

Perspective

The paradox of food insecurity in Nigeria (2011-2017)

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This paper argues that agricultural policies alone, no matter how well formulated and implemented cannot ensure food security in Nigeria without a corresponding sound macroeconomic management, poverty reduction strategy and social safety net. We argue that increase in domestic food production will only positively affect the supply side of food security while poverty rate if unattended to will negatively affect the demand side ensuring the persistence of food insecurity.

Keywords: Food security, agriculture, policy, macroeconomics.

INTRODUCTION

In March 2017 the Food and Agriculture Organization (FAO) declared that about 7.1 million people in Nigeria are facing acute food insecurity and in need of urgent lifesaving and livelihood protection (Food and Agriculture Organization, 2017). This pronouncement runs counter to general expectations as the same FAO has initially indicated that food availability is generally satisfactory in Nigeria. Furthermore since the launching in 2011 of the Agriculture Transformation Agenda (ATA), the National Bureau of Statistics has been recording increase in agricultural output and a strong growth rate in the agricultural sector GDP. Central Bank of Nigeria (CBN, 2012) indicated rise in output of almost all the staple food crops in Nigeria in 2011-rice, wheat, yam, cassava, maize, soybeans, beans and millet. This growth in food production has been consistent for over five years. CBN (2016) also reported an increase of 3.5% in crop production and 5.9% in livestock and fishery. According to Olomola (2015), working with data from Federal Ministry of Agriculture and Rural Development (FMARD), rice production increased from 1.4 million MT in 2012 to 2.7 million MT in 2014, Sorghum from 60,000 MT in 2012 to 73,000 in 2014. In the same vein, cassava which when processed in form of garri is the most important staple food in Nigeria also increased in output from 250,000 MT in 2012 to 850,000.00 MT in 2014. The highest increase was recorded in maize production which increased from 1.02 million MT in 2012 to 7.3 million MT in 2014. Overall as the report indicated over 20 million MT of food was added to Nigeria domestic food output between

2012 and 2015. The paradox however is that as domestic food production is increasing in Nigeria, hunger and undernourishment are also increasing. According to International Food Research Institute (IFRP), the proportion of Nigerian population that were undernourished in 2008 was 5.9%. However in 2016 that proportion has gone up to 7% (IFRP-GHI, 2016). This goes contrary to the position of most Nigerian scholars on food security in the country. These scholars have always posited that the panacea to food insecurity in Nigeria is good agricultural policy and increase domestic food production. Reality however has proved them wrong.

An observable feature of literatures on food insecurity in Nigeria is that while international writers acknowledge the importance of macro-economic factors, most Nigerian writers are still stuck in productivity as the panacea position. Ojo & Adebayo (2012) exemplifies this sole concentration on food production syndrome. They see increase in domestic food production as the only solution to food insecurity in Nigeria. This pattern was followed in Kughur, Omale & Lonreng (2015), placing emphasis solely on the supply side. Food unavailability seems in the view of these scholars to be the only dimension of food insecurity worthy of attention and no mention was made of inaccessibility. Even with the success achieved so far in food production in Nigeria, Ejika & Omede (2016) still stuck to the old mantra of inadequate domestic food production as the sole cause of food insecurity. Other works with similar postulation include, Otaho (2013), Ahungwa et al. (2014), Fasayiro & Taiwo (2012). However, Ogundari & Awokuse (2016) in a well-researched

paper presented a balanced view. While acknowledging that agricultural productivity contributes positively and significantly to all measures of food security, they also note the crucial role of macro-economic factors. In their words, “to compliment the potential effects of agricultural productivity, we also include a number of macro-economic factors as control variables” (pp.5). The role of macro-economic factors in food security seems to be well acknowledged internationally. Rocha (2006) views food insecurity from the perspective of market failure and postulates that the solution requires an interdisciplinary approach especially from agriculture and economics. In the same vein Kargbor (2005) recommends a marriage of agricultural and economic policies in ensuring food security. He sees price shock as a major factor in food insecurity and emphasized the impact of macro-economic factors on the agricultural sector. Trade, exchange rate, and monetary policy (price and level of money supply) are acknowledged as having crucial roles to play on food availability and accessibility. For Diaz-Bonilla (2015), fiscal policies, monetary and financial policies, exchange rate and trade policies are key factors in ensuring food security. According to him appropriate macro-economic policy is necessary for agricultural sector development, poverty alleviation, efficiency and economic growth all of which enhances food security.

