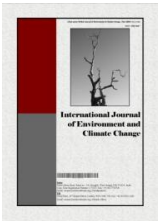

International Journal of Environment and Climate Change

10(12): 322-330, 2020; Article no.IJECC.63814
ISSN: 2581-8627
(Past name: British Journal of Environment & Climate Change, Past ISSN: 2231–4784)

As Climate Change Responds with Terrifying Brutalities

Nura Jibo MRICS[1*]

[1]African Climate Change Research Centre, United Nations Climate Observer Organization, Third Floor, Block B, New Secretariat Complex, Dutse, Jigawa State, Nigeria.

Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

Article Information

DOI: 10.9734/IJECC/2020/v10i1230308
Editor(s):
(1) Dr. Anthony R. Lupo, University of Missouri, USA.
Reviewers:
(1) Ali Didevarasl, University of Sassari, Italy.
(2) Atilio Efrain Bica Grondona, Universidade do Vale do Rio dos Sinos (UNISINOS), Brazil.
(3) Derling Jose Mendoza Velazco, Universidad UTE & Universidad Nacional de Educación (UNAE), Ecuador.
Complete Peer review History: http://www.sdiarticle4.com/review-history/63814

Short Research Article

Received 24 October 2020
Accepted 29 December 2020
Published 31 December 2020

ABSTRACT

Introduction: The lip service in tackling the climate change issues five years after the famous Paris Agreement on climate change is quite unwholesome to individual countries' pledges and promises that were made on reducing global carbon emissions at Le Bourget, France. The attempt to limit the global mean temperature to 1.5^0 Celsius preindustrial level has even resulted in warming the climate more than anticipated [1]. The bulk of the climate change adaptation and mitigation effort(s) have, generally, ended up in a tragic fiasco. The rise in sea level and temperature overshoot carry substantial and enormous risks and uncertainties that have caused the entire humanity to head towards an irreversible crossing tipping point [2]. For example, the year 2020 horrible flooding; animal and plant species extinction; coral reef death; permafrost melt; loss of sea and land ice; breaking of the two major glaciers in the coast of the Amundsen Sea in West Antarctica that has kept climatologists and meteorologists terrified in studying the Pine Island and Thwaites glaciers, are all cases in point that proved an irreversible condition of the climate change.

Methodology: This paper used content analyses by reviewing the climate change brutal scenarios that occurred at random globally. The data on climate events was obtained from the existing literature on the magnitude of destruction of flood rains and storms' damage due to sea level rise that is exacerbated by the breaking away of the two major glaciers in the coast of the Amundsen

**Corresponding author: E-mail: jibonura@yahoo.com;*

Sea in West Antarctica.
Results: The paper examined critically the flood scenarios that occurred in Puerto Rico; Arecibo; Panzhihua; Gopalganj; Kara-Kache; Krasnoyarsk; Tlalpane; Talas; Taif; Valencia; Lagamenas; Khabarovsk; Hadejia; Dabi; Magarya; and Auyo etc. It revealed that massive flooding was witnessed globally within a span of a weeklong catastrophe. Sea level had risen by at least 0.05 percentile as a result of the breaking away and melting of the two glaciers at the coast of the West Antarctica.
Conclusion: The paper concluded that human beings are no longer near the target of achieving the 1.5^0–2^0C goal. What remains now is for everyone to understand the dangers of the climate change blind investment that has already thrown the entire world habitat into a déjàvu phenomenon.

Keywords: Climate change adaptation; glaciers; antarctica; flood disaster; sea level rise; global warming.

