

Research article

Environmental Diplomacy: Examining Multilateral Framework Effectiveness in Promoting Proactive Climate Change Response

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Abstract

Climate change is one of the greatest threats of any generation, it is a global issue that needs to be addressed through proper climate diplomacy. Thus, diplomacy is very important in this regard to tackling the worldwide difficulties presented by climate change and generates a system that combines most of the governments regardless of their size and location to cooperate, discuss and find an optimum solution. States must build internal capacities for successful climate diplomacy, as it has become a primary foreign policy instrument in the international climate regime, although many major states contribute it to climate diplomacy, such as the European union, China and the united states, yet there are many obstacles and challenges, In addition to other states from different continent such as Africa and Asia, lacks participating in global climate politics due to environmental degradation and lack of preparedness, Hence, the core of the research problem is located in the conflict of interests between the need to address the climate change issue with the collective effort and promotion of national interests by states. The study uses a qualitative framework that specially makes use of document analysis as the main approach of data collecting and policy analysis as the method data analysis with the focus on case studies. Furthermore, the purpose of the research is to analyse the potential and the flaws of climate diplomacy as the means of tackling various aspects of climate change crisis. And assess the role of the existing multilateral climate diplomacy frameworks such as the united nation framework convention on climate change and Paris Agreement in fostering collective efforts and progress towards emission cuts and development of climate resilience.

Keywords: Climate change, Climate Diplomacy, Multilateralism, International Cooperation, Climate policy, Environmental Diplomacy

1. Introduction/Background

One of the most significant issues to be faced in the 21st century is climate change due to the evidence nature has shown toward its impacts and what causes it. Environmental crisis began to be pointed out at dawn of time by most forceful and dramatic events. Therefore, the topic has always attracted attention from the media throughout the year. On the list, there are such important phenomena as the mass pollution of water, land, and air; unusually fast climate changes, such as global warming and elevation of mean temperature; increasingly growing drought and desertification; melting of the polar ice at a much faster pace, which threatens to flood the ocean level; more frequent hurricanes and floods; extreme cold waves and heavy snowfalls; ongoing exhaustion of non-renewable resources; an increase in water absence on the planet; a continued loss of forests; lands removed from agriculture; animals and plants are

becoming extinct by an enormous factor; and an increase in the inflow of environmentally influenced migration. Moreover, industrial and nuclear disasters also contribute to these disasters sometimes. Hence, this is a new and growing concern worldwide that consensus and commitment for an action necessitate putting climate change in an overseas policy perspective. First and foremost, objective of conventional foreign policy is to maintain and achieve stability and security without which human well-being, international concord, freedom and prosperity cannot exist. Against global threats, such as climatic changes, in an ever more connected world, traditional tools of diplomacy alone are no longer able to do much. In such problems, established alliances and procedures struggle to be effective because greenhouse gas emissions have no driver in the form of any single "unreceptive" entity.

To put it bluntly, climate change is a challenge that calls for new

ways of thinking in foreign policy, not only in terms of treatment of climate action but also about interrelating it with broader concerns, not as an environmental issue. It is when the views of science clash with politics, bridging the gap between the two becomes hard on one side, the climate scientists, and on the other, the diplomats together with the officials from the Foreign Ministries. However, green diplomacy imposes necessary cooperation between them to fulfill their interests designed for the sake of efficiently confronting such a global crisis. Undoubtedly, the accord of scientists and decision-makers rests on the "principle of shared but varied responsibility" as the most effective framework toward correcting the inequalities of the international system. The approach is significant in understanding and overcoming the different degrees of responsibility and capability among countries while facing global challenges. There needs to be good regional and international cooperation in achieving development and protecting the environment sustainably (Tayebi et al., 2016). Even with improved relations, augmented capacities, and pre-defined mechanisms such as international norms, the international community still must aim at cooperation to safeguard global security from serious threats and to attain a stable process for global peace.

1.2 Problem Statement

Environmental diplomacy can contribute much to facilitating interaction between nations and consequently between their peoples, aiming at peace and security. As a result, the aim of this research is to examine the role and effectiveness of Environmental diplomacy as one of the cornerstones of foreign policy and its impact on a critical threat like climate change. The paper will also be striving to answer the following question: How successful is Environmental diplomacy in tackling the grave menace of climate change? It, therefore, seeks to discuss the role of environmental diplomacy and its ability to prompt states into collaboration on matters of climate.

