

COMMENTARY

A REVIEW OF FOOD AND NUTRITION SECURITY IN NIGERIA

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ABSTRACT

The food and nutrition security situation in Nigeria is alarming as several factors exacerbate food insecurity in Nigeria. Dubbed as the '*poverty capital of the world*,' Nigeria's poverty rates are high. The country's population is over 200 million people, with more than half living below the poverty line. Poverty is closely associated with a lack of dietary diversity, malnutrition, and food insecurity. Volatility in food prices, fluctuations in the local currency's (naira's) value, and high inflation rates pose stress on domestic and imported food prices in Nigeria. Also, prolonged conflicts in Nigeria due to the Boko Haram insurgency and the Islamic State in West Africa Province (ISWAP) have continued to pose a danger and misery to millions of lives - exacerbating food vulnerabilities and social insecurity in the northeastern part of Nigeria. Similarly, farmers and herdsman's conflicts limit agricultural production and yield. As a result of limited farm production, import bans intended to improve local farm production and favor the local economy have not achieved that purpose. Instead, it has driven up domestic market food prices. Using the UNICEF's framework of malnutrition, this paper discusses factors contributing to food insecurity in Nigeria. Some factors discussed include the continuous conflicts caused by insurgency in northeast Nigeria, high poverty rates, inadequate sanitation facilities, improper food transportation and handling facilities, malnutrition, and the recent burden caused by the COVID-19 pandemic.

Key words: Food and nutrition security, food insecurity, COVID-19, hunger, malnutrition, Nigeria

INTRODUCTION

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 [1]. Based on the definition above, there are four dimensions of food and nutrition security: food availability, food access, food utilization, and food stability [2].

Food availability looks at the supply side of food security. It refers to the physical existence of food in a household from household agricultural production, markets, food imports, and food aids [2]. Food access deals with individuals and households' economic and physical capacity to acquire appropriate foods for a nutritious diet. The availability of diverse food is essential, but individuals/households must access and have enough resources to buy them at the market [3]. Economic access depends on an individual or household's income, food price, and people's purchasing power. Physical access depends on the availability and quality of infrastructure needed to produce and distribute food [2,3]. Food utilization deals with the body's ability to ingest and metabolize most of the various nutrients in food. People's health status usually determines food utilization. It is compromised by a lack of proper food preparation knowledge, diseases, and a lack of hygienic and safe drinking water [4]. Food stability refers to a household's ability to access food for a stable and sustained period. It deals with the strength of the other pillars or dimensions of food security over time [5]. Factors that can undermine food stability include climatic instability, political instability, economic factors, and pandemics such as COVID-19 [3,5].

Regular access to safe, nutritious, and sufficient food for a healthy life continues to be a problem in Nigeria [6]. With an estimated population of over 200 million people, Nigeria is the most populous African country and the sixth most populous globally. Nigeria's population has been increasing exponentially for at least the last five decades due to very high birth rates, quadrupling its people during this time [7]. However, population growth has not been commensurate with food availability and food security. In addition to insufficient agricultural production, Nigeria is ripped by conflicts, high poverty rates, unemployment, an unstable economy, and several factors which make the food system highly susceptible to instability and food insecurity [6, 8].

In summary, the causes of food insecurity in Nigeria are extensive. With the onset of the pandemic, prevalent causes are worsening, and rates of food insecurity are predicted to increase in Nigeria [9]. Without drastic actions by policymakers, food insecurity in Nigeria may continue to worsen [9]. Hence, the purpose of this review paper is to provide policymakers with an accessible document that investigates the existing causes of food insecurity in Nigeria and gives suggestions to alleviate food insecurity in Nigeria.

METHODS

In this paper, the United Nations International Children's Emergency Fund (UNICEF) Conceptual Framework of malnutrition (Figure 1) is used to expound the causes and manifestation of food insecurity in Nigeria. The UNICEF framework was developed in 1990 as a tool that identifies multi-dimensional influences of food insecurity. It has been redesigned in recent years and includes basic, underlying, and immediate causes of food insecurity. Though the UNICEF framework identifies several factors that cause food insecurity and malnutrition, this paper only focused on the issues in each sector contributing to food insecurity in Nigeria.