1. INTRODUCTION

The global climate change scenarios that occur in the year 2020, most especially during the rainy seasons across the globe are a very serious cause for concern. The aftermath of the Paris Agreement (PA) and the general appraisal of the signatory countries' performance in reducing carbon emissions are very discouraging indeed. The global average mean temperature and sea levels keep rising at a rate that is apparently beyond human control. Human environmental activities that degrade communities and forest vegetation covers in the world are quite unwholesome. Already, sea levels are rising above their normal scientific threshold. As the globe warms due to plenty occurrence(s) of Greenhouse Gases (GHGs) in the atmosphere, there is much work and effort, which must be put in place to tackle the dangers and threats of climate change. The Paris Agreement that was entered and ratified by at least 196 countries in Le Bourget, Paris in 2015 has been receiving a lip service by most of its signatories. Instead of the world leaders to put more policy measures for successful implementation of the PA, they always convene meetings and superficially gloss over the issues of implementation and go away. Only a few countries had shown promise of implementing the PA. And mostly they are the ones that are heavily affected by the effect of climate change and global warming. The year 2020 flood disasters that ravaged certain countries are enough indicators to tell or/and inform the world that human beings' inaction on arresting the menace of climate change has reached its nadir.

For instance, the breaking away of these two Antarctic glaciers had already contributed to approximately 5% of the global sea-level rise [3]. Their loss and damage could trigger the total collapse of the West Antarctic ice sheets that would raise or/and increase the global sea level by about 10 feet [3]. An increase in the 5% sea-level rise caused by these two glaciers' segregation has very badly affected the entire world's cities, towns, and villages because climate change is now responding with terrifying brutalities.

Hence the objectives of this study are:

- To show the dangers of climate change caused by natural and man-made activities and the lack of taking much action in minimizing carbon emissions.
- To link up the negative impact of climate change with sea level rise, flood disasters and global warming by urging the global big actors of climate change to rise up to the challenge and act decisively in salvaging the Mother Earth.
- To demonstrate and pinpoint the areas that are already engulfed by climate change catastrophe and are already receiving early warning signs, especially the Pine Island where the two glaciers had broken away.

2. METHODOLOGY

This study used content analyses method by reviewing the existing literature on global flood occurrences at random. Data of the global flood occurrences from 13-19 September 2020 was picked at random and carefully analyzed and utilized in drawing an inference for this study. The study was based on European countries' regions such as the Southeast province of France and Valencia, Spain and Pine Island flood risk and disasters that affected sea levels

and caused a lot of loss and damages to human lives and properties. The study also utilized flood data in Mexico, South America and Moscow in Russia. Other flood data in African countries such as Nigeria and Niger Republic where massive flooding was witnessed in Hadejia and Dabai constituted a big threat to Africa's ecosystem. The study also utilized flood happenings in the South American and Arab countries' regions of Thlalpane, Mexico and Taif, Saudi Arabia. Climate and flood image data were obtained from Google Earth and other weather and meteorological organizations such as the Joint Research Centre and online etc.

From the below two images, at the right side of the Thwaites glaciers had shown no promise of future formation of more glacier in the Antarctica. At the left side it shows promise, because the two glaciers had not reached a crescendo of melting the way they did and got depleted in the above circumstance. Hence climate change could be one of the main factors that contributed to the separation of the two glaciers in the Antarctica. And this would continue to pose a significant threat to the global glaciers as already there is a surge and imbalance in the weight of the glaciers and the displacement and rise of the sea level that they caused.

A more terrifying climate change natural disaster that occurred within a week in the year 2020 (13 - 19 September 2020) was very seriously mindboggling. Indeed, a country by country climate change perspective from 13-19 September 2020 shows a radical shift in extreme weather and climate change variability [5].

3. RANDOMIZED GLOBAL CLIMATE CHANGE AND FLOOD DISASTER WEEKLONG OCCURRENCES (13-19 SEPTEMBER 2020)

For instance, on 13 September 2020, the effect of stratospheric cooling, Arctic wintertime influx, and melting glaciers had probably exacerbated the daily North Atlantic Oscillation (NAO) and caused tidal waves in the Atlantic Ocean where Hurricane Paulette passed on top of Bermuda, moving northwestward at a speed of 21km per hour. Paulette caused serious climate cataclysm in places such as Puerto Rico and Spain. In Puerto Rico, USA, flood rain consumed most parts of Arecibo. A tropical storm, Sally flooded Keywest, Florida on the same day that Spain was engulfed by wildfires in the province of Ourense.

