One of the most important and crucial debates in the world today is how to provide sufficient food for over seven billion people in the world. In 2019, 690 million people were suffering from hunger globally while about 135 million people in 55 countries and territories were suffering from acute food insecurity with Africa accounting for 73 million of this figure. Food insecurity is one of the major challenges of most African governments occasioned by an increasing number of people living in extreme poverty, high-level corruption, incidences of conflicts/terrorism, low level of human capital and unfavorable climate change in the region. Nigeria has the highest number of people living in extreme poverty globally. The Global Food Security Index (GFSI) rank of Nigeria has been on the increase since 2013 while it was ranked 94th among 113 countries in 2019. Nigeria is facing the challenge of food insecurity, especially in the northeastern and north-central states where conflicts/insurgency, kidnapping, armed banditry, cattle rustling and weather extremes are aggravating the food insecurity situation. This paper therefore recommends that the Nigerian government should redouble efforts aimed at improving food production and processing activities to ensure food security across the states and also boost exports.

Keywords: Food insecurity; Malnutrition; Hunger; Economic Development; Africa; Poverty; Social Protection

INTRODUCTION

One of the most challenging issues in the world today is how to provide sufficient food to more than seven billion people around the globe. Food security is a complex, multifaceted concept usually influenced by culture, environment and geographical location (EIU, 2018). The Food and Agriculture Organisation of the United Nations (FAO) gave a clear definition of “food security at five different levels (individual, household, national, region and global) as “when 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 active and healthy life” (FAO, 1996; Perez-Escamilla et al. 2017a).

The United Nations (UN) in September 2015 at Its General Assembly adopted the resolution of the agenda for sustainable development and the resolution birthed 17 goals referred to as Sustainable Development Goals (SDGs) (UN, 2017a). The SDG Goal 2 (SDG 2) as one of the food security goals, was set to address the importance of food security and nutrition within the wider agenda, and calls member States to “end hunger, achieve food security and improve nutrition, and promote sustainable agriculture” by 2030. The SDG 2 has five principal targets and three implementing mechanisms (UN, 2017b; IITA, 2017; Otekunrin et al. 2019a, b).

In 2019, it was revealed that close to 690 million (8.9 percent world population) people are estimated to be undernourished globally. This (Table 1A & 1B) showed that the number of hungry people continued to rise steadily since 2014 and projected to increase to 841.4 (9.8 percent) million where Africa will have 51.5% (433.2 million) share, the highest number of undernourished people globally by 2030 (FAO et al. 2020).

*Corresponding Author: Olutosin A. Otekunrin, Department of Agricultural Economics and Farm Management, Federal University of Agriculture, Abeokuta (FUNAAB), Nigeria E-mail: otekunrinolutosin@yahoo.com
However, considering the number of people in food crises around the world, the 2020 Global Report on Food Crisis (GRFC 2020) reported that about 135 million people in 55 countries and territories are suffering from acute food insecurity while 73 million of this figure are from 36 countries in Africa (FSIN, 2020; Otekunrin et al., 2020a,b,c).

Heady and Ecker (2012) reported that there are about 250 definitions and 450 indicators of food security but the most widely accepted definition of “food security” is the one from FAO which evolved after the 1996 World Food Summit which states that “food security 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” (FAO, 1996). X-raying the definition reveals the multi-dimensional nature of the food security concept. Food security is conventionally classified into two categories; chronic and transitory, while seasonal food insecurity falls in-between the two (FAO, 2008; Jones et al. 2013). On the other hand, food insecurity may be referred to as the absence of one or more of these components. Food insecurity is conventionally classified into two categories; chronic and transitory, while seasonal food insecurity falls in-between the two (FAO, 2008; Jones et al. 2013).

