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RESEARCH ARTICLE

A Facile Review on the Legal Issues and Challenges Concerning the Conservation and Preservation of Biodiversity

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Abstract

The defective environmental changes caused by climate change have a drastic harmful effect on natural habitats and species. This is concerning the fact that there are signs that the increase in the intensity of temperature often has (caused by human activities) an effect on biodiversity. However, the threat posed by climate change to biodiversity is expected to increase, given the harmful human activities. The scientist has identified that if the present rates of global warming continue by 2030, it will result in a significant detrimental impact on biodiversity. In this regard, this study adopts a doctrinal method of study in examining the current causes of climate change, the effect of climate change on biodiversity, and several global legal frameworks concerning the preservation and conservation of biodiversity. The study also detailed the lacuna inherent in the conservation and preservation of biodiversity, and possible legal and scientific method for revamping biodiversity. The study further concluded and recommended that adopting this possible solution it will curtail harmful human activities that often cause climate change that negatively affect biodiversity.

Keywords: Climatic Change; Biodiversity; Legal; Framework; Environmental

Introduction

Preservation and conservation of biodiversity are fundamental for the sustainable relationship between man and it environment. The uniqueness of this relationship is well articulated in various legal frameworks on biodiversity conservation. Various studies have shown that the well-being and economic prosperity of all people depend largely on man's harmonious living with Mother Earth. That is because, we depend on the earth for our basic and non-basic needs for daily survival including food, medicine, recreation, water, air, security, etc. (United Nations, 2022). Given the vast benefits derived from the richness of the environment, it is only natural for stakeholders within and across state lines to form an alliance in other tackle the continued loss of biodiversity and the threat it poses to nature and human well-being. There is ample scientific evidence that biodiversity is fast dissipating at an unprecedented rate in human history (IPBES, 2019). In this regard, several global frameworks have been formulated and adopted to address this menace. Starting from the Rio Earth Summit of 1992 to the "Kunming-Montreal Global Biodiversity Framework of 2022, all of which are aimed at arresting the ongoing loss of biodiversity. Most conservation techniques take into consideration, science, economics, religion, and law.

However, this study tends to focus on the legal aspect of biological conservation.

Before 1950, no legal attention was given to pollution and ecological issues (Ukhurebor and Aidonojie, 2021; Aidonojie et al., 2020). This is concerning that before 1950, just a few bilateral and multilateral agreements tend to regulate international environmental issues (Ijaiya et al, 2018; Dzidzornu, 2004). Most of the international agreements in the operation focused more on unrestrained and controlled national sovereignty over natural resources (Aidonojie et al, 2022; Riget et al. 2016). Furthermore, these international environmental agreements also regulate ecological issues related to boundary waters, navigation, and the rights to fishing along shared waterways (Aidonojie et al, 2022; Ladychenko et al., 2020). In this regard, it suffices to state that no international legal framework concerning the conservation of climate earth and its biodiversity from any form of harmful human activities that may cause depletion of the ozone layer. In this regard, human activities that could be harmful to the environment were unchecked, leading to climate change, and drastically affecting the conservation of biodiversity.

However, the incessant climate change and depletion of the ozone layer, resulting from global industrial stride and the indiscriminate exploitation of biodiversity, has led to the deterioration of climate earth biodiversity (Cifci and Oliver, 2018). In this regard, to curtail harmful human activities, several international laws from 1950 till date have been agreed upon and adopted by several nations that make up the international community to ensure the conservation and preservation of climate earth biodiversity from harmful human activities (Charney, 1995).

Although, it suffices to state that introducing an international environmental legal framework concerning the preservation of climate earth and its biodiversity is one of the greatest achievements of the international community (Megan et al. 2020; Aidonojie, 2023; Anani et al. 2022). However, it has been observed that although several international environmental legal frameworks tend to provide for the preservation and conservation of biodiversity. Unfortunately, there is still a high rate of emission of Methane (CH4), water vapour (H_20), Nitrous Oxide (N_20), and Carbon dioxide ($C0_2$) as stipulated in the various international legal frameworks Auta et al., 2017; Aidonoie et al., 2022). Furthermore, there has been a deterioration of biodiversity across the global environment resulting from harmful human activities. However, this continuous environmental hazard affecting biodiversity stems from the fact that most member states have a poor commitment to the agreement as it contains various international ecological legal frameworks (Max et al, 2017).