On 14 September 2020, China witnessed terrible flooding in Panzhihua, Sichuan the same day Central Portugal was devastated by major forest fires where one thousand (1,000) firefighters and fifteen (15) planes were deployed to quell the situation. This antecedent happened on the same day Tunisia witnessed massive flooding in its various towns, villages, and cities.

Indeed, the forest fires outbreak varies from country to country. It depends on the seasonal meteorological conditions. The above scenario shows fire frequency in the five southern European countries for which long time series increased in 1990s. However, a decrease in this frequency was noticed after a decade. Hence an attempt at generalization or comparison of the forest fires magnitude and figures cannot be easily done, because of the difference of each country's areas that are at risk of forest fires occurrence [7].

On 15 September 2020, Gopalganj in Tunisia saw the most devastating catastrophe caused by Gandak River flooding, which triggered erosion that made a school building collapsed.

Ditto Kyrgyzstan! Kyrgystan experienced a severe landslide at the Kara-Kache coal mine that was similar to the severe flooding in Misrata, Libya.

On 16 September 2020, Russia experienced what was tagged as "Invasion 2020 in Krasnoyarsk. Thousands of people in the area did not leave the city unharmed. It was the same day Turkey was ravaged by earthquake M4.6 in the Korkut region. Pomaski is a village in the Canton of Quito in the US that was severely flooded and almost totally wiped out by rain.

On 17 September 2020, tropical storm Knowle reached central Vietnam and wreaked havoc on its inhabitants as heavy rain caused flooding in Tlalpane in Mexico City. Russia was also caught by Typhoon "Isla" in the Moscow region where 17 people were injured and several buildings and properties were lost. In some areas, almost a third (1/3) of monthly rainfall fell in two hours in Russia. As this happened in Russia, Saudi Arabia was faced with great fires that took the Arabian nation a concerted effort to arrest it.

On 18 September 2020 Finland was attacked by storm "Aila" as Greece was hit by a rare Mediterranean cyclone "Jamos" snowfall in Talas region. Immediately after the 17 September Saudi great fires attack, another forest fire devastated the Taif region, Saudi Arabia.

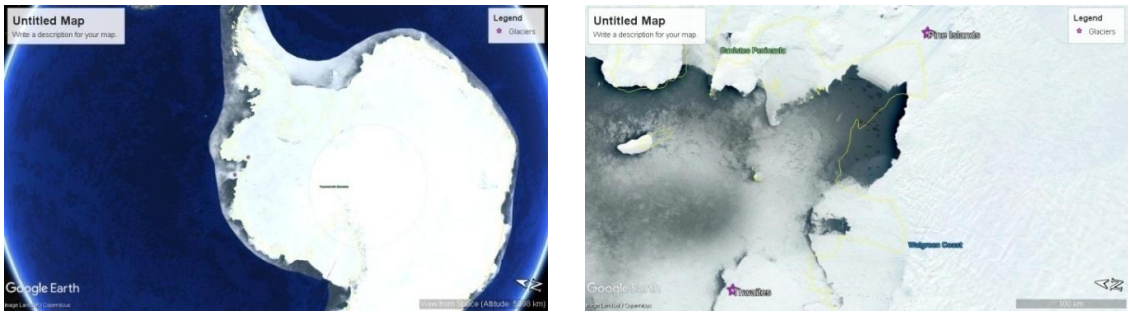

Fig. 1. Position of Pine Island and Thwaites glaciers on Antarctica (global, left and detail, right)
Picture Source: Google Earth 2020[4]