### Table 1A: Number of Undernourished people in the world (2005-2019)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WORLD</td>
<td>825.6</td>
<td>668.2</td>
<td>653.3</td>
<td>657.6</td>
<td>653.2</td>
<td>678.1</td>
<td>687.8</td>
<td>841.4</td>
</tr>
<tr>
<td>AFRICA</td>
<td>192.6</td>
<td>196.1</td>
<td>216.9</td>
<td>224.9</td>
<td>231.7</td>
<td>236.8</td>
<td>250.3</td>
<td>433.2</td>
</tr>
<tr>
<td>Northern Africa</td>
<td>18.3</td>
<td>17.8</td>
<td>13.8</td>
<td>14.4</td>
<td>14.5</td>
<td>15.0</td>
<td>15.6</td>
<td>21.4</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>174.3</td>
<td>178.3</td>
<td>203.0</td>
<td>210.5</td>
<td>216.3</td>
<td>221.8</td>
<td>234.7</td>
<td>411.8</td>
</tr>
<tr>
<td>Eastern Africa</td>
<td>95.0</td>
<td>98.1</td>
<td>104.9</td>
<td>108.4</td>
<td>110.4</td>
<td>112.9</td>
<td>117.9</td>
<td>191.6</td>
</tr>
<tr>
<td>Middle Africa</td>
<td>39.7</td>
<td>40.0</td>
<td>43.5</td>
<td>45.8</td>
<td>47.2</td>
<td>49.1</td>
<td>51.9</td>
<td>90.5</td>
</tr>
<tr>
<td>Southern Africa</td>
<td>2.9</td>
<td>3.2</td>
<td>4.4</td>
<td>5.1</td>
<td>4.5</td>
<td>5.2</td>
<td>5.6</td>
<td>11.0</td>
</tr>
<tr>
<td>Western Africa</td>
<td>36.9</td>
<td>37.0</td>
<td>50.3</td>
<td>51.2</td>
<td>54.2</td>
<td>54.7</td>
<td>59.4</td>
<td>118.8</td>
</tr>
<tr>
<td>ASIA</td>
<td>574.7</td>
<td>423.8</td>
<td>388.8</td>
<td>381.7</td>
<td>369.7</td>
<td>385.3</td>
<td>381.1</td>
<td>329.2</td>
</tr>
<tr>
<td>Central Asia</td>
<td>6.5</td>
<td>4.8</td>
<td>2.1</td>
<td>2.1</td>
<td>2.2</td>
<td>2.1</td>
<td>2.0</td>
<td>n.r</td>
</tr>
<tr>
<td>Eastern Asia</td>
<td>118.6</td>
<td>60.6</td>
<td>n.r</td>
<td>n.r</td>
<td>n.r</td>
<td>n.r</td>
<td>n.r</td>
<td>n.r</td>
</tr>
<tr>
<td>South-eastern Asia</td>
<td>97.4</td>
<td>70.1</td>
<td>66.7</td>
<td>63.9</td>
<td>63.4</td>
<td>64.2</td>
<td>64.7</td>
<td>63.0</td>
</tr>
<tr>
<td>Southern Asia</td>
<td>328.0</td>
<td>264.0</td>
<td>263.1</td>
<td>256.2</td>
<td>245.7</td>
<td>261.0</td>
<td>257.3</td>
<td>203.6</td>
</tr>
<tr>
<td>Western Asia</td>
<td>24.3</td>
<td>24.2</td>
<td>27.6</td>
<td>29.2</td>
<td>29.5</td>
<td>30.4</td>
<td>30.8</td>
<td>42.1</td>
</tr>
<tr>
<td>LATIN AMERICA AND THE CARIBBEAN</td>
<td>48.6</td>
<td>39.6</td>
<td>38.8</td>
<td>42.4</td>
<td>43.5</td>
<td>46.6</td>
<td>47.7</td>
<td>66.9</td>
</tr>
<tr>
<td>Caribbean</td>
<td>8.4</td>
<td>7.2</td>
<td>7.4</td>
<td>7.3</td>
<td>7.1</td>
<td>7.3</td>
<td>7.2</td>
<td>6.6</td>
</tr>
<tr>
<td>Latin America</td>
<td>40.1</td>
<td>32.4</td>
<td>31.4</td>
<td>35.1</td>
<td>36.3</td>
<td>39.3</td>
<td>40.5</td>
<td>60.3</td>
</tr>
<tr>
<td>Central America</td>
<td>11.8</td>
<td>12.4</td>
<td>13.4</td>
<td>14.7</td>
<td>14.4</td>
<td>14.7</td>
<td>16.6</td>
<td>24.5</td>
</tr>
<tr>
<td>Southern America</td>
<td>28.4</td>
<td>20.0</td>
<td>18.0</td>
<td>20.4</td>
<td>21.9</td>
<td>24.6</td>
<td>24.0</td>
<td>35.7</td>
</tr>
<tr>
<td>OCEANIA</td>
<td>1.9</td>
<td>2.2</td>
<td>2.4</td>
<td>2.4</td>
<td>2.4</td>
<td>2.4</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td>NORTHERN AMERICA AND EUROPE</td>
<td>n.r</td>
<td>n.r</td>
<td>n.r</td>
<td>n.r</td>
<td>n.r</td>
<td>n.r</td>
<td>n.r</td>
<td>n.r</td>
</tr>
</tbody>
</table>

