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CLIMATE CHANGE AND CHALLENGES OF GLOBAL INTERVENTIONS: A CRITICAL ANALYSIS OF KYOTO PROTOCOL AND PARIS AGREEMENT

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ABSTRACT

The radioactive effects of climate change that stem from high concentration of greenhouse gases of industrialized and developing countries had in the last four decades elicited global strategic alliance, United Nations Framework Convention on Climate Change among sovereign states to stem the tide. Accordingly, this paper critically examines the dynamics and trends of global action on climate change as referenced in Kyoto Protocol and Paris Agreement. From the qualitative methodological perspective, the discourse argued that the two climate change Action Frameworks were immersed in daunting challenges enormously induced from domestic realities of participating sovereign countries amid other constraining factors. As the member countries of UNFCCC prepare for 26th United Nations Climate Change Conference of Parties, COP26 in Glasgow, Scotland in November 2021, this discourse advocate for more commitment of Parties to ambitions of emission reduction, viable leadership from industrialized countries on fair negotiations, domestic climate policy initiatives, and expert assistance from specialized international agencies which are among the plausible measures for effective global response to the crises of climate change.

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1. INTRODUCTION

Global climate change is a paramount challenge of the 21st Century. Since the beginning of the industrial revolution, atmospheric concentrations of carbon dioxide (CO_2) the chief heat-trapping greenhouse gas, have risen above 35 percent—from about 275 percent per million by volume (ppmv) today. This increase is due to human activities, primarily from the burning of fossil fuels and from deforestation. Carbon that has been sequestered in the Earth's crust (in the form of oil, coal, and other fossil fuels) over millions of years has been extracted, burned, and released into the atmosphere in large quantities within the past 200 years. Atmospheric concentrations of methane, the second leading greenhouse gas, have more than doubled over the past two centuries. These changes in the composition of the Earth's atmosphere have increased the average global surface temperature by about 0.6° C (1° F) over the past 100 years. Regional climate changes due to temperature increases have already affected many physical and biological systems, and emerging evidence suggests impacts on human settlements from recent increases in floods and droughts (Andre, *et al* 2011:115). Furthermore, Peterson (2018) stressed that to prevent atmospheric CO_2 concentrations from exceeding a level of 450 ppmv, global emissions would need to decrease dramatically. Over the same period, however, the global population is expected to increase by 40

to 100 percent (from today's population of six billion) and economic growth is projected to climb 10- to 20-fold. The challenge is formidable and unprecedented; meeting it will require a transition away from a global economy dependent on fossil fuels to one based on renewable and more energy-efficient technologies. Even limiting atmospheric CO_2 concentrations from higher level, such as 550 ppmv, would entail major emission reductions from projected levels and eventual reductions far below today's emission levels.

In credence, Winkler *e tal* (2002) stressed that climate change is a global problem requiring the cooperation of all countries to be addressed effectively. Emissions from the industrialized North have thus far been greater than from the developing South, but they are growing rapidly in the latter. The principle of "common, but differentiated responsibilities" between industrialized and developing countries is well established in the negotiations. However, cooperation between North and South has been limited in the negotiations under the United Nations Framework Convention on Climate Change (UNFCCC). Climate change is not seen as a priority by developing countries, which are preoccupied by the challenges of meeting basic development needs. As regards commitment, the question is of how developing countries might participate in the effort against global warming becomes more urgent. Participation could take different forms. Participation might range from mandatory requirements, such as quantified emission limitation targets, to pledges to make their development path more sustainable. In this perspective, it is therefore argued that climate change is a socio-political challenge that demands a coordinated approach among the world's countries. Governments resist acting alone to rein in their emissions, given that the rising greenhouse gas output in other countries could undermine their own potentially costly efforts. Furthermore, most emissions come from sectors such as electricity generation, transportation, and agriculture, which are important to national security and economic growth. Powerful vested interests in these sectors will make the transition to a low-carbon future an uphill political climb (Baumert and Kete 2002: 8). These efforts are further accentuated in Kyoto Protocol which Fletcher (2005) remarked was opened for signature on March 16, 1998, and entered into force February 16, 2005, becoming legally binding for countries that have ratified it. The Protocol conditions required that it would be in force only when 55 nations had ratified it, provided that these ratifications included Annex I Parties that account for at least 55% of total Annex I carbon dioxide emissions in 1990.

