

**FOOD SECURITY AND ENVIRONMENTAL DEGRADATION IN NIGERIA:
CHALLENGES AND ENHANCEMENT OPTIONS**

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Abstract.

Food by all means is the most importance need of man. The lack of it or threats to its availability has also been at the root of social conflict, strife and social disharmony. For Nigeria the threat to food security had never been so pronounced and worrisome at any other time than now when insurgency with many diseases and environmental degradation are staring farmers in the face. This means that food is central to man's survival and well being. But what happens when this basic need of man is threatened by so many factors, so much so that this threat of food insecurity haunts the country's teeming populace. This paper therefore by way of literature review x-rayed the place food security in the face of environmental degradation in Nigeria, with emphasis on the challenges faced by food producers in the country. It recommend among others that issues of environmental abuses be address in Nigeria, with government, oil companies and private sectors strengthening the pathway to environmental sustainability. Assist farmers by providing grants and loans. Retouch the existing policies and enforce.

KEYWORDS: Food, Security, Environment, Degradation

Introduction

This United Nation food and Agriculture Organization (FAO) express the view that agricultural production will continue to grow over the next few years. The current world food supply would be sufficient if equitably distributed, to provide an average of 2,500 Kcal per person per day. According to FAO predictions, by 2030, there will be enough food available to supply 3,050 Kcal per day to everyone, or about 30 percent more than most of us need.¹

In Countries like United State, and China the problem is what to do with surplus food, as fanners in these countries are said to be paid Billions of dollars per year not to grow crops.²

However, in the midst of this surplus food, many including the Nigeria nation do not have enough to eat. Ninety-five percent of the chronically undernourished are in the developing countries.³

But an increasing number arc in transition countries (primarily states of the former Soviet Union and its allies undergoing a change from socialism to market economic). Where bad weather, poor management, environmental degradation and social crises have resulted in falling agricultural

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Food and Agriculture organization (UM) 2004. The state of food insecurity in the world: Monitoring progress Towards the world food summit and the millennium Development Goals. United Nations publication.

² W.P Cunningham and M.A Cunningham, Principle of Environmental Science, 2008. Me Crow Hill Higher Education, New York P. 154.

³ Ibid

production. Even in the richest countries where excess calories are the greatest problem for the majority, some 11 million people don't have enough to eat.⁴

Agricultural world over is the source of food production. Agriculture is also dependent upon water, nutrients, favourable climates to grow crops, productive crop varieties, and the mechanical energy to tend and harvest the crops.

Up till now those conversant with the Nigeria's economic history from independent in 1960 are blaming successive governments for neglecting the agricultural sector despite its huge potentials. It therefore came as a relief last year when the president Muliammadu Buhari administration announced it would tackle the menace headlong through appropriate policies. Hope were raised that at least, the Maputo declaration by Heads of African Government in (2003) to the effect that, at least, 10 percent of annual budgets should be deployed to agricultural investments to boost food production, would be implemented in president Muhammadu Buhari's first annual budget. However a cursory look at countries compliance with the Maputo declaration shows that Nigeria has only attained 1.66 percent, Ethiopia 10 percent, Malawi 10 percent, Burkina Faso 10percent, Senegal 10percent and U.K. 10 percent.⁵ Despite the president's promises the threat of food insecurity still haunts the country. According to the National Bureau of statistics, Nigeria's food inflation appears to be the highest contributor to headline figure announced. The food insecurity in Nigeria is believed by many to have been further compounded by the negligence of Government, the adoption of neo-liberal economic policies. Such as trade liberalization, naira devaluation and withdrawal of government from economic activities ethnic and religious conflicts, disasters, as well as pests like the recent Tuta Absoluta known as Tomato Ebola ravaging tomato and other farm produce, climate change and lack of irrigation.