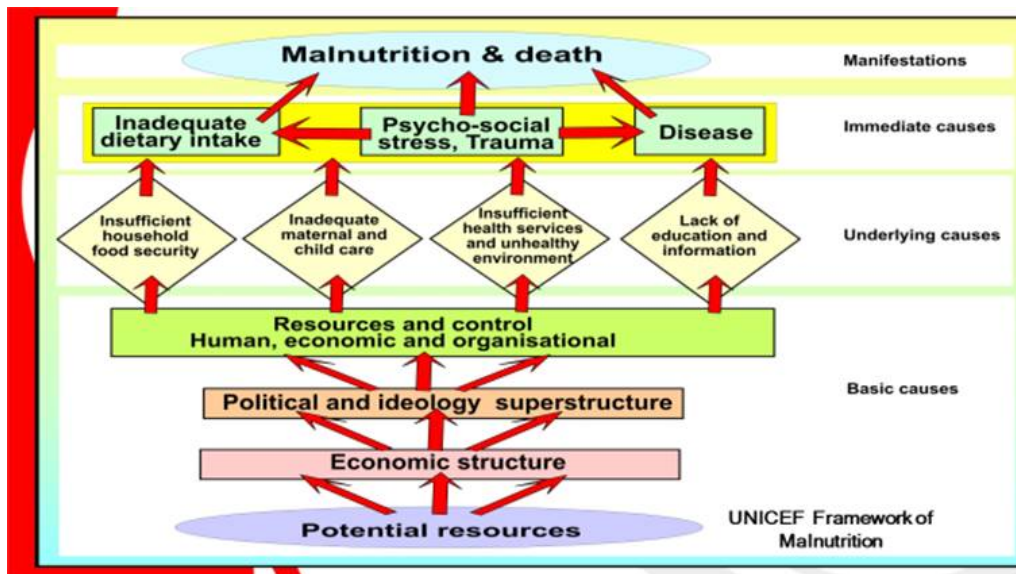


Figure 1: UNICEF conceptual framework of malnutrition Adapted from [10]

BASIC CAUSES OF FOOD INSECURITY IN NIGERIA

Insufficient agricultural production

Nigeria produced all of its food needs in the 1970s with surpluses [11]. In recent years, population growth has, however, been more than agricultural productivity [12]. Despite the government's trade restrictions in 2015 to encourage local agricultural production, Nigeria remains highly dependent on food importation [12]. The country is both the largest producer and importer of rice in Africa. Weather extremes and flooding also affect agricultural production in Nigeria. Seasonal rainfall often causes an increase in water levels of the two major rivers– Niger and Benue [13]. Flooding, especially in the Northcentral and northeastern parts of the country, causes crop damage and destruction of farmlands, homes, and camps, reducing crop harvest yield [13].

In June 2020, the Nigerian Bureau of Statistics reported that 38% of farmers changed farming plans by planting late, reducing the planting area, and planting a different crop with less harvesting time. Nine percent of farmers reported having stopped farming due to COVID-19 [14]. Famine Early Warning Systems Network (FEWS NET) began to project a reduction in Nigeria's food supply from March 2020 [15].

Negative economy growth/recession

Nigeria depends on crude oil export for government revenues. The oil sector contributes close to 90% of Nigeria's export earnings. The oil price and volatility usually affect Nigeria's Gross Domestic Product (GDP) growth rate [16]. From the year 2000 to 2014, the GDP grew at an average of 7% yearly. Since the fall in oil prices between 2014 and 2015, Nigeria's GDP growth rate has reduced to an average of 2% per year until the first part of 2019 [7,17]. As over-dependence on oil in the early 2000s increased, agriculture's contribution to the GDP dropped from 36.97% in 2002 to 21.2% in 2019 [17].