Interestingly, United States, a developed Party however disengaged from formal negotiations on the Protocol on premise of controversial issues of emission reductions. Subsequently, eleven years later after Kyoto Protocol was initiated in framework of compliance, Paris Agreement emerged with optimism as Report of European Parliament (2016) stressed that Paris Agreement goes beyond the Kyoto Protocol, which only committed a limited number of Parties to reduce their greenhouse gas emissions. The Agreement sets a long-term goal of limiting the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels, and of pursuing efforts to limit this temperature increase to 1.5 degrees C. However, these lofty ideals of the Paris Agreement become an uphill task in view of non-compliance to its established objectives and targets by Parties. Accordingly, this discourse re-examines the issues and challenges bedeviling global responses to the exigencies of climate condition as referenced in Kyoto Protocol and Paris Agreement. Hence, the discourse in a historical sense establish the affinity between the foundation framework of climate action, Kyoto Protocol and current framework of climate action, Paris Agreement in attempt to dissect fundamental issues that trail global intervention in crises of climate change as sovereign countries prepare for 26th United Nations Climate Change Conference of the Parties (COP26) in Glasgow (United Kingdom) in November 2021.

2. CONCEPTUAL ANALYSIS

In a technical sense, the terms "global warming and climate change" are vague and deplete with myriad conceptualizations and interpretations. Hence, Pollack, (2003) remarked that the concept of global warming and climate change is enhanced greenhouse effect due to increasing concentration of greenhouse gases in the atmosphere. However, global warming and the consequent climate change have not been generally accepted by all players; most governments have not made reasonable efforts to reduce the emissions of greenhouse gases. This is because the following hypothesis could explain global warming and climate change:

i. Possible variations in solar radiation or natural variations in earth's temperature independent of human activities which are yet to be understood may be responsible for observed warming and climate change.
ii. The complexity in earth's climate system may exceed the complexity in human behaviour and reaction to change.

In other words, genuine scientific uncertainties about global warming and climate change prediction has made the concept of global warming and climate change difficult for policy makers and planners (Pollack, 2003). In this vein, Mahlman (1997) attempt to embellish the issues associated with global warming which include:

a. Atmospheric abundance of greenhouse gases is increasing due to human activity.
b. Increased concentration of greenhouse leads to warming at the earth's surface.
c. Carbon dioxide build up is particularly serious because it remains in the atmosphere for decades to centuries.
d. Buildup of aerosol, anthropogenic or natural inhibits incoming solar radiation and thus tends to offset global warming by cooling.

Thus, these realities with adverse effects can still be mitigated through a strategic mechanism obvious in United Nations Framework Convention on Climate Change, UNFCCC.

The United Nations Framework Convention on Climate Change (UNFCCC) has been the forum for cooperation among nations on greenhouse gas (GHG)-induced climate change since its adoption in 1992. Its objective is "to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system, in a time frame which allows ecosystems to adapt naturally and enables sustainable development". Stabilizing GHG concentrations in the atmosphere requires that the balance of "gross" emissions of GHG minus the removals of GHG from the atmosphere reach "net zero." (Report of Congressional Research Service, 2020:1). In a historical perspective, it is stressed that multiple decades of scientific studies find that human activities induce global climate change by emitting greenhouse gases (GHGs) from fuel combustion, deforestation, and other activities. Scientists researched and assessed the science of GHG-induced climate change for more than 150 years before government policymakers around the world agreed to cooperate to consider how to address its risks to humans and ecosystems. In regards to several international scientific meetings in 1985-1987, governments decided to establish the Intergovernmental Panel on Climate Change (IPCC), under the auspices of the United Nations Environment Programme and the World Meteorological Organization, to provide them with assessments of climate change science, projected social and economic impacts, and potential response strategies. In 1989, the U.N. General Assembly provided a mandate to negotiate what became, in 1992, the U.N. Framework Convention on Climate Change, UNFCCC (Report of Congressional Research Service 2015: 3 and United Nations, 2010: 123).

