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THE EFFECT OF GLOBAL WARMING IN NIGERIA: FLOOD IN PERSPECTIVE

Abstract

Background: Global warming is the world phenomenon and its effects cannot be overemphasized. In Nigeria, the effect of global warming is being experienced on a daily basis as a flood which is one of its effects is now the order of the day in some parts of the country. In Nigeria, the body responsible for taking necessary actions during an emergency situation called The National Emergency Management Agency (NEMA) warned in 2014 that some states across the country would experience flooding and they did. The same warning came from the body in the year 2015, and of course flooding affected the concerned states same has been happening on a yearly basis across the country. As can be seen in Nigeria, many lives have been lost to a flood which is related to global warming. Some families have perished while some have been rendered either fatherless or motherless. Some have also been rendered homeless and their property has been destroyed as a result of the flood. This article examines some causes and effects of the global warming in Nigeria, while paying particular attention to floods as one of its effects.

Research purpose: The purpose of the article is to answer the question why is Nigeria so much affected with the effects of global warming especially flooding.

Methods: This article relies on both primary and secondary research sources. Various laws regulating environmental protection, both local and international, were considered. The Internet sources as well as Nigerian newspapers articles related to the research topic are also essential to this work.

Conclusions: It has been observed that there are inadequacies in the existing laws regulating environmental protection. The article recommends the application of the new regulations ensuring adequate environmental protection, especially to tackle the flood menace in Nigeria.

Keywords: global warming, Nigeria, flood, environmental protection.

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1. Introduction

Environmental protection arises as a need to ensure sustainable development. Sustainable development is the development which meets a need of the current generation without compromising an ability of the future generation to meet their own needs, too. In effect, the way and manner the environment is being used by us will determine whether the future generation will have an opportunity to enjoy the environment. Thus, it is imperative that we use reasonably the environment, so as to take care of the future generation.¹

It has been observed today that the way human beings use the environment has adversely affected it: the rewards of which we have already been reaping in our environment. Imagine the kind of weather we experience today in Nigeria, very much different from what we experienced about two decades ago. Back then, when Christmas period approaches, the whole environment will change; harmattan will be felt deeply but this is not the case anymore, definitely something has gone wrong with the environment. All these changes arise as a result of global warming.

Global warming has been described as a phenomenon in which the Earth's temperature has increased beyond the acceptable normal standard and which has negative effects on the environment. The way and manner human beings use the environment has led to global warming; the Intergovernmental Panel on Climate Change noted in its report in 2018 that human beings and their activities had been the ones responsible for the spike in the world's wide temperature which is between 0.8 and 1.2 degrees Celsius since preindustrial times. The warnings given over the 20th century were attributed to the manner in which human beings use the environment. The article will examine some causes and effects of global warming in Nigeria taking into consideration flooding as one of the effects of global warming.

2. Regulations to ensure environmental protection in Nigeria

Among the regulations ensuring environmental protection in Nigeria we can enumerate the following:

1. National Environmental (Soil Erosion and Flood Control Regulations 2011). This Regulation was introduced on 28 April 2011. The general

¹ <https://en.unesco.org/themes/education-sustainable-development/what-is-esd/sd>; accessed 21.03.2022.

objectives of the Regulation are to protect human life and the environment, minimize losses due to floods and erosion and their effects on vulnerable areas by regulating land-disturbing activities, and control accelerated soil erosion, flooding and sediment deposition in water bodies and water courses to prevent pollution of these water resources.² The specific objectives of the Regulation are:

- a) to restrict or prohibit land disturbing activities/uses which are dangerous to health, safety and property due to water induced erosion caused by increased flow velocity and volume/depth of the surface run-off;
 - b) to ensure that projects on sites that are vulnerable to flooding, including facilities which serve such projects, are protected against flooding by appropriate designs at the time of initial construction;
 - c) to regulate or minimize the alteration of natural floodplains, streams channels, and a natural protective barrier, which are responsible for the accommodation and conveyance of flood waters;
 - d) to regulate filling, grading, dredging and other development projects which may increase soil erosion or flooding incidence and damage to prevent or regulate the construction of flood barriers and other structures that can divert or escalate flood waters or which may increase flood hazards on human settlements and related infrastructure;
 - e) and to protect drainage infrastructure and impose penalties on violators³ of National Erosion and Flood Control Policy 2011.
2. **National Erosion and Flood Control Policy 2004.** This Policy was adopted in the year 2004 to address the issue of the erosion menace in Nigeria and to see how the government's intervention can address the menace. It seeks to protect the environment from degradation, especially loss of productive land through escalating a crisis of soil erosion and floods.
 3. **Water Resources Act.**⁴ This particular Act was enacted in order to promote the optimum development, use and protection of water resources.
 4. **The National Environmental Standards and Regulations Enforcement Agency Act (NESREA) Act 2007.**⁵ This is the principal body which was established in 2007 to ensure environmental protection in Nigeria. NESREA was established as a parastatal of the Federal Ministry of

² Section 2(1) (a-c) National Environmental (Soil Erosion and Flood Control) Regulations 2011.