Also, due to the COVID-19 pandemic and resulting lockdowns, there was a decline in oil price, which affected Nigeria's economy. In April 2020, the government had to revise the budget and adjust fiscal benchmarks [18]. The Nigerian currency 'naira' also depreciated and was devalued by the Central Bank thrice in 2020. The official interbank exchange rate against the United States Dollar (USD) increased from 305naira/USD in January 2020 to 360naira/USD in March 2020 and eventually to 380naira/USD in September 2020 [19]. The economic recession placed more burden on many households' purchasing power as food prices and the country's unemployment rate increased [18,19].

Conflicts and insecurity

Continuous conflicts in the Northeastern part of Nigeria due to the Boko Haram insurgency in Nigeria and the Islamic State in West Africa Province (ISWAP) contribute to food insecurity in Nigeria [20]. Also, escalated conflicts between cattle herders and farmers have led to massive displacement and undermined food security in north-central, northeastern, and southwestern states. In some parts of the country, traders avoided the market for fear of attacks [21]. As banditry, killings, and violence increased, livelihood activities and access to essential health services and food were restricted. This insecurity has prevented households from accessing land, planting, or harvesting [20,21]. In 2019, less than half of farmers in Borno state and about one-third in Yobe and Adamawa states could sow or harvest produce [22].

Covid-19 pandemic and disruptions to the food system

The COVID-19 pandemic affected all four pillars of food security – food availability, access, utilization, and stability in Nigeria [8,22]. Subsistence farmers who produce for household consumption and export had restricted access to their farmlands, reducing agricultural production. Transportation time and cost also increased, affecting the movement of seeds, insecticides, fertilizers, and agricultural products [14, 23]. Nigeria is heavily reliant on food imports. Due to the pandemic's disruption, food importations were hampered by international movement restrictions [23]. Also, suppliers of grains to Nigeria like India and Vietnam banned the exportation of food such as rice to ensure their citizens' food sufficiency during the pandemic [23].

According to the National Bureau of Statistics in Nigeria, the percentage of those experiencing severe food insecurity was reported by the Nigerian COVID-19 National Longitudinal Phone Survey (NLPS) and General Household Survey (GHS) to be

almost six times higher in June 2020 (30.3%) when compared with January and February 2019 (5.9%). Households experiencing moderate or severe food insecurity also doubled to 76.8% from 37% in Jan/Feb 2019 [14]. Figure 2 below summarizes the rates of food insecurity in Nigeria from July/August 2018 to August 2020.

