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IMPACT OF CLIMATE CHANGE ON THE ROLE OF NON-GOVERNMENTAL ORGANIZATIONS IN ENVIRONMENTAL HEALTH DELIVERY IN SOUTH-EASTERN REGION OF NIGERIA

© **Ozioma O. C. Azubuike, Jacinta A. Opara**

Climate change remains a serious problem to most rural settlement in Nigeria. Individuals are faced with a wide range of health problems. These problems include high risk of communicable and non-communicable diseases, an outbreak of epidemics, and scarcity of water. This study investigated the impact of climate change on health delivery services by Non-Governmental Organizations (NGOs) to the different Local Government Areas (LGA) of the five the States in the South -Eastern Region in Nigeria: Anambra, Imo, Abia, Ebonyi and Enugu were selected and three communities from each was sampled using stratified random sampling technique. The result revealed that most NGO health workers could not penetrate into most of the rural areas to deliver aids to the victims

Keywords: NGOs, sanitation, water, food, environment, disaster, climate change, Nigeria, health delivery

Зміна клімату залишається серйозною проблемою для більшості сільських поселень в Нігерії. Окремі люди стикаються з широким колом проблем зі здоров'ям. Ці проблеми включають в себе високий ризик інфекційних і неінфекційних захворювань, спалахи епіdemій та нестачу води. В даному дослідженні вивчався вплив зміни клімату на забезпечення охорони здоров'я з боку неурядових організацій (НУО) в різних територіях місцевого управління (ТМУ) п'яти штатів в Південно-Східній Нігерії: Анамбра, Імо, Абія, Ебоньї та Енугу були відібрані і три громади з кожного відбиралися з використанням методу багатоступеневої випадкової вибірки. В результаті з'ясувалося, що більшість медичних працівників НУО не могли проникнути в більшість сільських районів, щоб доставити допомогу постраждалим

Ключові слова: НУО, каналізація, вода, їжа, навколишнє середовище, катастрофи, зміна клімату, Нігерія, забезпечення здоров'я

1. Introduction

The gradual heating of the earth due to green house gases (GHGS) is referred to as global warming. This is generated from human activities. The gradual heating leads to climate change that is affecting the environment and health of the people. Uyigve (2008) stated that climate change is not by global worm which is the increase in average surface temperature of the earth. Also intergovernmental panel in climate change (IPCC, 2001) define climate change as any change in climate over time. These changes have caused diversification all over the world with special reference to the south eastern region of Nigeria. These changes could have an impact on the echo system which gives rise to flooding, draught, change in rainfall pattern, rise in sea level, coastal erosion, environmental pollution, soil degradation, earthquake, hurricane, mud slide etc. [1–6].

When these happens the health of the people is endangered. For instance the incidence of flooding in some states of the south east region displaced a lot of people's lives as refugees, infections and malnutrition. These have caused so many disasters which resulted to serious health problems. This will warrant the intervention of NGO's to help in health delivery to the affected areas in the south eastern region of Nigeria.

Nongovernmental organisation (NGO's) also known as private voluntary organization (PVDs). Provide approximately 20 % of all external health aid to developing countries. Most of these organisations are quite small; many are church-affiliated. In the very poorest countries, hospitals and clinics run by missionary socie-

ties are especially important. It's special function is organising efforts at rehabilitation in the disaster- struck area. World bank defined Non-governmental organising (NGOs) as a private organisation that pursue activities to relieve suffering, promote the interest of the poor, protect the environmental, provide basic social services or undertake community development. Most often in terms of disaster the NGO activities are frustrated because of their inability to access their roads to reach to the vulnerable house-holds.

Causes Of Climate Change

Climate change sets in as a result of global warming which is caused by the GHG emission V12; carbon dioxide, methane, Nitrous acid, fluorinated gases etc. These gases trap heat in the atmosphere.(EPA, 2009) US Environment Agency- enumerated how human activities can erupt these gases as:

– Nutrous Oxide(N₂O).

This is the emitted during the agricultural and industrial activities, as well as at the combustion of fossil fuel and solid waste.

– Methane (CH₄).

This is emitted at the production and transport of coal, natural gases and oil. Also livestock, other agricultural practices and organic waste in municipal solid waste landfills as well result to emit of methane.

– Carbon Dioxide(CO₂).

These enters the atmosphere through the buying of fossil fuel, cooking with fire wood, electrical appliances, burning of refuse, flared gas and the other industrial processes eg the manufacturer of cement. Other ac-

tivities that generate GHGS are the use of cleaning solvent, use of disinfectant and aerosols etc. Deforestation that removes trees and vegetation covers which serve as carbon sink is another activity that causes global warming.

