LEGAL FRAMEWORKS FOR ADDRESSING THE IMPACTS OF CLIMATE CHANGE ON COMMUNITIES ACROSS THE WORLD*

Abstract

Globally, the issue of climate change has become prominent over recent decades, as a result of the negative consequences of carbon emissions and global warming. Climate change alters our world by disrupting the natural, economic and social systems we rely on for sustenance. This in turn affects the weather, food supplies, and financial market, destroys infrastructure and harm human health and global development. According to World Health Organization, climate change contributes to humanitarian emergencies from floods, wildfires, heat waves, tropical storms etc. Climate change legislation on the other hand consists of the laws and policies that govern change which is majorly human induced changes in the atmospheric composition, which if unchecked, will grow tremendously over the next decades. The aim of this paper is to examine the laws and regulations that govern climate change at the regional and international levels. The paper further seeks to explore the relevance of adopting and effective enforcement of legal instruments and laws in the regulation of climate change. The research methodology adopted is the doctrinal method of legal research. The emerging trend of global climate change analyzed indicates that countries in the global south are extremely vulnerable and not adequately prepared for the impending impacts of climate change. Hence there is need for collaborative efforts particularly in terms of climate legislation and litigation both at the international and national levels. The paper recommends among others that the Global South needs to be actively included in the decision-making of global action and partnership. While the Global North actors need to support active inclusion of Global South actors on climate change regulation.

Key words: Climate Change, Climate Litigation, Climate Regulation, Global South, Global North

Introduction

Climate change is a burning issue on the international scale both for the Global South and Global North actors. Hence, it requires cutting edge legal framework to address the challenges posed by this global menace. Every country in the world at least now has a law or policy addressing climate change concerns. Climate change has brought a lot of disruptions in the physical, ecological and social systems in the world[1]. Climate change is an alteration in the statistical properties of meteorological variables over a long period of time, irrespective of the cause.[2] Climate changes are majorly caused by human activities/ interference, which has exceeded the bounds of natural variability. Greenhouse gases play a significant and crucial role in keeping the earth warm and conducive. The greenhouse gases are made up of the methane nitrous oxide, ozone and carbon dioxide. Currently, the level of these gases has tripled in the recent decades. It is pertinent to state that climate change as a profound driver of change presents both hazards and potential opportunity. However, impacts, responses and actions are dependent on varying locations; it depends on climate change manifests at the international, regional and local levels and on the

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W N Adger, J Barnett, *e tal*, "Under-representation of Identity and Meaning in Climate Change Decision Making", (2011) Global Environmental Politics 11(2).

[2] B Princeton, S Preetha, L Prathap, "Awareness on the Recent Trends of Global Climate Change", (2022) Journal of Educators, Teachers and Trainers, Vol. 13 (6).

vulnerability of the international, regional and local levels to these changes[3]. Climate change is a complex phenomenon which has multiple effects on countries of the world particularly the developing countries.

The major cause of global climate change include increase in carbon dioxide, greenhouse gases, coal burning power plants etc. climate change are made manifest in increase in water and air pollution; increase in temperature may also lead to increased chronic respiratory diseases like asthma. Increase in temperature as a result of climate change leads to increased ground level ozone, which can cause airway inflammation and damage lung tissue[4]. There is an urgent need for everyone across the communities of the world to adapt to climate change as well take steps that will mitigate the effects of the climate change. All hands must be on deck to reduce maximally the negative effect of climate change on communities.

1. Meaning of Climate Change

Severally, climate scientists always aim to communicate their expertise to people without giving sufficient background of the meaning of climate change. In order to fully understand and appreciate the concept of climate change, it is necessary to first define the term 'climate' and highlight its difference with other related terms such as 'weather'. Climate refers to the long term regional or global average temperature or weather over a long period (30 – 50 years) in a region. It is the average weather patterns and trends over an extended period of time.[5] The distinction between climate and weather lies essentially in the time frame over which each phenomenon is understood and observed. Weather is generally a short-term variation in atmospheric conditions while climate represents the long-term average of weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions[6]. Hence climate change is the long-term shift or alteration of temperature and weather conditions in a given region. These alterations, however, lead to global warming, altered precipitation patterns and extreme weather conditions.

2. Causes of Climate Change

Basically, climate change is as a result of change in the earth's energy balance i.e the amount of energy from the sun that enters the earth[7].While climate change can occur naturally, it has been indicated that human activity is a major driver of recent and rapid changes observed in the climate which has significantly contributed to greenhouse gas emissions[8]**.** Below is an overview of several causes of climate changes. These causes have been broadly classified under human induced causes and natural causes.

