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Climate change, its palpable impacts in Sub-Saharan Africa and the measures to be taken

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Abstract: Climate change is one universal occurrence that affects the globe and its inhabitants. Sub-Saharan Africa, as part of the globe, is not left out in the afoot, adverse changes taking place in every nook and cranny of the earth. The effects or impacts of climate change in sub-Saharan Africa, however, are what this study tried to look at. How man contributes to the supersonically changing climate, and the solutions or the measures to be taken in order to effectively handle the issue are also considered in the paper. Nonetheless, textbooks, different journal articles, several organizational reports, newspapers and online scholarly articles were consulted in the course of the study.

Keywords: Climate change, impacts, sub-Saharan Africa, solutions.

Introduction

It is clear to every dick and harry that things are no longer the way they used to be in the world. The state of the earth's climate in the last ten years is far from what it is presently. The temperature of the earth, for example, has increased greatly over the years. The discharge of or increase of carbon dioxide CO2 and greenhouse gases, which of course traps the heat of the sun, make the earth abnormal or hotter than it should be.

In Africa in general, and sub-Saharan Africa in particular, the effects of climate change are undeniable and unprecedented. There have been cases of unprecedented drought, flood, desertification, habitat destruction, etc. in the region. The Lake Chad, a very important source of water to the people living around it, has for example shrunk to ten per cent of its original size due to intense drought (see Njoku, 2018). In fact, the reduction of the lake is not without its own consequences. In the 1960s when the size of the lake was 25,000 km2, numerous fishermen and herdsmen depended heavily on it for fishing and watering of their herds. There was also little or no dispute between them as there was enough water resource to satisfy their needs. However in the 1980s and 1990s when the size of the lake reduced to 2,500 - 6,000 km2, several issues began to emerge some of which were increased poverty, conflict, threatened livelihoods, increased grievances, etc. (see FAO, 2012:30; Ubelejit, 2016; and Conroy, 2017).

In addition to the above, people have suffered displacement, property destruction, food shortage, health challenges, death among others in sub-Saharan Africa at different times as a result of climate change. The July-to-October 2012 flood in Nigeria for example, forced, according to Nigeria's National Emergency Management Agency, about 1.3 million people to flee their homes and caused the death of about 431 persons (see Earth Observatory, 2012).

Climate change

To deny climate change is to deny reality. The undeniability of climate change can be seen in unusual rise in sea level, global temperature rise, warming oceans, habitat destruction and shifting wildlife population – the major cause of human-wildlife conflict –, glacial retreat, shrinking ice sheets, decreased snow cover, ocean acidification, extreme desertification, abnormal hurricane, extraordinary flood and drought, declining Arctic Sea ice, etc. which currently take place in different parts of the world (see Global Climate Change, NASA, 2019).

To still justify the above, the Intergovernmental Panel on Climate Change (IPCC) [established by the World Meteorological Organization (WMO) and United Nations Environment] reports that climate change presently exacerbates land degradation. From 1961 to 2013 for example, the IPCC notes that there has been increase in the annual area of dryland in drought and that the increase occurs at average of slightly more than 1% per year. Thus in the year 2015 alone, over 500

million people lived within areas which experienced desertification between 1980s and 2000s (IPCC, 2019).

Still on the evidence of climate change, the IPCC, in its Fifth Assessment Report released in 2013, asserts vividly that:

- From 1880 to 2012, the average global temperature increased by 0.85°c
- Oceans have warmed, the amounts of snow and ice have diminished and the sea level has risen. From 1901 to 2010, the global average sea level rose by 19cm as oceans expanded due to warming and ice melted. The sea ice extent in the Arctic has shrunk in every successive decade since 1979, with 1.07 x 106 km2 of ice loss per decade.
- Given current concentrations and ongoing emissions of greenhouse gases, it is likely that by the end of the century global mean temperature will continue to rise above the pre-industrial level. The world's oceans will warm and ice melt will continue. Average sea level rise is predicted to be 24-30 cm by 2065 and 40-63 cm by 2100 relative to the reference period of 1986-2005. Most aspects of climate change will persist for many centuries, even if emissions are stopped (see United Nations, 2019).

Climate change: man as the cause

The activities of humans, especially industrial activities, contribute greatly to the changing climate. Different scientist and scholars have argued that man, in the process of industrialization, has endangered his environment. Greenhouse gases emitted by human activities for example, affects Earth's energy balance as well as the climate (The Royal Society, 2019).