It is concerning the above that this study tends to embark on a study concerning the current trending of the causes of climate change and the effect of climate change on biodiversity. Also, the study will also examine the legal framework as a panacea concerning the preservation and conservation of biodiversity. Furthermore, the study will also identify the challenges inherent in the legal framework preservation and conservation of biodiversity and the way forward of revamping the legal framework concerning the preservation and conservation of biodiversity.

Literature Review

The term conservation may mean to carefully preserve and protect something from loss, decay, or destruction. In this context, it may be referred to as the official supervision of rivers, forests, and other natural resources in other to preserve and protect them through prudent management. Conservation may also be considered as the act of protecting Earth's natural resources including air, water, soil, and wildlife in a manner that may be useful for present and future generations. This process may entail maintaining the diversity of species, genes, and ecosystems. The distinction between the term "conservation" and "preservation" is somewhat unclear as the use of these terms has varied over time. For convenience, some scholars, however, used them interchangeably this is because both terms are similar to the extent that they tend to achieve the goal of protecting biodiversity. However, technically speaking, conservation and preservation are different. This is evident from the method and technique they apply to achieve the same purpose.

Conservationist seeks to protect the environment through the responsible use of natural resources. On the other hand, preservation seeks to protect the environment from harmful human activities, at the extreme, preservation proposes the prohibition of man from using the environment as a remedy to extinction and climate change. It is unthinkable for humans not to use natural resources. The reason is that life on Earth is sustainable through its usage. The goal of the relevant legal framework on biodiversity protection has been on

conservation rather than preservation in its technical sense (Santiago-Avila, Treves, & Lynn, 2019). This is because with or without man's intervention the loss, erosion, and extinction of biodiversity are inevitable. Thus, a relevant strategy has been adaptation and mitigation. Adaptation measures are necessary to curb the shortcoming of many stakeholders to curb their GHG emissions as required by various international, regional, and local legal frameworks (Spier,2019).

No meaningful discussion on conservation can be made without first recourse to Rio de Janeiro Earth Summit. Rio Summit laid down the foundation for global commitment toward environmental protection. It was at this event that world leaders under the auspices of the United Nations formally made the needed commitment to the protection of the environment while pursuing economic development. A major feature or fallout of this event was the signing of the Biodiversity Treaty. Rio Summit suffered a setback because of the failure of member nations to make full commitments. Especially, from the countries in the global North. Again, it should be recalled that the requirement of member nations to take inventories of wild animals, plants, and all endangered species.

The Convention on Biodiversity (CBD) at Rio has been supplemented by Cartagena, Nagoya Protocol as well as the recent Kummin-Montreal global biodiversity framework (GBF). According to Steinhauser, et al (2022), the major thrust of this Framework target is to reverse the loss of biological diversity, ensuring sustainable use of its component, and the fair and equitable sharing of benefits arising out of the utilization of genetic resources. The introduction of GBF is meant to strengthen and maintain balance in the protection of the environment through the integration of its objective with the provisions of the Convention on Biological Diversity, the Cartegena Protocol on biosafety, and the Nagoya Protocol on access and benefit-sharing more efficiently and effectively. A major challenge in this Framework may arise concerning the financial requirement of developing countries. As emphasized by Rampheri, et, (2022) they stated that the challenge is that most developing countries do not have enough finances to tackle such issues, and many grappling with development needs so adequately face the required conservation needs.

However, policymakers believe that protecting the human right to a clean, healthy, and sustainable environment, in line with the 1986 United Nations Declaration on the Right to Development is at the heart of full and better implementation. Meanwhile, other scholars such as Kanu (2022) posit that preservation of the environment is possible, through the conceptualization of nature as a mother, source of life, and nourisher. The concept of motherhood brings to bear other virtue such as respect, love, and care which may help in strengthening or promoting a good environment.

In the case of Nigeria, the most recent attempt to conserve the environment has been toward reducing the amount of carbon emission in the atmosphere through a national legislative framework for the mainstreaming of climate change actions. The Act shows Nigeria's commitment to the global agenda of environmental sustainability. Nigeria is also a signatory to the United Nations Framework Convention on Climate Change (1992) and its associated Kyoto Protocol (1997). The country, following the agreement of COP26, has enacted the Climate Change Act 2021. In summary, the Act seeks to provide a framework for achieving low greenhouse emissions (GHG), inclusive green growth and sustainable economic development, and a climate-resilient society. One of the major goals of this enactment is to formulate programs for climate change mitigation and adaptation. In the world of environmental protection and sustainability, adaptation, and mitigation are complementary strategies, which virtually all nations within the global terrain (Spier,2019).