Human-Induced Causes: climate change that is as a result of human activity is sometimes referred to as anthropogenic i.e. caused by human beings[9]. These activities include;

[3] T R McClanahan, J E Cinner, *Adapting to a Changing Environment: Confronting the Consequences of Climate Change*, (Oxford University Press, New York 2012).
[4] P H Dave, Preetha, Pathogenesis and Novel Drug for Treatment of Asthma-A Review", Journal of Pharmacy and Technology, (2016) Vol.9.
[5] Nigeria-Climatology-Climate Change Knowledge Portal, < https://www.climateknowledge portal.worldbank.org. >accessed on 14th June, 2024.
[6] What is Climate Change? Available at, htpps:www.un.org/en/climatechange/what-is-climate-change. Accessed on 26th June, 2024.
[7] *Ibid.*
[8] What Causes Climate Change? Human and Natural Causes-NRDC. Available at htpps://www.nrdc.org. Accessed on 26th June, 2024.
[9] What is Climate Change? (Grades K-4)-NASA. < htpps://www.nasa.gov> accessed on 26th June, 2024.

Burning of Fossil Fuels: This leads to the significant release of carbon dioxide (CO_2) and other greenhouse gases into the atmosphere, leading to enhanced greenhouse content and consequently, global warming.

1. Industrial Processes: These include manufacturing processes that are carbon intensive which in turn leads to emissions of unhealthy amounts of carbon emissions including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O).
2. Deforestation: This involves the clearing of forests for agricultural purposes and urban development. The consequence of this being the reduction in the number of green life that can play a role in helping to offset the effects of excessive greenhouse gas emissions by serving as a carbon sink.
3. Poor Waste Management: The resultant effect of this greenhouse gas emissions caused by decomposing organic waste.

Natural Causes: it is important to note that climate is not solely a direct effect of human activity. Some of it can be attributed to natural phenomena, though the effect is minimal, more often than not.[10]

1. Volcanic Eruptions: in events where volcanic eruptions occur, large amounts of sulphur dioxide (SO_2) and other particulates, this can temporarily cool the Earth but can also contribute to long-term climate change through CO2 emissions.
2. Orbital Changes: (Milankovitch Cycles): Variations in the Earth's orbit and tilt affect the distribution and intensity of sunlight received by the Earth, influencing long- term climate patterns over extended periods of time.
3. Natural Carbon Cycle Variations: Natural processes such as respiration, decomposition, and ocean atmosphere CO_2 exchanges can vary and impact the climate.

4. The Effects of Climate Change

Climate change has multifaceted effects on the environment, human health and global economies. The unabated impacts of climate change leads to many unfavorable, unpleasant and negative consequences. These effects can manifest and be observed on various scales, from local to global. Some of these effects include

1. **Environmental Effects**: Where climate change occurs it usually manifests in various forms in our environment; they include

A, **Rise in Sea Level**: when water is warm, it begins to expand. Hence, as ocean gets warm, the increased volume of water results to sea level rise. Sea level rises and desertification are two processes that serve as a catalyst for climate change.[11] Sea level rise also has an effect on island states, nations with floodplains, and low-lying coastlines.

B, **Warming Temperature of the Earth's Surface**: The average global temperature has risen, thereby leading to global warming which in turn has led to hotter climate and more frequent and severe heat waves, melting glaciers and ice caps. More so, these altered temperature regimes can stress ecosystems, affecting species composition and leading to shifts in habitats and biodiversity.

C, **Reducing Glaciers and Snowpack: It is important to note that melting glaciers and snowpack also contribute to rising seas.** This can affect the climate/environment by changing precipitation patterns. This is evident through ocean acidification, altered rainfall and flooding, while other regions suffer droughts and water shortages. These changing precipitation patterns can also further affect the availability of fresh water for drinking, agriculture and industry use. In Africa, the melting of glaciers has the ability of

[10] *Ibid*

[11] H Brock, "Climate Change: Drivers of Insecurity and the Global South", <https://www.files.ethz.ch.>accessed on 28th June, 2024.

threatening more than 25% of the continent's population, who are situated within 100 kilometres of the coast.[12] Climate change mostly leads to extreme weather events also called 'climate shocks'. For instance, in Pakistan, areas with a history of 'high frequency , low intensity flood events' are now experiencing 'high intensity, high frequency floods' such as those experienced in 2010 and 2011. [13]

D. **Migration:** A change in the climate which affects the environment often leads to migration. This is caused as a result of extreme weather conditions which ultimately lead to displacement of persons either internally or externally. People move so as to stay away from areas of intense climate stress and improve the resilience of their households to deal with future climate shocks and stresses.[14]

3.Human Health Effects: Increased frequency and intensity of heat waves can lead to heat exhaustion, heat strokes. Higher temperatures and changes in air quality and circulation can increase the concentration of ground-level ozone and other pollutants, exacerbating respiratory and cardiovascular conditions. Warmer and humid temperatures can expand the range of disease vectors, such as mosquitoes, increasing the spread of diseases like malaria, dengue fever, and Zika Virus. Another effect climate change has on human health is in how the performance of certain crops may be compromised and reduce crop productivity.