Source: FAO et al. 2020
Note: *Projected values, ** Projected values up to 2030. n.r means “not reported”

### Table 1B: Prevalence of Undernourishment (2005-2019)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>WORLD</td>
<td>12.6</td>
<td>9.6</td>
<td>8.9</td>
<td>8.8</td>
<td>8.7</td>
<td>8.9</td>
<td>8.9</td>
<td>9.8</td>
</tr>
<tr>
<td>AFRICA</td>
<td>21.0</td>
<td>18.9</td>
<td>18.3</td>
<td>18.5</td>
<td>18.6</td>
<td>18.6</td>
<td>19.1</td>
<td>25.7</td>
</tr>
<tr>
<td>Northern Africa</td>
<td>9.8</td>
<td>8.8</td>
<td>6.2</td>
<td>6.3</td>
<td>6.6</td>
<td>6.3</td>
<td>6.5</td>
<td>7.4</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>23.9</td>
<td>21.3</td>
<td>21.2</td>
<td>21.4</td>
<td>21.4</td>
<td>21.4</td>
<td>22.0</td>
<td>29.4</td>
</tr>
<tr>
<td>Eastern Africa</td>
<td>32.2</td>
<td>28.9</td>
<td>26.9</td>
<td>27.1</td>
<td>26.8</td>
<td>26.7</td>
<td>27.2</td>
<td>33.6</td>
</tr>
<tr>
<td>Middle Africa</td>
<td>35.5</td>
<td>30.4</td>
<td>28.2</td>
<td>28.8</td>
<td>28.7</td>
<td>29.0</td>
<td>29.8</td>
<td>38.0</td>
</tr>
<tr>
<td>Southern Africa</td>
<td>4.9</td>
<td>5.4</td>
<td>7.0</td>
<td>8.0</td>
<td>7.9</td>
<td>8.4</td>
<td>8.4</td>
<td>14.6</td>
</tr>
<tr>
<td>Western Africa</td>
<td>13.8</td>
<td>12.1</td>
<td>14.3</td>
<td>14.2</td>
<td>14.6</td>
<td>14.3</td>
<td>15.2</td>
<td>23.0</td>
</tr>
</tbody>
</table>
Chronic food insecurity is a long-term or persistent situation where people can no longer meet their minimum food requirement over a sustained period of time while transitory food insecurity is commonly short-term or temporary and it relates to short periods of extreme scarcity of food availability and access (Barrett and Sahn, 2001; Hart, 2009; Afolabi et al. 2018).

It is common wisdom that food insecurity is a necessary but not sufficient condition for nutrition security. Food insecurity is a major determinant of nutrition insecurity and poor psychosocial, cognitive and mental health outcomes (Jones et al. 2013; Gubert et al. 2016). Nutrition security relates to care, health and hygiene practices in addition to food security (Jones et al., 2013). The FAO defines nutrition security as “A situation that exists when secure access to an appropriately nutritious diet is coupled with a sanitary environment, adequate health services and care, in order to ensure a healthy and active life for all household members” (FAO et al. 2012).

**Evolution of Food Security**

The term “food security” is an important phenomenon with a global recognition. It was first discovered as a concept of food supply in which at that time, food crisis led to concerns that global food supply shortages might bring about political instability (Simmons and Saundry, 2012). It was recognized at that time that food availability remained a fundamental component of comprehending what food security meant, and it was realized that food availability was not a sufficient condition for access to food at household level (Jones et al., 2013). Sen (1981) opined that the poor usually lack “entitlement” to food due to spike in food prices and reduced demand for wage labor. The 1974 World Food Summit definition of food security (UN, 1975; Jones et al. 2013) emphasized availability of food at all times but this was revised in 1983 to include physical and economic access to basic food (FAO, 1983).