Methodology

Given the rate of climate change and its effect on biodiversity, this study tends to examine the current impact and challenges of climate change on biodiversity and the various international regulatory frameworks concerning climate change and the preservation of biodiversity. In this regard, the study adopts or uses a doctrinal research method. The essence of adopting a doctrinal research method is to examine various primary international legal frameworks that regulate how man relates to his environment in curtailing the drastic effect of the harsh climate change. Further, a doctrinal method was adopted or used to examine some international laws concerning the preservation and conservation of biodiversity. However, the doctrinal research method was also adopted in examining various scholarly literature in journal articles, online sources, and textbooks to enable the researcher to critically analyse and review the current trending and effect of climate change on biodiversity. The

essence of the analysis of the scholarly literature is to reveal the fact that there is a need to revamp the various legal frameworks as a panacea in the conservation and preservation of biodiversity from the harsh effect of climatic change.

Result and Discussion

Current Trending of the Causes of Climate Change

The consensus among scientists and researchers is that climate change is caused by the emission of greenhouse gases (GHG) such as water vapour (H_20), Methane (CH4), Carbon dioxide ($C0_2$), and Nitrous Oxide (N_20) into the atmosphere (Zahir, et al. 2021; Aidonojie et al., 2022). These gases can absorb ultraviolet radiation coming to the earth from the solar system, which ordinarily ought to exit outer space but is trapped in the atmosphere. A high concentration of these gases in the atmosphere triggers the problem of global warming (known as the greenhouse effect.)

Anthropogenic activities and natural factors have been identified as the two driving contributors (forcings) to GHG emissions. Unfortunately, a significant amount of the gases has been released daily by human-related activities since industrial development (Kamshat et al., 2020). According to Ahad et al. (2017), the release of GHG by human activities is partly responsible for the increase in the global atmospheric temperature since the mid-20th century.

Global warming is the factual expression of climate change due to too much concentration of GHG in the atmosphere. Greenhouse gases usually act as a blanket or shield trapping heat generated from fossil fuel combustion within the earth, thus, preventing the release of these harmful gases into_space, leading to an abnormal rise in the heat level in the earth. Fabio et al. (2021) noted that $C0_2$ and CH4 play the most active role in global warming. However, Alejandro et al., (2017) in their study, observe that CO_2 alone contributes about 75% of the total greenhouse gases released worldwide. A similar review of atmospheric activities between 1970-2010 reveals that $C0_2$ by anthropogenic processes contributed approximately 78% of the total greenhouse gases.

Reports by several agencies such as the America Chemical Society (ACS), the America Association for the Advancement of Science (AAAS), and other empirical research published in scientific journals reveal that Anthropogenic activities such as the burning of fossil fuel (E.g., gas, and coal.), deforestation for farming purposes, and other agricultural related activities, play a key role in the total emission of greenhouse gases. In their study, humans' quest for civilization and economic prosperity contributes significantly to GHG emissions into the atmosphere. The ACS, while acknowledging human influence on the changing world climate weather condition, noted that the change in earth's weather conditions is a direct response to the ever-increasing concentration of greenhouse gases in the atmosphere introduced by man with negative implications for the ecosystem (Andrii et al., 2019; Majekudumi et al., 2022). Similarly, the Intergovernmental Panel Assessment Report on Climate Change (IPCC) under the sponsorship of the United Nations, after a period of assessment and evaluation of scientific literature, came to the same conclusion in its Fifth Assessment Report (AR5). IPCC is a team of an expert on climate issues drawn from all over the world by the United Nations to provide a scientific explanation of the ongoing change in the global weather condition, to identify its potential consequences to the environment and the socioeconomic activities of humans to proffer a scientific solution(mitigation) through the adoption of policies and deployment of effective technologies (Robert et al., 2022) In its AR5 of 2014, human input contributed to the rise in atmospheric temperature especially the through the emission of CO_2 in manufacturing plants, and vehicular activities. This is traced to the emergence of the industrial revolution.