4. Economic Effects: The ways in which climate change can affect economies of states can be seen in the increased frequency and intensity of climate-induced natural disasters like hurricanes, floods and wildfires, causing significant damage to infrastructure, business establishments and homes. Individuals and families may be forced to relocate to avoid the harmful effects of climate change. This would certainly cause economic and social disruptions. Furthermore, rising sea level, extreme weather, and resource scarcity can force people to migrate, leading to climate refuges and increased pressure on hosts regions and countries. Climate change also has an adverse effect on farming, as land and soil quality is affected by water insecurity and flooding; thereby making plants and farmlands produce little or nothing.

5. **Climate Change Laws**

Climate change laws are laws aimed at regulating climate change and its resultant effects. The laws differ in scope, type and applicability. However, the climate laws, policy and directives are still emerging. The U.K's 2008 Climate Change Act is generally credited as the earliest example of a climate framework law and the world's first globally legally binding mitigation target. The U.K Act emerged on the basis of British support for climate action. This charted the way for an improved political debate on climate change and also established an agreed empirical evidence base.[15] The importance of climate change legal framework cannot be over-emphasized. It provides countries with nationwide policy coherence, effective government action and a great deal of accountability.

It is pertinent to note that climate change legal framework laws enable a robust greenhouse gas data management. Global North countries have the ability to generate this data at their various national levels as a result of the obligatory requirements under the UNFCCC reporting processes.

[12] *Ibid.*
[13] Floods in Pakistan: A State-of-the-art review. < https://www.sciencedirect.com. > on 14th June, 2024.
[14] *Ibid*
[15] Sam Fankhauser *et al*, 10 Years of the U.K Climate Change Act 3 (2018). <https://www.Lse.ac.uk> accessed on 17th July, 2024.

Climate change legal framework helps in establishing medium to long term stability and vision that policymakers require to tackle climate change and transition to a low carbon economy.[16] A research undertaken in 2020 by Shaikh Eskander and Sam Fankhauser, scholars with the Grantham Research

Institute on climate change and the environment indicates that countries with a strong rule of law has the ability to reduce annual carbon dioxide omissions per unit of gross domestic product by 0.78% at the national level in the first three years and 1.79% in the fourth year and beyond.[17] The urgency of effective climate action in both the near-and long-term basis and the relative success of climate framework laws have provoked calls for climate law in many countries.

5. The Legal Framework for Climate Change

The legal framework for climate change can be categorized into two; International and national.

International: Pre-United Nations Framework Convention on Climate Change

The first international conference on climate change was held in Switzerland in 1979.[18] It was then that the UN General Assembly (UNGA) recognized climate change as a common concern of mankind which required urgent action by all States. Prior to this Convention, there had been United Nations General Assembly resolutions bordering on the protection of the environment. There was the United Nations Conference on the Human Environment which culminated to the Stockholm Declaration. After the recognition of climate change as an existential threat, there were UN conventions which bordered on specific aspects of the environment. For example, there was the UN Convention on the Law of the Sea of 1982, Vienna Convention for the Protection of the Ozone Layer 1985, Montreal Protocol on Substances that Deplete the Ozone Layer, among others. In 1990, the UNGA established an intergovernmental negotiating process for the preparation by an Intergovernmental Negotiating Committee of an effective framework convention on climate change.[19] Thereafter, the United Nations Environmental Program (UNEP) and the World Meteorological Organization (WMO) established and still co-sponsor an independent scientific body called the Intergovernmental Panel on Climate Change (IPCC). The IPCC is a body of over 2000 scientific and technical experts from around world who collect scientific information about the causes, potential effects, and ways of mitigating climate change.[20] The body issued its First Assessment Report in 1990. Its latest was the sixth in 2023. The Fifth Assessment in 2014 culminated to the Paris Agreement.

