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FOOD SECURITY IN THE ERA OF CLIMATE CHANGE IN NIGERIA

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ABSTRACT

This study highlights the various effects climate change has on the availability of food for the teeming populace of Nigeria to ensure food security. Developing countries are plagued by inadequate access to good quality and quantity of food to ensure growth and development, thereby resulting into a lot of challenges like malnutrition, health issues, infant mortality, and migration to other areas. The current practice of Agriculture in Nigeria was taken into consideration, the impact it has on the entire population and the effects climate change has on it. Nigeria, like most other developing countries, is affected in a very important and critical manner by the adverse effects of environmental crises, most of which are direct influences of climate change and this change in the long run has effect on food security. The study recommended that infrastructural facilities, social interventions in the form of food aid, and policies which encourage agricultural production should be put in place in rural areas to help reduce the incidence of rural-urban migration and to encourage agricultural production so as to ensure that all the citizens of the country are food secured.

Keywords: Food, food security, climate change.

INTRODUCTION

Food is any nutritious substance that people or animals eat or drink or that plants absorb in order to maintain life and growth. Food is needed for continual growth and development of the average human person which in turn has simultaneous effect on the socio-economic, political, religious, and all aspect of human life. Nigeria as an agrarian country though not practicing its agriculture in an advanced way faces huge food security challenges. With petroleum being the mainstay of the largely agrarian economy, agriculture however is not given the required attention being one of the most important sectors of the economy as it employs 35% of the 75% of the rural populace and contributes to Gross Domestic Product (G.D.P).

Despite Nigeria's rich agricultural resource endowment, the agricultural sector has not been developed in a way to combat problems of food insecurity in the country. Small holder farmers are the only veritable tool to ensure national accelerated food production but have been constrained to use rudimentary production

techniques in cultivating the land hence, leading to low productivity. The small holder farmer's accounts for about 80% of all farm holdings but have not been efficiently motivated to ensure sufficient production for the teeming population of the country. The growing population is dependent on imported foods. The challenges of adequate food security in a world faced by global climate change could be enormous. This is also coupled with the milestone of an ever-increasing population which correspondingly is accompanied by increased human and industrial activities.

It is of note that the world population is increasing at an alarming rate and this has not been complemented by an increased food production, improved storage methods, improved methods of farming particularly in the developing countries. Rather, on the other hand, we have had increased human population which invariably increases the rate of climate change which consequently affects the adequate provision of food to nourish the teeming world population. Food insecurity and climate change are, more than ever, the two major global challenges humanity is facing, and climate change is increasingly perceived as one of the greatest challenges for food security (HLPE.2012). Nigeria with a population

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of about 167 million (NPC 2012) needs a concise and concerted assessment and reassessment of the various farming, storage practices, industrial activities, and so on even to the most insignificant as these human activities combines to disrupt the ecological balance of the environment. This will create a path to achieving sustainable availability of food for its population in the face of climate change. The general demographic trend in the country in terms of climate poses a real threat to ensuring food security amongst the teeming population of Nigeria. We currently as a country are one experiencing a rather fast rate of population growth, high estimated decrease in agricultural production and low resilience to climate change. As climate change amplifies the environmental and socioeconomic drivers of food insecurity, it is imperative that we prioritize where, how and when to act to counter the effects of climate change on food security.

Concept of Food Security: Food security refers to the availability of food and one's access to it. Households are food secured when they have year-round access to the amount and variety of safe foods that their members need to lead active and healthy lives. At the household level, food security refers to the ability of the household to secure, either from its own production or through purchases, adequate food for meeting the dietary needs of all members of the household (FAO, 2010). It is also a condition which exists 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 an active and healthy life. (FAO, 2006). A household is considered food-secure when its occupants do not live in hunger or fear of starvation. This typifies that all members who share the same roof and resources have access to basic food they need for survival. This definition brings out the component of the concept of food security mainly from the production, down to distribution, ending at the consumption level. Nigeria was ranked 40th out of 79 on the 2012 Global Hunger Index and 156th out of 187 on the 2011 UNDP Human Development Index. Nigeria is the world's largest producer of cassava, yam, and cowpea; yet it is a food-deficit nation and depends on imports of grains, livestock products, and fish (IFAD, 2012). Of an estimated 71 million hectares of cultivable land, only half is currently used for farming; there is similar potential for an expansion of irrigation, which now only covers 7% of irrigable land.