Consequently, greenhouse gas emissions into the atmosphere have increased tremendously, particularly due to industrial growth in the world population. According to this group of scientists, there is an undeniable connection between industrialization and human civilization. However, the report concluded that there is a very high probability that the release of GHG through human-related activities is the most dominant driver of the increase in the earth's surface temperature from 1951-2010, coupled with other anthropogenic forcing acting together. (Marcelo et al, 2018; Aidonojie et al, 2022).

From the preceding analysis, it goes without saying that among the two drivers mentioned earlier, human-induced greenhouse emissions have the most profound impact on ozone layer depletion and the notorious greenhouse effect compared with natural processes. Essentially, nature's contribution to the release of greenhouse gases, according to Gupta and Pennan (2022) occurs predominantly during a volcanic eruption, in which CO_2 is released into the atmosphere. However, the amount of C02 released during this period of volcanic activity is small concerning the

amount emitted by human activities. In addition, the variation in solar radiation, changes in the earth's orbital activities, and rotation around the sun are other natural processes that contribute to climate change.

The Effect of climate change on Biodiversity

Several studies have sought to give a pragmatic explanation with empirical certainty, the apocalyptic effect of climate change on biodiversity as a result of extreme weathers events culminating in the loss of natural habitat for various terrestrial and aquatic species, depletion of the world population through death triggered by heatwaves, storms, drought, cyclone, harmattan, and floods. The effect brought by the change in climatic composition, no doubt, is staggering. Notably, the most affected component of the ecosystem is the alteration of the structure of the natural habitat for diverse species.

As a result of a change in the average weather condition, extreme events have progressively impacted biodiversity globally. While the effect may differ across continental lines, the general effect is that it alters the ecosystem and exposes the species to hazards. Due to the disproportionate annual rainfall, intense flood, and wide fire in the ecosystem, many biological species have been forced to relocate and secure an adaptable environment for their continuous existence. While unable to safely migrate to a new geographical location, they will have to exit the lifecycle, thus, shrinking the already depleted population of the species. The gradual extinction of some endangered species is more worrisome, mainly in the Savannah or African region.

Water supply and controlled temperature are the two components necessary for the survival of plants and animals. However, the shortage of water supply (its pollution) and the increasing atmospheric temperature are the major characteristics of global climate change, which can affect the continued existence of these species in the ecosystem. Also, the abnormal rise in heat levels will affect agricultural practices. Indeed, agricultural activities have been severely affected by the intensity and frequency of rainfall throughout the year, affecting productivity. In the same vein, the dropping of acid rain in some climes is known to have a destructive effect on farm products. This also has a catastrophic impact on global food security (Marcelo et al, 2018). It should be noted that environmental disruption is not new to our ecosystem. However, the current climate change has the potential to endanger all species found in both aquatic and terrestrial environments, including man.

The adaptation in the species transformation in the new environment only plays a minimal role in its survival (Robert et al., 2022). Furthermore, he observes that the behavioral, morphological, and Physiological modification of species is most times the direct response to the change in climate conditions. For example, he said painted turtles grew larger in warmer years and attained sexual maturity faster during warm seasons.

Many nations depend on the interactions within and around the aquatic environment. However, with the rise in sea temperature coupled with the shrinking of the glacial, activities in aquatic habitats have dwindled. Considerable evidence has shown that ice will continue to melt, the ocean will rise, and the human mortality rate will increase due to the rise in air and water pollution. Also, for instance, in Bangladesh, it was observed that the problem of an outbreak of cholera was high due to the abnormality in the frequency of rainfall. The same is predicted for other developing countries with poor water and sewage infrastructures. Aside from these social factors, global warming has been detected to impact the spread of infectious diseases depending on the countries' socioeconomic conditions (Abejon and Garea, 2015).

Speaking on the impact of climate change on the world's ecosystem, Endre Ivinnereim (Augustine, 2021) rightly stated that climate change is a problem with global consequences. According to him, the consequence of global warming can not be fenced off but may be mitigated. This explains the collective responsibility approach by international policymakers like the United Nations. By mitigation, we mean the human strategy or activities employed to reduce the human-induced emission of greenhouse gases into the atmosphere by national governments, companies, and more recently by an individual with appreciable knowledge of the impact of climate change on biodiversity. For instance, Greta Thunberg, the young environmental activist, became famous after her protest at the Swedish parliament in 2018. Since then, her campaigns brought other teenagers and college students like herself from European nations and some Asian countries to the awareness of the devasting impact of global warming.