Food security further evolved as a concept that did not include only national levels but also involved household and individual distributions (Webb et al. 2006; Ayinde, et al. 2011; Nathalie, 2012; Ike et al. 2015). This food access at household levels continued to gain relevance with the understanding that household is a key social unit through which people access their food (Ayinde, et al. 2010; Ike et al. 2015). Also, food utilization was recognized as a third component of food security, which reflects differences in the allocation of food within the households, the national quality of food and variation in absorption and metabolism of food nutrients by individuals within the household.

Moreover, at the 1996 World Food Summit, the food security definition was further revised and it clearly spelt out the importance of diet quality at the individual level, not only at the household level (FAO, 1996). The FAO (1996) food security definition later became the widely accepted definition which incorporated not only the three domains of food security discussed above (availability, access and utilization) but included the phrase “at all times” which reiterated the fourth, less commonly accepted domain of food security, i.e., the stability of food security over time (Barrett, 2010; Jones et al. 2013).

**Measuring Food Security**

Diverse food security metrics abound in the literature. The challenges, however, are the identification of the underlying construct(s) a particular metric is targeting and its intended use. These determine the choice of a metric in any given situation. Some food security metrics, measured domains and purposes to which they are commonly used are presented in Table 2.
<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Metric</th>
<th>Domains</th>
<th>Nature of Metric</th>
<th>Unit of Analysis</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>Prevalence of undernourishment</td>
<td>Physical Availability</td>
<td>Outcome</td>
<td>Macro</td>
<td>Comparisons across countries; global/regional governance of food security; advocacy tool</td>
</tr>
<tr>
<td></td>
<td>Global Food Security Index (GFSI)</td>
<td>Physical availability</td>
<td>Determinant and Outcome</td>
<td>Macro</td>
<td>Comparisons of food security status across countries; their determinants and outcomes</td>
</tr>
<tr>
<td></td>
<td>Global Hunger Index</td>
<td>Physical Availability</td>
<td>Outcome</td>
<td>Macro</td>
<td>Assessment of hunger situation in different countries</td>
</tr>
<tr>
<td></td>
<td>Relative dietary supply index</td>
<td>Physical Availability</td>
<td>Outcome</td>
<td>Macro</td>
<td>Advocacy tool, cross-country comparisons; global/regional governance</td>
</tr>
<tr>
<td></td>
<td>Global Food Security Index (GFSI)</td>
<td>Economic access</td>
<td>Determinant and Outcome</td>
<td>Macro</td>
<td>Comparisons of food security status across countries; their determinants and outcomes</td>
</tr>
<tr>
<td></td>
<td>Share of food expenditure by the poor</td>
<td>Economic Access</td>
<td>Outcome</td>
<td>Macro</td>
<td>Comparisons across countries; advocacy tool; global/regional governance of food security</td>
</tr>
<tr>
<td></td>
<td>Household Consumption and Expenditure Surveys (HCESs)</td>
<td>Economic access</td>
<td>Determinant</td>
<td>Macro</td>
<td>Assess food security status within regions or households; Monitor and evaluate the impact of food security interventions.</td>
</tr>
<tr>
<td></td>
<td>Domestic Food Price Volatility</td>
<td>Economic Access</td>
<td>Determinant</td>
<td>Macro</td>
<td>Provide cross-country comparisons</td>
</tr>
<tr>
<td></td>
<td>Household Food Insecurity Access Scale (HFIAS)</td>
<td>Economic Access</td>
<td>Determinant and Outcome</td>
<td>Macro</td>
<td>Assess food security status within regions or households; Monitor and evaluate the impact of food security interventions.</td>
</tr>
<tr>
<td></td>
<td>Coping Strategies Index (CSI)</td>
<td>Economic Access</td>
<td>Determinant</td>
<td>Macro</td>
<td>Target food aid and monitor its impact</td>
</tr>
<tr>
<td></td>
<td>Global Food Security Index (GFSI)</td>
<td>Food quality, Food safety</td>
<td>Determinant and Outcome</td>
<td>Macro</td>
<td>Comparisons of food security status across countries; their determinants and outcomes</td>
</tr>
<tr>
<td></td>
<td>Household Dietary Diversity Score (HDDS)</td>
<td>Food quality</td>
<td>Determinant</td>
<td>Macro</td>
<td>Assess household level dietary diversity and its changes over time</td>
</tr>
<tr>
<td></td>
<td>Minimum Dietary Diversity for Women (MDD-W)</td>
<td>Food quality</td>
<td>Outcome</td>
<td>Micro</td>
<td>Measures proportion of women who achieved minimum dietary requirement in the last 24 hours</td>
</tr>
<tr>
<td></td>
<td>Children under 5 Dietary Diversity Score (CDDS)</td>
<td>Food quality</td>
<td>Outcome</td>
<td>Micro</td>
<td>Measures proportion of children under 5 years who achieved minimum dietary requirements in the last 24 hours</td>
</tr>
<tr>
<td></td>
<td>Coping Strategies Index (CSI)</td>
<td>Food quality</td>
<td>Determinant</td>
<td>Macro</td>
<td>Target food aid and monitor its impact and long-term changes in food security</td>
</tr>
<tr>
<td></td>
<td>Household Consumption and Expenditure Surveys (HCESs)</td>
<td>Food quality</td>
<td>Determinant</td>
<td>Macro</td>
<td>Measure income, consumer price indices, socioeconomic status, and food and non-food expenditures; provide cross-country comparisons and subnational analyses</td>
</tr>
</tbody>
</table>
Link between Food Security and Development