Consequences of Food Insecurity: The persistence of hunger in a developing country like Nigeria purports that ensuring the right amount of food both in quality and quantity remains the focal point of policy makers in the developing countries (Stamoulus *et al.*, 2004). Food security and hunger are the main cause of nutritional, health, human and economic development problems. They entail the deprivation of basic necessities of life. Malnutrition affects one out of every three pre-school children living in developing countries. This preventable menace causes suffering and presents a major debacle to the overall development process. Malnutrition accounts for more than half of all child death worldwide. Malnourished children are less physically and intellectually productive when they attain adulthood hence Smith *et al.* (2003) posits that malnutrition is a violation of the child's human right.

Furthermore, poverty, hunger and malnutrition has been identified as a major cause of accelerated migration from rural to urban areas in developing countries and this needs to be addressed appropriately and timely so as not to undermine political and economic stability of any country and region. Hunger and poverty can go a long way in compromising world peace because it can provide a fertile ground for conflict especially when it occurs with unequal difficulty in coping with disaster. Food insecurity also undermines women's health; stunt their opportunities for education and employment and impede their progress towards gender equality and empowerment of women.

Hunger and malnutrition also pose serious threat to health as it increases the incidence and fatality rate of conditions that causes the majority of maternal deaths during pregnancy and childbirth. It also compromises people's immune system and forces them to adopt risky survival strategy and hence increase the risk of infection and death from HIV/AIDS, malaria and other infections. Food insecurity also forces livestock herders, subsistence farmers, and forest dwellers to use their natural environment in an unsustainable way leading to further deterioration.

Change in Global Climate: Nigeria as a Case Study: Climate change has generated a global issue of discourse because of its potential effects on the human livelihood including agricultural production. Climate Change is caused by increasing concentrations of atmospheric warming gases or Green House Gases (GHG) especially carbon dioxide whose concentration has increased from

280ppm in 1800s to about 370ppm now. These gases warm the atmosphere by their capacity to trap heat and cause changes in the weather pattern of the earth. The increase in temperature causes the polar ice caps to melt and ocean waters to expand. These in turn result in sea level rise leading to submergence of many low-lying areas of the world. Variety of food crops produced in Nigeria are all dependent on rainfall for instance, in the rainfall abundant region (from the coast to the middle belt) crops dependent on rain are planted and in the drier part of the country, crops that are not dependent on much rainfall are planted there. The teeming population of Nigeria has not kept pace with food production.

Climate change in Nigeria affects food production in a number of ways for example uncertainties at the onset of farming season due to changes in rainfall supply may not be sustained and crops planted at that instance can be smothered by heat waves which can lead to an unusual sequence of crop planting which leads to food shortage. Thunderstorms, heavy winds and floods devastate farm lands and can also lead to crop failure, pest and disease migrate in response to climate change and variation e.g. migration of Tsetse fly northwards and this potentially poses a threat to livestock in the drier northern regions. Parts of the country that also experiences soil erosion and operate rain fed agriculture could also be affected which washes away the rich top soil causing low fertility of the soil. Climate change could disrupt progress towards a world without hunger. A virile and coherent global pattern is shown on the impact's climate change has on food availability which also determines food security. The stability of food availability may be threatened by climate change because of short term variation in its supply. The vagaries of climate will exacerbate food insecurity in zones currently prone to hunger and under nutrition, likewise household food security and utilization would be affected by a collateral effect on household and individual income and food utilization could be disrupted by loss of access to drinking water and damage to health.

As a result of climate change, higher temperature in the form of sunrays is incident on the soil surface turning the liquids in the soil to vapour which is then passed to the surrounding air. When the water in the soil is being evaporated, the soil moisture content is being reduced leading to a reduction in agricultural productivity threatening food security. According to the United

Nations, climate change has become one of the leading risks to food security with droughts, floods and hurricane expected to result in lower productivity and price volatility. The lower productivity and price volatility index caused by risk from unpredictable weather pattern raises the chances of farmers investing less in agricultural production thereby threatening food output levels. The small holder farmers which produce food on a small scale are forced to cope with large changes in inputs and output price making them risk averse and it also lowers their ability to adopt and invest in new technologies and this in the long run results in lower productivity hence food insecurity ensues. The international food policy research institute (IFPRI) was warned of an imminent threat to food security in Nigeria and to other nations in the West African region. According to them such menace could only be averted if deliberate efforts are made by both government and private sector to include climate change adaptation to food security investment in the region. Policy makers in Nigeria must buckle up for future challenges from climate change as it can address the pressing needs of broad-based economic growth. When such challenges are tackled it will however, help in fostering good economic growth in the country. Maize, millet, rice, and sorghum are the major cereals grown in these regions, yet the yields from these crops are very low compared to the world average yield and even yields from other regions in Africa. The deleterious effects of a changing climate will further challenge production system already under pressure to produce more to feed the increasingly growing population.