³ Section 2(2) (a-g) National Environmental (Soil Erosion and Flood Control) Regulations 2011.

⁴ Water Resources Act Cap W2 LFN 2004.

⁵ The National Environmental Standards and Regulations Enforcement Agency Cap 301 LFN 2010.

Environment, Housing and Urban Development.⁶ It is charged with the responsibility for the protection and development of the environment, biodiversity conservation and suitable development in Nigeria's natural resources in general.⁷ The vision of the Agency is to ensure that Nigerians have access to the cleaner and healthier environment while the mission is to inspire personal and collective responsibility for building environmentally conscious society to achieve sustainable development in Nigeria.⁸ The Agency has the power to prohibit processes and the use of equipment or technology that impair the environmental quality.⁹ It also has the power to conduct field follow up compliance with set standards and take procedures prescribed by law against any violator.¹⁰ The Agency also reserves the power to establish mobile courts to recognise cases of environmental violations expeditiously.¹¹ The Agency can conduct public investigations and make proposals to the minister for the review of existing guidelines, regulations and standards on the environment.¹² Also, the Agency can establish programmes for setting standards and regulations for prevention, reduction and elimination of pollution and other forms of environmental degradation in the nation's air, land, oceans, seas and other water bodies and for restoration and enhancement of nation's environment and natural resources.¹³

5. **Environmental Impact Assessment (EIA) Act:**¹⁴ This was promulgated to assess the impact of any kind of a project on the environment and it further makes it mandatory for an EIA report to be issued by the Federal Ministry of Environment. Environmental Impact Assessment is the process of identification of any contrary effect that may be created from siting certain projects in a particular area as well as the mechanisms to contain, curtail, mitigate such

⁶ NESREA was established by the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act No 25 of 2007. Its commencement date was 30 July, 2007. By virtue of the provisions of Section 36 of NESREA Act, the FEPA Act was repealed.

⁷ See Section 2, NESREA Act.

⁸ **D.A. Ariyoosu**, *An Examination of Legal Regulation and Environmental Impacts of Telecommunication Installations in Nigeria*, Journal of Law, Policy and Globalisation 2014/30, pp. 88–96.

⁹ Section 8 (d) NESREA Act.

¹⁰ Section 8 (e) NESREA Act.

¹¹ Section 8 (f) NESREA Act.

¹² Section 8 (k) NESREA Act.

¹³ Section 8 (o) NESREA Act.

¹⁴ Environmental Impact Assessment (EIA) Act Cap E12, LFN 2004.

a contrary effect as well as ensure that parties who are adversely affected obtain restitution.¹⁵ Thus, the Environmental Impact Assessment should ensure that before an approval is granted in respect of any project, the appropriate government authorities have fully identified and considered the environmental effects of the proposed activities under their jurisdiction and check whether affected citizens have had an opportunity to understand the proposed project and express their views to the decision makers.

6. **The 1999 Constitution of the Federal Republic of Nigeria.**¹⁶ It is worthy of note that the 1999 Constitution of the Federal Republic of Nigeria recognizes a need to protect the environment. The Constitution recognizes the need for environmental protection as it provides that ‘the state shall protect and improve the environment and safeguard the water, air and land, forest and wild life of Nigeria’. It is obvious from this provision that the government realizes that there is a need to protect the environment so as to make it worth living for the Nigerian people. It is worthy of note that as beautiful as this provision is, it falls within the rights under Chapter II of the Constitution which are non-justiciable rights.¹⁷ It is my view that this right should be one of the rights under Chapter IV of the Constitution so as to enable it to have a kind of weight it ought to have in the country. As far as this right is concerned, it is just a toothless bull dog. The Constitution as the principal legislation in the country should ensure that this right is justiciable.
7. **The National policy on the Environment.** This was introduced by the Government on 27 November 1989. This document described guidelines and strategies for achieving the policy goal of sustainable development in Nigeria.
8. **The National Guidelines and Standards for Environmental Pollution Control.** This was introduced on March 12 1991 and represents a basic instrument for monitoring and controlling industrial and urban pollution.
9. **The Land Use Act.**¹⁸ Land ownership structure is relevant for environmental protection, in that the control and ownership of land often dictates a right

¹⁵ P.C. Williams, *The Environmental Impact Assessment Act and the process as an Environmental and Livelihood Advocacy Tool*, in: B. Obayanju, M. Obaseki (eds.), *Defending the environment: The role of Environmental Impact Assessment, Environmental Rights Act*, Benin City 2009, pp. 7–9.

