



## **Food Security in Nigeria: Government's Intervention and the Place of Effective Storage**

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## Food Security in Nigeria: Government's Intervention and the Place of Effective Storage

### Abstract

The paper discusses the importance of agriculture to a people, its economy and its place at achieving food security for nations, Nigeria Inclusive. Furthermore, it talked about food security and insecurity and its indices. It delved into prospects for increased agricultural production and how this can be achieved. Again, it discussed efforts that have been put in place by past Nigerian governments at meeting food need of Nigerians and making the country food secured. It maintained that food shortages in Nigeria are due not primarily to underproduction but agreed that more crops should be grown to meet production shortfall. The paper indicted lack of adequate postharvest practices as the chief bane of food security in Nigeria and posits that more should be done to see that food are adequately stored after they are produced to nip wastages and scarcity in the bud. Finally, it recommended that agricultural support programmes, projects, and research institutes that have been put in place be spurred towards stepping up production and do even much more at storage.

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### Introduction

Histories have shown that no nation has actually become great without developing its agriculture and its concomitant institutions (Isife and Albert, 2009). According to FAO (1992) globally there is enough food for all, but more than 780 million people are chronically undernourished worldwide. Nigeria has the highest number of undernourished people in West African (FAO, 2003), and according to Idachaba (2004) over 40% of Nigerians are food insecure. However, agriculture production was the mainstay of Nigerian economy and a source of food; in the colonial Nigeria, and briefly after independence agriculture played a dominant role in the nation's economy from the standpoint of adequate food for its population, rural employment, raw materials for its industries, source of public revenue, source of foreign exchange and internal market for agricultural related tools. According to Akande

(1998) at independence agriculture was able to match the expectation ascribed to it as regards food security; agriculture contributed 67% of gross domestic product (GDP) in 1960/1961. Ogen (2003) posits that during the first ten years after independence Nigeria could be seen as an agricultural economy because agriculture was the engine of growth of its overall economy, during this time Nigeria was the world's second largest producer of cocoa, and highest producer and exporter of palm-kernel and palm-oil.

According to Alkali (1997) and Lawal (1997) then Nigerian farmers produced 70% of Nigerian export and 95% of its food needs. Agriculture has contributed immensely by helping to maintain a healthy population; it has been a source of food and nutrition for households in Nigeria. However, it has not done well enough, especially from the time the country started the production of crude oil in

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commercial quantity in the mid 1960's till now.

### **Food security**

Food security in a broad sense 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 (Idrisa *et al.*, 2008). According to FAO (1996) food security is a situation when all people at all time have physical and economic access to sufficient, safe and nutritious food for a healthy and active life. Ladele and Ayoola (1997) 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. Food insecurity is the opposite of this, 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). According to Gillespie and Haddad (2001), 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. Food importation as a result of insufficiency have continued to be on the rise in Nigeria a country which according to Edokpa and Okafor (2009) and Igberaese and Okojie – Okoedo (2010) is the highest food producer in sub-Saharan Africa. Food demand in Nigerian has grown faster than food production (Idrisa *et al.*, 2008), the CBN (2001) corroborates this when it maintained that the rate of increased food production of 2.5% per annum does not measure up with the annual population growth of 2.8%. Most Nigerian farmers are inadequately informed, have inadequate supply of agricultural inputs, machinery and extension services, and high level of illiteracy and lack of adequate knowledge of modern techniques in agricultural practices which can propel production and bumper yield to meet the ever increasing food

need and demand of Nigerian growing population. Again, adoption of modern technology and techniques is often a major constraint in agriculture in Nigeria and this is where agricultural extension comes to bear. There is the need to link farmers with sources of knowledge of storage and good quality equipment as well as training institutions like the Nigerian Stored Product Research Institute whose mandate it is to increase Nigerian agricultural self reliance through adequate post harvest loss prevention. According to Omonoma and Agoi (2007) and Von Braun *et al.* (1992) 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 Edo state, 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 challenges in Nigeria and efforts at its eradication**