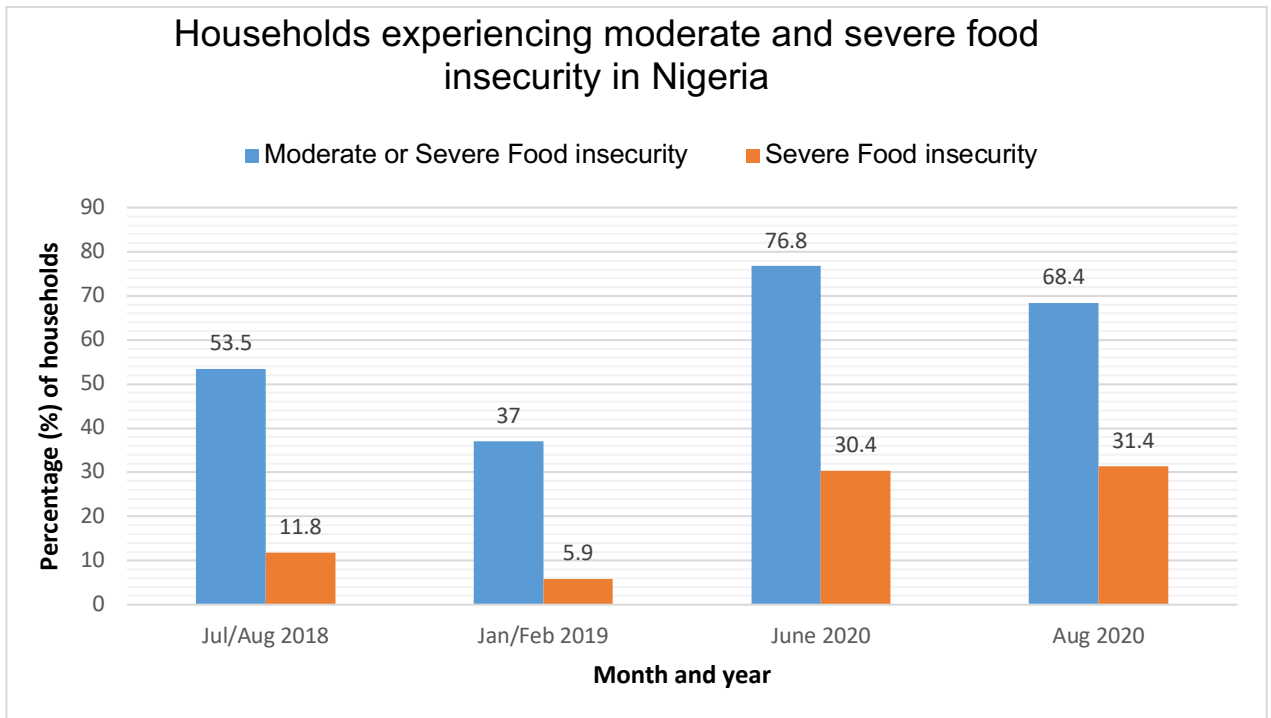


Figure 2: % of households experiencing food insecurity reported by NBS in the NLPS and GHS [26]

UNDERLYING CAUSES OF FOOD INSECURITY IN NIGERIA

Inadequate access to food

The trend of food prices in Nigeria has shown fluctuations over the last two decades. The food inflation rate has been between 12- 16% in Nigeria between 2017 and 2020 [19,23]. Nationally, prices of rice, gari (fermented cassava), sorghum, maize, cowpea, and wheat were on the rise from 2013 and reached an all-time high in 2018 [22,23]. Reports in August 2020 showed a year-by-year increase in average food prices of more than forty percent amid the pandemic and resulting border closures [24].

Poverty and unemployment inhibit food access in many households in Nigeria [24,25]. Fifty-one percent of Nigeria's population lived below the poverty line of 1.90 US dollars/day (\$1.90/day) preceding the pandemic. Using the national poverty rate of 137.4 thousand Nigerian Naira/annum (which is roughly less than US\$361 a year), 40.1% of Nigerians live below the poverty line [25]. The World Bank projects an increase to about 44% due to the pandemic and the resulting lockdown measures [7].

Unemployment also affects household expenditure on food. Household income predicts an individual's purchasing power and the ability to access food. Data from Nigeria's

National Bureau of Statistics shows a gradual increase in unemployment from 16.2% in the second quarter of 2017 to 23.13% at the end of the third quarter in 2018. At the end of the second quarter of 2020, the unemployment rate rose to 27.1% [19,26]. Due to the restriction in movements to limit the spread of COVID-19 in March 2020, subsistence farmers who get their livelihood as migrating farmers experienced a decline in income. Non-farm business owners, self-employed businessmen, seasonal laborers, wage earners, industry, and commerce workers were also affected [26]. Income instability affected households' purchasing power and their ability to afford a healthy diet [26].

Another issue that affects food access in Nigeria is the lack of adequate transportation facilities. The majority of roads in rural communities are unpaved, and some are unpassable [11,27]. As of 2017, more than two-thirds of the road network systems in Nigeria were unpaved [27]. Poor roads place a burden on farmers, market women, and food manufacturers. Similarly, food spoilage and wastage due to inappropriate storage equipment while transporting food products contribute to Nigeria's food insecurity [28].

Inadequate care for children and women

Malnutrition often begins at conception, and inadequate access to care by women and children is an enabling factor for malnutrition's immediate causes [21,29]. There is uneven care of women and children in Nigeria based on socioeconomic status, household income, and geographical location. In most rural parts of the country, the primary context for children's care is the home [29]. The adverse effects are observable in the wide variations of stunting, wasting, and underweight prevalence among Nigeria's different states and locations [30]. Reports from the Federal Ministry of Health in Nigeria show that women in urban areas, compared to their compatriots in rural areas, had a higher probability of taking iron supplements, being delivered by health care professionals, and breastfeeding within one hour of child-birth in 2018 [30]. As a result, the percentage of stunted, wasted, and overweight children in rural areas (47%, 8%, 27%, respectively) is almost double those of urban areas (27%, 5%, 15%).