The UNFCCC has been the primary multilateral vehicle since 1992 for international cooperation among national governments to address GHG-induced climate change. While the UNFCCC is a focal point for national governments, its periphery is one forum, among others, for information sharing, collaboration, and activism also for sub national governments, financial institutions, the private sector, and nongovernmental organizations on climate regime system(Andrew, 2020: 3). The United Nations Framework Convention on Climate Change, UNFCCC therefore represents a multi-lateral mechanism of climate regime uniting sovereign countries and providing a platform for collective response to the exigencies and challenges of unfolding changes in atmospheric condition. The following are fundamental principles of UNFCCC resolutions:

i. Parties should act "on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities" and
ii. Developed country Parties should take the lead in combating climate change.

From the context of these principles, the strides and challenges of Kyoto Protocol and Paris Agreement illuminates.

In reference to recent development, the UNFCCC which was adopted in 1992 and entered into force in 1994 has a governing body, the Conference of the Parties (COP). Thus, the Conference of the Parties met in its 25th session (COP25) from December 2 to 13, 2019, in Madrid, Spain. Initially, Chilean President Sebastian Pinera stepped forward to host COP25 in place of Brazil following the election of President Jair Bolsonaro. Pinera sought to underscore his efforts to address climate change but suddenly decided that the summit should take place elsewhere due to mass protests in Chile (New York Times, 2019:1). The unpleasant developments in Chile further illuminate the gap between the domestic realities and the expectations of global response to climate change. This situation is succinctly dissected in the issues and challenges that trailed Kyoto Protocol and Paris Agreement.

2.1 The Fundamentals and Challenges of Kyoto Protocol

The first subsidiary agreement to the UNFCCC was the 1997 Kyoto Protocol (KP), which entered into force in 2005. The uniqueness of the Kyoto Protocol was the decision by developed Parties (industrialized countries) to reduce GHG emissions by 5% below 1990 level with different targets for each Party. However, United States signed but did not ratify the Protocol and so is not a Party. In historical perspective to Kyoto Protocol, it was observed that between 1979 and 1990, the issue of climate change was brought up and discussed in various scientific and intergovernmental conferences. In 1991, the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC) under the United Nations was established to prepare a convention, and the United Nations Framework Convention on Climate Change (the Convention) was adopted in May 1992. In June 1992, the Convention was opened for signature at the Earth Summit held in Rio de Janeiro, Brazil. One hundred and fifty-four Parties signed the Convention at the Earth Summit. The Convention entered into force in 1994. In 1995, INC was dissolved and COP became the Convention's decision making body. At the first session of COP held in 1995, delegates agreed that commitments of developed countries were inadequate, and thus COP launched the Berlin Mandate talks on additional commitments of developed countries. In 1997, Kyoto Protocol, a legal instrument, was adopted at the third session of COP to consolidate commitments of developed countries on climate change (Ahmad and Rabidu, 2003:123, and Reinna 2011: 45). The broad objective of Kyoto Protocol is to achieve the objective of the Convention, that is, "to achieve… stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (human-induced) interference with the climate system…" (UN, 1998:

2). It is therefore pertinent to highlight fundamental provisions of the protocols. Accordingly, Kyoto Protocol consists of 28 Articles. The Preamble states that Kyoto Protocol is built on Articles of the Convention and the Berlin Mandate.