United Nations Framework Convention on Climate Change (UNFCCC)

The UNFCCC was adopted in New York on 9th May 1992. It entered into force on 21st March 1994.[21] 198 countries have ratified the Convention giving it a near-universal membership.[22] It is the central focus of global action on climate change. The objective of the UNFCCC is to stabilize greenhouse gases concentrations in the atmosphere at a level that allows ecosystem to adapt naturally to climate change so that food production is not threatened, while enabling economic development to proceed in a sustainable

[16] J Huang, "Exploring Climate Framework Laws and the Future of Climate Action", Pace Environmental Law Review (2021) Vol. 38 No 2.
[17] *Ibid*
[18] Asian Development Bank, *Climate Change, Coming Soon to a Court Near You; International Climate Change Legal Frameworks*, December 2020.
[19] UN Environment Programme, *Climate Change International Legal Regime,* UNITAR
[20] *Ibid.*
[21] UN Framework Convention on Climate Change-UNFCCC, < https:www.enb.iisd.org. >accessed on 17th July, 2024.
[22] *Ibid*. (n 1)

manner.[23] The parties are guided by the Principles of Common but Differentiated Responsibilities, Inter-generational Equity, Pre-cautionary Approach, and the Right to Sustainable Development.[24] The parties have general commitments which include: the establishment of national inventories of greenhouse gas emissions and sinks; the formulation and implementation of policies and measures to mitigate and adapt to climate change; the sustainable management of forests, oceans and ecosystem; and the integration of climate change considerations in national social, economic and environmental policies. To monitor progress in implementation, all parties are required to submit periodic reports containing an inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases as well as information on measures taken or envisaged to implement the Convention.[25] The Conference of the Parties (COP) is the governing body of the Convention and meets regularly to review the adequacy of commitments, progress in implementation and effectiveness of the Convention. Its last meeting was in December 2023 in Dubai. There were subsequent meetings and agreements of the COP aimed at strengthening the existing provisions and accommodating emerging climate issues. Some of these were The Kyoto Protocol, The Marrakesh Accord, etc.

1. ***Post- UNFCCC: The Paris Agreement***

   The Paris Agreement is a legally binding international agreement on climate change which was adopted on 12th December 2015, at COP-21 of the UN Framework Convention on Climate Change (UNFCCC) in Paris.[26] The purpose of the Agreement seeks to enhance the implementation of UNFCCC, to prevent dangerous anthropogenic interference with the climate system. Its long-term goal is to limit global average temperature to well below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C.[27] It allows state parties to implement the Agreement to reflect equity and according to their common but differentiated responsibilities.[28] One of the essential provisions of the Paris Agreement is the Nationally Determined Contribution (NDC). The concept implies that state parties should determine at the national level what actions they are able and willing to take in achieving the purpose of the Agreement.[29]

2. ***Nigeria***

   Nigeria, like the rest of the world, is making commitments to mitigate climate change. Being the grund norm, the Constitution charges the government with the duty of protecting and improving the environment including wildlife, forestry, air, water and land.[30] Nigeria has implemented certain policies such as Climate Change Response and Strategy (CCRS). This policy is to ensure an effective national response to the multi-faceted impacts of climate change.[31] Another one is the National Adaptation Strategy and Plan of Action for Climate Change, which is geared towards reducing the vulnerability and enhancing the resilience and adaptive capacity.[32] Nigeria is also a party to the Paris Agreement of 2015, where it was agreed to limit global warming below 20C. The Paris Agreement requires parties to set a Nationally Determined Contributions (NDCs) and update it every five years. Nigeria's NDCs include its commitment to cutting its carbon emissions unconditionally by 20% or conditionally by 45% with international support by 2030. In March 2021, Nigeria revised its NDCs to

[23] Article 2, UNFCCC.
[24] Article 3, UNFCCC.
[25] Article 4 (1-4), UNFCCC.
[26] The Paris Agreement, < https://www.unfccc.int. >accessed on 14th July, 2024.
[27] Article 2(1)(a), Paris Agreement.
[28] Article 2(2), Paris Agreement.
[29] Article 3, Paris Agreement.
[30] Section 20, CFRN 1999.(As amended).
[31] G A Nwaeze, "Nigeria's Climate Action Strategy: How Policy and Regulation Will Enable Nigeria's Journey to Achieving Sustainable Economic Growth and Its Proposed 2060 Net Zero Target*",* May 3, 2023.< https://ssrn.com/abstract=4436477>accessed on 15th June, 2024.
[32] *Ibid.*

include clean cooking.[33] The latest commitment is to reach net zero by 2060. The Department of Climate Change under the Federal Ministry of Environment has also released a National Climate Change Policy for Nigeria 2021 – 2030. The goal of the policy is to promote a low-carbon, climate-resilient and gender-responsive sustainable socio-economic development. Indeed, the policy is audacious in its approach and holistic in content.

