumption of nutritious food bearing in mind that the physiological use of food is within the domain of nutrition and health.

When individuals cannot provide enough food for their families, it leads to hunger and poor health. Poor health reduces one's ability to work and live a productive healthy life. Poor human development destabilizes a country's potential for economic development for generations to come (Otaha, 2013). Food insecurity is the opposite of food security, it is the lack of access to sufficient quality and quantity of save nutrition food for an active and healthy life; the inability of households or individuals to meet the required consumption level in the face of fluctuating production, price, and income (Maharjan and Chhetri, 2006). Food insecurity boils down to inability of households to have reliable access to food in sufficient quantity and quality to enjoy active and healthy life.

Chronic food insecurity now affects some 28% of the population that is nearly 200 million people who are suffering from malnutrition. Acute food insecurity in 2003 is affecting 38 million people in Africa who are facing outright risk of famine with 24,000 dying from hunger daily. Famines are the most visible and extreme manifestation of acute food insecurity. Of the 39 countries worldwide that faced food emergencies at the beginning of 2003, 25 are found in Africa (Ojo and Adebayo, 2012). It is vital to add that Amartya Sen (cited in Clover, 2003) has been credited with initiating the paradigm shift in the early 1980s that brought focus to the issue of access and entitlement to food. Food insecurity is no longer seen simply as a failure of agriculture to produce sufficient food at the national level, but instead as a failure of livelihoods to guarantee access to sufficient food at the household level. Today, most common definition begin with individual entitlement, though recognizing the complex inter-linkages between the individual, the household, the community, the nation and the international community (Clover, 2003:7).

The World Food Summit plan of Action (cited by Attah, 2012) states that food insecurity occurs when;

- a. People experience a large reduction in their sources of food and are unable to make up the difference through new strategies.
- b. The prevalence of malnutrition is abnormally high for most time of the year, and this cannot be accounted for by either health or care factors.
- c. A large proportion of the population or group is using marginal or unsuitable strategies, and
- d. People are using —coping strategies that are damaging to their livelihoods in the longer term or incur some other unacceptable cost, such as acting illegally or immorally.

Haile (2005:2169) identified a number of factors that are responsible for the precarious food insecurity, in Africa. They are: low agricultural productivity, lack of agricultural policies, poor infrastructure and high – transport costs, lack of appropriate marketing strategies, frequent extreme weather events, high – disease burden including HIV/AIDS, weak financial support systems, lack of safety net systems and political conflicts. Another great challenge facing food security in Africa is poverty. Key steps to increasing agricultural productivity which is in turn key to increasing rural income and reducing food insecurity. They include:

1. Boost agricultural science and technology. Current agricultural yields are insufficient to feed the growing populations. Eventually productivity derives economic growth.
2. Securing property rights and access to finance.
3. Enhancing human capital through education and improved health.
4. Conflict prevention and resolution mechanisms and democracy and good governance based on principles of accountability and transparency in public institutions and the rule of law are basic to reducing vulnerable members of society.

### **Causes of Food Insecurity**

Generally, food insecurity is caused by undernourishment which is predicated upon remoteness and inaccessibility to food; economic and/or social. Food insecurity is associated with people who consume food that with low energy components and those who show physical weakness as a result of nutrition deficiency arising from intake of unbalanced diet or from the body's inability to use food effectively because of infection or disease. According to FAO (2010) food insecurity refers to the consequences of inadequate consumption of nutritious food, considering the physiological use of food by the body as being within the domain of nutrition and health. Malnourishment also leads to poor health; hence individuals fail to provide for their families. If left unaddressed, hunger sets in motion an array of outcomes that perpetuate malnutrition, reduce ability of adults to work and to give birth to healthy children and erode children's ability to learn and lead productive healthy and happy lives.



This truncation of human development undermines a country's potential for economic development for generations to come. Famine and hunger are both rooted in food insecurity. Food insecurity can be categorized as either chronic or transitory, chronic food insecurity translates into high degree of vulnerability to famine and hunger, ensuring food security presupposes the elimination of that vulnerability. Chronic insecurity is similar to undernourishment and is related to poverty existing mainly in poor countries. No problems can be solved unless its causes are known: therefore, knowing the causes of food insecurity will help us to locate the solutions (Otaha, 2013).