A fallout of this collective responsibility by the international community is driven by the desire to reduce the anthropogenic emission of GHG through active implementations of policies, agreements, and protocols. For instance, the United Nations Framework Convention

on Climate Change (UNFCCC) is believed to be the first and major international treaty addressing the emission of GHG and its associated Kyoto Protocol (1997). However, relevant stakeholders and observers have heavily criticized these regimes for lacking the necessary 'binding' ingredient for proper implementation needed to flatten the curve and prevent further deterioration of biodiversity in the ecosystem. However, a significant portion of EU countries having the foresight of the impact of global warming on natural habitats have taken the initiative to limit industrial emission of GHG within their jurisdiction despite the nonbinding nature of these international treaties/agreements.

It is indisputable that 'we,' including the biological species, are most vulnerable to climate change. Evidence shows that several biological species which are unable to adapt have gone into extinction. Global warming is a precarious phenomenon introduced by man and has an irreversible consequences if proactive steps are not taken. This truth was rightly emphasized by Antonio Guterres, the United Nations Secretary-General. In his opening remarks at the Katowice Climate Change Conference (COP 24) in 2018, when he said "We are in trouble" In a rather apologetic appeal for urgent action, he added, "We are in deep trouble with climate change." In his speech, he noted that the concentration of $C0_2$ in the atmosphere was the highest in 3 million years and still growing.

The Legal Challenges Concerning Preservation and Conservation of Biodiversity

Given the causes and effects of climate change on biodiversity, it suffices to state that the international community has through various methods and legal frameworks curtail some of these challenges in mitigating the conservation of biodiversity. However, despite the efforts of the international community to preserve and conserve biodiversity, there are still major challenges mitigating the smooth operation of the international community in preserving and conserving biodiversity. Some of these challenges are examined as follows;

Poor Level of Implementation and Enforcement

However, it is also relevant to note that some member states, such as some developed and developing member states who are the signatory to most international treaties, conventions, and protocols, have refused to accede or comply with the directive in most relevant international law environmental regulatory framework concerning biodiversity. This is concerning the fact that there are poor enforcement methods and implementation of the concerned international treaties. For example, most developed and developing countries have refused to commit themselves to reduce the emission of Methane (CH4), Carbon dioxide (C02), and Nitrous Oxide (N20), undue exploitation of the environment as stipulated by the various global environmental legal framework. However, despite this violation by members state, there are no strict penalties or deterrents from refusing to commit themselves to preserving and conserving the climate of Earth, which will protect and conserve biodiversity. Currently, the hash and drastic climate change affecting biodiversity and climate earth is a pointer to the fact that most countries are still carrying out harmful activities that are detrimental to biodiversity and climate earth.

Furthermore, it also suffices to state that most conventions or treaties concerning the preservation and conservation of biodiversity often rest the responsibility of enforcement and implementation on member states. For example, the Convention on International Trade in Endangered Species of Wild Fauna and Flora tends to place restrictions on preserving and conserving them against indiscriminate harvesting and use without due permission from the appropriate body (that is, members' state). This concerns that Articles III, IV, and V of the Convention on International Trade in Endangered Species of Wild Fauna and Flora protect endangered species from indiscriminate exploitation. The provision stipulates that member states must have prior approval in importing or exporting any wild fauna and flora red-listed in appendix I, II, and III of the convention. Furthermore, Article VIII of the Convention Concerning Trade in Endangered Species of Wild Fauna and Flora empowers contracting states that where there is a violation of the convention, an appropriate measure in enforcing the provision of the convention.

Given the above, it suffices to state that giving members state the sole responsibility in implementing and enforcing issues as it affects the global environment may be detrimental and lead to inadequate implementation and enforcement. This is concerning the fact that most members state may not have the capacity to ensure sue implementation and enforcement like an international institution or body.