National development simply means a sustained improvement in the standard of living in the country as depicted economically, by sustained growth in per capita income. Economic development is brought about by sustained economic growth, which is characterized by high efficiency and productivity of resources invested in production (Ayinde, 2019).

It is a fact widely acclaimed that no country can achieve economic development without agricultural development. This is achieved through achieving food security and sustainability in the provision of abundance crop and livestock (food accessibility, food affordability, food utilization and food quality), to meet local consumption, raw materials for the processing industries, national reserves and export (Ayinde, 2019).

Food insecurity and its derivatives are used as economic development indicators because of the positive linear correlation that exists between the two (Otekunrin et al. 2019a); this informs its prominent mention in the SDGs. Examples of food security-related indicators of development include but not limited to:

a) Prevalence of stunting and wasting of under-age children.

b) Under-five years children mortality rate.

c) Infant mortality rate

d) Maternal mortality rate

e) Proportion of total water resources used

For Nigeria to develop, food security growth must be sustained. An increase in production activities in the industrial, mining, metallurgy sub-sector, especially if it promotes export (like the case of Nigeria been a net exporter of urea) must, without doubt, put food on the table of average Nigeria. No economy can thrive sustainably without improving the human capital component of the economy (Otekunrin 2011; Awoyemi et al. 2015; Ayinde, 2019).

Food insecurity negatively affects human physical, social, emotional, and cognitive development throughout the life course and is a major social and environmental disruptor with serious repercussions for planetary health (i.e., the health of human civilization and the state of the natural systems on which it depends). Food security is related to all of the United Nations SDGs. Improved food security governance based on sound, sustainable and equitable agricultural is essential for countries to meet the SDGs (Perez-Escamilla, 2017b).

Food and nutrition security embraces meeting energy, protein and nutrient needs for healthy life. Food systems overlap with agricultural systems in the area of food production, but also comprise the diverse set of institutions, technologies and practices that govern the way food is marketed, processed, transported, accessed and consumed. The food system activities are grouped into four categories: producing food, processing and packaging food, distributing and retailing food, and consuming food (Capone et al. 2014). Figure 1 shows very clearly, the pictorial representation of the link between food security, human capital development and national development.

Figure 1: Precursors food insecurity (FI), human capital development and national development (SDGs). Source: Built from SDGs; UN Sustainable Development Goals Data. Cited by Perez-Escamilla, R. (2017b).
Food Insecurity and Underdevelopment Features of Nigeria

Nigeria, according to World Data Lab (6 May 2020) has an estimated population of 205,323,520 persons and has 102,407,327 people living in extreme poverty (50% of the total population) (World Data Lab, 2020). Nigeria is unarguably the most populous nation in Africa and ranked number 7 globally with an estimated growth rate of 2.43 percent per annum and a high dependency ratio of 88 percent. According to Worldometer, Nigeria’s population is equivalent to 2.64% of the total world population and it is projected to reach 401 million by 2050. (NPC/NBC, 2018; Otekunrin et al. 2019a; Worldometer, 2020; World Data Lab, 2020).