In the United States alone, the burning of fossil fuels to make electricity traps the heat of the sun and produces about two billion tons of carbon dioxide (CO2) each year. Also, the country's coal-burning power plants and its transportation sector, which generates about 1.7 billion tons of CO2 emissions per year, greatly pollute the atmosphere and increase global temperature (Amanda, 2016). Thus, Andrew Heywood (1992:243) avers that industrialization, initiated by man, does havocs to our climate and engenders environmental degradation. Michael G. Roskin et al. (2003;55) painted the picture this way: *The results of industrialization as well as mining, factories and even farms poisoned streams, industries and automobiles polluted air; chemical wastes made areas*

uninhabitable; and nuclear power leaked radioactivity; the burning of fossil fuels and rain forests increase CO2 that traps heat inside the earth's atmosphere and changes climate.

In addition to the above, deforestation by man for farming purpose and for generation of firewood has made some places vulnerable to erosion and earthquake. Normally, every act of deforestation should be followed immediately by reforestation as deforestation not only exposes the environment to erosion and earthquake but also increases CO2. Why? Every single tree in the forest and/or beside, around or near any human dwelling naturally takes CO2 and gives oxygen (O2), thereby automatically reducing the overall global CO2. But reverse is the case in a condition of deforestation, whether intentional or unintentional.

Finally, in IPCC 2013 Fifth Assessment Report on how human activities exacerbate climate change, it (IPCC) notes unambiguously, in the concluding part of the report, that: climate change is real and human activities are the main cause. It even went further to note that CO2 emissions from fossil fuel combustion and industrial processes contribute to no less than 78% of the total greenhouse gas (GHG) emission increase from 1970 to 2010 (see United Nations, 2019; and IPCC, 2014). Nonetheless, environmentalists clamour for 'limit' in every of human activity since they directly and indirectly affect the environment as well as the climate. They argue that we cannot continue some of our activities [like deforestation, improper disposal of chemical waste, burning of fossil fuel, etc.] without "producing environmental catastrophe" (see Roskin et al., 2003:55).

Palpable impacts of climate change in Sub-Saharan Africa

The sub-Saharan Africa, which consists of about 50 countries located south of the Sahara, has been colossally affected by climate change virtually in all ambits of life. To speak with precision, climate change has its own economic, socio-cultural, political, developmental and humanitarian resultants in the region.

Agro-economically, flood and drought have over the years engendered the issues of food insecurity, poor harvest, death of cattle, destruction of properties worth millions of dollars and so forth in different parts of the region. In Central African Republic for example, International Federation of Red Cross and Red Crescent Societies reported that the 2017 flood in the town of

Kouango located 415 km away from Bangui – the country's capital city, affected no less than 700 households with about 276 houses utterly destroyed and 74 houses partially destroyed. In clearer terms, the damages were stated as follow:

- Number of households affected: 700
- Number of people affected: 3,500
- Number of water points damaged: 65
- Number of latrines damaged: 76
- Number of houses completely destroyed: 276
- Number of houses partially destroyed: 74 (see Reliefweb, 2018).

Concerning food insecurity, the IPCC stresses that food security is under great threat. In lower-latitude regions, the yields of some crops like maize and wheat have declined while in different higher-latitude regions reverse happened to be the case. For livestock, climate change has resulted in lower animal growth rates and productivity as agricultural pests and diseases are already on increase (i.e. infestation), thereby trying to make food security in sub-Saharan Africa an impossibility. In addition, the IPCC, considering how climate change triggers land degradation, notes that increase in rainfall intensity, flooding, drought frequency and severity, heat stress, dry spells, sea-level rise and wave action, and permafrost thaw all exacerbate land degradation (pp.6-7).

In KwaZulu-Natal (KZN) also known as 'the Garden Province', a total of 1.1 billion Rand worth of properties was reportedly lost to the flood that engulfed the area in early 2019. Railways, roads, houses full of furniture and personal possession were partially and completely damaged, said Premier Willies Mchunu (News24, 2019).