Inadequate or lack of Commitment by Members State

Concerning this study, it has been identified that several international environmental legal frameworks tend to provide for the preservation and conservation of biodiversity. However, irrespective of the above relevant legal framework concerning biodiversity, it suffices to state that one of the challenges mitigating the preservation and conservation of biodiversity could stem from the fact that there are poor or low levels of commitment by most member state in acceding to the agreement as contained in the various international environmental treaties. For example, in 1997, nations had to come together during the Kyoto Protocol to proffer an enabling solution in curtailing, reducing, and mitigating the level of industrial activities that release gasses that cause global warming. In this regard, the Kyoto Protocol was adopted due to the drastic emission or release of greenhouse gasses concentration in the atmosphere, thereby causing climate change and global warming, which had most of its challenges with member states committing themself to the protocol. This is concerning the fact that nations such as USA and China withdrew their membership. Given that the USA and China withdrew their commitment to the protocol in 2012, Canada also withdrew from the summit. Their withdrawal is because the biggest two emitters (China and the USA) are not part of the protocol agreement. Furthermore, given the fact that it will amount to the Canadians to reduce their industrialization and employment opportunity drastically. According to the Canadian environment minister, he said

> "The Kyoto Protocol does not cover the world's largest two emitters, the United States and China, and therefore cannot work," Kent said. "It's now clear that Kyoto is not the path forward to a global solution to climate change. If anything, it's an impediment." signing Kyoto was one of the previous government's biggest blunders, allowing us to continue creating jobs and growth in Canada.

This is concerning the fact that, if members state has effectively complied with the directive as regards, the reduction of emission of water vapour (H_20), Methane (CH4), Carbon dioxide ($C0_2$), and Nitrous Oxide (N_20), reduction of bush burning as stipulated in global environmental treaties and convention, the level of drastic climate change affecting biodiversity would have been curtailed or minimize. However, the current report has shown that climate Earth is still severely undergoing global warming and climate change, owing to harmful activities of man that are catastrophic to climate Earth.

National Legislation Constrain in Implementing International Treaties

Although most nations have seen the need to form an international institution in resolving issues that tend to have an international flavor. However, the various international laws that have been enacted recognize the fact that members state still possess sovereign power within their society or state. They are exercised and realized in distinct ways. In this regard, virtually all countries' constitution provides for their sovereignty and supremacy of their contents. Therefore, any law inconsistent with the said provision or content of the constitution will be declared null and void. Concerning this, it suffices to state that, in most developing countries, their constitution places restrictions or constrains concerning the recognition and enforcement of international treaties, conventions, and protocols. For example, in Nigeria, virtually all international treaties, conventions, and protocols are not enforceable by section 12 (1) of the Nigeria Constitution, except such international instruments have been domesticated by the National Assembly. Section 12(1) of the Nigeria Constitution provides thus;

> No treaty between the Federation and any other country shall have the force of law to the extent to which any such treaty has been enacted into law by the National Assembly.

This position of the Nigeria constitution has been aptly given judicial recognition in the case of *Abacha V. Fawehinmi (2000) 6 NWLR (PT. 660) P. 228 at 228*, where Ogundare JSC held that before an international treaty becomes binding and enforceable in Nigeria, such treaty must be enacted into law by the National Assembly. Also, in the case of *Mhwun V. Minister of Health & Productivity & Ors (2005) 17 NWLR PT. 953, P. 120*, the court held that the provisions of an International Labour Convention could not be invoked and enforced by Nigeria court unless an Act of National Assembly has domesticated it.

The above provision of the Nigerian constitution serves as a constraint and restriction on the international

environmental legal framework concerning the preservation and conservation of biodiversity within the Nigerian territory.

Poverty and Poor Level of Technological Development in most Developing countries

Given the level of poverty and slow pace of technological development in most developing states or countries, it may also serve as a challenge in ensuring the effective preservation and conservation of biodiversity. This is concerning the fact that these developing countries may not have the capacity to adapt or adopt sophisticated technology or scientific method that could preserve and conserve biodiversity. In this regard, given the poor level of their economy and technological development of most developing countries, it may lead to such countries engaging in some industrial activities that could be harmful to biodiversity.

The Possible Ways of Revamping the Conservation and Preservation of Biodiversity

Varied predictions on the effect of climate change on the natural system indicate that delay in mitigation may cause irreversible consequences on the ecosystem. In this regard, the timely intervention, the environment, and diverse species (plants and animals) in the ecosystem may be conserved or salvaged from the brink of extinction.