The Climate Change Act 2021 is the principal legislative framework in respect of climate change in Nigeria. The Act provides a framework for achieving low greenhouse gas emissions, inclusive of green growth and sustainable economic development.[34] It established the National Council on Climate Change. The Council is vested with powers to make policies and decisions on all matters concerning climate change in Nigeria.[35] The Act also provides for the National Climate Change Action Plan which is formulated in every five-year cycle.[36] It serves as the basis for identifying the activities aimed at ensuring that the national emissions profile is consistent with the carbon budget goals. The Carbon Budget is the approved quantity of greenhouse gases emission that is acceptable over a specific time.[37] The Act places climate change obligations on private entities with 50 employees and above to put in place measures to achieve the annual carbon emission reduction targets in line with the Action Plan and shall submit annual report of such to the Secretariat of the Council.[38] In the same vein, the Council can impose obligations relating to climate change on any public entity.[39] The Climate Change Act also provides for the Climate Change Fund, which is the treasury of the sums appropriated by the National Assembly for the running of the Council. It also includes donations, grants, international funds due to Nigeria for meeting her NDCs, fines, carbon tax and emission trading.[40] It is pertinent to note that the Act failed to address the need for the government to plan for suitable low-carbon alternatives for the country. Nigerian economy is almost entirely dependent on fossil fuels, which leaves it in a highly unstable and vulnerable fiscal and macroeconomic condition with high fluctuations in global oil price connected to the global movement to the green economy and other factors driving energy demand. The Act also did not state the appropriate court to institute actions on global warming and climate change issues.

6. Climate Change Litigation

7. Climate change litigation also known as climate litigation is an emerging area of environmental law which comprises of cases before judicial and quasi-judicial bodies that involve material issues of climate change science, policy, or law[41]. Addressing the negative effects of climate change requires a multi-sectoral and multi-dimensional approach to empower and sustain community-led interventions. Climate change litigation simply refers to the use of legal frameworks and court systems to address the causes and consequences of climate change. Climate change litigation has made significant strides in Global North; however attention given to cases emanating from the Global South has been notably limited. However, it must be noted that not all climate cases seek to advance climate change; there are many recorded cases in which litigants challenge the introduction of regulations or policies that would lead to greenhouse gas emissions reductions or other 'positive' climate outcomes. There are also cases that have been filed that might not have opposition to climate action as their main

[33] *Ibid*.
[34] Section 1, Climate Change Act 2021.
[35] Section 3(1), Climate Change Act 2021.
[36] Section 20, Climate Change Act 2021.
[37] Section 35, Climate Change Act 2021.
[38] Section 24 (a)(b), Climate Change Act 2021.
[39] Section 23, Climate Change Act 2021.
[40] Part IV, Section 15 (1) a-f
[41] Joana Setzer and Catherine Higham, Global trends in climate change litigation: 2022 snapshot, June 2022.

objective, and yet may delay the implementation of climate policy responses. For example, individuals bringing rights-based climate cases might not object to climate action, but rather to the way in which such action is carried out or its impacts on the enjoyment of human rights. Climate litigation therefore encompasses both cases seeking to advance climate measures and cases aimed at delaying climate action[42]. Climate change litigation has grown exponentially in the last decade, paralleled by the emergence of a rich legal and social sciences literature assessing these cases[43]. According to the Global Climate Litigation Report 2023 Status Review by the UN Environment Programme (UNEP) and the Sabin Center for Climate Change Law at Columbia University, the total number of climate change court cases has more than doubled since 2017 and is growing worldwide. As laws relevant to climate change which create new rights and duties have grown in number and in the face of slow climate change politics delaying climate change mitigation, activists and lawyers have increased efforts to use national and international judiciary systems to advance the effort. Climate change litigation does not however negate the importance of policy and legislative measures. Rather, it can be an effective complementary tool in efforts to tackle climate change[44].

According to the Climate Change Laws of the World (CCLW) database maintained by the Grantham Research Institute on Climate Change and the Environment, there are about 2,002 ongoing or concluded cases of climate change litigation from around the world, as of May 2022. Of these, 1,426 were filed before courts in the United States, while the remaining 576 were filed before courts in 43 other countries and 15 international or regional courts and tribunals (including the courts of the European Union). Some of the notable cases include will be looked at briefly. However, it is pertinent to state that there are few cases in the Global South, as compared to the Global North this is attributed to late commencement of climate litigation cases.