Insufficient health services and an unhealthy environment

In Nigeria, access to health services is low [29]. Access to health care is often undermined by the challenges of inadequate staffing, insufficient medications, and low capacity or health equipment [6,29]. There is also disparity based on location, which results in some households choosing to visit health care facilities less frequently or opt for less qualified health personnel [29,30]. According to estimates by the Federal Ministry of Health, 80% of households in urban areas lived within 5 kilometers (km) of a primary health care service compared to 66% of households in rural areas in 2005 [30].

Another factor that contributes to food insecurity in Nigeria is the environmental conditions. Inadequate access to water, sanitation, and hygiene (WASH) services contribute to Nigeria's cholera and typhoid outbreaks [9,30]. Most households still rely on unimproved water sources such as sachet water, uncovered dug wells, and surface water as drinking water sources [30,31]. Only 66% of Nigeria's population has access to basic or improved drinking water sources [30]. The percentage is even lower in rural areas (54%) than in urban areas (78%).

The situation is similar for access to primary or improved sanitary facilities such as flush/pour toilet facilities or pit latrines with the slab. Over 44% of Nigeria's population does not have improved toilet facilities [31]. Although households with no toilet facilities reduced from 29% in 2013 to 25% in 2018, the proportion is still high among rural and urban households. In 2019, Nigeria became the leading country with the highest number of people practicing open defecation surpassing India – a nation with 1.35 billion people - almost seven times more populated than Nigeria [32].

IMMEDIATE CAUSES OF FOOD INSECURITY IN NIGERIA

Inadequate dietary intake and diseases

Diet quality comprises nutrient adequacy, variety (among different food groups), moderation, and food safety [5]. Associations among inadequate dietary intake, diseases, and malnutrition are well established. Insufficient dietary intakes undermine the body's immune system increasing the incidence, prevalence, severity, and duration of common infections [5,33]. Inadequate dietary diversity, undernourishment, and disease prevalence contribute to the incidence and prevalence of malnutrition in Nigeria. Most households in the country rely heavily on starchy staple foods and consume fewer fruits and vegetables. Over 65% of the total calories consumed by households in Nigeria are from staples [25,34]. Only 34% of children under five met the minimum dietary requirements of eating from five food groups, while an estimated 16.5% met the minimum acceptable diet for growth and development in 2018 [30,34]. Nationally, 29% of children under six months were exclusively breastfed [34]. As discussed in the next section, the consequence of malnourishment is far-reaching among women of reproductive age and children.

MANIFESTATION OF FOOD AND NUTRITION INSECURITY IN NIGERIA

As discussed below, food insecurity results in several forms of malnutrition and the manifestation of diseases such as stunting, wasting, micronutrient deficiencies, overweight, and obesity.

Stunting

Stunting, which can also be referred to as low height-for-age, indicates chronic undernutrition [4,33]. It reflects the failure to consume adequate nutrients over a long period. The adverse effects of stunting compromise an individual's cognitive development and negatively impact the community and the nation [33]. The national prevalence of under-5 (U-5) stunting decreased in Nigeria from 41% in 2008 to 36% in 2011. It was estimated to be 36.8% in 2018. However, the prevalence is higher today in some parts of the country, as shown by more recent data from the northern part of Nigeria [34]. The prevalence of stunting in North West and North East Nigeria was estimated to be 57% and 44.3%, respectively, in 2018 [30,34].

Wasting

Wasting is defined as low weight-for-height [34]. It reflects acute malnutrition, often due to insufficient dietary intake or recent illness incidence, leading to weight loss such

as diarrhea [4]. Wasting undermines the immune system resulting in increased incidence, severity, and duration of common diseases. At the national level, the prevalence of wasting is 7% among children under five years. However, it is higher among U-5 in Nigeria's Northwest and Northeastern states with 9% and 10%, respectively [34].