Also, the increasing hotness of the planet is currently having an adverse effect on Chad particularly. Although Chad is a landlocked state, global warming is greatly making life uncomfortable for individuals in the country. The Lake Chad, which serves as a source of water to the people living around it, has been seriously shrinking and thus, affecting agricultural activities [like farming, cattle-rearing and fishing] in that area. Apart from having palpable effects on agriculture, the continuous reduction of the Lake and the hotness of the area are also accompanied

by issues of migration of agriculturist [including herders and fishers], increase in and spread of diseases and sicknesses, frustration, etc. In fact, IPCC unequivocally states:

> *Changes in climate can amplify environmentally induced migration both within countries and across borders, reflecting multiple drivers of mobility and available adaptation measures. Extreme weather and climate or slow-onset events may lead to increased displacement, disrupted food chains, threatened livelihood, and contribute to exacerbated stresses for conflict.*

According to Mr. Ovie of the National Institute for Freshwater Fisheries Research [Nigeria] (NIFFR) and Mr. Belal of the Ministry of Livestock Fisheries and Animal Industries [Cameroun] (MINEPIA), the effects of climate change in the Lake Chad region has, like we have it above, led to increase in food prices, increased migration and mobility of fishers southwards in search of more productive grounds and wetter ecosystems, and increased incidence of HIV/AIDS in the region (see FAO, 2012).

Also humanitarian wise, and socio-culturally, the frustration that climate change causes have paved way for conflict, disastrous conflicts in different sub-Saharan states. In Nigeria, the afoot conflict between Fulani herdsmen and farmers has a lot to do with climate change. The conflict has in fact engendered bitterness, acrimony and disunity between the two agriculturist groups in the country. It has also led to the death of numerous Nigerians, displacement, and loss of a whooping amount of 13.7 billion dollars in just four states – Plateau, Nasarawa, Kaduna, and Benue – in 2016 alone. Over 25,000 people were also killed as well as 62,000 people displaced from their homes, according to the country's former head of state, General Abdulsalami Abubakar (see The Guardian, 2017).

In Mozambique, Zimbabwe and Malawi, cyclone and flood left over two people dead, hundreds missing and 1.5 million generally affected across the three nations in 2019 (Aljazeera, 2019). In KwaZulu-Natal's 2019 flooding also, Premier Willies Mchunu remarked that a total of 1,469 people were out of their homes as a result of the flood and that they were being housed temporarily in community halls as well as in their friends' and relatives' homes, thereby rendering them homeless. Over 50 persons were also being hospitalized due to the flood (News24, 2019). In 2018 in Kenya after the cloudbursts or downpours that slammed the Horns of Africa (HOA), many

homes and infrastructural facilities came to ruin; water also got contaminated. As if these weren't enough, the incidence claimed 150 lives and caused the displacement of 300,000 people from their homes (The World Bank, 2019).

Finally, climate change affects education and increases starvation and malnutrition. In a situation of flooding for example, school children stay out of school for months, depending on the duration of the flooding, to avoid getting drowned in the process of attending school. This was, of course, the case of Bayelsa State, Nigeria after Governor Henry Dickson ordered the immediate closure of all schools in the entire state due to the 2018 flooding to prevent disgusting and ugly occurrence from taking place (Vanguard, 2018).

Measures to be taken

To tackle climate change effectively in sub-Saharan Africa and in the world, the following need to be considered:

- There should be global legislation on and strict global implementation of policies against burning of fossil fuels as this increases greenhouse effect. The developed and industrialized countries that depend much on fossil fuels [gotten by burning coal, oil and natural gas] for production, generation of electricity, transportation, etc. should seriously look for alternatives [for example, harnessing the wind to generate power] so as to reduce global CO2.
- Every sub-Saharan African state should embark on tree planting project for reclamation and forestry purposes. Trees should even be planted in major cities and roads to help facilitate increase in oxygen and decrease in carbon dioxide. For deforested areas, there should be afforestation/reforestation. People engaging in deforestation for generation of firewood and timber or for any other purpose [especially illegally] should be apprehended and duly prosecuted, for such an act is environmentally unfavourable and causes soil erosion, flooding, earthquake among others.
- Factories and industries, regardless of where they are found, should start or pursue recycling with great vigour and seriousness. One consequential thing about recycling is that it combats carbon emissions and climate change in turn. When empty bottles, cans, gallons or jerry

cans, and cloths are properly washed and reused for example, a lot of energy is saved, and waste prevented or clean environment maintained. However, the opposite is the case in the absence of recycling. In short, this is in conformity with the clamours of the Global Recycling Foundation (GRF).

- In countries like Nigeria where there is erratic electricity and large number of people making use of generator sets, the government should, at least, come up with policies that are decarbonization-oriented. Put differently, manufacturers as well as importers of generator sets should be cajoled and persuaded by the government to focus on importation of only decarbonized or generator sets that produce less CO2, and less sound too.
- Enlightenment programmes ought to be frequently conducted in different parts of each sub-Saharan African state concerning climate change and global warming as many people who contribute to our atmospheric deterioration and environmental degradation through their activities might be unaware that they are doing so.

Suggestions for further readings

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