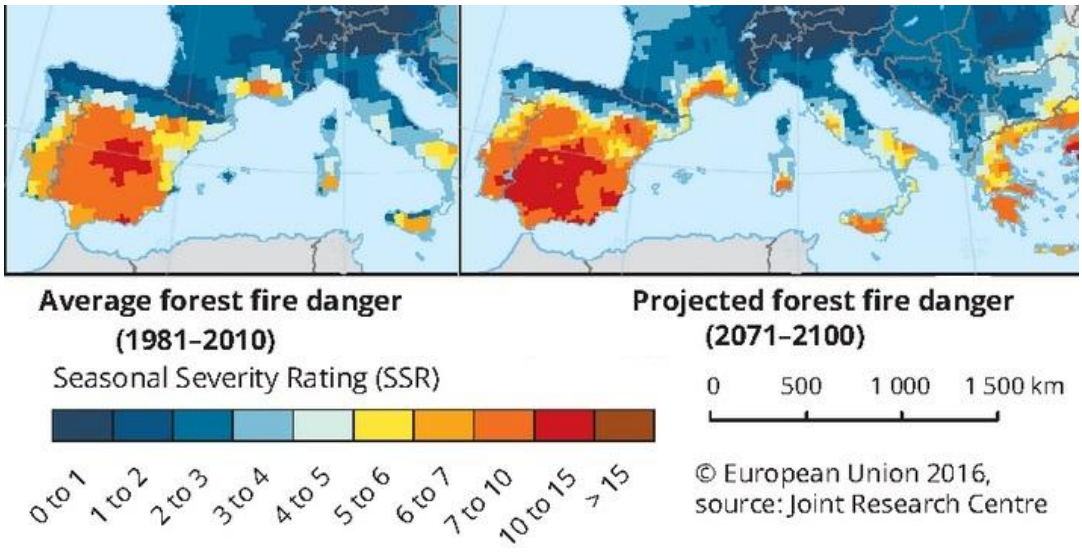

Fig. 2. Current and projected state and trend of fire danger
Source: Joint Research Centre, 2020[6]

On 19 September 2020, Valencia in Spain was vehemently affected by a storm that destroyed half of northern Valencia and half of southern Castellon. As this happened to Spain, Portugal was under heavy flash flooding in Setubal due to heavy rainfall from tropical storm “Alpha”. A tornado came up and destroyed Lagamenas, Setubal district, Lisbon due to tropical storm Alpha. There was also heavy rain and flash flood in Cuernavaca, Morelos in Mexico. In Khabarovsk territory, Russia 29 settlements were flooded and submerged by rainfall. France was also attacked by heavy rain in the mountainous regions of Southeast provinces.

The entire global climate change pandemic happened within one week! And it happened with speed in geometric progression that far surpassed that of the COVID-19 pandemic, which occurs in an Arithmetic progression according to Johns Hopkins "daily global tally and projections".

4. CLIMATE MATTERS AT ISSUE

Therefore, the issue of tackling global warming that causes a threat to the atmosphere is a task that must be done. Indeed, the limiting of global mean temperature below 1.5^0C preindustrial level appears to be a mirage since the Paris Agreement. Because the globe is getting warmer every blessed day and climate change vulnerabilities are everywhere. We often see polluted clouds that do not rain themselves out. They tend to grow larger and stay longer. In the end they bounce sunlight out to space [8].

As it is the policymakers in the developed and developing nations are making very little progress that is slightly above the UNFCCC’s

annual COP meetings. And the COVID-19 pandemic is even compounding the climate change scenarios due to the social and economic trappings and lockdowns.

What is more dangerous is the continuous Chameleon approach to implementing the Le Bourget 2015 climate change Paris Agreement that each country out of the 196 countries pledged to reduce carbon emissions. Lack of following the Paris Agreement "template" and the improper non-implementation of the Nationally Determined Contributions (NDCs) /Intended Nationally Determined Contributions (INDCs) could push the global mean temperature to reach up to 4.1^0C or 4.8^0C at the end of the 21st century. Until and unless the planet Earth is taken care of by reducing the baseline emissions, it is very unlikely that human beings could reduce global warming by limiting the preindustrial average temperature below 2.9^0C at the end of the twenty-first century.