Given the above, it suffices to state that the following mitigating measure that could revamp and complement the available international environmental legal framework should be considered if the ecosystem will be preserved.

a. Role of the Government of Signatory States in the Conservation of Biodiversity

The essence of the calls for sustainable development that ensures the effective preservation of biodiversity by the international community through the relevant legal framework is very pertinent to the existence of man and its environment. However, the protection of and conservation of biodiversity cannot be fully realized without the stake input of signatories' states in their respective domains. This is concerning the fact that the aim and essence of the relevant international legal framework that tends to preserve and conserve biodiversity will only have a better effect of implementation if, at the local level, there are legal frameworks that provide for the preservation and conservation of biodiversity within their territory. In this regard, it suffices to state that the government of all signatories should, through national environmental legislation, replicate most of the provisions of the international ecological legal framework that curtails the ongoing activities (such as the emission of Methane (CH4), Carbon dioxide (C02) and Nitrous Oxide(N20), undue exploitation of the environment and bush burning) that destroy biodiversity. Furthermore, states party must go through administrative measures to take proactive preventive and protective measures concerning the preservation and conservation of biodiversity. Some of these administrative measures that could be adopted in ensuring the preservation and conservation of the marine environment;

i. Setting up a task force to curtail incessant and indiscriminate exploitation of biodiversity and curtailment of bush burning
ii. Declaring specific days for environmental sanitation
iii. Setting up a mobile court to summary try individuals violating or refusing to adhere to environmental sanitation that seeks to curtail minor pollution within their environment

However, irrespective of the above, the government of the signatory state should endeavor to create a Lilly way for effecting and implementing an international environmental legal framework concerning biodiversity. In this regard, there should not be any national or state constitutional and legal restrain restricting the international community from effectively implementing the relevant international environmental legal framework concerning biodiversity within members or signatory states. Furthermore, given the global-scale impact of climate change, collective international policies are needed to utilize regional support effectively.

b. Adopting a New Scientific method that compliments Relevant International Legal Framework on Biodiversity

The need to develop international and states environmental law was triggered and necessitated by the need to protect life and preserve the ecosystem from hazardous substances that may be very harmful and result in the pollution of the environment. However, it suffices also to state that the introduction of hazardous substances to the environment that results in the depletion of the ozone layer is mainly a result of the harmful industrial

activities of humans arising from exploiting natural resources of climate Earth. Therefore, given the harmful activities of human industrial activities, it has degenerated into an environmental problem such as pollution of the environment, deforestation, desertification, acid rain, the destruction of the ozone layer, and climate change.

It concerns the above that a scientific researcher has scientifically driven them in inventing scientific methods to preserve and conserve climate earth, which will ensure the conservation of biodiversity. It must be noted that one such scientific method that has been adopted is Nanobiosensor. According to scientific study, nanobiosensor has been scientifically proven to be relevant in various scientific research. This is concerning the fact that the introduction of the scientific concept of nanobiosensor for environmental monitoring is aimed at ensuring prevention and control of the introduction of hazardous substances or constituents that may contaminate or pollute the environment (Vincent et al., 2015).

Furthermore, another scientific discovery that could also be relevant in conserving and preserving biodiversity is nanotechnology. According to a scientific study, nanotechnology involves the designing and making use of devices and systems ranging from 1-100 nm scale (Fei Ma and Chun-yang, 2018). The relevance and essence of utilising nanotechnology are based on the sensing and detection of harmful substances that could cause pollution. In this regard, the use of nanotechnology involves the use of nonmaterial in detecting pollutants and hazardous substances (Nafiseh et al., 2016).

Given the above, it suffices to state that given the relevance of current scientific discovery (such as the nanobiosensor and nanotechnology that complement and strengthen the already existing international environmental legal framework for conservation and preservation of the environment) as relating to scientific preservation of the environment, such scientific measure should be adopted to complement the implementation of the current international legal framework as it relates to the preservation of biodiversity.

c. Strict Sanctioning Erring Countries or States Violating International Legal Framework on Biodiversity

However, despite this violation by members' states, there are no strict penalties or deterrents from refusing to commit themselves to preserve and conserving climate earth, preserving and conserving biodiversity. It suffices to state that most developed and developing countries have refused to commit themselves to reduce the emission of Methane (CH4), Carbon dioxide (C02), and Nitrous Oxide(N20). Furthermore, it was also observed that the continuous and undue exploitation of resources within the environment is prohibited by the various global environmental legal frameworks. This is concerning the fact that the current hash and drastic climate change affecting biodiversity and climate earth is a pointer to the fact that most countries are still carrying out harmful activities that are detrimental to biodiversity and climate earth. In this regard, the international community must, via the relevant international legal framework and various mechanisms, ensure strict compliance of members' state of the various scheme stipulated in an environmental legal framework to ensure proactive conservation and preservation of biodiversity. Furthermore, it is also required that the International Court of Justice should be given adequate judicial power concerning erring states whose activities tend to pose a threat to climate earth

