



Sustainable Food Security: An Imperative For Raising Domestic Food Production

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ABSTRACT

The paper highlight the relevance of agriculture, its economics implications, examined the food security challenges in relation to increased domestic food production and food import in Nigeria and its rules towards achieving food security for nations, Nigeria Inclusive. Furthermore, it discusses food security and insecurity and its attendant's indices. It dwelled into prospects for increased agricultural production and how this can be achieved, discussed efforts that have been put in place by past Administrations towards achieving food need of the nation and making the country food secured. Evidence have showed 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 post harvest 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 reduce wastage and scarcity in the bud. Finally, it recommended that agricultural support programs, projects, and research institutes that have been put in place be spurred towards stepping up production and efforts should be channeled 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.

Keywords: Food security, Storage Structure, Sustainable, Hunger, Food Production

INTRODUCTION

As it has been reported that the United Nations (UN), when it held its high-level Special Summit New York, in the year 2015, adopted among its resolution the agenda for sustainable development made by the General Assembly (comprising 150 Heads of State and Government and their Representatives). The resolutions gave birth to 17 goals referred to as Sustainable Development Goals (SDGs) (UN, 2017a). The goals were formulated to tackle the deficiencies identified in the Millennium Development Goals (MDGs) on achieving zero hunger, worldwide, by the year 2030. Adegami and Adesanmi (2018) reported also that the MDGs did not achieve many of its targets for development in many developing countries. Especially the Sustainable Development Goal 2 (SDG 2) which was formulated to address the importance of food security and nutrition. Also, the United Nations Food and Agriculture Organization (FAO) has reported repeatedly of the danger inherent in food shortages in African countries, because the average per capita calorie intake in many African countries which has now fallen below the minimum nutritional standards, considering the relatively poor performance of the agricultural sector (Ehigiamusoe, 2012). There are a lot of measures put in place to ensure food security which was mainly focused on increasing crop productivity and production in the field. But, however, increasing food production is being constrained by a lot of setbacks which includes limited land and water resources and increased weather variability due to climate change (Aulakh & Regmi, 2013). On the other hand also, a significant amount of losses occurs at different stages after crops are being harvested and before consumption, after expanding large investment of time,

labour, and money in the production phase. Hence, the developing adequate policies on reducing food losses at different stages of the supply chain based on timely and reliable statistical data has a paramount role to play in addressing food security in developing countries like Nigeria.

Records have shown that Nigeria faces huge food security challenges with about 70 percent of its population living on less than US\$ 1.25 per day, thus, suffering from poverty and hunger (Nwajiuba, 2012). Post-harvest losses are a major cause of concern leading to worldwide food crisis in Nigeria, where below 5% research funding has been allocated (Rajashekar et al., 2012). Grain losses in maize for example can reach 20-30 % under reasonable conditions. This sort of loss lowers the income and standard of living of farmers and also leads to waste of a large fraction of the contribution to the nation's food supply (Asiedu & Van Gastel, 2001). There are different types of losses in grains and other storage materials during their storage periods. These include; weight loss, quality loss, colour loss, value loss, and organoleptic loss (Talabi, 1996).

Nigeria's claim to remain an agrarian economy hinges on two key facts. The first is the proportion of the population engaged in the agricultural sector and the second is the share of agriculture in the Gross Domestic Product (GDP). On both, the agricultural sector contributes more than any other sector of the economy, providing over 40 % of GDP while the population of Nigeria involved in farming is between 60 and 70% (Nwajiuba, 2012). However, according to the Nigeria's Senate President, David Mark as quoted in Thisday Newspaper (May, 3, 2012), Nigeria still spends about N24.5 trillion on food importation per annum.

Nigeria is naturally blessed with abundant water and land resources, giving the nation's agricultural sector high potentials for increased growth, but these potentials are not yet being fully exploited, prompting the nation to set up the Vision 2020 wherein, agriculture is pivotal to its realization of positioning herself among the 20th world leading economies by the year 2020. Despite all these obvious abundant human and natural resources, the country is still unable to feed its citizens, producing for instance, about 500,000 tons of rice while the annual consumption is million tons, accordingly also Nigeria the world's second-largest rice importer after Singapore. Over the past 20 years, food production increase has not kept pace with population growth, resulting in rising food imports and declining levels of national food self-sufficiency (FGN, 2009). Statistics revealed that Nigeria has become a floodgate for food imports. A country that has the potentials of supporting a wide range of agricultural ventures, still spends over N635 billion on import of wheat, N356 billion on import of rice, N217 billion on sugar importation and despite the huge marine resources spent N97 billion importing fish as of 2010 (Adesina as quoted by Azubike, 2012). In 2012, Nigeria's food import has risen from \$3 billion in 2009, \$11 billion in 2010/11 to N24.5 trillion as affirmed by Corporate Nigeria, (2009), Osagie, (2013) and the Nigeria's senate president, David Mark (2012). The loss of food sovereignty and the dependence on food importation are also making the country quite susceptible to fluctuations in global food crisis.