Discussing the causes of food insecurity in Nigeria is a very difficult task; this is because most Nigerians develop apathy towards locally produced food and prefer imported food which they consider as superior to domestically produced ones. The emergence of oil sector and the substantial revenue accruing from the sector shifted emphasis from agriculture to the extent that even domestic food production is not given the desired requirement. The government felt that it was better to import food than to embark on local production, especially when oil money has changed the tastes of most Nigeria in favour of foreign imported goods. The above reasons notwithstanding, the causes of food insecurity in Nigeria according to Otaha (2013) can be discussed under the following:

### ***Gender Inequality***

Gender inequality is a major cause of hunger and poverty. Food security can be a major concern for people who are incapable of or denied access to participation in labour - formal, informal or agricultural. In 2009, the UN estimated that 60 percent of the world's chronically hungry people are women and girls, 98% of which live in developing nations, when women have income, substantial evidence indicates that the income is more likely to be spent on food and children's needs. Women are generally responsible for food selection and preparation and for the care and feeding of children (Otaha, 2013). Women play many roles in land use, production, distribution, processing, marketing accessing, trading and food availability. They often work as unpaid and self-employed workers on and off farm employees, entrepreneurs, traders, providers of services and caretakers of children and elderly, women farmers represent more than a quarter of the world population, comprising on average 43 percent of the agricultural workforces, ranging from 20 percent in Latin America to 50 percent in Asia and sub-Saharan Africa. However, women have less access than men to agricultural assets, inputs and service. Analysts suggest that if women have the same access to productive resources as men, women would have boost yield by 20 – 30 percent, raising the overall agricultural output in developing countries by two and half to four percent. This gain in production could lessen the number of hungry people in the world (Otaha, 2013). Reducing gender inequality and recognizing the contribution of women to agriculture is critical to achieving global food security, there is consistent and compelling evidence that when the status of women is improved, agricultural productivity increases, poverty is reduced and nutrition improves.

### ***Policy inconsistencies and corruption***

Frequent policy changes and poor performance of agencies assigned to implement food and agriculture policies have serious setback on food production and distribution. Each time a new government comes to power, the previous agricultural policies and programmes are abandoned and new ones are put in place, and not that the new ones are better than the old ones. It is in a bid to create opportunities for graft. This creates no room for stability and progress in food production. Similarly, the dismal performance of some of the past programs like Operation Feed the Nation, Green Revolution, Lower River Basin Development Authorities as well as agencies like National Agricultural and Land Development Authority (NALDA) and the Directorate of Foods, Roads and Rural Infrastructure (DFRRI) have contributed to low agricultural and food productivity in Nigeria.

### ***Poverty and hunger***

Poverty and hunger prevent people from working hard to increase productivity. Food and agricultural productivity is both capital and labour intensive. Unfortunately, it is the poor peasant farmers that produce the bulk of food needs in Nigeria, due to their level of poverty, they find it very difficult to learn, work and care for themselves and their family members, let alone getting the necessary inputs and energy to produce for others. Apart from the inconsistency in policies most of these policies are neo-liberal which work against the interest of the domestic economy such as the devaluation of naira which made the importation of farm inputs very difficult and out of the reach of peasant farmers.

### ***Conflicts***

The ethnic or religious conflicts have devastating effects on the economic activities especially food production in the areas that they take place. Conflicts here do not necessarily mean physical fighting of wars. It means a disarticulated country or society that is experiencing structural violence without official declaration of war such as pervasive poverty, oppression of the poor by the rich, police brutality, intimidation of ordinary people by those in power, oppression of women and children and monopolization of resources and power by some sections of the society. It will be wrong to say there is peace in such a country like Nigeria where Boko Haram and other sects are threatening the unity of the country. Consequently, it is quite possible not to have peace even when there is no war (Ibeanu, 2009).

### ***Natural disasters***

Frequent climate changes leading to shortage of rainfall and persist drought in Northern part of the country and excessive rainfall and flood in southern and middle belt regions of the country contributed immensely to low food production in Nigeria.

Low level of technology, low agricultural financing and rural-urban migration pose serious threat to food production in Nigeria.

### **Food Security Challenges in Nigeria**

At independence, the Nigerian agricultural sector was performing well and can be adjudged buoyant and dynamic, after all, one-half and three-quarter of the nation's GDP and export earnings; respectively, can be credited to this sector (Igbinedion and Aihie, 2015). However, this was soon to change with the discovery of and the shift of focus to crude oil which led to a drastic neglect of the former. As such, the development of the agricultural sector was replaced by a blatant reliance on crude oil, thus making the present predicament a 'self-inflicted scourge' as opined by Igbinedion and Aihie (2015:46). Attah (2012) submitted that agriculture has remained the largest sector of the Nigerian economy. It generates employment for about 70% of Nigeria's population and contributes about 40% to the Gross Domestic Product (GDP) with crops accounting for 80%, livestock 13%, forestry 3% and fishery 4%. This view was also held by Oriola (2009) who affirmed that Nigeria in the 1960s relied on agriculture to provide infrastructure and run services until the end of the first republic through the military regime of 1976, then it became sufficient agriculturally that crop seedlings were exported to other countries like Malaysia.