That is the reason why in August 2020, the President of Indonesia announced that he would be moving the capital city of the country from Jakarta to a new green city on the Island of Borneo. His reason for the £33 billion city relocation project was that Indonesia's current capital city, Jakarta is sinking. And so far two-thirds (2/3) of the city is at sea level, and climate change has already caused Indonesia an unsustainable risk [9].

Indeed, according to RICS [9], coastal cities such as Lagos, Tokyo, Dhaka, and Miami would become history if the global mean temperature rises above 2^0 C. Lagos State, Nigeria, for example, currently has over 70% of its 12 million inhabitants living in slum areas that are less than 2 metres above sea level.

Indeed, Nigeria has the highest density of locations with a high risk of flood mortality. Flood in Nigeria is expected to increase in intensity, especially in the context of global warming. There are areas of high risk for landslides, which are closely related to storms, rains and floods [10].

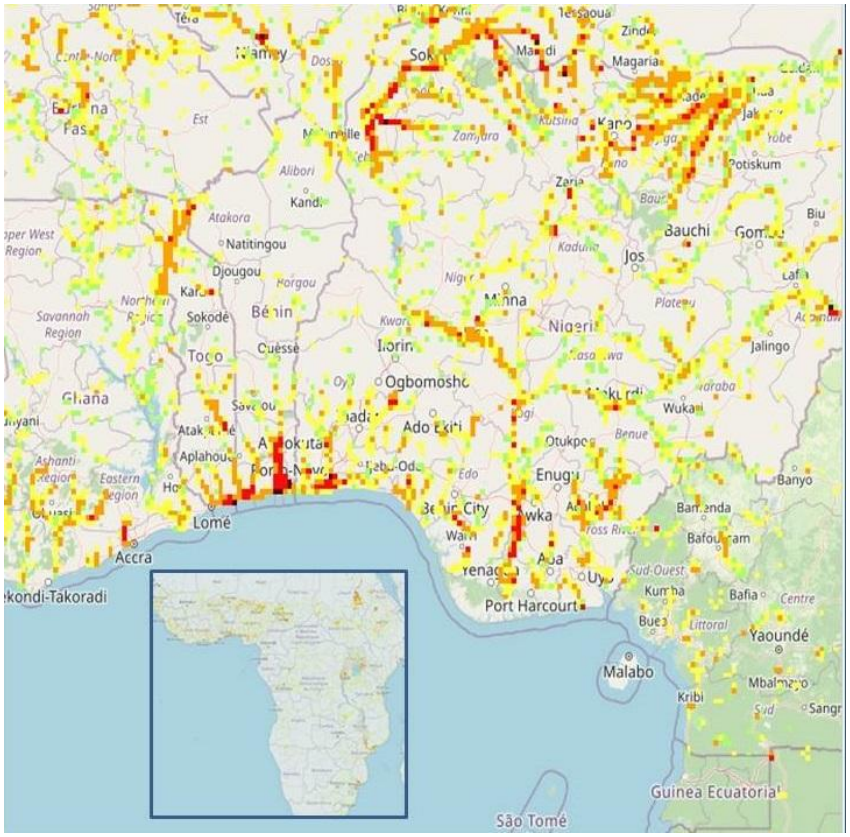

Fig. 3. Flood mortality risk map, Nigeria. In medallion, Africa
Source: Google Earth, 2020; Preventionweb, 2020[10]

Fig. 4. Localities with strong flood events in Nigeria in 2020
Source: Google Earth Programme Archive Free Version, 2020[11]

The reality is if the global mean temperature rises to or/and above 2^0C, sea level along the West African coasts would rise by 20-40cm by the year 2050. Hence a rise in mean temperature above 2^0C would cause a sea-level rise that would make cities such as Lagos; Portharcourt and other Nigerian Ports history! They would be overwhelmed by floodwaters.