In 2014, Nigeria, the 10th largest crude oil producer in the world, achieved a status of a middle-income country. In spite of Nigeria’s oil wealth, 50% of Nigerians total population live in extreme poverty within poverty threshold of $1.90 per day (World Data Lab 6 May, 2020). Food insecurity in Nigeria is currently at alarming rate calling for urgent and immediate intervention. Figure 2 shows that Nigeria’s ranking in Global Food Security Index (GFSI) has continued to increase since 2013 (ranked 86 among 107 countries with 33/100 score) and reached a disturbing rank of 94 (with 48.4/100 score) among 113 countries behind Ethiopia, Niger and Cameroon in 2019 GFSI overall ranking table (the closer to 100 score the better) (EIU, 2019).

Moreover, Nigeria overtook India which was previously regarded as the country with the highest number of people living in extreme poverty globally but in May, 2018. In May 2018, Nigeria overtook India to become the world poverty capital with the highest number of population living in extreme poverty reached 86.9 million. It is quite alarming that the poverty situation in Nigeria is increasing. As of 6 May 2020, 102.4 million Nigerians live in extreme poverty implying that an additional 15.5 million Nigerians have plunged into poverty in 24 months (World Data Lab, 2018; 2020). The precarious state of acute food insecurity in Nigeria is occasioned by chronic and hidden hunger, extreme poverty, corruption, conflict events (insurgency in the North East) and unfavorable climate change. In the 2019 Global Hunger Index (GHI) score, Nigeria has a GHI score of 27.9, which falls in the serious category. These data reflected that Nigeria (through these indicators) is not yet on track in attaining the SDG 2 target of ending all forms of hunger, achieve food security and improved nutrition, and promote sustainable agriculture by 2030. Proportion of undernourished increased from 9.3% in 2000 to 13.4% while a slight decrease was reported in stunting from 39.7% in 2000 to 37% in 2019. Meanwhile, the only indicator that showed remarkable progress was the child mortality rate, which declined from 18.6% in 2000 to 10% in 2019 (von Grebmer et al. 2019). Nigeria also had a rather low Africa’s Sustainable Development Goals Index (SDGI) rank and score (ranked 43rd among 52 countries in Africa with 47.03/100 score) slightly behind Sudan (ranked 42nd with 47.38/100 score) and Comoros (ranked 41st with 47.5/100 score) in Africa (SDG Centre for Africa and Sustainable Development Solutions Network, 2019; Otekunrin et al. 2019c).

Even though, International Fund for Agricultural Development (IFAD) rated Nigeria the highest producer of cassava, yam and cowpea globally in 2012 and currently the highest producer of cassava and yam globally, the country still persistently remained food insecure and heavily import-dependent. Nigeria is blessed with abundant land suitable for agriculture (75 percent) but unfortunately; only 40 percent is used for agricultural purposes. A vast majority of the rural household population still engages in subsistence farming which can barely feed their immediate families. Lack of infrastructural facilities such as good roads has heightened rural poverty disconnecting rural farmers from needed inputs and markets for their produce (IFAD, 2012; FAOSTAT, 2019; Otekunrin and Sawicka 2019).

Chronic and seasonal food insecurity persist in every part of Nigeria, escalated by frequent high food prices, impact of conflict related to insurgency (especially in the Northeast), armed banditry, communal, pastoralist/farmer crisis, kidnapping, cattle rustling, and climate change (FEWS NET, 2020). Among the six geopolitical zones in Nigeria, Northeast, North-Central and South-South are the three zones mostly affected by conflict events. Figure 3 shows that the reoccurring conflict events are terrorism in the Northeast (73%), land or resource access in the North-Central (55%) and cultism/criminality in the South-South (36%) (NBS/World Bank, 2018; Otekunrin et al., 2019a).

According to the International Office of Migration (IOM) assessment in October 2018, over 1.8 million persons were displaced across Borno, Yobe and Adamawa states with Borno state remaining the epicentre of Boko Haram conflict hosting over 1.4 million Internally Displaced Persons (IDPs) (FEWS NET, 2019). Global Rights (an international non-governmental organisation) report revealed that 3,188 persons, including 2,707 civilians and 481 security operatives, were reportedly killed in 2019 (FEWS NET, 2020). IOM-DTM assessment, conducted between August and October 2019, reported that over 2 million people were displaced in Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe states in the northeast while in January 2020, ACLED reported 507 fatalities throughout Nigeria (FEWS NET, 2020). Agriculture, a major source of livelihood for people in these areas, and other income-generating activities were disrupted leading to reduced household income and limited access to food (USAID, 2017).
The projected food security outcomes (June-September 2020) in the country is displayed in figure 4 while figure 5 shows the food security situation in the north-eastern part of Nigeria. According to FEWS NET (2019), intense insurgent attacks in the northeast Nigeria have led to increased displacement of persons with attendant food needs. Also, many households are negatively impacted by farmer/herder conflict in central and northern states of Zamfara, Katsina, Kaduna, Taraba, Plateau, Benue, Nasarawa and Adamawa. The conflict did not allow the households to engage in normal livelihood activities including farming with no access to market and income opportunities (FEWS NET, 2019; 2020).