As Igbinedion and Aihie noted, the contribution of agriculture to GDP during 1976-80, for example, declined to 21.8% (from 50.2% during the 1960-70 period). Although the sector's contribution to GDP increased to 39.6%, in the 1981-85 period, 41.2% in the 1986-90 period and declined to 29.9% in the 2006-2011 period, this is far from its dominant position in the 1960s. For Attah (2012), to say that Nigeria's economy is agrarian does not mean that Nigeria is agriculturally advanced. Peasant farming characterizes agricultural practice in Nigeria. Farming families engage in subsistence farming in which family needs determine the scale of production and wherein small plots of land are cultivated by individual owners or sub-owners following age-old methods without much control on the yields. Family farming uses mainly family labour which could be augmented with minor hiring of labour and labour exchanges with other farmers at peak seasons. The essential factors of production – land, labour, and capital are provided within the family. This system does not make adequate use of modern farming techniques, capital input, advisory services and market information. The technology of production is not modern and involves a lot of drudgery. Also there is the problem of lack of or inadequate infrastructural facilities.

Peasant agriculture takes care mainly of the food needs of the farm family and produces little surplus for sale. This type of peasant agriculture involves about 95% of Nigerian farmers, while farmers employed on corporate and government supported large-scale farms account for only about 5 percent. It is this 5% that has continued to receive priority attention in governments' efforts to promote agriculture in Nigeria. Nigerian agriculture has being dominated by small-scale farming on small farms, family-owned, rented, or leased. The major staple foods produced by the farmers are sorghum, yam, millet, cassava, and maize, as well as live stocks which give a majority of Nigerians the amount of calorie and protein they need. As Oni (2008) observed, there was sustained emphasis on agriculture to the extent that Nigeria was a major exporter of such agricultural products as palm produce, cocoa, groundnut, cotton and rubber. In addition to these cash crops, the national agricultural system was able to produce enough of food crops like yam, cassava, maize, millet, sorghum and soya beans to the extent that there was almost no need for food importation.

Hitherto, agriculture accounted for over 60% of the Nation's Gross Domestic Product (GDP). However, with the advent of petroleum in the early 1970s, petroleum became the country's major foreign exchange earner and agriculture became grossly neglected.

As noted by Tell (2008 cited in Ojo and Adebayo, 2012), the consequential effect of the decline like some countries of the world, the nation's economy is feeling the brunt of the rising cost of food items, especially the rise in the prices of staple foods. Significantly, the price of rice has increased by over 100 per cent since 2006. It is instructive to note that Nigeria requires 2.5 million metric tonnes of rice annually while local rice production is less than half a million metric tonnes per year. As reiterated by Ojo and Adebayo (2012), beyond high prices of staple food items in Nigeria, drought and political situation in neighbouring countries like Chad, Cameroun and Niger seem to pose a threat to a state like Borno as they rely on the state for their food supplies. Another problem according to the Ministry of Agriculture and Water Resources, responsible for the food crisis in Nigeria is not unconnected with the fact that "Nigeria's agriculture is mainly rain-fed and she has not taken full advantage of its irrigation potential estimated between two and 2.5 million hectares". The area under irrigation is officially estimated at about 220,000 hectares or less than one per cent of the total areas under crops. The contribution of irrigated agriculture to crop production is, therefore, very small.

According to Eme et al (2014), the primary cause of food insecurity in developing countries is the inability of people to gain access to food due to widespread poverty and unemployment, which also inhibits purchasing power and prevents assured access to food supplies. While Abu (2012, cited in FAO, 2012) affirmed that food price volatility has exerted considerable pressure on global food security, and many Nigerians depend on market for their food supply and vulnerable to high food prices. Related to high food prices is a high cost of input which limit yield and production levels that many time lead to sub-optimal input utilization. For instance, fertilizer consumption in Nigeria is one of the lowest in sub-Sahara Africa at 71g per hectare. Farmers in Nigeria also have limited access to credit, and less than 10 per cent of irrigable land is being irrigated. The global economy is knowledge-driven and food system efficiency is dependent heavily and directly on agricultural technological innovations and innovations in relevant sectors. Nigeria's adult literacy level is 54.5 per cent.

Ojo and Adebayo (2012) further professed that in contrast, while drought presents a major problem for the affordability and availability of food items, excessive rain has also contributed significantly to the current hike in food prices. Statistics from Gombe State alone as compiled by Gombe State Emergency Management Agency (GSEMA) show that about 999 farmlands in the state were affected by floods which destroyed yams, maize, vegetable, sugarcane and cassava farms in 2007, when data from other states are added together, no doubt, the ripple effect becomes staggering.

Whereas, climatic conditions favour the rising food prices, the deficiencies in the delivery of farm inputs also come to the fore as a major challenge to farmers. Another factor is the low usage of fertilizers, occasioned by using the poor level of availability resulting in low crop yield. The Ministry of Agriculture and Water Resources has disclosed that current use of fertilizer is about 1,000,000 metric tonnes per annum, while the projected demand estimate is 3.7 million metric tonnes. While the average worldwide rate is 93kg per hectare of NPK, the rate for Nigeria is around 13kg per hectare.