The following are some fundamental articles of the Protocol:

a. Article 1 defines terms used in Kyoto Protocol.

b. Articles 2 to 9 list actions which Annex I Parties can take to reduce their emissions of greenhouse gases and mechanisms which ensure actions are duly taken. Article 2 states policies which Annex I Parties can implement to achieve their assigned emission targets. Areas of concern include energy efficiency, sinks and reservoirs of greenhouse gases, sustainable forms of agriculture, and renewable forms of energy, carbon dioxide sequestration technologies and reduction of greenhouse gases emissions from emitting sectors.

c. Article 3 of Kyoto Protocol assigns greenhouse gas emission targets for Annex I Parties. In order to set up a quantified target, all greenhouse gases are converted into carbon dioxide equivalent amount. Each Annex I Party ensures its aggregate human-induced greenhouse gases do not exceed its assigned amount. Annex I Parties agree to reduce the overall emissions of greenhouse gases by at least 5% below the 1990 levels in the commitment period of 2008 to 2012.

d. Article 4 states that Annex I Parties can achieve the assigned target jointly. For instance, the European Union as a group commits to at least 8% below the 1990 level.

e. Article 5 states that each Annex I Party establishes a national system for the estimation of human-induced emissions by sources and removals by sinks of all greenhouse gases. COP is the final authority to determine the methodologies for estimation.

f. Article 7 states that each Annex I Party submits a national communication to COP annually. The national communication provides an inventory of human-induced emissions by sources and removals by sinks.

g. Article 8 states that the submitted information is reviewed by expert review teams. The expert review teams assess the implementation of the commitments of the Party and identify any potential problems in and factors influencing the fulfillment of commitments. A review report will be submitted to COP and circulated to all Parties to the Convention.

h. Article 9 states that COP reviews Kyoto Protocol periodically. Articles 10 to 12 elaborate co-operation among Parties and financial contributions.

i. Article 10 emphasizes regional co-operation among Parties to document and mitigate climate change and international co-operation on climate change research and training.

k. Article 11 stipulates that developed countries provide new and additional financial resources and transfer of technology to developing countries to help reduce human-induced greenhouse gases emissions in these countries.

l. Articles 13 to 23 elaborate the institutional arrangements of Kyoto Protocol. COP serves as the meeting venue of Parties to Kyoto Protocol and the ultimate authority of decisions on all aspects of Kyoto Protocol. The rules of procedure, financial procedures, secretariat, subsidiary bodies, and settlement of disputes of the Convention shall apply to Kyoto Protocol.

m. Articles 24 to 27 stipulate the conditions of joining in, withdrawal from and entry into force of Kyoto Protocol. Countries are free to join in and withdraw from Kyoto Protocol.

n. Article 25 states that Kyoto Protocol will enter into force 90 days after not less than 55 Parties' ratification, accounting for at least 55% of the total carbon dioxide emissions of Annex I Parties in 1990.

o. Article 28 states that the authentic text of Kyoto Protocol is written in six languages (Information Book on Kyoto Protocol, 1998:6).

In reference to the differentiated responsibilities of developed and developing countries in compliance to the explicit articles of Kyoto Protocol, the preamble of the Convention states clearly that the largest share of historical and current global emissions of greenhouse gases has originated in developed countries and the emissions in developing countries are still relatively low. Thus, the Convention and Kyoto Protocol therefore stressed the need for industrialized countries to ensure the reduction of human-induced greenhouse gases emissions.