Overweight and obesity

Food insecurity is not only associated with undernutrition; there can be inappropriate over-nutrition, leading to an increased risk of overweight and obesity [5,34]. Overweight and obesity increase the risk of non-communicable diseases such as diabetes and cardiovascular diseases. The prevalence of overweight and obesity in Nigeria is estimated to be 28.9% and 8.85%, respectively, with a higher prevalence among women [34].

Micronutrient deficiencies

Micronutrients are essential vitamins and minerals necessary for disease prevention and maintaining proper growth and development. They are not usually produced in the body (except vitamin D) and can only be obtained via food or supplements [35]. The harmful effects of micronutrient deficiencies in Nigeria are more pronounced among vulnerable populations – children and women [36]. Common deficiencies include iron and vitamin A deficiency.

Anemia occurs due to decreased hemoglobin levels in the blood, and Iron deficiency anemia (IDA) is the most common form. It is the most prevalent micronutrient deficiency among Nigerian populations [36]. Insufficient dietary intake of iron, low dietary bioavailability, parasitic infections, and diseases such as malaria are some of the factors that cause anemia [36,37]. Over two-thirds of children under five years and about 58% of women of reproductive age in Nigeria are estimated to have anemia [34,36]. Iron deficiency anemia is linked with elevated peripartum morbidities and delayed psychomotor development of infants in Nigeria [37].

Vitamin A Deficiency (VAD) often results from prolonged insufficient dietary intake, malabsorption by fat cells, or liver dysfunction. It is a significant cause of childhood blindness and increases the severity of infections and diseases such as malaria, diarrhea, and measles [36]. The most recent Nigeria Food Consumption and Nutrition Survey 2001 – 2003 (NFCNS) released in 2004 reported that 29.5% of children under five years suffered from VAD. Approximately 4.1% of women of reproductive age (WRA) and 8.8% of pregnant women (PW) were estimated to be vitamin A deficient [38].

In summary, figure 2 highlights the prevalent basic, underlying, and immediate causes of food insecurity in Nigeria and its resulting manifestations.