¹⁶ The 1999 Constitution of the Federal Republic of Nigeria (as amended) Cap C23, LFN 2004.

¹⁷ Section 6 (6) (c) of the Constitution of the Federal Republic of Nigeria 1999 (as amended).

¹⁸ The Land Use Act Cap L5 LFN2004.

to important resources such as oil, natural gas, mineral resources and agricultural products found on the land. Section 1 of the Act now vests ownership of land within a state in the State Governor who holds the land in trust and administers it for the benefit of all Nigerians. The general aim of the Act was to vest absolute ownership of land in each state in the State Governor. The Governor allocates such land for commercial, agricultural and other purposes through granting statutory right of occupancy or customary right of occupancy.

The Act provides further that such a right given to an individual by the Governor may also be revoked by them for overriding public interests.¹⁹ This includes the requirement of the land for mining purposes or oil pipelines or for any purpose connected therewith. This provision makes it possible for the Nigerian government to appropriate land containing oil and gas. To that effect, the government may take over even private or industrial land, wherever oil is found, in the interest of the general public.²⁰

10. Pollution Abatement in Industries Facilities Generating Waste Regulations of 1991. Through this Act, restrictions are imposed on the release of toxic substances and requirements stipulated:

- a) monitoring pollution to ensure permissible limits are not exceeded;
- b) unusual and accidental discharges;
- c) contingency plans;
- d) generator's liabilities;
- e) strategies of waste reduction and safety of workers.

11. Waste Management Regulation of 1991. This regulates the collection, treatment and disposal of solid and hazardous waste for municipal and industrial sources and gives a comprehensive list of chemicals and chemical waste by toxicity categories.

It is relevant to mention the Laws passed by different states in the country; if not all, at least a few of them. The Federal government has empowered the states of the Federation (36 of them including the Federal Capital Territory) to make Laws and Regulations on the environment related matters. It is important to highlight some of the Environmental Laws at the state level, among others:

1. Kwara State Environmental Protection Agency Law.²¹ The Kwara State Environmental Protection Agency Law was enacted in the year 1992. The

¹⁹ Section 28 *ibid.*

²⁰ **D.S. Olawuyi**, *The Principles of Nigerian Environmental Law*, Afe Babalola University Press, Ado Ekiti 2015, pp. 21–22.

²¹ Kwara State Environmental Protection Agency Law, 1992.

Law created the Kwara State Environmental Protection Agency (KWEPA) to promote the safe and healthy environment for the people of Kwara State to live in and to ensure sustainable development. The Agency is saddled with carrying out all environmental protection activities research and development activities for environmental protection and educating the general public on the types of disposal methods that are acceptable by the State Government for domestic and industrial wastes, among others.²²

2. Lagos State Environmental Protection Agency Law: The vision of the Agency is to build a portfolio of sound environmental management programmes and projects in the development of the sustainable environment in collaboration with other Agencies of Government Regulatory Organizations International Donor Agencies.²³ Lagos State Environmental Protection Agency's mission is the commitment to the healthy environment through preservation, protection and conservation of renewable resources. It is responsible for the following:

- a) advising the State Government on all environmental management policies;
- b) giving directions to affairs of the Agency on all environmental matters;
- c) preparing periodic Master plan to enhance the capacity of the Agency and to manage and develop natural resources;
- d) carrying out public enlightenment and education of the general public on sound methods of environmental sanitation and management;
- e) carrying out appropriate test on insecticides, herbicides and other agricultural chemicals;
- f) monitoring and controlling disposal of solid, gaseous and liquid wastes generated by both government operations;
- g) setting, monitoring and enforcing standards and guidelines on vehicular emissions;
- h) surveying and monitoring the surface, underground and portable water, air land and soil environments in the state to determine the pollution level in them and collect baseline data;
- i) promoting cooperation in environmental science and technologies with similar bodies in other countries' international bodies connected with the protection of the environment;

²² H. Ijaiya, *The Legal Framework for Solid Waste Disposal and Management in Kwara State, Nigeria*, Journal of Environmental Protection 2013/4, pp. 1240–1244.

²³ <http://www.lagosstate.gov.ng/entities.php?k=137>; accessed 18.03.2015.

- j) cooperating with the Federal, State and Local Governments, Statutory Bodies, and Research Agencies on matters and facilities related to the environmental protection.

These are the activities of Lagos State Government to ensure environmental Protection and sustainable development. To sum up, it has been observed that all these laws are grossly inadequate in curbing environmental challenges in Nigeria especially flooding which occurs mainly as a result of global warming and some other things that will be discussed in this paper.