2. Literature Review

2.1 Climate change overview:

Climate is a key environmental factor for regions, countries, and the planet. Climatic change refers to long-term alterations in environmental factors, such as light, temperature, humidity, wind, gases, air, water, and soil, averaged over approximately 30 years. Additionally, Climate change refers to changes in climate patterns primarily driven by greenhouse gas emissions. These gases trap heat in the Earth's atmosphere, fueling global warming. Emissions come from both natural sources, such as forest fires, earthquakes, oceans, permafrost, wetlands, mud volcanoes, and volcanoes (Yue & Gao, 2018). In recent decades, there has been a significant increase in record-breaking weather and climate extremes, such as heat waves, droughts, and intense rainfall (AghaKouchak et al., 2020). These extreme events are often influenced by a range of interconnected climate factors and can happen simultaneously in various parts of the world, leading to severe and sometimes irreversible effects on both human and natural systems. While there is a growing amount of research on the occurrence of climate extremes over time, there has been limited attention given to their spatial co-occurrence. Nevertheless, human

activities that contribute to greenhouse gas emissions are mainly associated with energy production, industrial processes, and practices related to forestry, land use, and land-use changes (Edenhofer et al. 2014). Furthermore, in modern environmental discussions, "global warming" is the mechanism of the process by which the Earth's atmosphere holds the heat, causing the general temperature around the planet to rise slowly. Scientists, politicians, and environmentalists have come to an implicit agreement that the rate itself of carbon dioxide and other industrial emissions has a meaningful impact on this process and its consequences (Koornneef, et al., 2011).

This is attributed to the fact that modern industrial civilization is driven by high consumption of organic energy sources such as coal, oil, and gas. According to the latest scientific reports compiled by international environmental scientists, the current climate imbalance being faced is greatly unnatural, not because of natural phenomenon or forces, but rather human activities and mismanagement. (Du Plessis, 2018). It is well known that these activities have increased linearly since the arrival of the Industrial Revolution in the nineteenth century. It is mostly put forward those human activities started increasing from the Industrial Revolution in the nineteenth century and finally doubled in the twentieth century. More importantly, recent reports suggest that the environmental hazards caused by these practices have moved from mere speculation to a concrete catastrophic reality. The tangible effects of these hazards are now visible as they spread across most regions of the world, threatening to alter their characteristics, elements, and life (Mukherjee & Ouattara, 2021). Recent decades have been witnessing a surge in great man-made environmental catastrophes hitting different regions worldwide which have greatly enhanced the perception of the real scale of the environmental crisis that has taken place. This growing awareness has sharpened concerns over the idea that it might bring about destructive consequences for life on Earth and, on a larger scale, for the survival of the human species and of its cultural and civilizational heritage. As a result, the environmental crisis has increasingly become the center of talks around the world, overshadowing the media increasingly, occupying an ever-greater part of all kinds of meetings, infiltrating most public debates, and more actively capturing political space.

2.2 Green emission:

Over the past few decades, most of the variabilities in global climate have been attributed to increased human activities that alter the atmospheric composition. In particular, the concentration of CH₄, CO₂, and N₂O has increased by 150%, 40%, and 20%, respectively, since 1750. Carbon dioxide emissions, the single largest share of greenhouse gases, reached 36.8 billion metric tons in 2023 from 22.15 billion metric tons back in 1990. CO₂ comprises the largest share of GHGs in the atmosphere: 65% is derived from fossil fuels and industrial activities, while 11% is derived from forestry and other land uses. Methane contributes 16%, nitrous oxide 6%, fluorinated gases 2% (Filonchik et al., 2024). Greenhouse gas emissions, especially CO₂ from burning fossil fuels, along with non-CO₂ GHGs like nitrous oxide, methane, and CFCs, contribute to global warming. The concentration of CO₂ in the atmosphere rose from 315.98 ppm in 1959 to 419.3 ppm in 2023 (Ramonet

et al., 2023). Additionally, CO₂ concentrations have surged considerably over the past 60 years, with the annual increase accelerating from 1 to 2.2 ppm (Lindsey, 2024). This rise, driven by escalating global emissions, presents a major challenge to the world's efforts to combat climate change (Abbas et al., 2023). A few centuries ago, CO₂ emissions from fossil fuels were minimal, but they surged dramatically with the onset of industrialization.

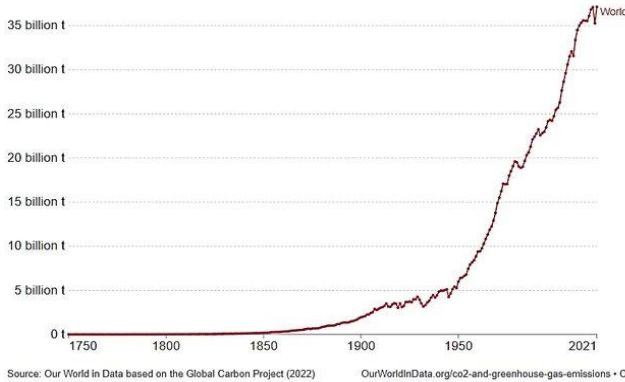


Figure 1: illustrates the growth in CO₂ emissions over the years, spanning from 1850 to 2023

Since 1751, the world has released approximately 1.5 trillion metric tons of CO₂ (EI Kenawy et al., 2023). However, these emissions vary significantly across different regions. According to the latest date, China is considered the largest contributor to CO₂ emissions with emissions of 12,600 million metric tons in 2023 (International Energy Agency [IEA], 2024). primarily due to its extensive industrial activities and high consumption of fossil fuels. The United States is another major contributor, with a significant increase in natural gas usage leading to a rise in CO₂ emissions, totaling 4,807 million metric tons (U.S. Energy Information Administration [EIA], 2024). This makes the U.S. the second-largest emitter after China. India comes next, as the third-largest emitter, with 2,830 million metric tons of CO₂ produced in 2022. In 2023, global CO₂ emissions related to energy increased by 1.1%, rising by 410 million tons to set a record of 37.4 billion tons (Rudnik, 2024).