The above map shows areas that are at high risk of landslides in Nigeria. They experienced heavy storms, rains and floods, which may cause landslide in the near future. Dabi town; Kafin Hausa; Auyo; Hadejia and Birniwa all in Jigawa State, Northern Nigeria were seriously flooded by rain waters. The fear is that if the Nigerian government did not act on time and take care of the typha grasses that prevent the Hadejia-Jama'are river "smooth" flow and emptying itself into the Lake Chad Basin, it would constitute a threat to all the inhabitants of those areas. Indeed, the Nigerian governments need to construct proper drainages in the affected areas, because if similar 2020 flood rains occur, those places may be very badly hit by denudation and landslides.

5. GRAPHICAL PROJECTION OF A TRIPLE CORRELATION BETWEEN GHGS EMISSION, GLOBAL WARMING AND POLICY FRAMEWORK

The above vivid graphical projection shows a triple correlation between the Greenhouse gases (GHGs) emission; expected global warming; and the global climate change actors' policies framework. It shows that by the year 2100 the mean temperature projection could reach up to 4.1-4.8^{0}C baseline, which is a "menu" for unprecedented disaster.

6. FLOOD DISASTER IN DABI TOWN, RINGIM LOCAL GOVERNMENT AREA, JIGAWA STATE, NIGERIA

Dabi Town in Ringim local government area, Jigawa State, Nigeria had, for example, witnessed the worst flooding in decades during the 2020 rainy season. In September 2020, a male resident of Dabi lost three of his daughters to flooding as a result of over 10 hours of a heavy downpour of rain in Dabi [13].

7. FLOOD DISASTER IN HADEJIA AND AUYO LOCAL GOVERNMENT AREAS, JIGAWA STATE, NIGERIA

Hadejia city in Jigawa State, Northern Nigeria was also one of the 2020's flooding most affected local government areas (LGAs). The Hadejia's case is a serious one, because on 6 October 2020, flood levels that were monitored by the hydrological stations in Niamey, Niger Republic, and Malan Ville in the Benin Republic showed that Jigawa'sHadejia-Jama'are River Basin; Kebbi; Kwara; Sokoto; and Zamfara states are already in the red alert zone of current and future torrential rainfall. Early warning signs have

shown that out of the 27 LGAs in Jigawa State, Northern Nigeria, about 15 to 18 LGAs were affected by the 2020 flooding [13]. This indicates that Hadejia city along the Hadejia-Jama'are and Komadugu river basin would be history by the year 2050 if the river-basin cannot be freed from the Typha grasses that prevent the free flow of rain waters into the Lake Chad tributaries. Already there is an upsurge of floodwaters along the Hadejia-Jama'are run-off; Ringim tributaries and Danbatta Dam. Therefore, in the next five to ten years (2021-2025/2030) the effect of the broken glaciers in Antarctica would eventually affect high latitude regions. The Sahelian/ Sudan climate and the semi-arid regions are likely to be wetter than the recent past where northern and eastern parts of South America are likely to be drier. The entire world would then experience an anticlockwise weather change scenarios in a south to north direction, as opposed to north to south movement [8], which if care is not taken, would consume more than 80% of places along the river basins such as Hadejia town in Jigawa State, Nigeria, and cause serious regional catastrophe for neighbouring towns such as Auyo, Kafin Hausa and Birniwa, etc.