Nigeria’s Intervention Programs in Achieving Food and Nutrition Security

The Nigerian government is not relenting in her efforts aimed at reducing extreme poverty, hunger and food insecurity among her ever-growing population where the children (infants and adolescents) and women are the most vulnerable. Several policies and programs that are nutrition-sensitive with efficient frameworks to tackle food insecurity and all forms of malnutrition have been developed. Some have been implemented while many are yet to yield positive results. Efforts are being made by the Nigerian government to return agriculture to its enviable position in the Nigerian economy. Some of the policies and strategies enacted by Nigerian government aimed at reducing the level of food and nutrition insecurity are mentioned below (IITA, 2017; Olomola, 2017; Otekunrin et al. 2019a):

**National Policy on Food and Nutrition (NPFN)**

The national committee on food and nutrition of the National Planning Commission developed this document, in 2002. It focused mainly on Food and Nutrition Security (FNS) in different sectors and among different classes of society. (IITA, 2017; Olomola, 2017; Otekunrin et al. 2019a). The policy did not yield needed improvement in nutrition as reported by the Ministry of Budget and National Planning and this occasioned its revision in 2016 better performance (FGN, 2016; Olomola, 2017; Otekunrin et al. 2019a).

**Agricultural Transformation Agenda (ATA)**

The ATA (2011-2015) was designed and implemented by the Federal Ministry of Agriculture having food security and agricultural productivity as the focal targets of the program.
Figure 3: Primary cause of conflicts in three Geo-political zones (2010-2017)
Source: Otekunrin et al., 2019a (using NBS/World Bank, 2018 data).

Figure 4: Projected Nigeria’s food security outcomes, June to September 2020
Source: FEWS NET, 2020
The main components of ATA as highlighted in Olomola and Nwafor (2018) and Otekunrin et al. (2019a) were:
(i) The Growth Enhancement Support Scheme (GESS) commissioned to enhance the availability of contemporary agricultural inputs to farmers at subsidized prices.
(ii) The Staple Crop Processing Zone (SCPZ) aimed at enhancing clustered food production, based on the comparative advantage of each region.
(iii) Agricultural Commodity Value Chain Development (ACVCD) designed to harness key commodities in crop and livestock sub-sectors in different agro-ecological zones.
(iv) Agricultural Marketing and Trade Development Corporations (AMTDCs) were commissioned to improve smallholder farmers’ access to markets.
(v) The Agricultural Extension Transformation Agenda (AETA) designed to enhance diffusion of information and adoption of innovations.
(vi) The Nigerian Incentive-based Risk-Sharing System for Agricultural Lending (NIRSAL) established to surmount the bottlenecks associated with agricultural commodity and financing value chains.

It was reported that about 12 to 14 million smallholder farmers benefited from the means-based input subsidies offered by ATA 2011-2014. Commodity marketing boards was reestablished and also formal lending purposely for agricultural businesses increased from 1% - 6% in 2015 (FGN, 2016; Olomola, 2017; Otekunrin et al. 2019a).

Other policies and programs geared towards food security and nutrition in Nigeria are listed below as cited by Olomola (2017) and Otekunrin et al. (2019a);
(b) Agricultural Promotion Policy (APP) (2016-2020): Some basic aims of the policy seek to raise awareness concerning nutritious foods and enhancing the quality of food through the control and use of agrochemicals.
(c) Zero Hunger Initiative (ZHI): The ZHI seeks to formulate a strategic framework for achieving Zero hunger target (SDG2) in the country using a multi-stakeholder and multi-dimensional approach in which all sectors have specific goals that must be met.