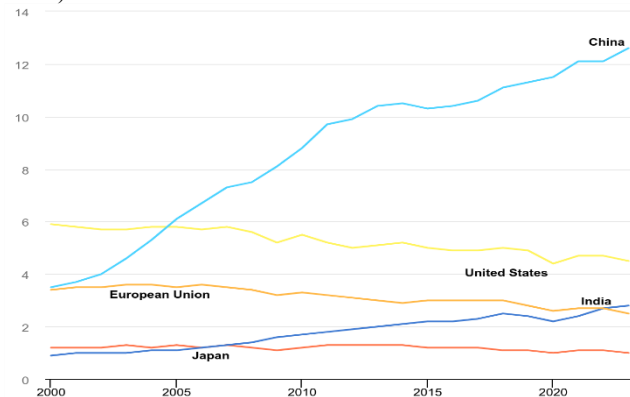


Figure 2: Largest contributors to greenhouse gas emissions worldwide in 2023

The increase in greenhouse gases directly affects atmospheric temperatures. Gases such as carbon dioxide, methane, and

water vapor absorb and emit infrared radiation, trapping heat from the Earth's surface and atmosphere. This process, known as the greenhouse effect, leads to a warming of the planet. According to Jain (1993), the greenhouse effect is a natural process where specific gases in Earth's atmosphere, called infrared radiation-absorbing gases, trap heat, playing a crucial role in regulating the planet's temperature and climate. While this effect is both natural and essential, human activities have disrupted its balance, leading to significant environmental challenges. According to the IPCC's Sixth Assessment Report (2023), The global average temperature has risen considerably, with estimates suggesting an increase of about 1.09°C (ranging from 0.95°C to 1.2°C) since the pre-industrial era (1850–1900). With global temperatures on the rise, it is essential to cut greenhouse gas emissions to keep the temperature increase within 2°C above pre-industrial levels. Since 2005, developed countries have been responsible for about 60–80% of the rise in global temperatures, reduction in sea ice, and warming of the upper ocean, while developing countries have contributed approximately 20–40% (Wei et al., 2012). Carbon dioxide (CO₂) stands out among greenhouse gases as the most influential, responsible for about 60% of global warming effects because of its high concentration in the atmosphere. (Li et al., 2023).

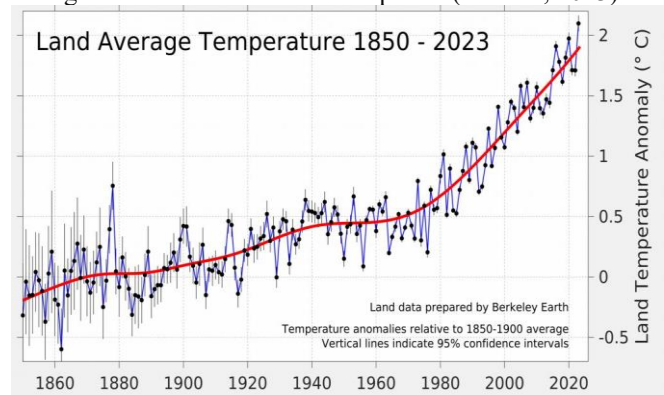


Figure 3 highlights the average global temperature anomaly, revealing a notable rise in global temperatures when compared to the baseline average from 1850 to 2023.

2.3 Climate change attribution to extreme events

According to the Centre for Research on the Epidemiology of Disasters (Cred, 2024). The world was faced with 399 cases of natural disaster in 2023. This incidence led to 86, 473 deaths, and impacted 93. 1 million people. The economic losses stood at US\$ 202. 7 billion. The 2023 earthquake, covering the area of Türkiye and the Syrian Arab Republic, was the most disastrous in terms of mortality and economic damage, with reported 56,683 deaths and US\$42.9 billion damage. This quake is estimated to have affected a total of 18 million people for both countries, thereby rating second in terms of the number of affected people. Of these, the first was the 2023 Indonesian Drought, which affected 18.8 million people from June to September 2023. In addition to earthquakes disaster there were many cases related to climate change such as storms, drought and floods for example, as far as strong storm events are concerned, Storm Daniel hit Libya in September, causing heavy flooding that resulted in 12,352 deaths, including 8,000 missing, besides losses of US\$6.2 billion economically. This event was the second most fatal disaster in 2023, next only to the Türkiye

and Syria Earthquake (OCHA, 2023). Furthermore, Cyclone Freddy passed through Madagascar, Mozambique, and Malawi earlier in 2023. It caused the greatest impact in Malawi, where it has left 1,209 people dead and affected 2.3 million. At the end of July, Typhoon Doksuri made landfall in the Philippines and then in China, where currently estimated economic losses reach US\$25 billion, making it the second costliest disaster in 2023. In early December, there was also severe flooding in India due to Cyclone Michaung, with more than 4.4 million people affected (Aderinto, 2023). Also in the Americas, two storms have made noteworthy economic impacts. In early March 2023, a storm hit the United States with tornado outbreaks, strong winds, and floods, killing 13 with estimated costs of US\$6 billion. Finally, in October 2023, Tropical Storm Otis in Mexico affected one million people, killing 104 and damaging US\$12 billion to become the costliest storm disaster on record in Mexico (LeComte, 2023).