The Director General of Nigeria Meteorological Agency (Nimet),⁶ has warned that the prevailing extreme weather conditions in the country would worsen food supplies in the months ahead unless the Federal Government stepped up efforts at implementing right climatic and economic policies to mitigate the foreseen danger, he further asserted as follows:

That extreme weather conditions in the country, especially drought, heat waves, and flood were posing a serious threat to food security at both the household community regional and national levels. The threat is the result of the high vulnerability of Agricultural production to weather variability, regrettably, man's quest for food security has continued to be hampered by extreme weather events. The good news, however, is that the impact of extreme weather events on food security in Nigeria can be managed through climate change adaptation policies and appropriate economic framework government.⁷

The question then, is, whether Nigeria authorities are taking the right steps in the right directions beyond the usual rhythmic. This is in view of the fact that for the first time in over three decades, Nigeria is going through the worst food crisis with most staple or essential goods and fruits suddenly

⁴ . Ibid p 155.

⁵ Steve Agbata "Food Crisis looms as discusses insurgency Plaque farmers. Daily Sun, Monday, June 13, Dec 16, P.22 6.

⁶ Ibid

⁷ Ibid

becoming scare. Some of the food badly affected and whose prices have now become exorbitant are: Tomatoes, rice, beans, garri, wheat, onions, among others.

The Minister of Information and culture,⁸ while accusing the dreaded insurgent group, Boko Haram, for the ongoing scarcity of tomato in the country, stated that:

That farmers producing the commodity have been forced to quit the North East due to high level of insecurity in the region, stressing that the price of tomato today is a direct result of the fact that Nigeria has lost two years harvest to Boko Haram insurgency....People that are supposed to be in the farm have now been displaced by Boko Haram and are now refugees at various camps across the country.

Beyond the above acknowledgment, lack of plans and focus on this menace, inability to support farmers, flooding and drought has taken its own toll on food insecurity in Nigeria. Threat to the attainments of food security also comes from the unresolved issue of the safety of genetically modified food made possible through agricultural biotechnology. Biotechnology represents a scientific advance in agriculture with far reaching potentials for increasing food production in an environmentally sustainable manner.

Conceptual Framework on Food security and Environmental Degradation

Food security is a concept that has evolved considerably overtime. It first appeared as a policy concept at the 1974 world food conference and its definition reflected the supply side concerns and uncertain International conditions of the time. Food security was defined in the proceedings of the conference as the;

Availability at all times of adequate world food supplies of basic food stuffs.
To sustain a steady expansion of food consumption....And to offset fluctuations in production and prices⁹

The World food summit of 1996 define food security as existing; 'When all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life'.¹⁰ Commonly, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences¹¹ Household food security exists when all members, at all times, have access to enough food for a relative, healthy life¹² Food security incorporates a measure of resilience to future disruption or an availability of critical food supply due to various risk instability and insurgency. Food security includes at a minimum;

- 1 The ready availability of intuitively adequate and safe foods.
- 2 An assured ability to acquire acceptable foods in socially acceptable ways (that is, without resorting to emergency food supplies, scavenging, stealing, or other coping strategies).

⁸ Lai Mohammed, in a Nigeria Television Authority Live Programme of November, 2006.

⁹ Dauda RS Food security: A critical variable in Nigeria" Quest for Economic Empowerment and Development" in Akano, and Familoni, K (eds.), the National Economic Empowerment and development strategy, philosophy opportunities and challenges, University press, Lagos, 2006, P.12

¹⁰ [http://www.disabled.com/fitness/nutrition/food security](http://www.disabled.com/fitness/nutrition/food%20security) food security; Definition and General Information. P.1 Accessed 7-25-2016

¹¹ United Nations Food and Agriculture Organization (FAO) -(1996) Social Political and Economic Environment for Food security , world food summit vol. 1 section 1 -4.

¹² United States, Department of Agriculture (USDA).

The whole notion about food security in a nation, entails that a country and its people are food secured when their food system operates in such a way as to remove the fear that there will not be enough to eat. It requires that the poor and vulnerable have secure access to the food **they want**.¹³ Food security has four interrelated elements which are: food stability, food access, food availability and food utilization.

Food stability: Refers to the ability to obtain food overtime.

Food Access: Is ensured when household and all individuals within them have adequate resources to obtain appropriate food for a nutritional diet. Access depends upon income available to the household on the distribution of income within the household and on the price of the food.