In the case of *Urgenda v. Netherlands (2019)*[45], a Dutch environmental group named the Urgenda Foundation, and 900 Dutch citizens sued the Dutch government to require it to do more to prevent global climate change. The court in the Hague ordered the Dutch state to limit greenhouse gas emissions to 25% below 1990 levels by 2020, finding the government's existing pledge to reduce emissions by 17% insufficient to meet the state's fair contribution toward the UN goal of keeping global temperature increases within two degrees Celsius of pre-industrial conditions. Also in the case of *Juliana v. United States (2015)*[46], a landmark climate change lawsuit filed in 2015 by 21 young plaintiffs, including Kelsey Juliana, against the United States government. The plaintiffs, who were between the ages of 8 and 19 at the time of filing, alleged that the government had violated their constitutional rights by failing to address climate change and protect the environment for future generations. The lawsuit argued that the government's actions, such as promoting fossil fuel development and failing to reduce greenhouse gas emissions, had contributed to the worsening of climate change, which in turn had caused harm to the plaintiffs, including increased risk of health problems, displacement, and economic impacts. In 2016, the US District Court for the District of Oregon denied the government's motion to dismiss the case, allowing it to proceed to trial. However, in 2020, the Ninth Circuit Court of Appeals ruled in favor of the government, finding that the plaintiffs lacked standing to bring the lawsuit. The case has been seen as a significant example of climate activism and the use of the legal system to hold governments accountable for their actions on climate change. Although the lawsuit was ultimately unsuccessful, it has inspired similar legal efforts around the world and raised awareness about the urgent need for climate action.

[42] *Ibid*.
[43] Jacqueline Peel and Hari M. Osofsky, Climate Change Litigation, Annual Review of Law and Science, 2020 Vol. 16, October.
[44] The UN Environment Programme (UNEP) and the Sabin Center for Climate Change Law at Columbia University, The Status of Climate Change Litigation, A Global Review, May 2017.
[45] *Urgenda Foundation v. Kingdom of the Netherlands*, [2015] HAZA C/09/00456689
[46] *Juliana v. United States*, No. 6:15-CV-01517-TC, 2016 WL 6661146, at *23 (D. or. Nov. 10, 2016).

In a similar vein, in the case of *Lliuya v. RWE (2015)*[47], ***i***n November 2015, Saúl Luciano Lliuya, a Peruvian farmer who lives in Huaraz, Peru, filed claims for declaratory judgment and damages in the District Court Essen, Germany against RWE, Germany's largest electricity producer. Luciano Lliuya's suit, supported by NGO Germanwatch, alleged that RWE, having knowingly contributed to climate change by emitting substantial volumes of greenhouse gases (GHGs), bore some measure of responsibility for the melting of mountain glaciers near his town of Huaraz. Especially, as the melting gave rise to an acute threat: Palcacocha, a glacial lake located above Huaraz, has experienced substantial volumetric increase since 1975, which has dramatically accelerated from 2003 onwards. Luciano Lliuya presented several legal theories in support of his claim; including one that characterized RWE's emissions as a nuisance due to which plaintiff had incurred compensable costs to mitigate. Acknowledging that RWE was a contributor to the emissions responsible for climate change and thus for the lake's growth, Luciano Lliuya asked the court to order RWE to reimburse him for a portion of the costs that he and the Huaraz authorities are expected to incur from setting up flood protections. The share calculated amounted to 0.47% of the total cost - the same percentage as RWE's estimated contribution to global industrial greenhouse gas emissions since the beginning of industrialization (from 1751 onwards). The district court dismissed Luciano Lliuya's requests for declaratory and injunctive relief, as well as his request for damages. The court noted that it could not provide Luciano Lliuya with effective redress (Luciano Lliuya's situation would not change, the court held, even if RWE ceased emitting), and that no "linear causal chain" could be discerned amid the complex components of the causal relationship between particular greenhouse gas emissions and particular climate change impacts.

On November 30, 2017, the Appeal court – the Higher Regional Court of Hamm – recognized the complaint as well-pled and admissible, allowing the case to move into the evidentiary phase. Here, it will be determined whether Luciano Lliuya's home is: (a) threatened by flooding or mudslides as a result of the recent increase in the volume of the glacial lake located nearby, and (b) how RWE's greenhouse gas emissions contribute to that risk. The appeals court will review expert opinion on RWE's CO2 emissions, the contribution of those emissions to climate change, the resulting impact on the Palcaraju Glacier, and RWE's contributory share of responsibility for causing the resulting effects. Due to the ongoing pandemic, the on-site visit has had to be postponed several times and has yet to take place. While the facts of this case must still be adjudicated, the court's recognition that a private company could potentially be held liable for the climate change related damages of its greenhouse gas emissions marks a significant development in law.

7. Types/ Scope of Climate Change Litigation:

1. Nuisance Claims: Alleging that climate change is a public nuisance, harming public health, safety, and welfare.

2. Tortious Claims: Claim that defendants' actions (or inactions) caused harm, such as sea-level rise or extreme weather events.

3. Human Rights Claims: Arguing that climate change violates fundamental human rights, like the right to life, health, and a safe environment.

4. Environmental Claims: Focusing on violations of environmental laws and regulations.

5. Shareholder Actions: Challenging companies' failure to disclose climate-related risks or take adequate action.

6. Consumer Protection Claims: Challenging producers or manufacturers for misrepresenting information about climate impact.