However, it is emphatic to state that international cooperation is most important and most challenging between rich and poor countries in this regard. Industrialized countries primarily the United States, but also others, such as Japan and Australia are concerned that lack of emission control commitments for developing countries translates into a lack of environmental effectiveness. This concern is due to rising greenhouse gas emissions in poorer countries as well as the possibility that, given asymmetric emission control commitments, some energy-intensive industries might migrate to countries where emissions growth is unconstrained that, although expected growth is large in industrialized countries, CO_2 emissions are expected to grow at much faster rates in China, India, Latin America, and other developing regions over the next few decades. Industrialized countries also argue that, through the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the subsequent Kyoto Protocol, they have made commitments to curb their greenhouse gas emissions and provide financial assistance to developing countries, all without any promise of future action from the developing world. While accepting that richer countries must take the largest steps, they argue that developing countries must take or at least declare an intention to take smaller steps. On the other hand, many developing countries believe that

the industrialized countries lack credibility on the issue of international cooperation to curb greenhouse gas emissions, having done little to address a problem largely of their own making. Thus, industrialized countries are responsible for most of the buildup of atmospheric carbon dioxide over the past century created by fossil fuel burning and land use changes (such as deforestation). Specifically, the industrialized countries are responsible for about 63 percent of human-related carbon dioxide that has accumulated in the atmosphere. The 80 percent of the world's population living in developing countries has contributed about 37 percent (Curtis, 2003; Stephen and Abdul, 2008). Furthermore, Drekin (2007) also remarked that beside the assigned targets, developed countries also abide by Kyoto Protocol to make financial contribution to support developing countries to implement policies and measures which gear towards sustainable development. The obligation of developing countries is to document and report their commitments of reducing greenhouse gases to COP after receiving funding for a specific period of time.

In a suspicious sense, some developing countries are concerned that repeated bids on the part of the industrialized countries (principally, but not exclusively, the United States) to include emission limitation commitments for developing countries on the negotiating agenda for the Kyoto Protocol are but thinly veiled attempts to impede poorer countries' economic development prospects. After all, greenhouse gas emissions are intimately linked to essential aspects of economic development, including electric power generation, transportation, and industry. For the developing world, addressing climate change is an issue of basic economic development more than environmental protection (Mitchell, 2003:312). However, certain developments in the Kyoto process further eroded trust and reinforce the North-South stalemate. In March 2001, the United States abandoned the Kyoto Protocol, citing two main reasons: lack of developing country participation and potentially high economic costs (Kete, 2004:1). Yet, the absence of U.S. participation in the Protocol is likely to retard future progress on the very issue that it deemed so important inclusion of developing countries in an emission limitation regime. In addition to abandoning the Kyoto Protocol, the United States has failed to put a strong climate policy in its place. The policy announced by President Bush in February 2002 will, by the government's own estimates, allow greenhouse gas emissions in the United States to grow by 14 percent from 2002 to 2012 (Emerson and Bauer, 2002: 156). Elsewhere in the world, most of the industrialized countries, including the members of the European Union and Japan, have ratified the Kyoto Protocol, which later come enter into force in 2005. With the Kyoto Protocol coming to life, discussions of what comes next gain increasing legitimacy and even urgency (Hickson, 2009).

Succinctly to assess the economic rationale for US rejection of the Kyoto Protocol, the US government claim that the mandatory limits under Kyoto would result in a loss of USD 400 billion in industry and 4.9 million US jobs (United Nations Foundation, 2002). Further projections also suggest that real GDP would fall at most by 2.9% during the 2008-2012 Kyoto compliance periods, and by 3.0% to 3.5% by 2020. In addition, it is estimated that 1.7 million jobs in the 2007-2010 period would be lost in the USA if Kyoto mandates had been successfully implemented (Kyoto Protocol and Beyond: The High Economic Cost to the United States, 2002). In a more specific sense, it was projected that the total costs of Kyoto mandates to the US economy have been estimated at roughly USD 5.5 trillion. The largest source of greenhouse gas emissions in the USA comes from energy-related activities, which account for over three-quarters of its GHG emissions. More than half of its emissions come from large sources such as power plants and factories, while about a third comes from transportation (Foreign Electricity Emission Factors 1999-2002, 2008). The business capital stock is predicted to drop by 4.2% as the economy's potential to produce would slip by approximately 3.0%, while overall consumption would decline as consumers adjust to a rapid increase in living costs (Kyoto Protocol and Beyond: the High Economic Cost to the United States, 2002). These underlying issues that trailed the foundation framework (Kyoto protocol) of climate action as regards the fuss in the differentiated responsibilities and non-compliance to obligations between industrialized countries and developing economies ostensibly provide insight on the challenges of subsequent negotiation and agreement of United Nations Framework Convention on Climate Change, UNFCCC. Hence, the Paris Agreement.