3. International instruments put together on environmental protection

Some of the international Laws related to the environment are as follows:

1. **Stockholm Conference of 1972.** The foundations for global environmental governance were laid at the Stockholm Conference on Human Environment in 1972. Principle 1 provides that man has a fundamental right to freedom, equality and adequate conditions for life in the environment of quality that permits a life of dignity and wellbeing. It was held in Stockholm, Sweden from the 5 to 16 June 1972. It was the first international forum that was aimed at addressing global environmental challenges. The forum considered a need for a common outlook and common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment. The preamble to the Declaration provides that both aspects of man's environment, the natural and the man made, are essential to their well-being and enjoyment of basic human rights, and a right to life itself.²⁴
2. **Brundtland Conference.** In 1983, the UN convened the World Commission on Environment and Development (WCED) which was chaired by the Norwegian Prime Minister, Gro Harlem Brundtland; it was comprised of representatives of both developed and developing countries. The Commission was responsible for 'addressing the growing concern over the accelerated deterioration of the human environment and natural resources and the consequences of that deterioration in terms of economic and social development'.²⁵ Its mission is

²⁴ D.S. Olawuyi, *The Principles...*, p. 246.

²⁵ J. Drexhage, D. Murphy, 'Sustainable Development from Brundtland to Rio 2012' background paper prepared for consideration by the High Level Panel on Global Sustainability at its first meeting, 19th September, 2010, https://www.e-education.psu.edu/emsc302/sites/www.e-education.psu.edu/emsc302/files/Sustainable%20Development_from%20Brundtland%20to%20Rio%202012%20%281%29.pdf; accessed 26.06.2022.

to unite countries to pursue sustainable development. This Commission is not a convention per se. It was charged with a duty to create a united international community with a shared approach to environmental problems worldwide. Four years later, the Commission published its report entitled 'Our Common Future' which contained a diagnosis of the environment of the world. The report popularized the most commonly used definition of sustainable development which is the 'Development that meets needs of the current generation without compromising the ability of future generations to meet their own needs'.²⁶ It is pertinent to state that the Brundtland report provided the momentum for the landmark 1992 Rio Summit that laid the foundations for the global institutionalization of sustainable development.

3. **Vienna Convention.** The Vienna Convention for the Protection of Ozone Layer is a multilateral environmental agreement. It was agreed at the Vienna Conference of 1985 and came into force in 1988. It acts as a framework for the international efforts to protect the ozone layer. However, it does not include legally binding reduction goals for the use of chlorofluorocarbons (CFC's) i.e. the main chemical agent which is responsible for causing ozone depletion. These are laid out in the accompanying The Montreal Protocol.
4. **Montreal Protocol.** The Montreal Protocol on Substances that Deplete Ozone Layer is the Protocol to the Vienna Convention for the Protection of Ozone Layer. To start with, the stratospheric ozone layer of the air acts like a shield in the atmosphere that protects life on the Earth from harmful ultraviolet (UV) radiation of the sun. During the 1980's, scientists observed that the stratospheric ozone layer was getting thinner.²⁷ The Montreal Protocol is an international Treaty which is designed to protect the ozone layer by phasing out production of numerous substances believed to be responsible for ozone depletion. It was signed on September 16, 1987 and entered into force on January 1, 1989. The Protocol includes a unique amendment that enables the parties to the Protocol to respond quickly to new scientific information and agree on so much needed accelerated reduction in the chemicals that are covered already by the Protocol.²⁸ Since its initial adoption, it has gone through amendments about six times;²⁹ all these are to ensure that the aim is achieved. In addition to this, the parties to the Protocol meet annually to take a variety of decisions aimed at enabling

²⁶ Brundtland Report of 1987, p. 45.

²⁷ <http://www.epa.gov/ozone/intpol>; accessed 20.03.2015.

²⁸ <http://www.ozone.unep.org>; accessed 20.03.2015.

²⁹ *Ibidem*.

effective implementation of this important legal instrument. So many writers have expressed fear over the condition of our natural environment. James Gustav Speth expressed much concern over the condition of the environment at large. He states that ‘the climate convention is not protecting the climate, the biodiversity convention is not protecting biodiversity [and] the desertification convention is not preventing desertification’.³⁰ He stated further that ‘since the Montreal Protocol, [the United States] has not accorded global-scale environmental challenges the priority needed’.³¹ There is insincerity on the part of most of the countries which are parties/signatories to all these Conventions and it can be safely concluded that this is part of the reasons why so little has been achieved despite all these Conventions. However, it is believed that if the international agreement is adhered to, the ozone layer is expected to recover by the year 2050.³²

5. Basel Convention. The Basel Convention on the control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted on 22 March, 1989 by the Conference of Plenipotentiaries in Basel, Switzerland, in response to a public outcry following the discovery in the 1980’s in Africa and other parts of the developing world regarding deposits of toxic wastes imported from abroad.³³ The overreaching objective of the Convention is to protect human health and the environment from any adverse effects of hazardous wastes.³⁴ The Basel Convention designates the transport or traffic of hazardous wastes, without consent or with false or fraudulent consent or one that results in the illegal dumping of hazardous wastes, as illegal traffic. In this situation, the duty is vested in the state of export to ensure that the waste is taken back by an exporter or generator, or disposed of in an environmentally friendly manner.³⁵ It can thus be summarized that the Convention seeks to do the following, among others:

- a) Reduction in hazardous waste generation and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal.