Food Availability: This is achieved when sufficient quantities of food are consistently available, to all individuals within a country such food can be supplied through household production. Other domestic outputs, commercial imports or food assistance.

Food utilization: Is the proper biological use of food, requiring a diet providing sufficient energy and essential nutrients, portable water, and adequate sanitation. Effective food utilization depends in large measure on knowledge within the household of food storage and processing techniques of basic principle of nutrition and proper childcare. Environment on its own refers to our surroundings, that is the Air, land and water. The environment consists of all or any of the following environment media namely, the air, water and land, the medium of air includes the air within buildings and the air within other natural or man-made structures above or below ground.¹⁴ It has also been defined to include "water, air, land and all plants and human beings or animals living therein and the inter relationship which exist among these or any of them".¹⁵

The world has also been judicially defined by the supreme court of Nigeria to mean, "the natural conditions, for example, land, air and water, in which people animals and plants live"¹⁶. On the other hand Environmental degradation, means;

The destruction of natural vegetation, of indigenous bush; of coastal dunes and forest; and of mangrove areas, Air and water, to clear way to construction and developments to take place. Is clearly an act that causes considerable and irreversible environmental degradation or damage.¹⁷

In the conventional sense, it means the lowering of the quality of the environment, either by the introduction of extraneous matter or energy, or the depletion of the same in a non — replenish able manner. Environmental degradation is a critical issue of economic development generally, and food production in particular. It is a global issue and was so recognized at the Rio Earth Summit in 1992. Before now, Nigeria can boast of fine ecosystem and an array of renewable and non renewable natural resources, aquatic, marine,

¹³ S.Mama —Sinkam, "Food, self sufficiency as a strategic option for Africa. In Onimode. B. and Synag R.(eds.) Issues in African Development. Essays in honour of Adebayo Adedejom et. Heinemann Education books, pic and African centre for Development and Strategies studies, Nigeria, 1995, 111

¹⁴ Section 1 (2) of the United Kingdom Environmental Protection Act 1999

¹⁵ The National Environmental Standards and Regulations Enforcement Agency Act 2007.

¹⁶ See the case of Attorney - General of Lagos State V. The Attorney General of Federation (1003) 6 S.C.Pt.1 24.

¹⁷ N. Imeh and N. Adebobola "The effects of poverty in conservation of Bio diversity: The Nigeria Experience" Environmental and Planning law Review, Vol. 2.No.1 Reuben Theodore Akonkwo & Co. Lagos 2005, Pg. 58

soil, minerals abundant energy, human resources and balanced tropical climate, unfortunately the same Nigeria environment is faced with all forms of degradation¹⁸. Some of these degradation according to mamman include;

1. Population Pressure and Continuous exploitation of marginal lands, aggravating the process of drought and desertification in the North;
2. Severe gully erosion in Eastern and Northern states
3. Coastal land marine erosion, and land subsistence in coastal and river line states;
4. Flooding in low lying hell of mangrove and fresh swamps along the coast, the plains of large rivers and short lived flash floods in the inland rivers.
5. Uncontrolled logging with inherent problems of the destruction of biodiversity;
6. Inappropriate agricultural practices;
7. Destruction of watersheds;
8. Soil-crust formation caused by loss of water;
9. Destruction of vast agricultural lands;
10. Creation of burrow pits associated with bad mining practices and road works;
11. Oil pollution from spillages and gas flaring related problems and
12. industrial pollution, municipal waste generation and urban decay.

No doubt, the above problems are the result of activities aimed at development but in many ways are the major causes of food insecurity. Central to the issue of food security is that, it is tied to environment, agricultural and related economic activities. In other words, there exists a linkage between food security, the environmental, and man's efforts. The ingenious minorities of Niger Delta witnessed how oil production poisoned their waters and destroy their vegetation and agricultural land by intermittent oil spills and other pollutants that occur in the course of oil production process. According to Ogene S. Omadjohwofe,¹⁹ the arable farmland that was hitherto fertile has retrogressively lost fertility. The land is so polluted that it can no longer support the growth of most of the crops, arable farmland has been so degraded that the hitherto productive areas are now turned into wasteland. With the increasing degradation of the soil, and the dwindling agricultural productivity, farmers have become occupationally disoriented and displayed thereby creating acute scarcities of farm produce and food insecurity.