2.2 The Fundamentals and Challenges of Paris Agreement

The Paris Agreement (PA) is the second major subsidiary agreement under the UNFCCC. The Paris Agreement defines a collective, long term objective to hold the GHG-induced increase in temperature to well below 2° Celsius (C) and to pursue efforts to limit the temperature increase to 1.5° C above the pre-industrial level. In the Paris Agreement, for the first time under the UNFCCC, all Parties participate in a common framework with common guidance, though some Parties are allowed limited flexibility (Report of Congressional Research Service, 2020:3). Accordingly, the Agreement aims to ensure global greenhouse gas emissions peak as soon as possible, and to balance emissions and removals of greenhouse gases in the second half of this century. Furthermore, the agreement addresses adaptation to climate change, financial and other support for developing countries, technology transfer and capacity building as well as loss and damage. This is basically in contrast to the Kyoto Protocol which commits only developed countries to specific reduction targets , the Paris Agreement requires all countries to prepare nationally determined contributions (NDCs), take measures to achieve their objectives and report on progress (Report of European Parliament, 2016:1). In a historical sense, the Conference of the Parties, at its 21st session, adopted the Paris Agreement on 12th December 2015. The Paris Agreement stipulates that it shall enter into force thirty days after the date on which at least 55 Parties to the United Nations Framework Convention on Climate Change (UNFCCC) accounting in total for at least an estimated 55 % of the total global greenhouse

gas emissions have deposited their instruments of ratification, acceptance, approval or accession with the Depositary, the Secretary-General of the United Nations. The agreement was opened for signature on 22 April 2016 in New York. On 5 October 2016, the threshold for entry into force was achieved and the Paris Agreement entered into force on 4 November 2016(Report of UNFCCC, 2017: ii). Remarkably, Leggett (2020) also emphasized that Paris Agreement reiterates the obligation in the UNFCCC for developed country Parties to seek and mobilize financial support to assist developing country Parties with climate change mitigation and adaptation efforts, encouraging all Parties to provide financial support voluntarily. The decision to carry out the Paris Agreement calls for continuing the Cancun collective mobilization through 2025. The Parties agree to set, prior to their 2025 meeting, a new collective, quantified goal of not less than $100 billion annually to assist developing country Parties. The negotiators intended the Paris Agreement to be legally binding on its Parties, though not all provisions are mandatory. All Parties must submit "Nationally Determined Contributions" (NDCs) containing non-binding pledges to mitigate GHG emissions. The Parties are to update or submit new NDCs by 2020 and every five years thereafter. Each successive NDC of a Party "will represent a progression" and "reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in light of different national circumstances''. Basically, the Paris Agreement is an international legal instrument with the potential to measure up to the scale and urgency of the climate change (Report of Organisation for Economic Co-operation and Development, 2018: 7).

Succinctly, the following are the fundamentals of Paris Agreement which are:

- holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels',
- increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development', and
- 'making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development' (Report of European Parliament, 2016: 5).