BACKGROUND TO STUDY

Years ago, most Sub-Saharan African countries, Nigeria inclusive produced most if not all of their domestic food needs. This trend changed significantly in the 1980s as food shortage became a recognized problem. Although food insecurity later came to be a global malaise, Sub-Saharan Africa and South East Asia were the areas worse hit. Between 1990 and 1992 the Food and Agriculture Organization (FAO) statistics indicated that 11% of the population of Latin America was undernourished, 31% in Sub Saharan Africa and South East Asia 24%. The same pattern continued into 2006 and 2008 as the same statistics also posited 7% for Latin America, 27% for sub-Saharan Africa and 14% for South East Asia (FAO, 2011).

In Nigeria the genesis of food crisis has mostly been associated with the collapse of agricultural sector in the mid-1970s. As the oil industry developed, the Nigerian government's attention moved away from the agricultural sector to the petroleum sector. As a result of the 1970s oil boom and the availability of petro dollar the nation resorted to food import in place of its usual domestic production. Food crisis set in at the end of the oil boom when the oil price crashed and the petro dollar ran out.

Over the years the Nigeria government has been formulating and executing policies to stem the tide of food crises and ensure food security in the country.

Table 1 below gives details of various agricultural programs, their aims and target and amount invested in their implementation.

None of these policies produced the desired output and were generally judged failures (Osamebo, 1992; Olaoye, 2010; Iwuchukwu & Igbokwe 2012).

However with the introduction of Agriculture Transformation Agenda in 2011 Nigeria agricultural sector started recording a significant improvement in domestic food production. This rise in agricultural output continued up to date. As indicated in Olomola (2015), from 2012 to date no crop has recorded a production shortfall in two consecutive seasons. As a result International Food Policy Research Institute (IFPRI) in her 2016 Global Hunger Index indicated that food availability is generally satisfactory in Nigeria and Lake Chad Basin (IFPRI 2017). This two apparent contradictory positions of satisfactory food availability and increase in hunger, malnourishment and food insecurity brings to fore a hitherto ignored fact that food security is not solely the function of food availability. It echoes the postulation of More-Lappe & Collins (1982) that people are hungry not because there is no food. Laying too much emphasis on inadequate domestic food production when analyzing food insecurity in Nigeria has been a major limitation on most previous work on the subject matter. This thought direction has led to the belief that rehabilitating agricultural sector through sound government policies to boost domestic food production is all the country needs to achieve food security. Adherence to this prescription has put the country in a quagmire. For the past six years domestic food production figures have been up with no reduction in hunger and food insecurity. Indicating that food insecurity is not to be measured or remedied by food production figures alone.

Perspectives on Food Insecurity

Sir Thomas Robert Malthus' 1778 work on population growth is the first known major theoretical perspective on food insecurity. His warning about the danger of starvation inherent in the geometrical increase in population as against arithmetical increase in food production presupposed a theory of food insecurity. Although more attention was initially paid to the population aspect of his work, his presupposition on food insecurity would inevitably dominate the discourse on the subject after over a century. By the 1970s when food insecurity became a recognized concept, it was Malthus that most researchers relied on to frame their own perspective of the concept. Scholars following his footsteps came to conceive food insecurity wholly as a result of decline or failure of aggregate food availability. In other words food insecurity was viewed essentially as a supply issue, an inadequacy of food supply at global and national level. There was also a tendency to blame or at least to overemphasize the role of nature in causing

Table1. Agricultural programs in Nigeria 1970-1999.

Programme	Date	Aim	Revenue Allocated
National Agricultural Credit Institutions	1970-74	To get ₦6million federal grant to all States for seed multiplication, extension services , fertilizer, pesticides and equipment	₦17 million and ₦6 million for all the states
River Basin Development Authority(RBDAs)	1975-80	To irrigate twenty five hectares of land, such that the nation can have all season cultivation	₦2.5 billion
National Accelerated Food Production Program	1975-80	To make selected farmers produce improved seedlings of maize, rice, wheat and cassava. These would then be distributed to other farmers	₦1.167million
Agricultural Development Projects(ADPs)	1975	To provide fertilizers, water supply, planning, land clearing and infrastructural development for farmers.	\$30 million, a joint venture with world bank providing 60% in loan
Operation Feed The Nation.	1976-79	To encourage the nation Towards food sufficiency by encouraging citizens to grow their own food	Approximately ₦1billion
Green Revolution	1980	Mechanization of agriculture to achieve large domestic food production	Between 2 to 4 billion naira
Directorate Of Food, Roads and Rural Infrastructure(DFRFI)	1986	To develop rural infrastructure as a way to improving rural agriculture	₦400 million in 1987, ₦500 million in 1988.
National Agricultural Land Development Authority(NALDA)	1992	Aimed at giving strategic support for agricultural land development and ensuring good land use in rural areas. It hoped to boost subsistent farming among rural households.	Not available
National Economic Empowerment and Development Strategy (NEEDS).	1999	Hoped to achieve 6% annual growth in agricultural sector GDP through mechanization, irrigation and improved seed crops.	Not Available