Domestic food production is on the rise in

Nigeria but it is not enough to meet the national food demand, worst still losses of produced crops are on the rise because processing and storage of crops are not adequately done. Nutritious food are limited by low income, and poverty; most nutrition food are often expensive, food intake and nutritional well being of many households are of relatively low quantity, and are affected by their low economic status. Between 1975 and 1970 the percentage share of agriculture in total GDP was 54.8%, this however, dropped to 38.6% between 1971 and 1975, and reduced further to 21.1% in 1976-1980 (Oriola, 2009), according to FAO (1997) households' food insecurity, under nutritional and micro nutrient deficiencies are found throughout Nigeria. Oriola (2009) also mentioned that since independence most Nigerian administration strife to attain food security; in the 1960s the country 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.

In 1973 the government embarked on the National Food Programme (NAFPP), this was a voluntary scheme launched in Nigeria to make the country self sufficient and food secured. Operation Feed the Nation (OFN) was launched in 1976, it's sought to increase local food production and thereby reduce food imports, citizen were encouraged to cultivate empty plot of lands to boost agricultural production. The Agricultural Development Project (ADP) were initiated in the mid 1970s as Nigeria oil production revenues were on the rise, the project was designed to increase crop production through rural development, its focuses on improved technology, increased supplies of farming inputs, and improvement of infrastructure. The River Basin Development Authorities (RBDA) were established to undertake the development of ground water resources and maintain dams, dykes, wells or boreholes, irrigation and drainage systems to boost agricultural production. National Seed Service (NSS) was established in 1975 and has the mandate of producing certified seeds as well as to arrange for seed certification. Furthermore, the National Seed Policy (NSP) was established in 1992 to provide guidelines for the development of seed subsector; it seeks to

support varietal improvement, testing, registration, release, multiplication of released seed varieties, and improve the quality of seeds sold to farmers. Agricultural Credit Guarantee Scheme (ACGS) was established in 1977 to provide guarantee on loans granted by banks to farmers to boost agricultural production and agro-allied processing. In 1986 the Directorate of Food, and Rural Infrastructure (DFFRI) was established to influence the performance of agricultural related project in rural areas to boost food production. Green Revolution was launched in 1980 to ensure self sufficiency in food production and introduce modern technology into the Nigerian agricultural sector. The Structural Adjustment Programme (SAP) was established in 1986, it aims at restructuring and diversifying the production base of the economy so as to reduce the over dependency on the oil sector and imports. Again, Nigerian Agricultural, Cooperative and Rural Development Bank (NACRDB) was established in the year 2000 and tasked basically with financing at both the micro and macro levels, it was mandated to meet the funding requirements of Nigerians in the agricultural sector to foster increase food production and subsequent food security. National Agricultural Development Fund (NADF) was established in 2002, the body was tasked to be involved in agricultural research and development, and it was designed to promote the development of the agricultural sector. The National Food Reserve Agency of Nigeria (NFRA) was established in 1977 and given the mandate to feed the Nigerian nation, export food to other countries, and produce processed agricultural products that would do well in international market. It was also saddled with the task of enlightening Nigerian farmers to produce sufficient food commodities in reserve for difficult times. Lastly, in 2005 the government assisted by the World Bank established the Fadama project, it was designed to enhance agricultural production and value addition to small holders and rural entrepreneurs in the states under the Fadama programme; the Fadama programme is to provide support for water management systems in low lying flood plains, so that farming can continue in the dry seasons. The project brought about the adoption of simple, low cost irrigation technologies that helped farmers achieve substantial rise in production of horticultural crops.