Arguing for the reasons that accounted for food insecurity in Nigeria, Eme et al. (2014), submitted that the inherent characteristics of climate that manifest themselves as changes of climate over a period time affect food security significantly in unpredictable ways as a result of their detrimental effect on pests, crops diseases, crop production, animal husbandry, and humans. Changing climatic conditions affect both the physical and the economic availability of certain preferred food items. Their impacts on income-earning opportunities can affect: the ability to buy food, the availability of certain food products, and price. Changes in the demand for seasonal agricultural labour, consequent upon changes in production practices, will in turn affect income generating capacity. At the production stage, certain factors affect the quantities and types of food produced. Likewise, food security activities like land clearing, crop production, animal husbandry, food processing and preservation and food distribution which lead to the production and release of GHC such as carbon dioxide, methane, and nitrous oxide) cause global warming and impact on climate change.

So also, the crisis in the North has forced some of the crop farmers and pastoralists to abandon their lands and relocate to the neighbouring countries of Niger, Chad and Cameroun. In March, the National Emergency Management Agency (NEMA) said about 65 per cent of northern farmers had migrated to the South because of the insecurity they faced. The agency warned that the country faced a famine by the end of this year because most of the small-scale farmers and mechanized farmers in the Nigeria's northeast are threatened by terrorist attacks. The attacks on these farmers who produce beans, onions, pepper, maize, rice, livestock and catfish in the Lake Chad area for the southern states, have forced them to migrate since the Boko Haram insurgency broke out in Borno State in July 2009 (Eme et al, 2014).

This was buttressed by GCF (2016) when it asserted that flood, drought, desertification are environmental issues affecting availability of food in Nigeria. Climate change affects food supply through loss of farmland, fluctuating food prices, increases in food borne illnesses and other food utilization issues. The recent environmental degradation through deforestation and flooding has wide negative implication for food production. For instance, in 2012 the country witnessed an unprecedented rainfall as a result of extreme weather. The rainfall resulted in severe flooding causing loss of agricultural crops, live stocks and human lives. According to Metu et al (2015), the estimated loss of the country's GDP was worth N2.6 trillion. In the same period, share of agriculture value added to total GDP declined from 23.89% in 2010 to 22.05% in 2012. Other environmental factors that may affect food security includes soil degradation, soil pollution and deforestation. Also air and water pollution from industrialization threaten both human and natural resources to an extent that food securities capabilities are damaged.

In his contribution, Adebayo (2010) acknowledged that one of the main thrusts of the macroeconomic deregulation programme in Nigeria was the radical adjustment of agricultural pricing policy. The fixing of commodity prices through commodity boards was dropped and agricultural produce prices became determined by market forces. This along with rapid inflation resulting from the massive devaluation of the Naira had the immediate impact of huge increase in nominal prices of agricultural and food products even though increase in real prices was much less. Metu et al (2016) argued that government policies with regard to agricultural production were rapid with plans hastily put together and little or no participation from those who are engaged in agricultural productivity. Moreover, policy change that championed increased incentive for local farmers for improved local food productions were neglected. Urban and community farming and even home gardening were no longer encouraged as land agents made it too difficult for people to obtain land for building as well as for agricultural productivity. Eme et al (2014) also claimed that the apparent inconsistency in government's targeted policy intervention and implementation strategies further compounds the problem of food security. For instance, weaknesses and threats to Agricultural development in Nigeria include: (a) Poor access to credit, technical inputs, machines and farm implements (i.e. fertilizers, seeds, pesticides, tractor, plow, harvesters etc.) by farmers (b) Degradation of agricultural natural resources especially soil and water bodies. (c) Poor infrastructure (i.e. rural roads, water supply, storage facilities and market infrastructure) (d) Bad and inconsistent government policy (e) Poor budget allocation to agricultural sector (f) Poor and inadequate irrigation facilities (g) Uncontrolled grazing and livestock migration in some areas and (h) Poaching and settlement within protected areas and bush fires. For the genuine transformation of Nigeria agricultural sector in order to make it relatively more attractive to people (especially the youth and unemployed), it is recommended that all tiers of government (Federal, State and Local), as well as public and private organizations should sincerely adopt policies and strategies that will address and reduce the above weaknesses and threats to agriculture.

According to Metu et al (2016), the type of farming system prevalent in Nigeria is the traditional subsistent farming. This system is characterized by use of simple farm tools, small farm holdings, restricted access to credit facilities and low agricultural inputs, inadequate storage facilities, insecure markets for post-harvest products and exploitation of farmers by the middlemen. In terms of technology, Nigeria is still lagging behind when compared to other nations in Europe and Asia. Due to poverty and illiteracy, farmers do not have access to modern communication system with which they can access information regarding new technologies. Also there are few extension officers to transfer new technology to the farmers. Funding for agricultural research is still low in Nigeria. Also heavy importation of food crops affects productivity of local farmers because the small farmers cannot compete with the imported crops.