It's further learnt that Europe in 2023 counted more than 47,000 deaths related to heat, becoming the hottest year globally and the second hottest in Europe, according to a study conducted by Barcelona Institute for Global Heal (Gallo et al., 2024). The study was based on temperature and mortality data from 823 areas covering 35 European countries. While 2023 did not observe such a far-reaching and intense heat wave as in the middle of the summer of 2022, which resulted in the deaths of more than 60,000 people, the heat waves in July and August of 2023 contributed to more than 57% of all total deaths. Countries in Southern Europe were at a higher risk: Greece, Bulgaria, and Italy presented the largest heat-related mortality rates (Ballester et al., 2023). Lastly, another extreme event caused by climate change is wildfires and drought. As global temperatures surge, so has the summer wildfire season, covering regions not typically prone to fire, in terms of both frequency and intensity. This allowed the vegetation to dry up under the scorching temperatures, so there were high flammability levels and better conditions for fires to develop and propagate. This set the scene for another hard summer season of wildfire in and around Europe, as new affected landscape types emerged, with clearly visible impacts on conventionally low fire-prone settings (Liu et al., 2024). A report by UNEP and GRID-Arendal, spreading like Wildfire: The Rising Threat of Extraordinary Landscape Fires, finds that climate change and land-use change is making wildfires worse and foresees that extreme fires will become more prevalent across the globe, even in countries that have not been affected previously. Uncontrollable and extreme wildfires devastate people, biodiversity, and ecosystems, but they also enhance climate change by adding huge amounts of greenhouse gases to the atmosphere (UNEP, 2022).

Through its Global Fire Assimilation System, the Copernicus Atmosphere Monitoring Service has issued timely updates on the wildfire situation around the world during 2023 and provided accurate data related to wildfire intensity and carbon emissions. This year saw record-breaking wildfire activity in many regions – Canada witnessed the highest wildfires carbon emissions in the CAMS record, which goes back to 2003, while in Greece, there was the largest wildfire in the European Union to date. According to the CAMS estimate, wildfires around the globe issued an approximate 2,170 megatons of carbon emissions in 2023, of which 22% came from Canadian

wildfires (Copernicus, 2023). Moreover, the climate risks, apart from rising temperatures and fluctuating precipitation, also involve changing seasonal patterns, shifting disease patterns, desertification, ocean-based impacts, and soil and coastal degradation, which are key contributors to vulnerability in many countries for different sectors. An empirical study reviewed the climate change vulnerability and adaptation readiness of 192 United Nations countries, and according to it, food, water, health, ecosystem, human habitat, and infrastructure are the most vulnerable sectors under attack by climate change. This also found out that Africa is the most vulnerable region with respect to climate variability. It is worth mentioning that such sectors are intertwined and so are the associated impacts (Sarkodie & Strezov, 2019). The 15th edition of the global risks report 2020, prepared by the World Economic Forum, laid an in-depth presentation of various climate realities, laying out areas greatly affected. In this regard, the potential natural disaster risks that included loss of life because of health hazards and natural disasters, while on the ecosystems, excessive stress would be especially borne by the aquatic/marine systems (WEF, 2020). Other highly affected areas are food and water security. In addition, more migration is expected because of extreme weather conditions, disasters, and sea-level rise. Geopolitical tensions and conflicts are also foreseen as countries try to extract resources along water and land boundaries. The negative financial impact is also described in capital markets through increased systematic risks. The last impact presented is that of trade and supply chains (WEF, 2020).

2.4 The Role of Diplomacy in climate change mitigation

Regional and international constructive interactions are the most strategic and most effective procedures to protect the political, economic, and security interests that take on a more authentic form. The concern for environmental security with a view to environmental diplomacy is the most valuable activity in the international arena and relations. Development and sustained development route to development surely intend to protect common human heritage of environment and natural resources. Development involves a special space on the way to internalization or globalization. The specialty of it can be said to be embedded in the subject matter of development, bearing the sustainability feature. Reference to the fact seems necessary, as unsustainable development would disrupt the globalization process, leading the world to an abyss of crisis. In other words, if the purpose was development only, without considering sustainability, the ecology and ecosphere would be ruined: the world is far from being environmentally safe. In addition, the environmental crises and hazards, the climatic changes inclusive are the realities that the world today have hostage. Consequently, a sustainable environment and globalization are harmonious or parallel. Therefore, perhaps, to be more precise, it could be more appropriate to be environment-conscious on the way to ideological consciousness (Tayebi et al., 2016). Environmental diplomacy is a powerful instrument, sound strategy, and trustworthy process for building synergies, regional and international cooperation aimed at the strengthening and support of protection of the ecosphere and joint human heritage (Munge, 2023). Thus, the right to a healthy environment is increasingly recognized as an integral human right in the broader human rights framework. Protection of this right is both basic to

development and a major concern of formal relations, one that underpins the right of coexistence within the frame of global cooperation. Environmental diplomacy, therefore, turns into an indispensable protection mechanism to ensure the right to a healthy environment (Nicolas & Kallab, 2021).