Apart from farmers, fishermen also suffer similar plight. The contamination of the water has serious implication for food security. Most indigenous rivers provides water for domestic use and for fishing. Quite sadly, with the advent of oil exploration, the streams, lakes and rivers are now without fish. The incessant pollution has grossly depleted the fish population. Whenever there is oil spillage on any water body, oil slick is automatically formed on the surface of the water and this reduces the dissolution of oxygen fishes suffocate to death. Most of the fishes species that cannot survive the adverse condition have gone into extrication due to migration or death.²⁰

In the same way, the forests are not spared in the degradation. The forest is the habitat of animals such as grass cutter, hyena, etc. The animals contribute the common games for hunters. But with the commencement of oil exploration, most of the animal species had fled the region as a result of the

¹⁸ A.B. Mamman, 'Desertification in Nigeria', in AllsweN Osini Muzan, 'Poverty Environment degradation and sustainability" Planning and Environmental Law Review Vol. 2. No. 1 Reuben Theodore Okonkwo& Co Lagos, 2005, Pg. 74'

¹⁹ O.S. Omadjohwofe "Oil Exploration and challenges of Food Security: A reflection on the indigenous minority, Faculty ofScience, department of sociology, Delta State University, Abraka. 2003.pp.10-11

²⁰ Ibid p.12.

sound generated from detonated explosive during exploration. This further aggravates the problem of food insecurity.²¹

Challenges To Food Security In Nigeria

To attain food security in its entirety in a country like Nigeria, the following hiccups against food security must be addressed, they include

A. Land Degradation: Agriculture suffers from environmental degradation. The international SON Reference and Information Centre in the Netherlands, estimates that, every year, 3 million hectares of crop land are ruined by erosion, 4 million hectares are turned into deserts and 8 million acres converted to non-agricultural uses, such as homes, highways, shopping centers, factories, and reservoirs. Flooding as in the case of Nigeria has also taken its own toll on farmlands, agricultural process, including livestock and fishery²²

Definition of degradation are based on both biological productivity and our expectations about what the land should be like. We generally consider the land degraded when the soil is impoverished or eroded, water runs off or is contaminated more than normal, vegetation is diminished, biomass production is decreased, or wildlife diversity diminishes. On farmlands, this results in lower crop yields. On ranchlands, it means that fewer livestock can be supported per unit area. On nature reserves, it means lower biological diversity²³. The causes of this extreme degradation vary from region to region. In the North, it is drought, west and east it is erosion, South, Slat and toxic, chemical are responsible.

Soil Erosion: Erosion is an important natural process, resulting in the redistribution of the products of geology weathering and it is part of soil formation and soil loss. In some places, erosion occurs so rapidly that anyone can see it happen. Deep gullies are created where water scours away the soil, leaving fenceposts and trees sitting on tall pedestals as the land erodes away around them. In some places, however, it is more subtle, it is a creeping disaster that occurs in small increments. A thin layer of topsoil washes off year after year until, nothing is left but poor quality subsoil that requires more and more fertilizer and water to produce any crop at all. For Cunningham, it is estimated that about 25 billion metric tons of soil are lost from crop lands every year due to erosion. The net effect worldwide, of this widespread topsoil erosion are reduction in crop production and thus food insecurity.²⁴ For example, not less than 13,000 hectares of rice plantation across Nigeria were washed away by ravaging floods. Analysis confirms that the future is bleak for the Agriculture sector, a sector that contributes 42 per cent to the GDP, and employs over 70 percent of the population.²⁵

²¹ Ibid - (Note that apart from the animal species being depleted, other forest resources and income yielding trees are degraded resulting in deforestation. The indigenous minorities extract a variety of forest products including fruits and nuts, fuel, wood, snail, etc. for domestic consumption and for commercial purposes.