### **Economic Strains of Food Insecurity in Nigeria**

Food insecurity unarguably remains a precursor to human, health, nutritional and economic development related challenges in the society. They connote deprivation of basic necessities of life. As such, food security has been considered as a universal indicator of households' and individuals' personal well – being, the consequences of hunger and malnutrition are adversely affecting the livelihood and well - being of a massive number of people and inhibiting the development of many poor countries (Gebremedhin cited by Attah, 2012). As submitted by Smith (2003), malnutrition affects one out of every three pre-school age children living in developing countries. This disturbing, yet preventable state of affairs causes untold suffering and presents a major obstacle to the development process. It is associated with more than half of all child deaths worldwide. It is therefore the bane of a major waste of resources and loss of productivity which are common occurrences in developing countries. This is because children who are malnourished are less physically and intellectually productive as adults. As such, malnutrition is violation of the child's human rights.

More than 800 million people have too little to eat to meet their daily energy needs. Most of the world's hungry people live in rural areas and depend on the consumption and sale of natural products for both their income and food. It tends to be concentrated among the landless or among farmers whose plots are too small to provide for their needs. For young children, lack of food can be perilous since it retards their physical and mental development and threatens their very survival. Over 150 million children under five years of age in the developing world are underweight. In sub-Saharan Africa, the number of underweight children increased from 29 million to 37 million between 1990 and 2003 (United Nations, 2005). Furthermore, poverty, hunger and malnutrition have been identified as some of the principal causes of increasing and accelerated migration from rural to urban areas in developing countries. Unless these problems are addressed in an appropriate and timely manner, the political, economic and social stability of many countries and regions may well be seriously affected, perhaps even compromising world peace (FAO, 2008). This is because hunger and poverty can provide a fertile ground for conflict, especially when combined with factors such as unequal difficulty in coping with disasters (United Nations, 2005).

Hunger and malnutrition are the major causes of deprivation and suffering targeted by some of the Millennium Development Goals (MDGs). This is illustrated by Diouf (2005) in his analysis as follows:

- (i) Hungry children start school later, if at all, drop out sooner and learn less while they do attend, stalling progress towards universal primary and secondary education (MDG 2).
- (ii) Poor nutrition for women is one of the most damaging outcomes of gender inequality. It undermines women's health, stunts their opportunities for education and employment and impedes progress towards gender equality and empowerment of women (MDG 3).
- (iii) As the underlying causes of more than half of all child deaths, hunger and malnutrition are the greatest obstacles to reducing child mortality (MDG 4).
- (iv) Hunger and malnutrition increase both the incidence and the fatality rate of conditions that cause a majority of maternal deaths during pregnancy and childbirth (MDG 5).
- (v) Hunger and poverty compromise people's immune systems, force them to adopt risky survival strategies, and greatly increase the risk of infection and death from HIV/AIDS, malaria and other infectious diseases (MDG 6).
- (vi) Under the burden of chronic poverty and hunger, livestock herders, subsistence farmers, forest dwellers and fisher folk may use their natural environment in unsustainable ways, leading to further deterioration of their livelihood conditions. Empowering the poor and hungry as custodians of land, waters, forests and biodiversity can advance both food security and environmental sustainability (MDG 7).

### **Way Forward on Enhancing Food Security in Nigeria**

According to Ogundare (2015), earlier consultations in FAO identified the following nine policy priorities as possible building blocks for the new post-2015 global food development agenda. Most of these form the very basis of strategic initiatives known as systems strengthening approach:

***Prioritizing equitable development - especially the empowerment of women.*** Women hold the key: they are the drivers of change in ensuring nutrition and food security. If women had the same access to productive resources as men, agricultural yields and output would increase and there would be a significant reduction in the number of impoverished people.

Key elements are (a) enhancing women's access to and control over land and other productive resources; (b) empowering women smallholder farmers to overcome institutional, social, and economic bottlenecks, (c) investing in the nutrition of women and their young children, and (d) participation of both women and men in decision-making at all levels: from the household to public policy and development planning. By focusing on equity of access or opportunity, decision makers emphasize the interests of vulnerable people.

***Ensuring access to nutritious food through comprehensive approaches to food and nutrition security.*** Policies, programmes and investments for strengthening food and nutrition security must aim at: (a) focusing on access as well as availability of foods, (b) recognizing the importance of diversified diets made up of nutritious foods, especially for pregnant women and young children, (c) preventing excessive food price volatility, (d) enabling poor people to access both social protection and social services, and (e) ensuring that the services contribute to adequate child care and feeding practices, and mother and child health care services, with sufficient access to clean water and sanitation. All forms of malnutrition – including nutrient deficiencies and obesity – should be addressed. This means dealing with the global transition to high energy and low nutrient diets and the shift away from unhealthy food consumption patterns.

***Recognizing the key role of agriculture and rural development in eliminating poverty, hunger and malnutrition.*** Smallholder farmers are essential contributors to resolving these challenges which are most pronounced in rural areas. Key elements are (a) provision of necessary public goods and support to raise rural incomes and productive capacities, (b) enabling smallholder farmers to participate and benefit from national and international markets, and (c) pro-poor development through investing in rural economies, both farm and non-farm.