[47] Lliuya v. RWE AG, Az. 2 O 285/15.

7. Constitutional Law: Focusing on breaches of constitutional rights by the state.

8. Administrative Law: Challenging the merits of administrative decision making.

8. Challenges and Limitations of Climate Change/ Climate Change Litigation

Africa which is one of the global south actors is one of the most vulnerable continents to climate change and variability[48]. Nigeria ranks as the largest emitter of greenhouse gas as of 2019, second only to South Africa on the continent.[49] Nigeria's oil and gas industry, which generates over 90% of export revenue, is a major source of greenhouse gas emissions, basically through gas flaring, resulting to climate change and global warning.[50] Global climate change litigation is a concept that has come to stay notwithstanding its novelty in most global south countries. Global climate change litigation or prospective litigants faces a number of common issues which recur in numerous jurisdictions. Some of the issues are:

1) **Legal Standing (Locus Standi)** : The legal definition of "standing," or locus standi, varies among countries, and may be more or less open or restrictive depending on which country and legal system (civil or common law) one is operating in[51]. In essence, it is a legal term that refers to the right or standing of a party to bring a lawsuit or appeal. It determines whether a party has a sufficient connection to the dispute or issue to justify their participation in the legal proceedings. In other words, legal standing is about whether a person or entity has the legal right to be heard in a court of law. The concept of locus standi is used to ensure that only those with a genuine interest in the outcome of a case can pursue legal action. Standing criteria may pose a barrier to climate change litigation. For example, it may be difficult for an individual plaintiff to establish an adequate causal connection between a defendant's allegedly unlawful actions or inaction and an injury that is linked to climate change impacts. This is a particular challenge in jurisdictions that require plaintiffs to establish a "particularized injury" for standing purposes. However, some jurisdictions allow individuals and groups to sue based on injuries that are general to the public, thus making it easier for plaintiffs to pursue climate-related claims[52].

2) **Causation**: Causation is another major challenge in climate litigation; it refers to the difficulty of establishing an unambiguous link between a specific action and event (e.g., a company's emissions) and the resulting climate change-related harm (e.g., a natural disaster or rising sea levels). Thus, it is usually difficult to show or establish the proof of resultant effects of climate change in the court of law.[53] In legal terms, causation is a crucial element in proving liability, and in climate cases, it's particularly complex due to factors like scientific uncertainty, multiple contributing factors, geographical scope e.t.c. The bone of contention is usually whether there is proof of a causal link between the defendant's action and the alleged harm. This issue cuts across the spectrum of climate change litigation, whether based in tortious, public law or international causes of action. This problem of proof faced by litigants in climate change litigation emanates from the uncertainties in relevant climate science. Most of the actions taken to address climate change are taken at the international level with less attention given to ways climate change may manifest at the local level. Thus, scientific uncertainties in the readily available evidence with respect to

[48] U Etemire, "Climate Change Litigation in Nigeria: Challenges and Opportunities", in F Sindico, M M Mbengue (eds) Comparative Climate Change Litigation: Beyond the Usual Suspects. (2021) *Ius Comparatum-Global Studies in Comparative Law*, Vol. 47

[49]Nigeria, Carbon Brief, < https://www.carbonbrief.org/the-carbon-brief-profile-nigeria. >accessed on July, 2024.

[50]M A Tigre, Climate Litigation in the Global South: Mapping Report, <https://www.scholarship.law.columbia.edu. > accessed on 17th July, 2024.

[51] Matt Handley, Why Crocodiles, Elephants, and American Citizens Should Prefer Foreign Courts: A Comparative Analysis of Standing to Sue, (2002). 21 Rev. LITIG. 97.

[52] *Ibid* (n 4)

[53] J Peel, "Issues in Climate Change Litigation", *Carbon and Climate Law Review*, (2011) Vol.5 p 162.

the local effects of global warming can be an easy defense for defendants seeking to deny that their gas emissions can be linked to specific climate change impact.[54]

3) **Political and Economic Pressure**: This poses a significant challenge to climate litigation, as powerful interests often seek to influence or undermine legal actions aimed at addressing climate change. This pressure can manifest in various ways, including: government interference, intimidation and harassment, corporate lobbying etc. On the other hand, people living in slums have been neglected and in most cases their homes demolished. The settlements are mainly built on flood paths or steep slopes, and have little or no access to basic infrastructure and services that can ameliorate the risk of climate change. Extreme levels of poverty and inequality, chronic underinvestment and limited policy to guide urbanization or respond to climate change all leave slum dwellers highly vulnerable to climate change.

