

# An Exploration of Human-Environmental Impact on Food Security in Nigeria

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## ABSTRACT

The importance of food as an integral part of human existence cannot be over-emphasized. However, it is disheartening to view the situation of food security globally. In the case of the African region, Nigeria in particular has been forced to rely heavily on food imports to prevent starvation. The rational use of environmental resources to cater to the present generation without necessarily jeopardizing the future generation is pertinent. Human beings have consciously and unconsciously overstretched the environment for their own benefit but to the detriment of the environment, the resultant effect of which is incessant food insecurity. This paper explores human-environmental impact (HEI) on food security in Nigeria. Among others, it was found out that the food situation in Nigeria is appalling with unfriendly statistics of food insecurity; multidimensional factors ranging from natural, human-induced, social, economic, technological, political, and socio-cultural, such as government policies, indiscriminate use of environmental resources; loss of biodiversity and extinction of crop biodiversity leading to reduction of traditional food crops; conflicts, terrorism, corruption, and environmental degradation; the overuse of natural resources in the environment; over-dependence on primary agricultural system degrading low fertility soils even further. Hence, necessary policies should be put in place towards the use of the environment; pollution of all forms, illicit bush burning, illegal mining, as well as bunkering leading to oil spillage should be jettisoned by all as well as loss of biodiversity and extinction resulting from crude agricultural practices and indiscriminate use of biotechnology. Again, sociological and demographical factors like conflicts, terrorism, environmental degradation, corruption, civil insecurity among others that are of grave impact on food production should be reduced to the barest minimum.

**Keywords:** Human-environmental impact, Food security, Exploration, Nigeria.

## INTRODUCTION

For the umpteenth times, the global community regardless of their status is grappling with the problem of adequately providing for her ever-increasing teeming population. This, of course, constitutes the basic need in the hierarchy of human needs exemplified by Abraham Maslow in his theory of need of 1934. Without mixing words, the way forward to achieving basic need of food encapsulated in the basic need is but a function of sustainable environment. Sustainable environment entails rational use of environmental resources to cater to the present generation without necessarily

jeopardizing the future generation. It thus implies responsible attitudes to the environment. Human beings in a bid to satisfy their unlimited wants and to find recourse to some perennial problems have consciously and unconsciously overstretched the environment culminating in different activities being carried out for the benefit of human beings but to the detriment of the environment at large. The result and effect of which is the continuous food insecurity.

The import of food as an integral part of human existence cannot be over-emphasized. However, it is disheartening

the situation of food security the world over presently. For instance, Nason (2015) averred that there exists a worrisome food gap in the world. Giving a vivid global food situation, Spielmaker (2013) and World Bank (2014) advanced that there are over 800 million people that are food unsecured globally. The said situation has led to over-reliance of the region on handouts from outside to salvage the people from starvation. It is in the realization of the foregoing that the World Bank (2014) advanced that nations of the world should not rest of their oars until those factors responsible for food insecurity are addressed in totality. Basic in factors responsible for problems of food security is the way and manner in which the environment and its associated resources are being managed generally. This paper, therefore, is envisaged at exploring the Human-Environmental Impact (HEI) on food security in Nigeria. The effort is made to conceptualized food security; identified factors responsible for food security problem in Nigeria; highlight HEI; establish a relationship between HEI and food security problem. Thereafter, conclusion and recommendations were drawn as a way forward to the menace human activities on the environment culminating in food insecurity.

## LITERATURE REVIEW

### FOOD SECURITY

Baring the essence of food as life supporting to organisms especially, human beings, the situation of food availability and consumption is nothing to write home about the world over and especially in Africa as a continent, Nigeria inclusive (Abdullahi, 2008; Ogunsanya, 2015; FAO, 2016). Confirming this stance, Matemilola and Elegbede (2017) were of the view that despite the unprecedented effort by international institutions, the population of the undernourished people in the world still constitutes a major problem in most parts of the world. According to Omotayo et al. (2017); Pérez-Escamilla et al. (2017) and FAO (2016), globally, food insecurity continues to be a pressing concern to policymakers with its highest prevalence in Africa, chronic poverty persists in Africa and recent estimates have shown that more than one-quarter of the population is suffering from hunger. The foregoing situation warranted the nation's food security rating by the International Fund for Agricultural Development (IFAD, 2012) that Nigeria is the number one producer of yam, cassava and cowpea in the world; yet Nigeria remains a food insecure nation and relies heavily on importation of grains, livestock products, fish inclusive.