Author: 2017 from various sources.

food insecurity. Natural disasters like flooding, pestilence and drought that led to crop failures were seen as the primary causal agents. The target over the years therefore was to overcome nature and increase production. The obsession with production was so pervasive that the amount of food a country produces was used to assess its food security (Rao, 2005; Maxwell, S., & Smith, M. 1992). Thus food security was totally focused on the production variables and the definitions focused on the aggregate food supply at global and national level.

Coming to the 1980s however, there was a major paradigm shift in the conceptualization of food insecurity. The shift has two recognizable sources, one theoretical, and the other empirical. On the theoretical level, Sen Amartya's 1981 essay on Entailment and Deprivation posited that food insecurity is more of a demand than supply concern. In other words Amartya (1981) claimed that there can be food insecurity without any fall or decline in food availability. In this regard, food insecurity can be as a result of variety of reasons as unfavorable shift in terms of trade of food exchange for assets. Starvation therefore results from people not having enough food to eat, and not because there is no enough food to eat.

On the empirical side it was observed that despite increase in global food supply, there was persistent food insecurity. In 1979 the Agricultural Information Service of the European Commission observed that technical innovations, replacement of labour with capital which involved a very high level of capital investment and continuous progression from small to larger sized farms has led to increase in yield in all agricultural sectors. Throughout Europe a very high rate of agricultural output has been recorded (European Commission, (EC) 1980). However, in Parikh & Tim (1986), the paradox of hunger in midst of abundance was noted, making them to state thus "the abundance of food worldwide and progress made through national and international efforts in coping with acute shortages make the question more pertinent: why has more progress not been made in reducing chronic hunger" (p.8). Having conquered nature and reach the level where the means of subsistence increases faster than the population the world was worried by the persistence of chronic hunger.

Based on these events there was a shift from supply to demand variables. Since then the issue of access became paramount in the analysis of food insecurity.

According to the Food and Agriculture Organization

(FAO, 1996) food consumption insecurity exists when a certain individual or group cannot gain access to adequate food given their nominal income and the price and the availability of food. According to Butcher, Sparks & O'Callaghan (2002) accessibility has both economic and physical aspects. The physical accessibility has to do with the old supply side factor. In other words the food must be physically available, while the economic accessibility implies the ability of the household to purchase food for an adequate diet without compromising the satisfaction of other basic needs.

Following the general acceptance of the two sides of food insecurity (availability and accessibility) scholars and institutions turned to finding the appropriate definition. World Bank (1986) defined it as access of all people at all times to enough food for an active, healthy life. For FAO (1996) Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. In General Food security is taken to be access by all people at all times to sufficient food for an active, healthy life without the need to resort to use of emergency food supplies, begging, stealing or scavenging. Food insecurity is defined as limited or uncertain availability of nutritionally adequate and safe food. With these two definitions, two new concepts were introduced to the concept of food security-nutritionally adequate and socially acceptable ways. While the nutritional element introduced the issue of nutrition security, the socially accepted ways brought in a totally subjective element to the concept of food insecurity. Food security by now has gone beyond availability and accessibility to issues as quality, safety and socio-cultural acceptability. Nutrition security is the adequacy of protein, energy, vitamins and minerals for all households' members at all times (Quisumbing et al., 1995). Thus a Nigerian household that feeds steadily on available, accessible and socially acceptable starchy food cannot be said to be food secured as a result of the quality of the food (Oluwatayo, 2008). Furthermore a household that depends on relatives, charity, begging, scavenging or stealing cannot be judged food secure irrespective of accessibility and the quality of the food.

THEORETICAL FRAMEWORK

In analyzing the paradox of food insecurity in Nigeria we adopt Sen Amartya's Entitlement Approach as our theoretical framework (Amartya, 1981). This theory challenged the popular view that food insecurity is caused by shortage of food. It stressed that people suffer from food insecurity as a result of their inability to have access to food irrespective of food availability (Devereux, 2001). That people suffer from hunger does

imply that there is not enough food to go round. Entitlement approach is based on three conceptual categories:-

- 1) The endowment set
- 2) The entitlement set and
- 3) The entitlement mapping.