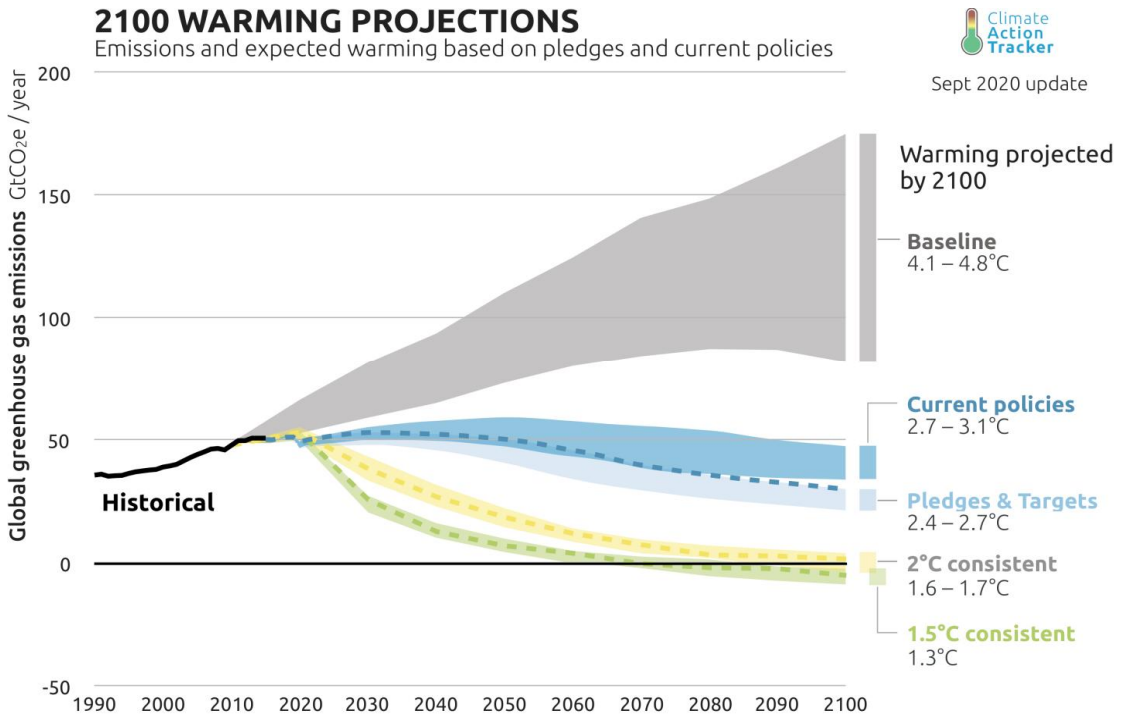

Fig. 5. 1990-2100 GHGs emission, global warming and policy framework
Source: Climate Action Tracker, 2020[12]

Fig. 6. Dabi flood disaster, Jigawa State, Nigeria
Picture source: bbc.com, Nigeria 2020[14]

Fig. 7. Sani Magarya, a resident of Magarya, Jigawa State, Nigeria waited for a canoe for two hours to save his child from the flood disaster by conveying him to a nearby hospital
Picture source: bbc.com, Jigawa 2020[14]

In the year 2018, Auyo – a town along the Hadejia-Jama'are river Bank had seen the greatest rain waters in over three decades that was caused by climate change. People of Auyo had to relocate and seek refuge elsewhere because floodwaters had overtaken the entire habitat. Massive flooding generally destroyed lives and properties in Auyo, which was mainly caused by the Typha grass stoppage of the free flow of the rainfall along its basin. And of course, the current and past Jigawa State's government's the Federal Government of Nigeria's Ministries of Water Resources and Environment inaction, lackadaisical attitudes, lack of collaborative effort and synergy and absence of proper/genuine research to deal with Typha grasses by constructing proper channels and canals for irrigation waters [15].

The reality is, therefore, very likely that annual global temperature could be at least 1^0C warmer than preindustrial levels in the next 5 years and is very likely to be within the range of 0.91-1.59^0C [16].

8. WAY FORWARD

Given the aforesaid, a radical shift away from the politics to the understanding of the science of climate change and its adaptation and mitigation strategies would be very helpful in bringing a wave of change to Mother Earth.

Climate change global risks do not respect national borders. One country's emission of greenhouse gases impacts the entire global climate. Therefore, climate change global risks should be dealt with by means of an overarching plan [17]. As the emissions are increasing, the world is, unfortunately, never on the path to achieve stabilization even at 2^0C. Falling short of this global target means that countries need to achieve net-negative emissions in the future to offset the cumulative carbon emissions [18].