As part of effort to make Nigeria food secured the government established various agricultural research institutes. Institute for agricultural Research was established in 1924 to take care of genetic improvement and development of production and utilization technologies for sorghum, cowpea, cotton, groundnut, and sunflower and the improvement of farm based farming system in Nigeria. National Cereal Research Institute was established 1975 for the genetic improvement and production of soybean, rice, sugarcane, and sesame. The Lake Chad Research Institute was established in 1960 for the genetic improvement and development of production technologies for wheat, millet, and barley. National Root Crop Research Institute was established in 1976 for the genetic improvement of yam, cassava, cocoyam, Irish and sweet potato and ginger. Cocoa Research Institute of Nigeria was established in 1964 for the genetic improvement of the production and local utilization of cocoa, cashew, kola nut, coffee and tea. National Institute for Oil palm Research was established in 1937 to research into the genetic improvement, production and processing of oil palm, date palm coconut, and ornamental palms. Furthermore, in 1977 the government established the National Animal Production Research Institute and mandated it to carry out research into the production of food animals' species and forages. Interestingly, Nigeria food problems does not lie basically with food production per se, rather it lies with what is done to crops after their production; the food problem in Nigeria is due largely to the inability to preserve food surpluses during the short harvest periods rather than to low production. According to [FAO \(2001\)](#) when compared to other African countries, Nigeria has one of the highest per capital food output; it accounts for about 70% of world production of yams ([Osunde, 2008](#)) and 19% of global market share for cassava ([Hillocks, 2002](#)). According to [Earth Trends \(2003\)](#) Nigeria produces 8.41%, 1.09%, 2.85%, and 0.38% of world production of root and tubers, cereals, legumes, and meat respectively. Food losses have a great bearing on food availability and security ([FAO, 2011](#)), [Nkana et al. \(1994\)](#) painted a dire picture of the situation when they posit that 20%-30%, 5%, 10%-20%, and 20%-67% of maize, rice,

cassava, and yam are lost respectively at post harvest-stored levels in Nigeria. Furthermore, they maintained that 35%-100%, 20%-80%, 20%-95%, 20%-50%, 70%, and 40%- 100% of plantain, banana, citrus, tomatoes, pineapple, and pawpaw are lost respectively at post harvest levels.

From the foregoing, we can say categorically that more efforts should be channelled towards food storage in Nigeria rather than to production since available statistics show that an alarming percentage of crops that are produced in Nigeria are lost at one stage or the other at post harvest-storage levels. The [FAO \(2011\)](#) corroborates this when it maintain that the issue of food losses is of high importance in the efforts to combat hunger and improve food security. The Nigerian Stored products Research Institute (NSPRI) was established in 1954 to conduct research in all aspect of post harvest handling and storage of all agricultural crops, though it was initially mandated to focus its attention on export crops, at independence it was given the mandate to research also into local food crops via improvement and maintenance of quality of perishable crops. It has developed the use of the ventilated yam barn for the storage of yam tubers, techniques for preserving fresh cassava roots, development of waxes for the treatment of citrus, and techniques for the production of pineapple, mango, okra, tomato, and pepper etc into more stable forms. Under its mandate of improvement and maintenance of quality of durable crops, it has developed systems for storing grains at domestic and commercial levels. It has developed techniques for maintenance of the quality of grains at warehouse level. Again, it has perfected the inert atmosphere techniques for grain storage. Under its mandate to improve and maintain the quality of tree crops it has developed techniques for checking mycotoxin and aflatoxin in cashew, cocoa, and also groundnut. It has developed techniques for storing and extending the shelf life of seed potato and ware potato by the use of diffuse light store; this can store seed and ware potato for up to 4-5months. It has developed the cassava stem storage structure for storage of cassava stem, and dryers for meat and fish products. It has the mandate to improve capacity building in post harvest technology for

artisans in the fabrication of packaging and storage structures, on this, it has advised on problems associated with stored products, it has provided extension services to NGOs on construction and uses of different dryers and trained interested small farm holders on food preservation techniques.