The endowment set is the combination of all those legally owned resources by a person conforming to established norms and practices. This may include tangible assets like land, equipment etc. and intangible assets like labor power, knowledge and skill and membership of a particular community. The entitlement is the set of all possible combination of goods and services that a person can legally obtain by using the resources of his endowment set. This use of resources to obtain final goods and services may be in form of production, exchange or transfer. The entitlement mapping, sometimes called the E-mapping is the rate at which resources of endowment set can be converted into goods and services included in the entitlement set. From the above it could be seen that since entitlement set is derived from endowment passing through applying E-mapping, it is only through changes in either endowment or E-mapping that food insecurity can occur, and that situation is called entitlement failure (Nayak, 2000). Therefore an entitlement failure can occur only through adverse changes in either endowment set or E-mapping or both. E-mapping consists of three different kinds of relationship:- production, exchange and transfer. One can therefore identify four distinct sources of entitlement failure such as:

- 1) Endowment loss- When capital is lost. May be in form of property or income.
- 2) Production failure-Business failure or poor harvest
- 3) Exchange failure- high inflation or exchange rate that reduces the currency value thereby lowering purchasing power.
- 4) Transfer failure-Unavailability of welfare package or safety net.

Inadequate food production or what is generally called food availability decline (FAD) plays a role in food insecurity mainly by worsening the entitlement set through unfavorable E-mapping as a result of rise in price caused by low supply. In other words more units of endowment set will attract a lesser unit of entitlement. The situation however is not different in the event of exchange failure. Either through high inflation or adverse exchange rate; more units of endowment will still attract lesser units of entitlement. This brings to fore the importance of price mechanism in food insecurity. Not only price mechanism but also the whole macroeconomics variables-unemployment, inflation, exchange rate and consumer price index.

Agricultural Policy and Food Security in Nigeria 2011-2015

Nigeria Agricultural policy got a big boost in 2011 with the launching of Agriculture Transformation Agenda (ATA). The federal ministry of agriculture and rural development stated that the long term solution to food insecurity is to boost domestic food production and acknowledged this as the main aim of the policy ((FMARD, 2014). Taking the small scale rural peasant farmers as the largest private sector producers in the country, they became the main focus of the program. Several means were adopted in assisting them to increase their productivity including- getting the database of all rural farmers in order to effectively reach out to them, hosting town hall meeting with the rural farmers in all the six geo political zones in the country in order to hear directly from them, making available to them subsidized seeds and fertilizers. Other policy initiatives include, credit guarantee for farmers through commercial banks by the ministry and agricultural insurance, zero tariff for importation of agricultural equipment and farm inputs, tax holidays for investors in the sector.

The singular aim of the policy was to boost domestic food production. The Ministry aimed at developing value chain for five key commodities in Nigeria-rice, cassava, sorghum, cacao and cotton. It hoped to generate additional 20 million metric ton (MT) of food to domestic supply by 2015. These targets were to a great extent achieved. Between 2012 and 2014 Nigeria agricultural/food output witnessed a huge upsurge. Yam, cassava, guinea corn, cocoa yam, millet, groundnut and beans recorded a great increase in output. A total increase of over 17 million ton on food output between 2011 and 2014 was recorded (FMARD, 2014).

The question then is to what extent has this huge increase in domestic food output affected food security situation in the country. The available data shows that there has been no significant change in Nigeria's food security status. Using the Global Hunger Index of International Food Policy Research Institute (IFPRI), data shows that from 2001 to 2014 Nigeria food insecurity situation remained on the "serious" category, which is between the score of 10.0-19.9 using the old formula (IFPRI-GHI, 2014), and it has remained in the serious category up to 2016 scoring 25.5 in the new formula. In other words no significant change was recorded.

Whence went the over 20 million metric ton of food that was added to domestic food supply within this period? More still, Ahungwa et al. (2014) noted that within this period of recorded high domestic output, there paradoxically was an astronomical increase in food importation in the country. Between 2005 and 2009, 2.6 trillion naira was spent on food import, however from 2010 to 2012 the amount shoot up to 20 trillion naira.

Despite all, no significant change was recorded in food security status.