The similar revelation has also been made. For instance, Amaka et al. (2016) affirmed that despite Nigeria's significant natural resources, the majority of the citizens are living below the poverty line. Conceptual wise, food security implies a situation whereby food is available to all and sundry in both quantity and quality as well as in

an affordable manner. This, in essence, ensures adequate nutrition, balanced diet necessary for good living. Subscribing in this wise, Food and Agricultural Organization (FAO, 2008) quoting The World Food Summit, 1996, agreed that food security "exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life". Corroborating this view, Oladiti (2011) averred that food security entails the availability of quantity and quality food in the nation capable of providing adequate diet at all times. Similar views were held by Abudullahi (2008) and FAO et al. (2013) that food security connotes access to the food needed by all people to enable them to live a healthy life at all times when people have physical and economic access to sufficient food to meet their dietary needs for a productive healthy life at present as well as in the future. Otaha (2013) cap it up in a simple term by saying that food security refers to the availability of food and one 's access to it. Thus, in line with Amaka et al. (2016), sustainable food security is access by all people at all times to enough food for an active healthy life at present plus the ability to provide enough for future generation. It is instructive to note that the foregoing situational analysis of food security does not operate in a vacuum; it is a product of a number of factors.

### FACTORS RESPONSIBLE FOR FOOD INSECURITY PROBLEM

The bane of food security is multidimensionally ranging from natural, human-induced, social, economic, technology, political, socio-cultural, and to mention few. For instance, human actions and inactions at times culminate in food insecurity. Advocating food insecurity factor, Akanimo (2010) identified loss of biodiversity and extinction of crop biodiversity as leading to a reduction of traditional food crops generally. Sociological and demographical factors involving conflicts, terrorism, corruption, and environmental degradation, among others according to Igbanibo (2009) account for food insecurity. Similarly, ecology and precipitation trends, as well as the use of natural resources in the environment, go a long way in determining the availability of food and food security at large (Azil, 2008; Aregheore, 2011). This definitely will hamper level of food productivity and resultant effect of which is food insecurity. Another agriculturally related factor is the issue of over-dependency on a primary agricultural system that degrades low fertile soils (Ilaboya et al., 2012). Again, population increases with its effects on the country's demand for food according to Amaka et al. (2016) coupled with diminished ability to produce food arising from pressures from the growing population in form of desertification, climate change and erosion are also impacting on the already diminishing resources which further threatens food production. This corroborates

Behnassi et al. (2013) view that a growing population responsible for stretching land availability to its limit is a determinant of food security generally. The same goes for inefficient policies especially with respect to agriculture, trade, economics and other adjoining sectors. The global changing climate is another important driver of food insecurity that cannot be underestimated. Amongst other impacts, climate change is responsible for biodiversity loss in the ecosystem as well as other physical access (Adeagbo, 2012). Climate change has become one of the key divisors that are redefining the global food equation and thus having so much impact on the food security of particularly, developing nations.

Another recurrent factor of food insecurity in Nigeria is the ones associated with conflict and civil insecurity that has been interrupting production of food as well as displacing people. This thus; leaves fertile land uncultivated (Adeagbo, 2012). Occasional ethnoreligious crisis and other conflicts in the form of physical fighting, structural violence without declaring war which may result from premeditated pervasion of poverty, rich oppression of the poor among others have devastating effects on the Nigerian economic development especially in the area of food production (Otaha, 2013). Associated with the foregoing is the issue of nature of prevalent farming activities which are predominantly traditional as the use of modern technologies in the production and distribution of agricultural products is very low in Nigeria. Also, the lack of food processing apparatus sometimes leaves farmers with no choice than to consume a significant fraction of their harvest within a short period. The more reason why Ilaboya et al. (2012) advocated that achieving sustainable food security requires averting unnecessary wastages. Industrial effluents such as oil spillage, gas flaring and other industrial effluents have greatly impacted on the agricultural sector and food production. All these are but the human-environmental impact on the environment.