³⁰ **J.G. Speth**, *Red Sky at Morning: America and the crisis of the Global Environment*, Yale University Press, New Haven 2004, p. 95.

³¹ *Ibidem*, p. 116.

³² *Ibidem*.

³³ <http://www.basel.int>; accessed 19.03.2015.

³⁴ **D.S. Olawuyi**, *The Principles...*, p. 158.

³⁵ *Ibidem*.

- b) Restriction of transboundary movements of hazardous wastes except where it is perceived to be in accordance with the principles of environmentally sound management; and
- c) Regulatory system applying to cases where transboundary movements are permissible.

It was, hence, designed to reduce the movements of hazardous wastes between nations and specifically to prevent transfer of hazardous waste from the developed countries to the less developed ones.

6. Bamako Convention. This in full is called Bamako Convention on the Ban of Imports into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa. The Convention was held in 1991. It is a treaty of African nations prohibiting the import of any hazardous waste (including radioactive waste that was not included in the Basel Convention). The objective is to create a framework for a state obligation in respect of the control of hazardous wastes, the prevention of the transboundary movements or importation of transboundary movement and the taking of precautionary measures against such wastes.³⁶ The aims of Bamako Convention are as follows:³⁷

- a) prohibiting of the import of all hazardous and radioactive waste into the African countries for any reason;
- b) minimizing and controlling transboundary movements of hazardous waste within African countries;
- c) prohibiting all ocean and inland water dump or incineration of hazardous wastes;
- d) promoting cleaner production of waste over the pursuit of a permissible emission;
- e) ensuring that the disposal of waste is conducted in an environmentally sound manner.

The Bamako Convention is significant in that it provided for an effective mechanism to stop waste traders from making Africa an international dump, to prevent dumping of hazardous wastes including radioactive wastes at the sea or on the sea bed and to control/prevent hazardous waste generators from avoiding liability for pollution.³⁸

³⁶ **G.O. Amokaye**, *Environmental Law and Practice in Nigeria*, University of Lagos Press, Lagos 2004, p. 163.

³⁷ <http://www.ntn.org.au>; accessed 29.03.2017.

³⁸ <http://www.opcw.org>; accessed 29.03.2017.

7. **United Nation Framework Convention on Climate Change (UNFCCC).** In 1992, the United Nations Framework Convention on Climate Change was adopted as the basis for a global response to tackle the challenge posed by climate change. The objective of the treaty is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.³⁹ It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases.⁴⁰ By 1995, countries realized that emission reduction provisions in the Convention were inadequate and launched negotiations to strengthen the global response to climate change, and two years later, launched the Kyoto Protocol. Climate Change is a complex problem, which, although environmental in nature, has consequences for all spheres of the human existence on our planet. At the very heart of the response to climate change, however, lies a need to reduce emissions. In 2010, governments agreed that emissions needed to be reduced so that the global temperature increases would be limited to below 2 degrees Celsius.⁴¹
8. **Kyoto Protocol.** This was negotiated in Japan in December 1997 and ready to be signed by member nations in 1998. It entered into force on 16 February, 2005. This is an amendment to the United Nations Framework Convention on Climate Change. It is a legally binding agreement under which industrialized countries aim at reducing global warming and coping with the temperature increases that are unavoidable after 150 years of industrialization. The Protocol's major feature is that it has mandatory targets for greenhouse-gas emissions in the world's leading economies which have accepted them with a view to reducing their overall emissions of such gases by at least 5% below the existing 1990 levels in the commitment period 2008–2012.⁴²
9. **Copenhagen Accord.** This is a significant breakthrough in the global effort to address climate change⁴³ which took place in 2009. The Accord includes emission reduction commitments by all major emitters including the United States, China, India and Brazil, and provides for an international review of both developed and developing countries' targets and actions.

³⁹ <http://www.preventionweb.net>; accessed 29.03.2017.

⁴⁰ <http://www.wwf.panda.org>; accessed 29.03.2017.

⁴¹ *Ibidem*.

⁴² <http://www.unfccc.int>; accessed 29.03.2017.