## Conclusion

Food insecurity in Nigeria is not solely tied to underproduction (Nigeria produces 8.41%, 1.09%, and 2.85% of global production of roots and tubers, cereal, and legumes respectively) though there is need to step up production, this is in tune with the assertion of CBN (2001) that the rate of increased food production of 2.5% per annum does not measure up with the annual population growth of 2.8%. Stepping up production is, however, not a panacea or silver bullet for food insecurity in Nigeria, thus, an all encompassing, holistic approach needs to be employed and advantages accruing to this synergy would be gotten. The increased production of rice, cassava, maize, and yam since the 1980s according to Shimada (1999) has been extra ordinary high, also Hall (1968), Adeniyi (1997) and Agboola (1980) posit that self sufficiency in food in Nigeria can only be achieved if all effort at increasing crop production is matched with greater effort at postharvest technology to save crops that are produced from spoilage and wastage. More so, Nigeria is one of the leading producers of plantain, okra , tomatoes, and the leading producer of yams and cassava but 30%-50% of these are lost due to poor post harvest practices

(Aworh, 2010). Hence, there should be maximum investment in storage technology, more production should be stimulated, and wastages that occur due to hoarding should be checked. Income affects household food security which in the long run affects national food security, for this reason, households' income should be raised (Omonona and Agoi, 2007). Dependency ratio (the proportion of households' members that are not working to those working) affects food security status of households and the nation at large and this should be looked into. Furthermore, people should be gainfully employed and this would impact positively on food security of the country. Ogwumike (2004) maintained that for Nigeria to be food secured it has to increase the production of some staple foods which can lift the nation out of food self-insufficiency and insecurity. National food security is about self-sufficiency, self reliance, availability, affordability for all year round consumption and reserve, this could be achieved with effective linkages and synergies among food security programmes as discussed earlier, it is only when this is achieved that the benefit of establishing these would be achieved on sustainable basis (Oyebanji, 2005). On a final note, agricultural support programmes and research institutes that have been put in place by the government should be spurred towards fully stepping up production and do much more in the quest to store what is produced to minimize post harvest losses, this will in the long run lead to the attainment of the much desired household and national food security that we long for.

**Table 1: 2004 Production of major crops in Nigeria**

Crop	Production (MT) 2004	Incremental output over 2003 (%)
Sorghum	4,278,679	7.6
Maize	4,582,035	2.2
Millet	2,871, 879	4.0
Rice	2,852,484	9.8
Groundnut	2,089,673	4.5
Cowpea	1,238,250	9.9
Soybean	377,963	9.0
Yam	21,983,283	10.0
Cassava	33,217,488	10.3
Sweet potato	2,896,202	1.2
Cocoyam	3,060,285	5.4

Source: Oyebanji O. O. (2005)

**Table 2: Major livestock products**

Live stock	Population	Increment of production of 2004 over 2003 percentage
Poultry	143,507,164	5.0
Cattle	14,659	0.1
Sheep	30,808,473	2.4
Goat	48,740,532	2.5
Pig	5,905,017	4.0

Source: Oyebanji O. O. (2005)

**Table 3: Food production, demand, deficit and import (million metric tone)**

Year	Food production	Food demand	Food deficit	Food import	Wastage
1995	89.23	89.53	0.30	0.57	0.27
1996	93.05	96.27	3.20	3.25	3.25
1997	93.05	99.06	3.53	3.59	3.59
1998	97.64	100.77	3.13	3.27	3.27
1999	100.40	104.60	4.20	4.43	4.43
2000	101.11	106.40	5.35	5.51	5.51

Source: Edokpa and Okafor (2009)

**Table 4: Volume of Nigerians production of some agricultural commodities compared with the worlds**

Commodities	World	Nigeria	% of Nigerians' production in world production
Root and tuber 1996-1998	638,438	53,717	8.41%
Cereals 1999-2001	2,075,387	22,729	1.09%
Legumes 1996-1998	55,469	1,583	2.85%
Meat 1999-2001	233,218	894	0.38%

Source: Earth Trends (2003)

**Table 5: Estimate of losses in stored food products in Nigeria**

Crop	Estimated % losses
Legume	30-40
Maize	20-30
Rice	5
Cassava	10-25
Yam tubers	20-67
Dried yam	5-10

Source: Nkana *et al.* 1994

**Table 6: Estimate of losses due to handling and storage of fruits and vegetables in Nigeria**

Commodity	loss of experience in %
Plantain	35-100
Banana	20-80
Citrus	20-95
Tomatoes	20-50
Pineapple	0-70
Pawpaw	40-100

Source: Nkana *et al.* 1994

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