2.5 The framework of climate diplomacy

Negotiation is a dialogue between two or more people or parties with the intent of reaching an understanding, settling, or gaining advantage in the outcome of that dialogue to produce an agreement on courses of action; to bargain for individual or collective advantage; to craft outcomes that satisfy various interests of two people or parties involved in the negotiation process. Negotiation is an integral component of Climate Change Diplomacy because it allows all parties to come together for bilateral or multilateral discourse to negotiate benefits for when the process is finalized. Scientists, activists and negotiators alike are known to talk about the "overwhelming" science showing evidence of the impacts of greenhouse gas emissions from extreme weather events like floods, to shorter warmer growing seasons, rising sea levels causing coastal erosion and salinity, melting glaciers and a host of other major impacts (Tänzler & Carius, 2013). At the international level, there is a permanent institutional structure for conducting negotiations and various diplomatic activities pertaining to environmental issues. Key organizations in this respect are the United Nations Environment Program, established in 1972, and the Commission on Sustainable Development, which was established in 1992, while the Global Environment Fund was created in 1990.

The main responsibility in terms of environmental protection has been assumed since 1992 by the United Nations, while recently, in this effort, the European Environment Agency has also participated (Dikaios, 2024). However, the governments accepted that the initial provisions could not be at all effective in dealing with and responding to climate change. At the first Conference of the Parties in Berlin, Germany, in early 1995, a new round of talks was initiated to discuss stronger and more specific commitments. After two and a half years of tough negotiations, a far-reaching extension of the Convention was adopted in Kyoto, Japan, in December 1997. It set binding targets for industrialized countries on their greenhouse gas emissions and created new mechanisms to help them comply (Yamin & Depledge, 2004). Moreover, longer-term prospects also include a vision for a future global environment agency. However, the rising complexity and speed of international negotiations cast serious doubts on whether the United Nations Framework Convention on Climate Change can deliver its Article 2 objective to avoid "dangerous human-caused interference with the climate system." This uneasiness is especially understandable for small island developing states and other low-lying and vulnerable countries like Bangladesh already at the receiving end of severe impacts of climate change (Rashid & Altaf, 2020).

Consequently, the role of climate security has come to the attention of the UN. The UN Security Council held its first debate on how climate change affects global peace and security in 2007. The discussion of the UN member states revealed a certain uncertainty of all parties on how to develop an effective

framework at the international level for addressing the security risks arising from climate change. On 3 June 2009, a new resolution on climate change and its possible security implications was adopted by the UN General Assembly, tabled by the Pacific Small Island Developing States (SIDS). The resolution had the support of 101 states, it was adopted by consensus, and for the first time, the United States was a cosponsor of a climate protection resolution in the UN. The resolution urgently calls on UN bodies to redouble their efforts in fighting climate change and mitigate possible security risks. It has also for the first time established a direct link between climate change and international peace and security (UN General Assembly, 2009). In September 2009, a detailed report was made by the UN Executive Committee on Economic and Social Affairs based on 35 contributions by member states and such regional or international organizations that are relevant to it. The report broadened the concept of security to focus on vulnerable individuals and communities, encompassing protection from disease, unemployment, political repression, natural disasters, and violence (UN General Assembly, 2009). It is indeed recognized that individual and community security is important in shaping nation-state security, typically defined by threat conceptions of an external aggressive nature. The key emphasis of the report was on strategies to minimize potential threats, including:

- Climate mitigation and adaptation
- Economic development
- Democratic governance and robust institutions
- International cooperation
- Preventive diplomacy and mediation

• Despite its explicit mandate, the report has gained little attention and, until recently, was only cursorily mentioned in subsequent activities. It was indeed not until Germany's presidency of the UN Security Council in July 2011 that topics regarding climate change and security made it onto the high-level agenda of the UN Security Council. A public debate at the Security Council turned into a presidential statement that acknowledged not only the impact of climate change on security but also a call for systematic and regular review by the UN Secretary-General of the potential security implications of climate change. This was even though such an outcome was heavily contested by China and Russia, and by many countries in the Group of 77, which is most wary of linking climate change with security (United Nations Security Council, 2011). Additionally, The Paris Agreement, adopted in 2015 by almost 200 countries, is the newest landmark in the fight against climate change globally. It marks a sea change in climate diplomacy: from the strict, top-down requirements of the Kyoto Protocol to a more flexible and decentralized approach. In lieu of legally binding targets, it encourages countries to voluntarily set and pursue their climate goals, leading to wider participation and cooperation on a global scale (Kuyper et al., 2018). The Agreement represents a high-level effort to stop the temperature on the planet from rising above 2°C more than that of the pre-industrial period and, furthermore, continue aiming to limit it to 1.5°C (BB & S, 2018). Although the goals set by the Paris