## **HUMAN-ENVIRONMENTAL IMPACT**

The environment through the forces of nature as well as the activities of human beings is responsible for the inevitable change pervading the components of the ecosystem generally. Such activities have been described as an environmental intervention (Iwena, 2008). The situation of the environment in the present time is better imagined than real. The more reason for the clarion calls for the sustainable environment the world over. In an apt description of the situation of the environment today, Olatundun (2008) averred that arising from research findings, one of the outstanding features of the environment is the speed with which it is deteriorating which keeps on enlarging and threatening to become uncontrollable. Thus, every attempt by human beings to support the vast population in an ever-shrinking agricultural-based environment is intrinsically futile.

Buttressing further on the environmental situation viz-avis human impact, Oladiti and Kamarise (2014) advanced that as a possibilistic animal, human beings in a bid to satisfy their ever-increasing needs tend to tamper with the environment. Thus, in the quest to satisfy one need, human beings keep on exploring and exploiting environmental resources which in most cases are associated with concomitant effects.

In like manner, the impacts of human beings on the environment have been identified as responsible for two interrelated problems of pollution and resource depletion. Thus, the global natural environment is now in certain critical dimension which thus, limits its carrying capacity. The said situation is a product of either sheer ignorance of such impact or wrong-headed discounting of the need for judicious use of the resources (Agunbiade, 2007; Gbadamosi, 2012). Among others, the following ways are identifiable among ways by which the environment has been altered: the destruction of the vegetation resulting from deforestation. This results from cutting of trees, bush burning and other obnoxious activities. All these lead to run-off, flooding, destruction of natural habitats, changes in energy balance, erosion, shortage of rainfall, etc. Another prominent way is the one associated with farming activities which manifest in form of bush burning, wood destruction, burning of organic matter in the soil, destruction of pests and natural habitats, soil erosion, deforestation, to mention few. Associated with this is the indiscriminate overgrazing activities by the herdsmen which usually leads to loss of agricultural land, depletion of soil and vegetable cover, soil compaction arising from trampling, destruction of soil structure, soil erosion, etc. Resultant effects of which are incessant herdsmen/farmers clashes generally. Urbanization related factor which is responsible for the reduction of agricultural land, pollution, loss of organisms and plants, exposure to flooding and erosion cannot be over-emphasized in human-environmental impact generally. The same goes for construction activities and its associated effects on the environment, ditto for activities of miners and the resultant effects on the land surface and the ecosystem as a whole. Similar impact reflects in activities such as hunting and fishing expeditions with its concomitant impacts on the elements within the ecosystem generally (Oladiti, 2019).

## **HUMAN-ENVIRONMENTAL IMPACT AND FOOD SECURITY NEXUS**

It is no gainsaying the fact that human-environmental impact is of concomitant effects on food security generally. Little wonder, Matemilola and Elegbede (2016) advanced that food security is a phenomenon that is multidimensional with economic, environmental and social aspects. It is on record that the greater share of the population of the undernourished is located in the developing countries. Of prominence in HEI on food security is the issue of climate change and natural

disasters. Confirming this stance, Behnassi and Yaya (2011) described climate change phenomenon as a time bomb that is already ticking and waiting to explode with the effect already impacting on global temperatures, unpredictable weather patterns and physical-biological systems. The said factor according to Adeagbo (2012) is responsible for biodiversity loss in the ecosystem as well as other physical access. Thus, climate change has become one of the key divisors responsible for a redefinition of the global food equation and its resultant impact on food security among developing nations of the world. The use of fertilizers and other agro-chemicals have also been fingered as contributory factor of environmental hazards with the nitrogen from fertilizers washing into water bodies causing eutrophication that kills aquatic lives, phosphorus responsible for accumulation of algae in water bodies depriving fishes of oxygen leading to suffocation, end result of which is reduction in the availability of fish for consumption (Engel, 2014; Elliott, 2015).