⁴³ <http://www.climatechange.gc.ca>; accessed 20.03.2015.

This reflects Canada's long standing position that real progress on climate change requires a global agreement that includes all major emitters.

10. **Durban Convention.** The United Nation climate change conference, Durban 2011 made a breakthrough in the international community's response to climate change. The outcomes included a decision by parties to adopt a universal legal agreement on climate change as soon as possible and not later than 2015. After the conference, the president COP17/CMP7, Maite Nkoana Mashabane said 'what we have achieved in Durban will play a central role in saving tomorrow, today'.⁴⁴
11. **Doha Conference.** This was held in 2012 in Doha, Qatar from November 26 to December 2012. Governments consolidated the gains of the last three years of international climate change negotiations and opened a gateway to a needed greater ambition and an action on all levels. Some of the decisions taken were that governments strengthened their resolve and set out a time table to adopt a universal climate agreement by 2015 which was to come into effect in 2020. They emphasized a need to increase their ambition to cut greenhouse gases and to help vulnerable countries to adapt. They also made further progress towards establishing a financial and technological support and new institutions for clean energy investments and sustainable growth in developing countries, among other things.
12. **Rio Conference.** The United Nations Conference on sustainable development was held in Rio De Janeiro between 20–22 June 2012. It was the conference where the foundation for Sustainable Development Goals was laid building on the Millennium Development Goals. Also during the conference, guidelines on green economy policies were adopted while the approach through which the proposed sustainable development was to be financed was considered and adopted.
13. **The Paris Agreement.** It is a legally binding international treaty on climate change adopted by 196 parties on 12 December 2015 and entered into force on 4 November 2016. The goal of this notable Agreement was to limit global warming to a level below 2 degrees Celsius preferably 1.5 degree Celsius compared to pre-industrial levels; by this landmark agreement, countries aim at reaching global peaking of greenhouse gas emissions as soon as possible to achieve a climate neutral world by the mid-century. This agreement is a landmark one because for the first time ever, countries

⁴⁴ http://www.unfccc.int/meetings/Durban_nov2011/meeting/6245.pht; accessed 20.03.2015.

of the world undertake ambitious efforts to combat climate change that is ravaging the world and adapt to its effects.⁴⁵

These are some of the most relevant International Conventions/Conferences held on combating environmental problems worldwide. Most of these conferences discuss the issue of climate change and how to cut down the greenhouse emissions mainly responsible for this menace by the countries of the world.

4. Causes and effects of global warming

As earlier noted, activities of human in the environment are associated with climate change and global warming. It has been noted that carbon dioxide emissions are above the recommended level and greenhouse gas emissions go to an extreme. All these result from the activities of humans in the environment.

According to the report of the Intergovernmental Panel on Climate Change in 2021, observers noted with dismay the level at which climate change was affecting the whole world. It was noted that reductions in Carbon dioxide emission and other greenhouse gases would definitely limit climate change.⁴⁶ It was noted that climate change was bringing serious changes to various regions which would still increase the level of warming. It was further noted that it was not only about warming, but climate change had other effects on the whole world which included intensifying the water cycle which led to more intense rainfall associated with flooding as well as intense drought in some other regions. Climate change really affects a rainfall pattern in so many regions which leads to flooding in regions that experience heavy rainfall.

It was also noted that coastal areas would continue to see the sea level rise in the 21st century which would lead to more intensive flooding and erosion. Human influence led to changes in the ocean including warming, more frequent marine heatwaves, ocean acidification and reduced oxygen levels.

The 2021 report by IPCC provided for estimates that there were chances to cross the global warming set limit of 1.5 degrees Celsius in a few years to come. It noted that unless something was done immediately, reductions in greenhouse gas emissions close to the set limit of 1.5 degrees Celsius or even 2 degrees Celsius would be absolutely impossible. The report also revealed that greenhouse gas emissions from human activities had been responsible for approximately

⁴⁵ <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>; accessed 21.03.2022.

⁴⁶ <https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/>; accessed 20.03.2022.

1.1 degrees Celsius since 1850 and that it was expected to reach or exceed 1.5 degrees Celsius in the next twenty years.

These are the impacts of human on how climate change has affected the whole world. If we are to experience reduced effects of climate change, we need to change our attitude as human beings by cutting down emissions of CO₂ and other greenhouse gases. It has also been noted that for cities, an aspect of climate change may be amplified by extreme heat, flood and rise in the sea level.⁴⁷

5. Flood and its effects in Nigeria

As noted earlier, a flood is one of the major effects of global warming and this has been ravaging most countries of the world including Nigeria. Floods have been affecting most of the states across Nigeria for a very long time now and there seems not to be a breakthrough in the next few years in some parts of Nigeria. The National Emergency Management Agency has always given a continuous warning that some states across the country will experience heavy rainfall which will lead to a flood; this has always been a situation on a yearly basis for some years now. Floods have indeed affected so many communities across the country which will be mentioned in this article.