Agreement are based on a solid scientific consensus and are techno-economically feasible, there are more than a few challenges in translating these goals into political reality and aligning them with short-term priorities for the individual countries. Even after the steps forward taken at the 2016 Marrakech climate talks, the long-term objectives laid down by the Paris Agreement are politically bound to remain vulnerable. Several countries have published mid-century decarbonization strategies since the coming into force of the Agreement more will follow. The implementation of these strategies encounters all the challenges of transformative change, such as disruption, innovation, and unpredictable shifts in human behavior.

2.6 Thematic synthesis of Literature

2.6.1 Theme 1: Evolution of Climate Diplomacy (1992–2023)

(Built entirely using your references: UNFCCC 1992, Kyoto Protocol 1997, Paris Agreement 2015, UNSC 2007–2011, etc.) Climate diplomacy has evolved substantially since the 1990s. The UNFCCC (1992) laid the foundation for global climate governance by establishing the principle of “common but differentiated responsibilities.” However, early frameworks were limited in their ability to translate scientific urgency into political action. The Kyoto Protocol (1997) marked the first attempt at binding emissions reduction commitments, but its effectiveness was undermined by the withdrawal of major emitters and persistent tensions between developed and developing countries (Yamin & Depledge, 2004).

A major transformation occurred with the Paris Agreement (2015), which adopted a decentralized model based on voluntary nationally determined contributions (NDCs) (Kuyper et al., 2018). This shift broadened participation but also raised concerns about weak enforcement, uneven ambition, and the absence of binding mechanisms. After 2015, climate diplomacy expanded into the security sphere. The UN Security Council’s 2007 and 2011 debates marked the growing recognition that climate change poses risks to international peace and security (UNSC, 2011). This demonstrates the widening diplomatic scope beyond environmental ministries to the highest levels of international governance.

2.6.2 Theme 2: Effectiveness of Multilateral Climate Frameworks

It is generally accepted among scholars that multilateral frameworks create an unprecedented level of global cooperation. However, the evidence supporting their effectiveness remains mixed.

- Under Kyoto, binding commitments were intended to drive deep reductions, yet participation gaps and unequal responsibilities limited its impact.
- While the Paris Agreement is often hailed for its universal participation, reliance on a voluntary target determines its far lesser capability of guaranteeing long-term emission reductions (BB & S, 2018).

The literature highlights several systemic weaknesses:

1. Lack of legal enforcement

There is no fine or any sanctioning mechanism within Paris, and compliance depends on political will rather than legal obligation.

2. Inequality between developed and developing states

Studies indicate that even though historical emitters bear most of the blame for global warming, vulnerable states—especially in Africa and Asia—do not have the capacity to participate vigorously in these climate negotiations (Wei et al., 2012).

3. Challenges in monitoring and implementation

Accountability consists of the five-yearly global stocktake under the Paris Agreement; the lack of binding follow-up, however, diminishes the capacity to course-correct.

4. Lagging response to accelerated climate impacts

Growing emissions, extraordinary events, and temperatures are on the rise at a rate much faster than the pace of diplomatic responses to address these challenges.

2.6.3 Theme 3: Power Politics and Climate Diplomacy

The literature highlights that climate diplomacy is shaped not only by science but by geopolitical interests and power asymmetries.

- **Major economies** such as the European Union, China, and the United States exert disproportionate influence on global climate negotiations. The EU is often seen as a leader in climate ambition, whereas China and the U.S. shape outcomes through their large emissions and geopolitical leverage.
- **Small Island Developing States (SIDS)** have played an outsized role in advocating for stronger temperature targets, emphasizing existential threats (UNGA, 2009).
- **Developing countries in Africa and Asia** commonly face structural constraints—including environmental degradation, economic limitations, and lack of preparedness—reducing their negotiation power despite high vulnerability.

Thus, climate diplomacy operates within a hierarchy where states’ political and economic power strongly influence the direction, ambition, and fairness of climate agreement

3. Methodology

For this type of research, the most applicable type of research design would be qualitative. Qualitative analysis offers a more penetrative look into the complex set of relationships and influences climate diplomacy exerts, especially considering governmental actions, policies, and diplomatic negotiations, which are less tangible than quantitative data.

3.1 Data Collection

A document analysis approach has been used to collect and analyze the key policy documents, treaties, and agreements. The sources of information would include UN documents, IPCC reports, government publications, and public statements from climate summits. It is this that would show insight into the official positions, negotiated outcomes, and areas of consensus or contention.

3.2 Data Analysis

A policy analysis framework applied to analyze the strengths, weaknesses, opportunities, and challenges of every climate agreement or analyzed diplomatic strategy can be done by

discussing compliance mechanisms, enforcement tools, or even inclusiveness in terms of consideration of the needs of different countries.