Another important component of HEI is increased population and the associated increase demand for food. Matemilola and Elegbede (2017) enthused that as the population increases, the country's demand for food increases, while the ability to produce food diminishes because pressures from the growing population in form of desertification, climate change and erosion are also impacting on the already diminishing resources and further threatening food production. Similarly, changes in weather patterns resulting from climate change account for reduced food supply. For instance, Amaka et al. (2016) reported that flood in the Southern parts of the country and drought in the Northern parts leads to substantial losses in food production and income. GCF (2016) also affirmed that environmental issue such as flood, drought, and desertification are environmental issues affecting the availability of food in Nigeria as climate change affects food supply through loss of farmland, fluctuating food prices, increases in food-borne illnesses and other food utilization issues. Summing up human environmental impact, Jekayinoluwa (2005) advanced that the plant and the global environment are witnessing most profound changes in the brief history of the human specifics. Changes such as depletion of stratospheric ozone, the threat of global warming, deforestation, acid precipitation, extinction of species and numerous others are the by-product of human activities on the environment. Reiterating HEI on food security generally, Ogundare (2016) maintained that food chain maintains a natural balance of species on earth, unbalance through human effects can result in adverse effects on human life. If any one species in between a food chain, therefore get extinct, the entire food chain gets disturbed, resultant effects of which is the extinction of its upper leveled species. The main reason for this disturbance can either be an adverse climatic condition for species or human interferences to nature. Different types of pollutions spread by human are responsible for the extinction of many rare species in the

biological system, a corollary of which is a food security problem.

## Conclusion and Recommendations

This study premiers' ways by which HEI has affected food security in Nigeria. The situational analysis as reflected in this study is an indication that the environment has been battered with no thanks to human indiscriminate use of the environmental resources. The effect of which is the colossal impact on food production, availability, avoidability and food security at large. The associated consequences for the teaming generation of the present time and the multiplier effects on the incoming generations are better imagined than real. Changes in environmental elements and the consequent climate change and its associated atmospheric impact keep on increasing daily and affecting seasons culminating in seasonal changes which to a greater extent do affect food supply generally. It is no gainsaying the fact that lack of adequate quality and quantity food is of great impact to the on the citizens as well as the nation as a whole. The nation's gross domestic product arising from food importation keep on reducing while little or nothing is being generated from food exportation in the form of foreign exchange earnings.

The nation at best is greatly becoming food importer to avert hunger, malnourishment and malnutrition while on the World Global Hunger Index, the country continues to rank among the top list. A lot of factors have been identified in this study coupled with the consequences of food insecurity all pointing to human-environmental impact. It therefore behooves on human beings to take cognizance of the said side effects of insensitivity to the environment and environmental resources as a whole. Consequently, it is expedient among others that necessary policies should be put in place towards the use of the environment. Thus, pollution of all forms, illicit bush burning, illegal mining as well as bunkering leading to oil spillage should be jettisoned by all and sundry. More so, the loss of biodiversity and extinction resulting from crude agricultural practices and indiscriminate use of biotechnology that are non-bio-degradable in form of modern technology should be used with great caution to avert environmental damages generally. Again, all sorts of sociological and demographical factors like conflicts, terrorism, environmental degradation, corruption, civil insecurity among others that are of grave impact on food production should be reduced to the barest minimum. In like manner, the issue of the rising population without concomitant productive capability should be given right attention to avoid over stretching of the resource capacity while the issue of over-dependence on primary agricultural system characterized with low yield need be improved upon through medium scale and mechanized farming. Efforts should be made to reduce the greenhouse effects culminating in further depletion of the ozone layer to forestall the negative impact of climate

change.

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