The flood arises as a result of water overflow onto a dry land. When a land that is normally dry is overflowed with water, then there is flooding in that area. This can occur whenever there is heavy rainfall, when the ocean waves come on shore or when snow melts quickly.⁴⁸

On September 12 2021, flooding struck southern Abuja, Nigeria after hours of heavy rainfall which affected the areas negatively. It was reported that the FCT Emergency Management Agency (FEMA) confirmed that 4 people lost their lives to the menace, about 26 vehicles either were swept away, destroyed or damaged while a total of 166 houses were damaged.⁴⁹

In another development, as many as 30 people were reported dead as a result of the flood in Nigeria. According to the National Emergency Management Agency, floods for almost 10 days already affected several states in Nigeria including Sokoto, Zamfara, Anambra, Kebbi and Kano. According to the report, in Zamfara State, 24 people lost their lives between 5 and 6 September

⁴⁷ *Ibidem*.

⁴⁸ <https://www.nssl.noaa.gov/education/svrwx101/floods/#:~:text=Flooding%20is%20an%20overflowing%20of,a%20house%20to%20the%20roof%20top;accessed%2020.03.2022.>

⁴⁹ <https://floodlist.com/africa/abuja-nigeria-floods-september-2021;accessed%2022.03.2022.>

2015 while over 400 houses were destroyed leaving about 2,000 Nigerians homeless. In Anambra State, on 6 September 2015, 6 people were swept away by the flood. In Adamawa State, it was reported that 116 communities had been affected by the flood.⁵⁰

According to vanguard newspaper report of March 19, 2022, the flood displaced seven communities in Niger State, Nigeria.⁵¹ According to the report not fewer than seven communities were affected by the flood and the affected people were moved to the established Internally Displaced Persons (IDP) camp in the state.

Another report of March 11 2022 reads ‘Tension over petty trader swept away by the flood in Akwa Ibom State’. According to the report, a petty trader in the state was swept away in an open drainage by a torrential rain.⁵² This shows the extent at which the flood ravaged the area at that particular time.

Imo State Nigeria is not left untouched by floods, over 2,900 people were affected by the flood in some selected local government areas of the state. The National Emergency Management Agency has been assisting in donating relief materials to the affected people.⁵³

In August 2021, it was reported that no fewer than 2,000 people were displaced by the flood in Adamawa State,⁵⁴ the said rainfall wreaked havoc on farmlands and various buildings; crops on the farmland were swept away by the flood which eventually affected the food production in the area.

It was further reported in 2018 that the two major rivers in Nigeria, namely, Niger and Benue overflowed and inundated the surrounding communities. As a result, a state of emergency was declared in Kogi, Niger, Delta and Anambra States on September 17. Likewise on October 11, a state of emergency was declared in Adamawa, Bayelsa, Kebbi, Rivers and Taraba States.⁵⁵

Considering the level at which floods ravage Nigeria as a country, some of the effects of floods as discussed above can be summarized as follows.

⁵⁰ *Ibidem*.

⁵¹ <https://www.vanguardngr.com/2022/03/flood-displaces-7-communities-in-niger/>; accessed 20.03.2022.

⁵² <https://www.vanguardngr.com/2022/03/tension-over-petty-trader-swept-away-by-flood-in-a-ibom/>; accessed 20.03.2022.

⁵³ <https://guardian.ng/news/nema-donates-relief-materials-to-2900-flood-victims-in-imo/>; accessed 20.03.2022.

⁵⁴ <https://guardian.ng/news/flood-displaces-2000-people-in-adamawa-sema/>; accessed 20.03.2022.

⁵⁵ <https://oldmedia.ifrc.org/ifrc/appeal/nigeria-floods/>; accessed 21.03.2022.

Firstly, a loss of lives has been one of the major effects of flooding in Nigeria. It has always been in the reports that lives were lost due to flooding anytime this occurs in any part of the country; many have been rendered orphans as a result of this tragic occurrence. The second one to be mentioned is a loss of property; so many properties have been destroyed as a result of flooded houses, cars, not left out. So many people have become homeless as a result of floods and internally displaced persons now staying in the camps built for internally displaced or with families and friends.

Likewise, farmlands have been affected by floods as so many crops planted by farmers were swept away by floods, this has led to a lack of adequate food production and food scarcity in the country as crops that were meant to be harvested and sold were already 'harvested' by a flood; these situations have increased the level of poverty ravaging the country as people are sorely affected.