Conceptual and Empirical Framework

According to FAO (1996) report food security is a situation when all people at all-time have physical and economic access to safe, sufficient and nutritious food for a healthy and active life.

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 educated, have inadequate and timely supply of agricultural inputs, machinery and extension services, with 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 of agriculture in Nigeria and this is where agricultural extension comes to bear. There is the need to link farmers also 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 *et al.*, (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 & Oyatoye, 2005). Food wastage has also been indicated as a bane of food security in Nigeria (Igberaese & Okojie-Okiedo, 2010).

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The immediate response to the recent food crisis in the country propelled the Federal Government, through the ministry of agriculture and water resources, to facilitate the development of a National Food Crisis Response Programme (NFCRP), The Food Security Thematic Group (FSTG), established in 2009 and the Food and Agricultural Organization (FAO) was invited to provide guidance. The Agricultural Transformation Agenda and Growth Enhancement Support Scheme were also introduced with the primary objective of import substitution to deal with the hidden hunger crisis confronting the country (Osagie, 2013). The major causes of hunger in Africa are severe pre and post-harvest losses due to high incidence of pests and diseases, unemployment, poverty, conflicts, wars, insurgencies, poor climatic conditions and corruption. Conflicts, wars and insurgencies play devastating roles in Africa.

Nigerian Food Security Challenges

Food security in a broader sense has to do with having at all times an adequate and sufficient level of food and food products to meet increasing consumption demand to mitigate rampant and untimely 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 economic and physical access to sufficient, safe and nutritious food for a healthy growth and active life. Ladele and Ayoola (1997) also reported that 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.

A lot has been written on food crisis in Nigeria, a country once considered as a major food exporter to many countries now found itself in the midst of net food importer. Adeniyi, (1977), Ahungwu *et al.*, (2014) and Olomola, (2017), confirmed the prevalence of food insecurity in Nigeria. What causes the crisis is a subject of debate among scholars. For example Olomola, (2017) is of the opinion that, the amount of statutory allocation given to the sector is too small for the sector to achieved its primary objective. Adeniyi *et al.*, (2009) pointed at poor agricultural policies and programs and the ways and procedures on how agricultural loans are disbursed to the farmers respectively are responsible for low agricultural productivity. In his contribution Adebayo, (2010) blamed the effects of deregulation policies on agricultural sector as a consequence to food security.

Other factors include high increase in the prices of food stuffs and the hand-work of hoarders in sabotaging enough food in the market and effective and sound storage structure to farm produce after harvest to prevent losses.

Food Security and the place of Storage

Domestic food production is on the increase in Nigeria but it is not enough to meet the national food demand, additionally also losses of farm products are on the rise because the processing and storage of crops are not adequately done. Nutritious food are limited to consumers due to low income and poverty; most nutrition food are often expensive, food intake and nutritional well- being of many households are of relatively going lower and lower day by day in 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 strive 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 (NAFP), 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. Interestingly, Nigeria food problems does not lie basically on the food production parse, rather it is with what is done to crops after their production phase, the food problem in Nigeria is due largely linked to the inability to preserve food surpluses during the short harvest periods rather than to low production. According to FAO (2011) 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. The report by the International Food Policy Research Institute released recently highlights the scale of postharvest losses and the gains farmers could make by using novel technologies such as Purdue Improved Cowpea Storage (PICS) bags, metal silos and zero energy cool chamber (ZECC) (Baral & Hoffmann, 2018)). It can be clearly observed that losses in all new storage techniques were significantly lower than those in the traditional storage, with the minimum being in the case of metallic silos. A nationwide study on post-harvest losses of rice in China reported 7–13% grain losses at the rural household storage facilities, compared to only 0.2% losses at the National reserve level using scientific storage structures (WeiFen & ZuXun, 2003).

RECOMMENDATIONS

1. Efforts should be channeled towards food storage in Nigeria rather than to production, a realistic efforts to combat hunger and improve food security.
2. The Nigerian Stored products Research Institute (NSPRI) should be revitalized and fund carry its basic functions efficiently and effectively.
3. 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.

CONCLUSIONS

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. Self-sufficiency in food in Nigeria can only be achieved if all effort at increasing crop production are matched with greater effort at postharvest technology to save crops that are produced from spoilage and wastage

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