The paradox of hunger amidst abundant food supply is not a new phenomenon and not peculiar to Nigeria. The World Bank once in 1986 lamented over this phenomenon. It stated in 1986 that the "world has ample food, growth in global food production has been faster than the unprecedented population growth of the past forty years, yet many poor countries and households and hundreds of poor people do not share in this abundance, they still suffer lack of food" (World Bank, 1986:1). Entitlement theory (Amartya, 1981) is a very good tool in analyzing and understanding this paradox which points to the fact that food production alone cannot solve the problem of food insecurity. The popular view among Nigerian writers, researchers and policy makers that sound agricultural policy that will lead to increase in domestic food production is the solution to food insecurity in Nigeria is a reductionist view and has been empirically refuted. Using Entitlement theory concepts, increase in food output will only directly affect the individual farmer's endowment set. Endowment set has been defined as the combination of all those legally owned resources by a person conforming to established norms and practices of his society. It includes both tangibles and intangibles, such as tools, physical assets, talents or skill and membership of a special class. However endowment set alone does not necessarily determine how well off an individual or household is. An expanded endowment set though may be a necessary condition but never a sufficient condition to guarantee an individual's or household's welfare. More attention should be focused on the entitlement mapping which actually determines the real worth of the endowment set in terms of the entitlements it can command. The entitlement is the set of all possible combination of goods and services that a person can legally obtain by using the resources of his endowment set. This use of resources to obtain final goods and services may be in form of production, exchange or transfer. The entitlement mapping, sometimes called the E-mapping is the rate at which resources of endowment set can be converted into goods and services included in the entitlement set. As an illustration, a farmer that usually harvests twenty tubers of yam annually and with those yams buy five kilogram of meat, five tins of milk and six kilogram of beans. If now due to government's good agricultural policy he is able to harvest forty tubers but somehow due to macro-economic factors of inflation, exchange rate and price fluctuation, the prices of meat, milk and beans have gone up that he is unable even with increase in his output to maintain his usual food status. Of what value is his additional output? There was initially an increase in his endowment set but due to adverse E-mapping there is a reduction in his entitlement set. This shows that policies that aim at increasing endowment sets alone can never be a solution

to food insecurity if there is no corresponding policies to ensure a positive and favorable entitlement mapping. What has been empirically proven by IFPR data on Nigeria's hunger situation is the same old theoretical postulation of Amartya (1981) that food insecurity occurs not only as a result of inadequate food production but mostly as a result of poverty- lack of economic access or what he called exchange failure. People suffer from food insecurity as a result of their inability to have access to food irrespective of food availability (Devereux, 2001). Hunger does not necessarily mean that there is not enough food to go round but more because great majority of the people have no money to buy food needed for their daily nutritional requirement. This is the new demand side of food insecurity theory. It shows the role macroeconomics indices of exchange rate, inflation rate and poverty level play in the food security status of a nation and this has been neglected by the Nigerian government and policy makers. Between 2015 and 2017 the Nigerian currency (Naira) was devalued, Nigeria being an import dependent economy is experiencing high food inflation, increase in poverty and unemployment level. This scenario has deflated whatever gain might have been made in domestic food output over the past six years. National Bureau of Statistics (NBS, 2012) reported that 61.2% of Nigerians are living in absolute poverty of less than 1\$ a day in 2010. In 2016 however it has gone up to 67.1%. Unemployment is also on the rise in Nigeria from 19.7% in 2009 to 31.2% in 2016 coupled with average food price increase between May 2015 and May 2016 at 35%.

Theoretically and empirically, poverty and food insecurity are mutually reinforcing concepts. The complementary relationship between these two concepts has been significantly acknowledged by many scholars including Omotesho et al. 2007; Oriola, 2009 and Adewuyi & Yusuf, 2011. Any policy therefore that aims at solving the problem of food insecurity by sound agricultural policy, if not integrated within a sound macroeconomic policy that checks inflation, price fluctuation and ensure good exchange rate is telling half of the story.

CONCLUSION

Food insecurity is not a single factor phenomenon, it is multi factorial. It reflects not only the condition of the economy as a whole but also the nation's politics of resource allocation and use (Mamadou, 2002). The current food insecurity in Nigeria is not as a result of food availability decline (FAD) rather it has to do with economic accessibility. Therefore any policy aiming at eradicating this malaise must be holistic. Sticking to the old Malthusian supply side of food insecurity is a reductionist approach and will not lead to the desired result. Good macroeconomic management is very essential with a huge dose of social welfare. This study

strongly holds that food insecurity in Nigeria cannot be eradicated without a measure of welfare and safety nets for the most vulnerable ones. As Devereux once advocated, welfare must be upgraded from discretionary ad hoc intervention to institutionalized system that responds adequately to needs of the citizenry. Moreover it must be grounded in the citizens' right as a social contract between the citizens and the state. Such welfare system can be in form of cash transfer, school feeding, meal parlous/ration cards or child allowance. This position is collaborated by FAO (2009) which posited that "hunger can persist in the midst of adequate aggregate supply of food because of lacking income opportunities for the poor and absence of effective safety net" (p.2).

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