3.2.1 Criteria for Policy Analysis

- **Effectiveness:** Was the policy effective in its goals, whether it be a reduction in emissions or increased global participation?
- **Efficiency:** Checking the relative cost-effectiveness of each policy in terms of resources deployed versus environmental outcome.
- **Equity:** The policy should consider issues of fairness, especially the differential impacts on developed and developing countries.
- **Feasibility:** Analyzing political, economic, and social feasibility of each policy, relating to willingness of the countries to commit to a policy and then to implement that policy.
- **Adaptability:** The policy needs to be seen as amenable to new scientific findings, shifts in the political climate, and emerging environmental challenges.

3.3 Research Design

The research design is structured with the specific purpose of conducting in-depth case studies using policy analysis to critically gauge the effectiveness of climate diplomacy. It points out strategies that have worked, challenges encountered, and what areas of diplomatic efforts need improvement. The proposed research design will seek to investigate how climate diplomacy effectively contributes to international cooperation, mitigation of climate change, and informs policy frameworks. Attention shall be paid to the understanding of how the practice of diplomacy has been shaping climate policy and encouraging cooperation across multi-national lines and exploration of the barriers and opportunities within this diplomatic space.

3.3.1 Design Type

The design type for the research is a descriptive case study. The study will adopt a descriptive case study design by focusing on specific influential cases of climate diplomacy, such as the processes of the Paris Agreement and UNFCCC. It will explore the details of how each case has contributed to bringing climate action to the global level.

3.3.2 Unit of Analysis

- **International Agreements:** The signature that determines key agreements, especially the Kyoto Protocol, the Paris Agreement, and recent COP26/27 agreements, will be verified to identify its diplomatic consequence.
- **Country-Level Diplomacy:** The extent to which the selected countries or blocs individually address and impact international climate policy, including the EU, the United States, China, and small island developing states, will be compared.

3.3.3 Design Guiding Research Questions

- How has climate diplomacy adapted in the face of global climate challenges?
- Precisely, which concrete diplomatic strategies or measures have so far proved effective in driving climate policy and cooperation?
- What are the major barriers facing diplomatic efforts as they push for climate action, and how are different countries addressing these?

3.4 Case Study Analysis

Case studies provide the basic method to understand deeply the role of climate diplomacy through narration of key agreements and actions taken. The individual case study will elaborate on a significant diplomatic undertaking or agreement and discuss its implications, concerns, and results.

3.4.1 Case Study 1: the Paris Agreement

Examining how the Paris Agreement transformed international climate diplomacy through its bottom-up approach to nationally determined contributions and with an emphasis on global cooperation.

Key Analytical Points:

- How the accord was able to galvanize nearly all countries in their commitment for climate targets.
- The efficiency of the NDC mechanism and the related global emissions reductions.
- Implementation with various levels of difficulties and lack of binding enforcement show disparities in commitment and progress across countries.
- Building diplomatic consensus and strategies of negotiation for reaching the initial commitment and subsequent ratifications.

3.4.2 Case Study 2: The Kyoto Protocol

Evaluating the implications and limits of the legally binding emission reduction obligations of the Kyoto Protocol in relation to the strings between developed and developing nations.

Key Analytical Points:

- The diplomatic challenges of distinguishing responsibility between developed and developing countries.
- Its eventual withdrawal and implications for the trends in global participation and effectiveness.
- Lessons learned regarding binding versus voluntary commitments and their implications for future agreements, such as the Paris Agreement.

4. Findings

4.1 Environmental Diplomacy for global prosperity

In the international forum, peaceful coexistence is the most

desired. Environmental diplomacy, therefore, is a product of international and global diplomacy that is determined by nature and form of governance. It calls for keen attention to security and environmental frameworks to ensure clear linkages between diplomacy and environmental concerns. Global problems such as environmental risks have received international collaboration, and these processes have only been successful because of the presence of proper mechanisms. It does not mean, however, that environmental diplomacy without regional and international collaboration would take off it is only greatly strengthened by the same collaboration in effectiveness (Torney & Cross, 2017). As such, effective diplomacy requires absolute cooperation from all people, especially the authorities, in ensuring that we preserve our environment. This is very important because how natural resources and the environment are managed can be a source of tension and conflict or a basis for cooperation. Environmental diplomacy has been viewed here as a set of tools and methods to help conflicting parties solve shared environmental and natural resource issues. It is an approach that offers cooperation, engenders trust, and reduces tension.

Therefore, the protection of the global environment involves critical international cooperation, both for the global communities and the people worldwide. Herein, environmental diplomacy can find a positive role in explaining international interactions, especially in finding solutions to pressing problems associated with environmental and natural resource degradation (Shao, 2023). It needs to be figured out that the environment not only contributes to tensions but could turn out to be an implicit or explicit victim of the disputes. Environmental destruction leads to serious threats against the health, livelihoods, and security of the people. Environmental Diplomacy, therefore, happens to be the new kind of approach that works within the framework of international interaction and cooperation. Its success depends upon the adherence to shared international commitments. The protection of the environment and the overcoming of climate hazards remain major issues for developing and industrialized countries. In tackling these challenges, there are many international agreements drafted, but they happen to create confusion with different rules, multiple obligations, and unachieved goals. The only solution to such complexities lies in environmental diplomacy, countries working constructively to solve environmental problems. Such diplomacy will be based on two important aspects: enforcement of treaties and protection of our environmental commitments. For effective handling of environmental risks, countries need to co-operate in aligning regulations with high standards and the pursuit of common objectives (Sharma, 2024).