²² W.P and M.A. Cunningham, "Principle of Environmental Science", McGraw Hill New York, 2003. P. 64

²³ Ibid

²⁴ Ibid

²⁵ S.R.Akinola, and B.A.Adawole, "Climate change, Urban Degradation and Flooding in Nigeria cities; Reducing vulnerability Through Polycentric Planning and urban Greenery strategy" Rethinking sustenance Development in Africa, BasseyAnam (ed.) of International Institute for Policy Review and Development Strategies, Nigeria P.270.

Agricultural Practices: The farming system in Nigeria is predominantly carried out in the traditional way. The system is characterized by use of simple farm tools with little subsistence output to show for it. Lack of credit facilities also affects the level of food production. Without credit facility, most of the framers will not be able to adopt improve agricultural practice, this is because the farmer lacks tangible collateral that will enable them to have access to the loan facility. Close to this, is the problem of farm input. Inadequate quantity of inputs, such as seeds, livestock implements, chemicals, available to fanners retard the development of Agriculture, poor quality of these inputs will also lead to low production of food.²⁶

D. Government Policy: Before the oil exploration and oil boom in the 1970's, Nigeria depended so much on agriculture as a source of its revenue. According to Abdellehi, the oil boom let to the negligence of then non-oil sectors especially the agricultural sector. The attention given to agriculture reduced drastically, farming reduced drastically, farmers need were not attended to and the worst of all was that research and development in the sector slowed down causing a stagnation in food production. Government policies with regard to agricultural production were rapid with plans hastily put together with little or no participation from stakeholder'.²⁷

E. Poverty: This is another threat to food security, or the ability to obtain sufficient food on a day-to-day basis. The 1.5 billion people in the world who live on less than \$ 1 per day all too often can't buy the food they need and don't have access or resources to grow it for themselves. Although the average food availability maybe satisfactory, some individual, communities or families may not have enough to eat.

F. Corruption: This is one of the most serious problems facing Agriculture in Nigeria. Corruption occurs at every level or facet of the society and in the Agricultural sector in particular. It is the root from where grows out the trunk, the stem, the branches and the leaves that makes agricultural production policies ineffective and at times impossible to implement or enforce.²⁸ The consequence of course is low food production.

G. Besides the above factors, there is aggressive threat with the Sahara Desert encroachment, which is pushing Fulani herds men down to the South because the cattle prefer to have locations with water and grass, cattle rustling by Boko haram and other criminals both within Nigeria, together with unfavorable weather conditions are moving cattle down to the South resulting in continuous fight between farmers in the South and herdsman. The Director of Arog Bio Allied Agro Services Limited, observed as follows:

As a fanner in the South, the cattle herdsman keep on invading many farm on regular basis and destroying many crops worth million of Naira. They destroyed and ate up our cassava, maize and everything in sight and anytime they are caught, they will only say sorry and come back to the farm again²⁹

²⁶ J.F.O Akpomadaye, "Agricultural Extension as a strategy to Boost Food production in Nigeria", The coconut, Vo. 5 No. 1 June, National Association for Research Development, University of calabar, 2012, Pg. 9

²⁷ A. Abdullehi, "food security in Nigeria: How Close are we?. Being a paper presented at the Federal Radio, Abuja on the occasion of the cope annual lecture, 2008, p.4-6.

²⁸ C.I.N, Emelie "Environmental law and practice in Nigeria" Rhyce Kerex "Publishers, Eugu, 2016.P.301

²⁹ Aroge Temitope, "An Interview with Daily Sun, Business Desk, Monday, June 13, 2016, p.22.

Enhancement Of Food Security In Nigeria

A food secured would be one which food as a human right would be the norm of social behavior. Food production is only a means to an end. Solution to achieving sustainable food security must include the following recommendations:-

1 Improved Agricultural Productivity: Among the 105 countries assessed by the global food security index (GFSI), of the economist intelligent unit, Nigeria became the 80th with 34.8 based on the indices of Affordability, Availability, quality and safety of food. The Country scored 0.0 in public expenditure on agricultural research and development. It is imperative, therefore, for Nigeria to embrace the modern food production techniques that have come in the form of Agricultural Biotechnology, introduced by biosciences for farming in Africa (B4FA). This technology aims to improve crop and livestock production through biotechnology tools that include conventional plant breeding, tissue culture and micro-propagation, molecular breeding or marker assisted selection, genetic engineering and genetically modified crops among others.³⁰ According to a plant physiologist,³¹ there is need for us to look at modern technologies that are capable of bringing about multiple food production and that is where Biotechnology comes in. He said "with biotechnology, what would be achieved in 15 years could be achieved in 5 years, especially where farmers are able to access the technologies".