Flourinated Gases. Hydro fluorocarbons, per fluorocarbon and surplus hexafluoride are synthetic, powerful GHG that are emitted from a variety of industrial processes. Fluorinated gas is sometimes used as substitute for ozone-depleting substances. These gasses are typically emitted in smaller quantities but because they are potent green house gasses, they are sometimes referred to as high global warming potential gases (High GWP gases) (Iyayi 2012).

Impact of climate change on health. Climate change impacts human health in many ways. WHO define health as a state of complete physical, mental and social well-being and not merely the absence of infirmity. The enjoyment of the highest and attainable standard of health in one of the fundamental right of every human being but most often the people in the developing world like Nigeria do not enjoy these because of climate change which are hazardous to the health and environment. Thus, the need of the NGO's in health delivery.

Ordinarily people's health is influenced by a wide range of social economic and life style factor, access to high quality and affordable health care and public health services, and this makes serious contribution to health status. These could result to health insecurity. Health insecurity is major treat to people all over the world especially in developing country like Nigeria. Millions die every year of infectious on parasitic diseases. Thus, the need for health security which is about providing food to fight against these diseases, ultimately decrease the number of death. Health security main threats include deadly infectious diseases, unsafe food, malnutrition, and lack of access to basic health care as a result of climate change hence, the intervention of the NGOs [7–11].

When a nation like Nigeria is faced with climate change issues it poses threat to health security by the disabling the NGOs to penetrate in the environment to aid in health delivery because in climate changes like flood disaster, there would not be accessible road to reach to the affected areas makes it impossible for the NGOs that involve in health delivery service reach to the vulnerable people to give aids when such disaster occurs. Climate change has the following impact on health:

1. Climate change affect the social and environmental determines of the health, clean air, safe drinking water, sufficient food and secure shelter.

2. The direct damage to health include the health determining section as sanitation.

3. The highly climate -sensitive major killer diseases such as malnutrition, malaria, diarrhea, and dengue are expected to worsen as the climate change.

4. Areas with weak infrastructure- mostly in developing countries-will be the least able to cope without assistance to prepare and respond.

5. Reducing emissions of green house gases through better transport, food and energy. Use choices can result to improve health (Ameh 2004).

Types of climate change that affect health are:

1. Extreme heat.
2. Variable rainfall pattern(Flooding)

Extreme heat. This affect health as high air temperature contributes directly to death from cardiovascular and respiratory disease, particularly among elderly people. High temperature also raises the level of ozone and pollutant in the air that exacerbate cardiovascular and respiratory diseases. Urban air pollution causes about 1.2 million death every year. Pollen and other aeroallergen levels are also higher in extreme heat. These can trigger asthma, which affect 300 million people. Ongoing temperature increases are expected to increase the burden.

Variable rainfall. Rising sea levels and increasingly extreme weather event will destroy home, medical facilities and other essential services. Increasingly variable rainfall pattern are likely to affect the supply of fresh water. Lack of fresh water affect hygiene and increase the risk of diarrhea and cholera diseases.

Floods are also increasing in frequency and intensity, flood contaminated fresh water supplies, heighten the risk of water borne diseases, and create breeding ground for disease carrying insect such as mosquito. Flood also causes drowning and physical injuries, damage homes, disrupt the supply of medical and health services especially by the NGO's.

The Roles/ activities of NGO's in health Delivery. Health related NGO's provide capacity development in area of need, which is, helping nations develop sustainable domestic health solutions. An example of this type of aid is the center for international rehabilitation NGO's activities can be local, national or international. They have contributed to the development of communities around the world and are important patterns of many governments while remaining independent from government (Human Development Report 2002). There are over 37,000 NGO's in the world. Their roles differ from each other. Some of them are:

– Refugee and disaster relief organizations: This is the one that intervene in mostly natural disaster like, floods, earthquakes, volcanic eruption etc.

– Food and Agriculture Organisation(FAO): It helps in developing countries prepare for famine through global information and early warning system and it's food security assistance scheme. In disaster it's principal role is to assist in re-establishment of agricultural production.

– The International Red Cross and Red Crescent Movement: In rehabilitating disaster victims

– Medicines Fan Frontiers (MSF): they provide health aid to victims of war and natural disasters.

The activities undertaken by ngos in health delivery are:

– Providing nutrition program and water sanitation.

– Providing nutrition programs, social diseases, family planning, education for disabled, communicable diseases, drug control, mental health, clinic services, etc for the masses.