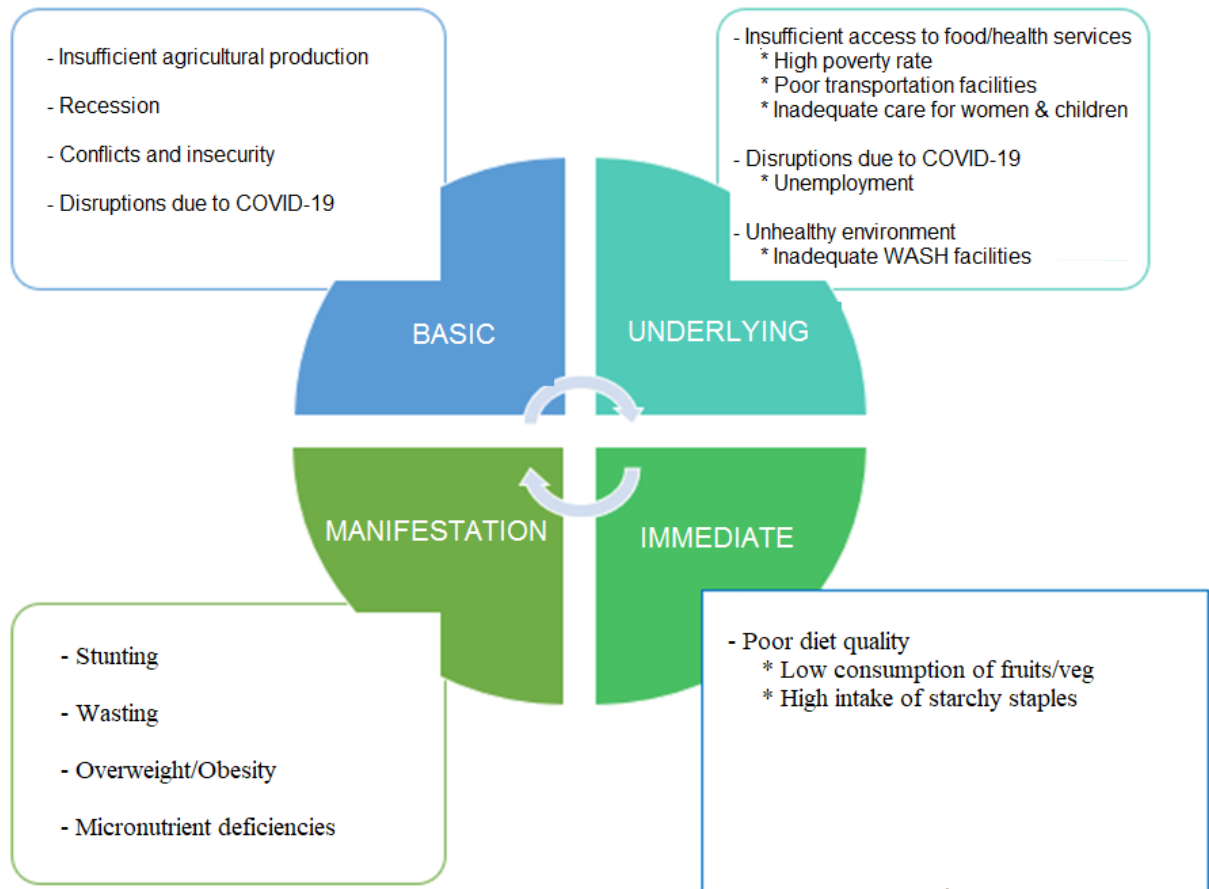


Figure 3: Summary of the causes and manifestation of food insecurity in Nigeria

RECOMMENDATIONS TO ALLEVIATE FOOD INSECURITY IN NIGERIA

There is no doubt there are ample food and nutrition security (FNS) policies in Nigeria. Nigeria has collaborated with many stakeholders and enacted no less than 17 policies addressing food insecurity and hunger in recent years (between 2010 and 2020). The Federal Ministry of Health (FMoH) and the Federal Ministry of Agriculture and Rural Development (FMARD) spearhead these policies. They include many multi-sectoral and government parastatals as stakeholders and implementers. Despite the number of FNS-related policies, these policies have many similarities, which creates some redundancy. This redundancy often results in overlapping duties among stakeholders, making it difficult to monitor, implement, and enforce policies efficiently.

Also, local 'community gatekeepers' such as religious leaders and business owners were neither decision-makers nor involved in the development stages of interventions in these policies. The synergy between multi-sectoral organizations and local community gatekeepers in the development stages of policies and nutrition programs increases the likelihood of achieving desired nutrition outcomes [39]. Thus, although some policies require multi-sectoral approaches, due to incoherence in some key stakeholders, targeted population, objectives, indicators, and goals, desirable FNS outcomes are still

unmet. For instance, Nigeria is not on course to achieve the six Global Nutrition targets 2025 of the World Health Organization [36,39].

Strategies and actions to alleviate food insecurity in Nigeria should include providing palliative and agricultural seeds for farmers and investing in rural farmers' education on improved farm machinery, equipment, and farming methods to improve harvest yield. In addition, strategically targeting the vulnerable population through social protection programs and providing food and financial aid to the internally displaced and those suffering from extreme hunger should be given priority. Likewise, investing in improved social amenities and technology such as enhanced transportation facilities and electricity to aid food handling, storage, and transportation will enhance physical access to foods. Also, developing and revising Food-Based Dietary guidelines for Nigerians every five years to encourage a healthy, varied, and nutritious diet should be considered. Finally, enacting a Price Control Act and creating a Federal, State, and Local price control board to monitor, regulate, and ensure food prices in the local market do not go beyond approved price benchmarks will aid food stability.

CONCLUSION

Having reviewed various contributing causes of food insecurity in Nigeria, more work needs to be done by the Federal Government and major stakeholders to achieve food and nutrition security. As a matter of urgency, Nigeria needs to address insecurity and conflicts, invest in rural farmers' education, provide improved infrastructures and social amenities, and develop Food-Based Dietary guidelines for its citizens. Also, local stakeholder engagement and adequate implementation of policies are needed to improve Nigeria's food and nutrition security.

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