***Making agricultural and food systems sustainable and climate sensitive.*** As demand for food increases – as a result of population growth, urbanization, and changing dietary habits – greater attention is given to the ecological footprint of agriculture and food systems. What are the options for enabling these systems to be socially, economically and environmentally sustainable, while becoming more productive and nutrition-enhancing? The dilemma is faced by all nations and is made starker by changes in climate, which may threaten agricultural production. Sustainable intensification of agriculture requires increases in productivity, while adapting to climate change and reducing greenhouse gas emissions. Climate-sensitive agriculture makes growth more sustainable, while improving the management of ecosystems, including soils, forests, water, fisheries, oceans, watersheds and biodiversity.

***Reinforcing resilience to natural and man-made disasters:*** Poor rural and urban societies experience crises – such as those linked to volatile food prices or climatic shocks – with increasing frequency threatening their food and nutrition security. The sustainability and resilience of their livelihoods can be reinforced by (a) developing a range of capacities and entrepreneurial skills, (b) promoting non-farm rural employment, (c) empowering small producers to diversify their on-farm and off-farm activities, (d) including the most vulnerable in sustainable development processes, and (e) investing in social protection - including food assistance, safety nets and targeted transfers.

***Focusing on food security and waste along value chains:*** Better functioning of interfaces between food and health systems will lead to reduced risks of disease, especially for food that is unsafe for humans. This is increasingly relevant as ecosystems change, due to climate change or human activity. Furthermore, there is universal concern over post-harvest processing and handling losses and food consumption waste: they undermine the sustainability of food systems.

***Ensuring responsible investment in agriculture and food systems.*** Investment in agriculture and food systems can – if undertaken responsibly – contribute to major societal benefits, including reduced inequalities, inclusive growth, and creation of decent jobs. Responsible investment can be strengthened by (a) recognizing that the main investors in agriculture are the farmers themselves, (b) engaging small producers and their organizations fully in the design and implementation of national strategies for agriculture and food security, (c) ensuring their secure tenure of land and improving their access to improved technology and innovation, (d) ensuring they benefit from key public goods - market infrastructure, price stabilization instruments (for both producers and consumers), affordable financial services, and functioning extension services. This calls for a combination of public and private investment involving farmer associations, agri-businesses, government, civil society groups and sources of financing.

In addition to the systems strengthening approach advocated by Ojo and Adebayo (2012) and Ogundare (2015) also recommended the following as strategies to be adopted in ensuring food security in Nigeria:

**Science and Technology.** In Africa, Asia, Latin America and other third world countries, Nigeria inclusive, a deterioration in technology or ecology, which lower outputs from given input has long been identified as one of the reasons for poor agricultural production performance. It is equally important to note that indigenous techniques like crop rotation and other cultural farming practices which have been used to preserve the soil structure and its fecundity do not seem to be adequate or even relevant in the present efforts to boost food production in most developing countries. It is for this reason that the use of chemical and organic fertilizer has been widely promoted in Nigeria, while its rate is even heavily subsidized by the State, despite the awareness of the corruption that is associated with its procurement and distribution. Government intervention to increase food production through technical and economic assistance to the small-scale farmers for land improvement schemes is therefore, not a misallocation of resources. It is, in fact, a necessity because viewed from macro-economic perspective; this kind of intervention cannot be left to market forces in the present circumstances. There is thus the need for the government to sustain the intervention. Not only that, threat to the attainment of food security in Nigeria also comes from the unresolved issue of the safety of genetically modified foods made possible through agricultural biotechnology. Today, biotechnology represents a scientific advance in agriculture with far reaching potentials in increasing food production in an environmentally sustainable manner.

Agricultural biotechnology includes using genetics to modify crops and plants to produce more nutritious food, cloning of livestock; tissue culture technique and genetic engineering. Apart from its potential to produce higher yields the one of biotechnology gives shorter gestation and maturity periods to crops, plants and livestock as well as will continue to use biotechnology to produce genetically modified foods.

As opined by Akinyosoye (2007), Nigerian agricultural scientists have been very enthusiastic in advancing the frontier of knowledge in biotechnology. They have been making efforts to assure the people that genetically modified foods do not pose any higher risk to consumers than conventionally cultivated crops, and have been calling on the government to allocate more research funds to enhance the application of biotechnology in agriculture to optimize yield potentials. The positive disposition of the government and the enthusiasm of the scientists notwithstanding, there are still obstacles to be overcome before full advantage is taken of scientific information in biotechnology in agriculture. First, the amount set aside for investment in the project is grossly inadequate. Second, the quality and the effectiveness of extension services needed to increase the awareness of the peasant farmers of the potentials of biotechnology are still low and need to be upgraded and there are still unwarranted public fears to contend with in the safety of genetically modified foods, stemming from scare-stories, reinforced by superstition and crash ignorance, of the danger in the consumption of genetically modified foods (Davies, 2009).