Moreover, making environmental diplomacy more effective will have to rest on a framework working at many different levels: global, regional, national, local, and down to the individual's carbon footprint. Whether we take a bottom-up

approach, a top-down strategy, or any other combination of those, it is worth taking a close look at which one of them will really do the job properly. In addition to the fundamental training of every diplomat, Environmental Diplomacy is a specialized field with a more pronounced technical character that requires practitioners to possess minimum ecological, biological, economic, legal, etc. expertise. Furthermore, a diplomat engaged in ecological bi and/or multilateral partnerships cannot impartially engage in the process of negotiation without possessing sufficient understanding of the matter being discussed. Due to growing concerns, some countries appointed ambassadors whose job was purely concentrated on environmental issues. Thus, the environmental sphere became an essential constant and very important element of international cooperation, organically having become a part of modern civic culture. It is for these reasons that every career diplomat, regardless of the field of work, needs to possess at least basic knowledge in ecology. Ultimately, "Environmental diplomacy" is a quest for peace and reconciliation between man and nature in the interest of sustainable development and enduring survival of human civilization.

5. Conclusion

Ecological concerns have gained global significance since the mid-nineteenth century and have recently evolved into a matter of urgent survival. The effects of global climate change will vary across different regions, but no area will be entirely spared. From the foregoing argument, it can be concluded that global cooperation is required because of the nature of a highly interlinked world, with feedback loops across regional threats and trends that are converging. This is similar when answering the question of climate-related security concerns not being solely a job for the UN climate negotiations, there is a menu of options open to foreign policymakers. Thus, ecological issues rise to prominence at both the domestic and international levels, and with their further spreading and pressing necessities, mitigating them without diplomacy is impossible. That is why the role of "environmental diplomacy" has increased beyond imagination. For example, global warming is an example of a difficult challenge; there must always be effective diplomatic efforts towards one of the complex eco-climatic problems. Hence, the role of environmental diplomacy is a global issue in such a unique approach, impacting human life directly. It holds a place with every walk of society: politically, economically philosophically, educationally, and through international cooperation.

The efforts of the international community to safeguard natural resources, as well as develop human resources, are tapped in the concept of justice, sovereignty, and law, which are geared toward achieving sustainable development. This would prove to be a crucial balancing factor for the well-being of our planet and people in general. This takes into consideration the concept that diplomacy requires structures to work successfully in terms of proper and improper frameworks. This, however, highlights the realities that the efforts in traditional diplomacy do not make a difference in some of the issues that exist. Environmental

diplomacy, still today, has been seen as the most effective way in which nations can deal, in the long run, as people can also work toward developing peace, friendship, among other positive objectives. It provides a solid framework for global environmental protection and sustainable development. However, for real change to happen, every country must commit to and follow through on international agreements. Given this, environmental diplomacy stands out as a crucial strategy for protecting our planet and promoting sustainable development in the biosphere. Finally, ecological cooperation should not be confined to the interstate level, which is too dependent on junctures. Instead, it is increasingly being driven by non-state actors through the publication of standards within an industry, agreements between economic sectors and non-governmental organizations (NGOs), and collaboration between the public and private sectors. Thus, international eco-policy establishes itself as a prospective domain for global political interactions.

6. Recommendation

Beyond the global climate change efforts, additional recommendations can help strengthen responses to climate change. Experts from development, foreign policy, and security fields should collaborate in a strategic partnership to tackle key issues. Governments and non-governmental organizations should integrate climate change considerations into ongoing risk assessments, identifying sectors most vulnerable to climate impacts. This approach will also help align and coordinate with other planning efforts. Expanding peace and conflict assessments to include the effects of climate mitigation and adaptation could be one way to achieve this.

Additionally, the research recommends:

Improving the institutional and legal enforcement mechanism: for example, one of the main issues with the climate agreements such as the Paris agreement is the absence of the legal binding mechanism, mostly the agreement relies on voluntary initiative and commitments, which often result in incompatible achievements. Hence, establishing a binding protocol within the multilateral framework which incorporates some articles that assures the legal commitments of all the participants and most importantly the high emission states, in which result in penalties, sanctions for non-compliance.

To establish an international climate compliance council, that could function under the United Nations, an arbitration unit or a climate court could be assigned to observe and monitor the compliance of the states and impose sanctions or take remedial actions against the violators.

Strengthen the international stock take procedure by going beyond the routine of data reviewing which is conducted every five years under the Paris agreement and instead providing a clear state by state evaluations and make their climate records information open and accessible to the public.

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