In addition, whenever there is a flood, people are unable to go out to meet their daily needs. This has a negative effect on the people's needs as they are unable to satisfy their basic needs until the flood is over. Some Nigerians depend on what they earn on a daily basis to feed a family and keep the life going. The inability to move out causes the flood to have devastating effects on them. The flood also has negative effects on road condition and transportation. It has also been noted that the flood affects the economy of the areas concerned as people are unable to go to work. Businesses, offices, companies are all affected.⁵⁶

6. Conclusions and recommendations

The effects of floods cannot be overestimated in Nigeria. The paper has been able to discuss how floods have affected the country and the citizens over a period of time. If there is reduction in this phenomenon, there is a need for proper collaboration among the government, citizens and relevant stakeholders to ensure that the flood menace is properly addressed. It has been observed that there are no proper drainages in most parts of Nigeria that are affected by flood. The Government should ensure that proper drainages are built so that excess waters move freely. Individuals should also be involved to ensure that drainages are constructed by them upon completion of their buildings. In addition, people should desist from building houses close to rivers, dams and so on. The Nigerian government should provide the proper monitoring of contracts so as to ensure

⁵⁶ <https://www.chiefscientist.qld.gov.au/publications/understanding-floods/flood-consequences>; accessed 20.03.2022.

that the contracts are adequately performed especially those concerning road constructions and needed drainages. Likewise, drainages that have been filled with debris must be mandatorily cleaned at all times, the government and relevant stakeholders in environmental protection should control that this is done frequently so as to ensure free flow of water. Individuals should also be mandated to treat it as a duty to evacuate debris from drainages constructed by them. The government should also provide adequate laws to combat the flood menace in Nigeria and then it should efficiently monitor if Nigerians comply with them. People who violate the laws must be condemned. The sanitary inspectors in Nigeria should be strengthened, motivated and encouraged to perform their duties as they ought to. Necessary equipment and facilities should be granted to them so as to encourage their operations. In addition, new buildings must not be allowed to be constructed along waterways while those already constructed along waterways to be immediately pulled down to allow easy flow of water. People living in those places prone to a flood should be relocated immediately to save their lives as one of the primary responsibility of a responsible government is to guarantee safety of citizens and their property.

This paper has examined climate change and its effects on the world. It examines a flood as one of the major effects of climate change in Nigeria and some laws in place to ensure environmental protection as well as various international instruments on environmental protection. It has been observed that the laws on environmental protection existing in Nigeria are grossly inadequate while recommendations have been made on the way forward.

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Adeola Olufunke KEHINDE

SKUTKI GLOBALNEGO OCIEPLENIA W NIGERII. POWODZIE W SZERSZEJ PERSPEKTYWIE

Abstrakt

Przedmiot badań: Globalne ocieplenie jest zjawiskiem na skalę światową, a jego skutki nie powinny być lekceważone. W Nigerii efekt globalnego ocieplenia jest odczuwalny na co dzień. Powodzie, stanowiące jeden z jego licznych skutków, są obecnie w niektórych częściach kraju niemal na porządku dziennym. W 2014 r. Krajowa Agencja Zarządzania Kryzysowego (NEMA), odpowiedzialna w Nigerii za podejmowanie niezbędnych działań w sytuacjach kryzysowych, ostrzegła, że niektóre stany w kraju doświadczą powodzi, i tak się rzeczywiście stało. To samo ostrzeżenie pojawiło się w roku 2015. Powódź wówczas również dotknęła te stany. Powodzie mają miejsce co roku w całym kraju. Wiele osób straciło w ich wyniku życie. Niektóre rodziny zginęły, wiele dzieci zostało osieroconych. Niektórzy stali się bezdomni, a ich dobytek został zniszczony. W treści artykułu przyjrano się bliżej niektórym przyczynom i skutkom globalnego ocieplenia w Nigerii, w szczególności dotyczącym powodzi.

Cel badawczy: Celem artykułu jest odpowiedź na pytanie, dlaczego to Nigerię w tak szczególny sposób dotykają skutki globalnego ocieplenia, w tym zwłaszcza powodzie.

Metoda badawcza: W treści artykułu odwołano się zarówno do źródeł prawa, jak i literatury przedmiotu. Uwzględniono różne akty prawne regulujące ochronę środowiska, zarówno o charakterze lokalnym, jak i międzynarodowym. Istotne znaczenie dla tej pracy mają również źródła internetowe oraz artykuły z nigeryjskich gazet związane z tematem badań.

Wyniki: Zauważono, że obowiązujące przepisy regulujące ochronę środowiska nie są w pełni skuteczne. Zalecono wprowadzenie nowych przepisów prawnych zapewniających odpowiednią ochronę środowiska, w szczególności w celu rozwiązania problemu powodzi w Nigerii.

Słowa kluczowe: globalne ocieplenie, Nigeria, powódzie, ochrona środowiska.