2. Statement of problem

Climate change increases the risk of some infectious diseases, particularly those diseases that appear only in one area. Diseases that are spread by mosquitoes and other insects could become more prevalent if warmer temperatures enable those insects to become more established such as 'vector-borne ' diseases include malaria, dengue,

fever, yellow fever and encephalitis, increases susceptibility and inability to respond to infections including food borne diseases, measles, pneumonia and fatal parasitic infections. These happens, there is always the need for the interventions of the NGOs but most often these interventions are not met due to poor access to motor able roads, poor transportation, flooding of roads prevents the NGOs from penetrating into these affected areas of the disaster. Thus prevent them to perform their roles.

Purpose Of The Study. The Purpose of the study was to examine the impact of climate change in the role of NGOs in health delivery in the South Eastern regions of Nigeria especially to:

- Identify the causes of climate change;
- Identify the roles of NGOs in health delivery;
- Determine the impact of climate change on the roles of the NGOs in health delivery in eastern region of Nigeria.

Research questions:

- What are the common causes of climate change?
- What are the roles of NGOs in health delivery?
- What are the impacts of climate change on the roles of the NGOs in health delivery?

3. Materials and Methods

Design of the study: the research design adopted for this study was a descriptive survey design, which describes details that impact climate change on the roles of NGOs in health delivery in South eastern region of Nigeria.

Population of the study. The population of this study consists of all the states in South eastern region of Nigeria which include Anambra, Imo, Abia, Enugu, and Ebonyi States.

Sampling and sampling techniques. A STRATIFIED RANDOM SAMPLING WAS ADOPTED FOR THE STUDY TO select two hundred people from the two affected States, Anambra and Imo States that are vulnerable to the 2012 flood disaster in Nigeria as a result of the climate change.

Instrumentation. A structured questionnaire developed by the researchers to elicit information from the study.

The questionnaires for the study contain 200 items structured to elicit information from thr vulnerable groups that require the intervention of the NGOs. The questionnaires a four(4) point rating scales with response level of strongly agree (SA)=4, Agree (A)=3, Disagree (D)=2, Strongly Disagree (SD)=1.

Validity of the instruments. The instruments were subject to both focal and content validity through comments, observation, advice, and suggestions by two experts from the college.

Reliability of the instrument. To ascertain the extent of the instrument, reliabilities, a pretext of the questionnaires was carried out using a sample of twenty(20) people who were part of the actual study. The Pearson's Product Moment Correlation Coefficient 'r' was used and yielded a correlation coefficient of 0.89 which was accepted as stable overtime.

Method of data collection. The questionnaire was personally administered by the researchers. Total number of 200 was administered and 198 was collected and found usable.

Method of data analysis. The data collected was computed into tables for meaningful interpretations. The mean and standard deviations were the statistical tools employed for the study. The rating of the 2.50 was used for decision in all the computations, the mean rating on any item by the respondents less than 2.50 was regarded as 'Disagreed and any means equal or above 2.50 was regarded as Agreed'

Research questionnaire. What are the common causes of climate change?

Table 1, revealed that most of the items agreed with the respondent as the causes of climate change except item number two that disagreed. Table 2 shows the mean rating of the roles of the NGOs in health delivery. In table 3, the research shows the impact of climate change on the roles of the NGOs.

Research Questions 2. What are the roles of the NGOs in health delivery?

The above reveals that the respondent reacted with agree to the roles of the NGOS in the items.

Research question 3: What are the impacts of climatic changes on health delivery.

Table 1

Mean ratings of the common causes of climate change

S/N	Items	Mean (X)	SD	Decision
1	GHG emission	3.16	0.96	Agree
2	Fossil Fuel	1.78	0.83	Disagree
3	Working with Firewood	3.11	0.92	Agree
4	Carbondioxide	3.13	0.90	Agree

Table 2

Mean rating of the roles of the NGOs in health

S/N	Items	Mean	SD	Decision
1	Gives health aid	2.90	0.94	Agree
2	HELPS IN REHABILITATION OF THE AFFECTED VICTIMS	2.95	1.06	Agree
3	Provide food and drugs to the vulnerable groups	3.40	0.72	Agree

Table 3

Impacts of climate change on the roles of the NGOs

S/N.	item	Mean (X)	SD	Decision
1.	Poor accessible road	2.95	1.06	Agree
2	Destruction of health infrastructures	3.20	3.76	Agree
3.	Displacement of homes	2.90	0.94	Agree

As shown in table above, the respondent agree to the statement of the items as been an impact of climate change on health delivery

4. Findings and Discussions

From The information obtained from the data, it was observed that:

1. Carbon dioxide (CO₂) is one of the causes of climate change.
2. The NGOs play important roles in the delivery of health in the vulnerable groups
3. That climate change due to flooding extreme heat, destruction of health infrastructures has an impact in the NGOs health delivery.