4) **Environmental Degradation:** Climate change has largely affected local communities who have limited infrastructure. For example, rise in sea levels has caused flooding which has taken people's lives and forced them out of their houses. Improper handling of wastes has also resulted in the blockage of drainages ultimately leading to flooding too. Improper disposal of sewage and oil impurities results leads to pollution of natural water supply and poses significant health hazard. Drought is manifestly evident presently and lasts longer in most communities; this will affect the sources of water, such that supply may not match demand. Water scarcity leads to shortage of food and reduction in livestock.

9. Conclusion

As the world grapple with the effects of climate change, there is need for innovative, community driven approaches to be embarked upon in order to mitigate the risks. As governments all over the world intensify efforts at combating the effects of climate change, it is pertinent to state that involving all stakeholders which includes; law makers, communities, non-governmental organizations, international bodies, individuals, corporate bodies e.t.c in addressing the impact of climate change will go a long way in reducing and mitigating the activities leading to environmental changes. It is clear that the issue of climate change poses an existential threat. Having a thorough understanding of the causes and the effects can help governments of states, organizations and even individuals become aware of their role and the necessary measures to be adopted to curb the climate crisis. These measures should involve comprehensive and practical mitigation and adaptation policies and strategies. Some key recommendations to this effect include:

Recommendations

1. Transition to renewable energy: asides enhancing energy efficiency buildings transportation and industries, further attempts must be made to shift from fossil fuel to renewable energy sources such as solar, wind, hydro, and geothermal power. We have to transition as a matter of urgency to carbon – free transportation and energy systems because CO2 remains the greatest contributor to climate change

2. Improvement of carbon sequestration; Reforestation, afforestation and protection of coastal and marine ecosystems should be greatly encouraged in order that they serve as carbon sinks.

3. Climate Finance for Equitable Urban Development: Financial support should mandatorily be provided to vulnerable states such as low income communities and climate sensitive areas so they're better positioned to take actions towards tackling the issue of climate change domestically. Local communities and people living in informal settlements are the ones mostly affected by climate change. Hence, they should access a higher percentage of climate finance. This will enable them build more equitable, resilient and low-carbon cities. Thus, local communities should be empowered in terms of finance to combat climate problems.

[54] *Ibid*

4. Climate Action Litigation: With more countries setting net zero targets, the trend in adopting climate framework laws seems likely to continue. Thus, more States are likely to have their own laws regulating climate change. To this end, local communities should as a matter of urgency explore more climate action litigations in court of law. Having contributed so little to the greenhouse gas emissions causing climate change, unfortunately they are the worst affected in terms of impact.

5. Judicial Sensitization/Activism: Judges and other persons who hold judicial positions should receive training on climate science, international law, and environmental justice to enhance their understanding of climate cases and ensure informed decisions. A lot of proactive measures need to be taken by the judiciary particularly with respect to climate change related litigation globally and in global south countries. Where communities and citizens embark on climate action litigation, the court and judges should ensure that the laws are effected and punishment meted out where necessary to deter future culprits.

6. Flexibility of Procedural Rules: Courts and other judicial bodies should adopt a more flexible approach to the application of procedural rules and admission of scientific evidence so as to increase access to justice and provide better remedies to climate related harms.

7. International Collaboration and Support: Financial, legal and moral support should be provided to litigants and organizations especially in less developed jurisdictions and local communities within states. Regional collaboration and networking will also go a long way in tackling the menace. International bodies are to collaboratively work and develop methodology for effective engagement and delivery of climate action.

8. Stricter Regulation of Gas Emission: There is need to regulate particularly in developing countries strict emission standards, especially for diesel vehicles. Heavy sanctions and penalties must be meted out to those who go against the dictates of the law.

9. Climate Change Legal Regulation: Climate change laws must be enacted by States to address climate change issues. The climate framework has to be robust and should contain mechanism for public participation and feedback from the people while it's been enacted. A regulatory body must also be established to see to the enforcement of the provisions of the Act. Global South actors should be encouraged to adopt international treaties on climate change and see to the enforcement of the letters and intendment of the treaties.

10. Advocacy and Sensitization Programmes on Climate Change: There should be more awareness programmes in the local communities concerning climate emergency and actions that individuals or groups can undertake to mitigate the increase of climate change effects in their immediate environment. People should be knowledgeable about scientific grounding of climate change including global warming, greenhouse gases and its resultant effects. This is tantamount to pairing action with awareness.

11. Encourage cleaner household cooking stoves in communities. Also the use of paper bags and packaging items that are environmentally friendly should be encouraged and enforced.

12. Improved sanitation, building of drainages, unblocked flood path ways, adequate waste management and recycling.

13. Non-governmental Organizations: More non-governmental organizations, civil society and support groups should be encouraged to develop climate action projects, workshops and proffer climate change solutions to local communities.