**Diplomacy.** Food no doubt is a veritable weapon used in foreign policy implementation. No doubt food has become a new form of weapon in international relations. Expectedly, governments may use food resources in international diplomacy for two purposes viz: to influence international food markets, and secondly to influence international economic and political relationships beyond food markets. Moreover, a hungry and unenlightened nation is a weak one while any region subject to famine or starvation is an insecure one no matter how vast and populated it is. Such a region will continue to be constantly under threats and be exposed to external penetration either by ways of aids, relief materials or other forms of assistance presumably put together to alleviate the suffering of the people. It is perhaps in realizing all the above mentioned facts that now made every country to place great emphasis on self-sufficiency in food production. The summation of this deduction so far, is that, food as it was is still and will continue to be a weapon of international and domestic politics (Bamisaye cited in Ojo and Adebayo, 2012).

For Igbiniedion and Aihie (2015), for a purposeful agricultural production, there is the need for the government to institute rural finance policy which is supportive of alternative rural financial institutions, including informal institutions financial intermediation (as opposed to purely credit) approach, savings mobilization including rural financial institutions, especially where it has been largely restricted. In view of the unsustainable rate of population increase throughout Nigeria, there is the urgent need to stem the tide of accelerated population growth. The nation must embark upon an action plan, which guarantees easy access to family planning services. The programme should also place a special focus on rural areas where the majority of the poor, who have been deprived access to family planning service, live.

So also, the attainment of the aforementioned goals of agricultural development in Nigeria and, by implication, adequate access to food for all requires the collaborative efforts of the private sector of the economy. In this wise, the government should provide the enabling environment through the creation of investment incentives and formulation of policies, which would help to enhance the purchasing power of the poor to attract business to rural areas.

According to Metu et. al. (2016), efforts to increase productivity have led to pressure on natural resources as well as environmental damage. There should be effective management of the environment by reducing the rate of deforestation. Trees should be planted as often as possible especially in the desert. Providing habitat for agricultural pests and increasing resilience to shocks and long-term climate change can help in the improvement and management of natural resources. Tree planting should be encouraged because forest trees outside the forest helps in protecting soil and water resources, promotes soil fertility and provides protection from extreme weather events. There is also the need for policy change. Sustainable food security can be achieved if the government adopts inclusive growth in its development efforts. Development should be participatory and environmentally friendly. People-Centered agricultural development puts the farmers first and attacks poverty with opportunities and education. It requires involving the rural people in decision making stages of agriculture productivity. The inability of government to involve these sets of people in defining and designing projects has led to the failure of some of these projects. There should be well designed social protection systems -such as risk insurance scheme and community empowerment- to help households sustain their resilience to shocks.

## References

- Adebayo, A.A. (2010), Food Security Status in Nigeria: Pre and Post Economic Deregulation Review, *International Journal of Economic Development Research and Investment*, 1(1):135-150
- Adegbola J. A., Bamishaiye E. I. and Daura A. M. (2011). Food Security in Nigeria: Government's intervention and the place of effective storage. *Asian Journal of Agriculture and Rural Development*, 1(2):56-63.
- Akinyosoye, F. (2007), *Microbial Biotechnology: A Tovs for Global Development*, Inaugural Lecture, Federal University of Technology, Akure.
- Akpan, N.S. (2012), From Agriculture to Petroleum Oil Production: What Has Changed about Nigeria's Rural Development? *International Journal of Developing Societies*, 1(3):97-106
- Attah, A.W. (2012), Food Security in Nigeria: The Role of Peasant Farmers in Nigeria, *African Research Review*, 6(4):173-190
- Babatunde, R., & Oyatoye, E. (2005). *Food security and marketing problems in Nigeria: the case of maize marketing in Kwara State*. Retrieved on 11/01/2017 from <http://www.tropentag.de>.
- Clover, J. (2003), Food Security in Sub-saharan Africa, *African Security Review*, 12(1):1-15
- Davies, A.E. (2009), *Food Security Initiatives in Nigeria: Prospects and Challenges*, Monograph, Department of Political Science, University of Ilorin, Nigeria.
- Eme, O., Onyishi, T., Uche, O. and Uche, I. (2014), Challenges of Food Security in Nigeria: Options before Government, *Arabian Journal of Business and Management Review*, 4(1):15-25
- Food and Agricultural Organization (2005) *The State of Food Insecurity in the World*. Rome: FAO.
- Food and Agricultural Organization (2008), *Global Food Security: Issues and Prospects*. Rome: FAO.
- Food and Agricultural Organization (2010) *FAO Statistical Yearbook 2010*. Rome: FAO.
- Gokum G. G. (2007), Agricultural Development Programs and Food Security in Nigerian (1970-2004) in Ogiiji P. (ed) *The Nigerian Economy: Challenges & Directions for growth in the next 25 years*. Lagos: Eagle Prints
- Haile, M. (2005), Weather Patterns, Food Security and Humanitarian response in sub-Saharan Africa, in philosophical transactions. *Biological Sciences*, 360(1463)
- Ibeanu, O. (2009). Policy Guidelines on Crop Production and Agro-based Industrialization in Nigeria, *Agricultural Development Bulletin*. Abuja.
- Idachaba F (2004), *Food Security in Nigeria: Challenges under Democratic Dispensation*, Being a paper presented at Agricultural and Rural Management Training Institute (ARMTI). ARMTI Lecture, Ilorin, March 24, 2004.