Social Safety Net Programs

In addition to the afore-mentioned Food and Nutrition Security policies and programs of the Nigerian government, there are other important social safety net programs commissioned in 2016 under National Social Investment Programs (N-SIP). The intervention program was launched to offer assistance to the most vulnerable people (groups) in the society in order to offer economic access to food and quality livelihoods while reducing the prevalence of food and nutrition insecurity in the country. According to FGN N-SIP (2018) and cited in Otekunrin et al., 2019a, these programs are given as follow:
(i) National Cash Transfer Program (NCTP): NCTP was launched in 2016 mainly to offer support to the most vulnerable groups in the population nutritional intervention, improving livelihood and human capital development through access to cash benefit (₦5000) every month. It was reported that more than 300,000

![Food Security Situation in Northeast Nigeria](image-url)

**Figure 5:** Food Security Situation in North East Nigeria
Source: Authors’ own graph from Emergency Food Security Assessment (EFSA), WFP et al. 2017
households have been impacted by this scheme since it was commissioned.

(ii) National Home Grown School Feeding (NHGSF) program: This was commissioned to reduce the prevalence of chronic hunger and malnutrition among the school-age children, improve school enrolment and enhance the teaching and learning process by providing at least a meal a day to each school pupil.

(iii) N-Power Program: The basic aim of this program is to induce the learn-work-entrepreneurship culture in Nigerian youths between ages 18 and 35. The N-Power program is sub-divided into eight categories. These are: N-Power Agro; N-power Tax; N-power Build; N-Power Creative; N-Power Health; N-Power Teach; N-Power Tech Hardware and N-power Tech Software. ₦30,000 monthly stipend is paid to each N-Power volunteer and equipment/device support for a specific volunteer for continuous learning on the job. There are over 200,000 beneficiaries as at the end of 2018.

(iv) Government Enterprise and Empowerment Program (GEEP): This is also referred to as MarketMoni and was launched to provide financial incentives and training to small scale business owners (traders, youths, market women, farmers). These small scale business owners are offered a no collateral interest loan of ₦10,000-₦100,000 payable within six months. A total of 308,737 loans was disbursed in all 36 states in 2018. In December 2019, Bank of Industry (BOI) reported that ₦19.9 billion has been disbursed to petty traders under this program (Punch, 2019)

CONCLUSION AND RECOMMENDATIONS

The Nigerian government is focused on reducing all forms of food insecurity (including chronic hunger and malnutrition) by 2030, as part of the global vision of the SDG2 which aimed at “end hunger, achieve food security and improved nutrition, and promote sustainable agriculture by 2030.

Meanwhile, there are laudable Food and Nutrition Security related programs and policies launched and revised by the Nigerian government which are geared towards drastic reduction in food insecurity in the country especially among the poorest of the poor in the society. There are also many bottlenecks and challenges in achieving proper implementation and monitoring of the programs for effective and maximum results to improve the livelihood of every citizen.

It is a common wisdom that it is only when Nigerians are food-secure and in good health that they can contribute meaningfully to the growth and development of the country. The government must ensure that institutional frameworks formulated to improve food security and nutrition are strengthened and properly supported financially in its entirety.

It is recommended that the Nigerian government should prioritize the following:

(i) strengthening policies and programs that can lift people out of extreme poverty

(ii) reduce bottlenecks and proffer solutions to challenges encountered in the smooth running of the N-SIP programs.

(iii) bring an end to the issues of terrorism (Boko Haram), armed conflicts, banditry and Fulani herdsmen crises especially in the northeast and north-central of the country.

(iv) provide needed financial support and monitoring teams to National Agricultural Systems, Nigerian agricultural and research institutes in order to deliver their core mandate

(v) effective implementation of agricultural programs and food and nutrition-related interventions especially to the most vulnerable people in the country

ACKNOWLEDGEMENT

This paper is a revised and expanded version of the paper entitled “Food Security in Nigeria: Impetus for Growth and Development”, presented (by the first author) at the 6th Waheed Kadiri Annual Lecture 2019 of the Nigerian Institute of Town Planners, Ogun State Chapter on 2 July, 2019.

REFERENCES


EIU (2019). Global food security index (2019). Strengthening the food systems and the environment through innovation and investment. A report from The Economist Intelligence Unit.


Nathalie, D. C. (2012) "A comparative overview of commonly used food security indicators, case study in the Limpopo Province, South Africa" Univiersit Gent.


and Dublin: Welthungerhilfe and Concern Worldwide


**Accepted 7 September 2020**


**Copyright:** © 2020: Ayinde et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are cited.