The solution to tackling the global climate pandemic is afforestation by planting trees where there were none. Hence the African Climate Change Research Centre's (ACCREC's) Going Green at the Grassroots tree planting project significantly engages young people and children in planting trees in the urban and rural areas of Africa. There is the need to very seriously embrace the use of bio-energy and carbon capture and storage. Indeed, there is the need to advance toward a zero-emission world.

9. CONCLUSION

This paper concluded that, human beings are no longer near the target of achieving the 1.5^0–2^0C goal. What remains now is for everyone to understand the dangers that human inaction and karmic retribution have caused to the global climate and be ready to take responsibility.

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Jibo N. Beating famine in Africa Dialogue. Sheraton Hotel, Bamako, Mali; 2019.
2. Chris M. Two Major Antarctic Glaciers are tearing loose from their restraints, Scientists say. Washington Post Climate and Environment Publ., USA. 2020;1-10
3. Google Earth. Position of Pine Island and Thwaites glaciers on Antarctica; 2020. Available:https://earth.google.com/web/@-23.34153188,10.677457,0a,1000000d,35y,0h,0t,0r. Accessed on 24: 12: 2020
4. Cataclysm Channel. Natural Disasters from 13 to 19 September 2020. Ukraine. 2020;1-5.
5. Joint Research Centre. Seasonal severity rating index; 2020. Available:https://www.eea.europa.eu/data-and-maps/indicators/forest-fire-danger-2/assessment.(Accessed on 23: 12: 2020: 1)
6. European Environment Agency. Current and projected state and trend of fire danger; 2020. Available:https://www.eea.europa.eu/data-and-maps/indicators/forest-fire-danger-2/assessment.(Accessed on 24:12: 2020:1)
7. Gulma MA. Predicting the Third Millenium. Kadiq Entreprise, Samaru, Zaria, Kaduna State, Nigeria. 2004;124
8. RICS. RICS, Futures Report. Parliament Square, London, United Kingdom. 2020;9.
9. Google Earth & Prevent web. Flood mortality risk map Nigeria; 2020. Available:https://www.preventionweb.net/english/maps/. (Accessed on 24: 12: 2020: 1-2)
10. Google Earth Programme Archive Free Version. Localities with strong flood events in Nigeria; 2020. Google Earth Programme Archive Free Version 2020.
11. Climate Action Tracker. 2100 Warming Projections. CAT Publ., Australia. 2020;1-4
12. BBC. Nigeria: Jigawa State farmers lose 80% of farmland due to flooding. Dabi, Ringim, Jigawa State, Nigeria; 2020. Available:https://www.bbc.com/pidgin/tori-54280698 (Accessed on 21:11: 2020: 1-2
13. BBC. Jigawa flooding: Pictures and tori of how water destroy houses, farms, cut off communities and cause serious damage. Hadejia, Jigawa State, Nigeria; 2020. Available: https://www.bbc.com/pidgin/tori-54280698 (Accessed on 21:11: 2020: 1-3
14. Jibo N. Sustainable Land Management Project Dialogue. IUCN-gef-UN Publ., Addis Abba, Ethiopia. 2019;3-107.
15. WMO. Global Annual to Decadal Climate Update: Target years: 2020 and 2020-2024. Geneva, Switzerland. 2020;16
16. Laszlo S. We need more cooperation, not less. UNA-UK, United Kingdom. 2018;10.
17. Nebojsa N. A Moore's Law for decarbonization. Climate 2020 Publ., UNA-UK, United Kingdom. 2020;31.
18. Holz C. Ratcheting modelling 1.5^0C – compliant mitigation scenarios without carbon-dioxide removal: near-term ratcheting success. Heinrich Boll Stiftung Foundation, Arnold Group, Grobbeeren, Berlin, Germany. 2018;44(8):13.

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sdiarticle4.com/review-history/63814