- Idrisa, Y. L., Gwary, M. M., & Shehu, H. (2008). Analysis of food security status among farming households in Jere local government of Borno State, Nigeria. *Journal of Tropical Agriculture, Food, Environment and Extension*, 7(3):199-205.
- IFAD (2011). Rural poverty in Nigeria. Retrieved on 28th May, 2017 from <http://www.ruralpovertyportal.org/web/guest/country/home/tags/nigeria>. International Fund for Agricultural Development
- Igberaese, F. I. (2004). Africa in Integrational Transmission of poverty: towards a radical model for the new partnership for Africa development (NEPAD). *Journal of University of the Gambia*, 1, 29-30.
- Igberaese, F. I., & Okojie, O. (2010). Food and hunger everywhere: A Nigeria Paradox of poverty. *International Review of Business Research Papers*, 6(4):90-100.
- Igbinedion, S.O. and Aihie, J.O. (2015), Towards good governance and sustainable food security in Nigeria: challenges and the way forward, *OIDA International Journal of Sustainable Development*, 8(5):41-52
- Maharjan, K. L., & Chhetri, A. K. (2006). *Household food security in rural areas of Nepal: Relationship between socio-economic characteristics and food security status*. Paper presented at the International Association of Agricultural Economists conference. Gold coast Australia August 12-26.
- Metu, A.G, Okeyika, K.O, and Maduka, O.D. (2016), *Achieving Sustainable Food Security in Nigeria: Challenges and Way Forward*. Being a paper delivered at the 3rd International Conference on African Development Issues (CU-ICADI 2016)182-187
- Nwachukwu, C.N. (2006), *The History of Agriculture in Nigeria from the Colonial Era to the Present Day: Pointing all agricultural programmes*, Retrieved on 28th May, 2017 from <http://www.onlinenigeria.com/articles/ad.asp?blurb=268>
- Odey, M.O. (2002), Alternative Approaches to Food Security Strategies in Nigeria in the New Millennium in Ogiji P. (ed) *Implications for Food Security and Agricultural Reforms in Nigeria*. Essays in Honor of David Iornongo Ker; The Food Basket Myth Aboki Publisher, Makurdi.
- Ogundare, W. (2015), *Sustainable Food Security: Re-igniting Nigeria's Economy via Systems Strengthening*. Not Available
- Ojo, E.O, and Adebayo, P.F. (2012), Food Security in Nigeria: An Overview, *European Journal of Sustainable Development*, 1(2):199-222
- Okpanachi, U.M. (2004), Policy options for Re-Positioning the Nigerian Agricultural Sector: In: Ogiji, P. (ed.), *The Food Basket Myth: Implications for Food Security and Agricultural Reforms in Nigeria*, Makurdi: Aboki Publishers.
- Oni, K.C. (2008). *Transforming Agricultural Potentials to Wealth in Northern Nigeria*. Being a paper Presented at the Northern Nigerian Economic and Investment Summit (NEIS), Abuja, October, 2008.
- Oriola, E. O. (2009). Irrigation agriculture. An option for achieving the Millennium Development Goals (MDGs) in Nigeria. *Journal of Geography and regional planning*, 2(7), 176-181.
- Otaha, I.J. (2013), Food Insecurity in Nigeria: Way Forward, *African Research Review*, 7(4): 26-35
- Patnaik, P. (2008) *The accumulation process in the period of globalization*. International Development Economics Associates (IDEAs), 28 May.
- UNECA (2009) *Economic Report on Africa 2009: Developing African agriculture through regional value chains*. Addis Ababa: UNECA.
- United Nations (2005), *Millennium Development Goals*, United Nations Department of Public Information.
- WFP (2007) *International Food Aid Information Systems (INTERFAIS)*. Rome: United Nations World Food Programme (WFP).
- Wiggins, S. (2005) *Southern Africa's food and humanitarian crisis of 2001-04: causes and lessons*. Discussion paper for Agricultural Economic Society annual conference, Nottingham, 4-6 April.
- World Bank (2007). *Nigeria Poverty in the Midst of plenty. The Challenge of Growth without Development*. A World Bank Poverty Assessment. Abuja: Will R.E. and Valter.
- World Food Summit (2003), *Agriculture and Sustainable Development*, Rome: FAO.