2 Environmental Management: Environmental quality and sustainability are fundamental to the overall wellbeing and sustenance of Agriculture. The environmental media are the basis for abundance in agricultural production, hence sustainable food security, the abuse or degradation of the environment will amount to food insecurity. There should be effective management of the environment by checking and addressing all forms of pollution. Trees should be planted as often as possible, this is because it helps in protecting soil and water resources, promotes soil fertility and provides protection, from extreme weather events.

3 Policy Changes: Sustainable food security can be achieved if the government adapts inclusive policy making in its advancement efforts. Development should be participatory. Nigeria's agriculture policy most times does not involve the major stakeholders who are active in food production. The policy is mostly "Top-down" instead of "bottom-up" which will accommodate the rural population that is in the rightful position to state clearly their constraints in the process of production but since they are not involved in policy making, implementation of the policy no matter how sound and impeccable will not land on fertile ground.³²

³⁰ A. El-Kubere, "Food Security Challenges: Biotechnology to the Rescue" Vanguard News, Oct. 16 2012, p. 10.

³¹ Inuwa Shehu Usman, of the Institute of Agricultural Research, Ahmadu Bello University, Zaria, in Food Security Challenges, Biotechnology of the Rescue. See note 30 above.

³² S.E. Adikwu, "The need for Agricultural Transformation", Opinion Page, Daily Sun, Tuesday, May 31, 2016, p.16.

4. Rural Transformation: According to Adikwu, about 70% of crops production is done in the rural areas. These rural farmers live in penury, thatched houses and lack basic amenities such as quality health care, electricity, portable water and inaccessible roads. They depend on rain for irrigation and use simple farm tools which does not give large scale production. The deplorable state of the rural areas has discouraged the youths who are supposed to be involved in active food production into riding of 'okada' and doing other menial jobs leaving Agricultural production in the hands of aged people whose strength cannot produce sustainable food for economic transformation. Government should make rural development a priority, provide incentives and welfare packages for the youths and rural farmers. Fertilizer should be made practically available and not on papers, farming tools should be provided, high yielding seeds, pest and disease resistant breeds, storage and post-harvest management, good pricing and accessibility to markets should be given eminent attention³³

5 Address Incessant Clashes: The continuous clash between "Fulani" herdsmen and crop farmers is another hiccup to agricultural production, this needs to be urgently addressed, because no meaningful agricultural activity will take place in an unstable and unsecured environment. The constant attack of the boko haram especially on the Northern part of the country is another bone in the flesh of northern farmers. There is need for a pragmatic solutions to these problems to attain efficient food production.³⁴

6 Reduction in population: Since food insecurity increase with increase in population, effort should be made by all stakeholders at improving programmes and policies that will ensure a proper family planning that will ensure reduction in the number of children in a family. Also, these programmes should include nutrition- oriented, as this will create awareness for improve food substitution knowledge for households.

Conclusion

Agriculture remains an important aspect of any nation's economy. Nigeria as a Nation, like other global communities must keep focus on the goal of assuring food security for all. Viable agricultural programmes and activities in any Nation are capable of sustaining the food supply and reserves needed for the welfare of the citizens. Nigeria having fought and growth through the failing oil sector, government in the past and now have found agriculture;

A bride that cannot be divorced from the bridegroom, the nation's economy so it is no longer news... that diversification of sources of revenue for economic transformation that Nigeria is looking for cannot be in oil and gas but in agricultural development ... Improving the productivity in agriculture is central to addressing food security, poverty, unemployment and attaining social and economic development.³⁵

We cannot afford to squander the abundant potential in agriculture while we look elsewhere for solution to end poverty and hunger. "Everything can wait but agriculture cannot wait."

³³ ibid

³⁴ ibid

³⁵ ibid