RECOMMENDATIONS TO REDUCE THE IMPACT OF CLIMATE CHANGE

As it has always been noted in past and present research activities, it is however pertinent for the government and all other major stakeholders involved in this critical area to forge ahead in renewed and concerted efforts to implement the various recommendations given. Much of the fight to save and preserve the environment lies in the hands of government and those who hold the knowledge on the adverse effects of climate change and the solutions.

The following recommendations are hereby given for immediate implementation:

1. The education and continued sensitisation of all and sundry in the Nigerian project. This class cuts across all the faces of educational, cultural, religious, economic,

and the socio-political class in Nigeria. The sensitisation of the Nigerian populace would go a long way in making the necessary impacts.

2. Implementing of existing protocols and legislation by the concerned parties. Nigeria as a country is signatory to a number of global protocols and their amendments some of which include the Convention for the protection of the Ozone layer (Vienna convention), protocol on substances that deplete the ozone layer (Montreal Protocol), Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel Convention), and so on.

3. The speedy passage by the National Assembly and implementation of the Nigerian Petroleum Industry Bill (PIB) which would adequately address major concerns to climate change such as oil spillages (its prevention, treatment, and compensation for communities), gas flaring which has been a major threat both to the economic and environmental climate of the Nigerian state.

4. Implementation of the various City Master-plans and development of such where it does not previously exist. It is of note that to ensure that various cities and towns conform to the environmental standards this can only be achieved through conformity to Master plans.

5. Tougher legislations and sanctions for various industries, groups and individuals who sabotage efforts to ensure strict adherence to environmental laws.

6. Afforestation, reforestation and establishment of a National Forestry Plan which would cater for the setting up of new forests and maintenance of existing ones. There is need to educate the citizens on the importance of planting of trees. Of note is the Igi- Iye (Tree of life) innovation by the State Government of Osun.

REFERENCES

Adelekan, I.O. (2009). Vulnerability of Poor Urban Coastal Communities to Climate Change in Lagos, Nigeria. Fifth Urban Research Symposium 2009.

Akinsanmi, A. (2005). Gender Relations and Food Security of Rural Families in Imo State, Southeast Nigeria. *Farming and Rural Systems Economics*, 68. MargrafVerlag,

Beddington J, Asaduzzaman M, Fernandez A, Clark M, Guillou M, Jahn M, Erda L, Mamo T, Van Bo N, Nobre CA, Scholes R, Sharma R, Wakhungu J. (2011). Achieving Food Security in the Face of Climate Change: Summary for Policy Makers from the Commission on Sustainable Agriculture and

Climate Change. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

Black, R. E., Allen, L. H., Bhutta, Z. A., Caulfield, L. E., De Onis, M., Ezzati, M., Mathers, C., & Rivera, J. (2008). Maternal and Child Under nutrition Study Group. "Maternal and Child Under nutrition: Global and Regional Exposures and Health Consequences." *The Lancet* 371 (9608),243-260.

CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org/commission. Nigeria's Treaties and Conventions on The Environment and Related Matter.

Emeka OM, (2007). Improving the Agricultural Sector Toward Economic Development and Poverty Reduction in Nigeria. *CBN Bullion*, 4: 23-56.

FAO. (1983). World Food Security: A Reappraisal of the Concepts and Approaches. Director General's Report. Rome.

Messer E, Cohen MJ, Marchione T. (2001). Conflict: A Cause and Effect of Hunger. ECSP report 7, Environmental Change and Security Program.

Nwajiuba, C. (2012). Does agriculture have a future in southeast Nigeria? Inaugural Lecture, No. 5. Imo State University Owerri, Nigeria.

Odjugo, P. A. (2010). General Overview of Climate Change Impacts in Nigeria. *J. Hum. Ecol*, 29(1), 47-55.

Smith, L.C., U. Ramakrishnan; A. Ndiaye, L. Haddad & R. Martorell (2003), The Importance of Women's Status for Child Nutrition in Developing Countries, Research Report Abstract 131, IFPRI Stamoulis,

Kostas G., P. Pingali & P. Shetty (2004): "Emerging Challenges for Food and Nutrition Policy in Developing Countries". *Electronic Journal of Agricultural and Development Economics*. I,2.

United Nations Environmental Programme (2013) Climate Change and Greenhouse effect.

United Nations. (1975). Report of the World Food Conference, Rome 5-16 November 1974. NewYork.

United Nations Conference on Environment & Development. (1992). Implementation of agenda 21: UNICEF, (1998). The state of the world's children. New York, Oxford University Press.