d. Re-engineering the polluters-pay principle with strict liability

It suffices to state that the need for the protection of climate earth biodiversity should not only be statutorily recognized. Rather there should be an imposition of strict liability where polluters are strictly held responsible for any of their actions that threaten the biodiversity of their neighboring state or within the international community. These principles of polluters pay have been aptly observed by the court in Trailsmelter Case (Xingang et al., 2022). The principles seem to have been adopted in several cases in the past, such as the Netherland Case that occurred in 2008. In the Netherlands case, four Nigerian farmers and with some relevant stakeholders of the international community known as Friends of the Earth filed a lawsuit concerning Shell Company oil spillages in three villages in Nigeria. In deciding on the lawsuit, the Dutch Court issued a decision compelling Shell Company to pay compensation to the farmers and ensure clean-up of the affected community. Furthermore, in the lawsuit of *United States of America V. Shell Offshore Inc. and Shell Exploration and Producing Company*, Shell Company was ordered by the court to pay Forty-Nine million dollars ($49,000,000) for engaging in an unauthorized gas flaring. The above represents the practice of polluters pays principles in the past; however, there seems to be a

lack or inadequate use of the polluters pay principles against those whose activities endanger the climatic biodiversity. Hence, it is required that the international community ensure that the polluter's pay principles are incorporated into international treaties and conventions and ensure effective enforcement and compliance of the polluter pay principles.

e. Mitigate Greenhouse Gases Emission (Decarbonization)

Having noted that the most dominant GHG emitted daily by human activities is Co2, and the same is released during fossil fuel combustion, a drastic reduction is required to keep the earth at a low temperature. Adopting friendly environmental technologies is key. Such mitigation procedure is in line with Article 2 of the UNFCCC.

f. Reforestation and Effective Forest Management

The farm practice of deforestation should be discouraged. Deforestation contributes significantly to the emission of co2. According to Anuradha et al., deforestation contributes approximately a quarter of the increase in the level of co2 in the atmosphere. Thus, reforestation may be a viable option for restoring the needed balance in the ecosystem. It should be noted that in the event of wildfires occasioned by climate change, there is usually a structural imbalance for most organisms in the forest. The herbivorous habitat is primarily affected, leading to shifting geographical locations with attendant hazards to predators along the way. To curtail this climate change, as an alternative to reforestation, Anuradha et al. recommended that forest management practices be implemented to enable the forest to cope with forest disturbances under climate.

g. Encourage the Use of Renewable Energy

The fact that a large percent of the world population still depends on fossil fuels for energy is evident in the ever-global increase in temperature. However, many nations and multinational companies have started investing in alternative energy sources (wind and solar). Renewable energy help to reduce the amount of pollution in fresh water and the marine environment. For instance, many regions rich in biodiversity and marine life have been negatively affected during explorative activities for mineral resources.

Conclusion

This study has identified that climate change and global warming arising from harmful human activities pose a great danger to climate earth's biodiversity. The study also observed that the conservation and preservation of climate earth biodiversity is a key and a central focal concern of the international community. This is concerning the fact that several international environmental laws concerning the preservation and conservation of climate earth biodiversity have been agreed on and adopted by members of the international community.

However, the study further identifies that despite the various international environmental legal frameworks concerning the preservation of climate earth biodiversity from harmful human activities. There is still an increased rate of deterioration of climate earth biodiversity arising from the detrimental activities of humans. The reason for the current increase rate of climate earth biodiversity stems from various reason which has been identified in this study above. Hence, concerning these challenges, the study tends to identify some probable solutions in revamping the international environmental legal framework concerning the preservation of biodiversity as follows;

i. The government of signatory states to international environmental treaties, conventions, and protocols in biodiversity conservation must ensure they commit themselves to their role as stipulated in the various international environmental legal frameworks.
ii. There is a need to adopt a new scientific method that compliments relevant international legal frameworks on preserving biodiversity.
iii. The international community must adopt a strict sanctioning method against erring countries or states violating biodiversity's global environmental legal framework.
iv. The international community should re-engineer the polluters-pay principle with strict liability against erring states whose activities threaten their neighboring state.

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