5. Conclusion

Results of the work carried out showed that quite a number of factors influences the climate of the region under study and this in turn affects the role of the NGOs in the health care delivery.

Recommendations

It was recommended that construction of roads and boreholes to provide good drinking water by the government could help the health challenges faced by people living in these communities.

References

1. Ameh, N. W. Climate change and global resources. SRGS emissions and socio-economic sciences [Text] / N. W. Ameh // Global change -Hand policy. – 2004.
2. Climate change 2007, impact, adaptation and vulnerability [Text]. – Geneva, Intergovernmental Panel on climate change.
3. Report of the World food summit [Text]. – FAO, 2008. – Available at: <http://www.fao.org/dprep/003/w3548e/w35e000/htm/retrieved3/3/2011>
4. Global warming Facts [Text]. – Global warming. – 2011.
5. Nosike, A. N. Environmental health in the Niger delta. Perspectives on human ecology and sustainable development in the 21st Century [Text] / A. N. Nosike, J. A. Opara // Port Harcourt: Centre for Environment and Community Development. – 2003.
6. Inter-governmental Panel on Climate Change. Synthesis report [Text]. – Geneva, IPCC, 2007. – Available at: https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_full_report.pdf

7. Opara, J. A. Environment and Development: An Interdisciplinary Perspective [Text] / J. A. Opara, B. Gehar. – Granada: Flopitem Publishing, 2008.
8. Opara, J. A. Recent Trends in Agriculture, Water and Environmental Research [Text] / J. A. Opara, N. S. Oguzor, I. Nazmul. – New Delhi: The SciTech Publishers, 2012. – Available at: <http://www.thescitechpub.com/>
9. Opara, J. A. Health Programmes in Nigeria: An Analysis of Science Students’ Perception of Sanitation Skills [Text] / J. A. Opara, A. U. Ejifugha, O. C. Azubuike // American Based Research Journal. – 2015. – Vol. 4, Issue 4.
10. Opara, J. A. Perspectives on Education and Sustainable Development [Text] / J. A. Opara. – New Delhi: Renu Publishers, 2015.
11. Opara, J. A. Science Education in an Changing Environment [Text] / J. A. Opara. – New Delhi: New Delhi Publishers, 2015.

References

1. Ameh, N. W. (2004). Climate change and global resources. SRGS emissions and socio-economic sciences. Global change -Hand policy.
2. Climate change 2007, impact, adaptation and vulnerability. Geneva, Intergovernmental Panel on climate change.
3. Report of the World food summit (2008). FAO. Available at: <http://www.fao.org/dprep/003/w3548e/w35e000/htm/retrieved3/3/2011>
4. Global warming Facts (2011). Global warming.
5. Nosike, A. N., Opara, J. A. (2003). Environmental health in the Niger delta. Perspectives on human ecology and sustainable development in the 21st Century. Port Harcourt: Centre for Environment and Community Development.
6. Inter-governmental Panel on Climate Change. Synthesis report (2007). Geneva, IPCC. Available at: https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_full_report.pdf
7. Opara, J. A., Gehar, B. (2008). Environment and Development: An Interdisciplinary Perspective. Granada: Flopitem Publishing.
8. Opara, J. A., Oguzor, N. S., Nazmul, I. (2012). Recent Trends in Agriculture, Water and Environmental Research. New Delhi: The SciTech Publishers. Available at: <http://www.thescitechpub.com/>
9. Opara, J. A., Ejifugha, A. U., Azubuike, O. C. (2015). Health Programmes in Nigeria: An Analysis of Science Students’ Perception of Sanitation Skills. American Based Research Journal, 4 (4).
10. Opara, J. A. (2015). Perspectives on Education and Sustainable Development. New Delhi: Renu Publishers.
11. Opara, J. A. (2015). Science Education in an Changing Environment. New Delhi: New Delhi Publishers.

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Ozioma C. Azubuike, Lecturer, Michael Okpara University of Agriculture, Umudike-Abia State, Umuahia - Ikot Ekpene Road, Umudike, Nigeria

Jacinta A. Opara, Professor, School of Environmental Studies, Universidad Azteca, Chalco-Mexico, Calle 3 de Mayo, s/n, San Antonio, 56600
E-mail: jaopara@yahoo.com