Furthermore, Streck, *e tal* (2016) summarized the important features of the Paris Agreement:

1. An ambitious collective goal to hold global warming well below 2 degrees with efforts to limit warming to 1.5 degrees.
2. An aim for greenhouse gas emissions to peak as soon as possible and to achieve net-zero emissions in the second half of this century.
3. A requirement for mitigation measures of individual countries to be expressed in nationally determined contribution.
4. A process that demand a revision of NDCs at least every 5-years representing progression beyond the last NDCs.
5. A mechanism for countries to achieve NDCs jointly, sharing mitigation targets and a mechanism for countries to cooperate in achieving NDCs. Countries can meet their NDCs targets by transferring mitigation outcomes intentionally either in the context of emissions trading, or to allow results-based payment.
6. A mechanism for private and public entities to support sustainable development projects that generate transferrable emission reduction.
7. A framework for private and public entities to support sustainable development projects that generate transparency and an expert review of NDCs.
8. Encouragement for parties to implement existing frameworks for RED + including through the provisions of result-based payment.
9. A global goal of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change and commitment to providing enhanced support for adaptation.
11. A commitment to collective goal of providing USD 100 billion per year to 2025 and beyond 2025 with USD 100 billion as a floor. Developing countries are encouraged to provide voluntary support. Public fund will pay a significant role in fiancé and developed countries must report twice a year on levels of support provided.
12. An enhanced transparency framework for education and support with built-in flexibility which takes into account parties' different capacities with the goal to understand climate change action in the light of the objectives of UNFCCC and the Paris Agreement.

In other words, Paris Agreement is a paradigm shift in United Nations Framework Convention on Climate Change and intends to improve on the inadequacies of Kyoto Protocol as further embellished in the table below:

Table 1: Key Indicators of Kyoto Protocol and Paris Agreement in Comparative Perspective

	Kyoto Protocol	Paris Agreement
Scope	Mitigation	Mitigation, adaptation, Finance
Duration	Phase 1: 2008-2012 Phase 2: 2013-2020	Indefinite with revision of NDCs Every five years.
Application	Only developed country parties have emission reduction targets.	All Parties must make (nationally determined) mitigation contributions.
Coverage of global emissions	14% in Phase 2	99% of emissions are covered by already substituted INDCs
Mechanism	Emissions targets for developed countries, market-based mechanisms	Nationally determined contributions, voluntary cooperation between parties
Compliance	Enforcement through suspension from emissions trading, and additional reductions in second commitment period.	Expert-based and facilitative mechanism that is transparent, non-adversarial and non-punitive
Transparency	Different reporting requirements for developed and developing countries	Similar reporting requirements for all Parties.

Source: Adapted from Report of European Parliament, (2016:4).

As noted in the Report of European Parliament (2016), the Paris Agreement comes 23years after the signing of the UNFCCC, represents the culmination of six years of international climate change negotiations under the auspices of the UNFCCC, and was reached under intense international pressure to avoid a repeat failure of the Copenhagen climate conference in 2009. Dramatically, President Trump in 2017 puzzled the international community by announcing his intention to withdraw the United States from the Paris Agreement. Further to this development, the United States Department of State also notified the United Nations of U.S. withdrawal on November 4, 2019. The withdrawal takes effect on November 4, 2020, unless the U.S. government postpones or rescinds the withdrawal. This unpleasant development again resonate the dilemma of strategic response to the expectations of global climate regime. In this regard, Leggett (2020) indicated that in Katowice, Poland, in 2018, the Paris Agreement Parties agreed to many of the guidelines and processes so that Parties may implement the Agreement as intended. Despite these agreements, Parties did not resolve several issues of significance. Negotiations on these issues will likely continue at COP26/CMA3 in Glasgow, Scotland, in November 2020. (Report of Congressional Research Service, 2020:3 and Report of UNFCCC, 2016:5). However, the COVID-19 pandemic eroded these prospects.

Similarly, in 2009 and 2010, developed countries pledged collectively to mobilize US$100 billion per year by 2020, from public and private sources, to support mitigation and adaptation activities in low income countries. COP decision 1/CP.21 to adopt the PA (not the PA itself) stated that developed countries intend to continue their existing collective mobilization goal through 2025. Prior to 2025, the Parties shall set a new collective quantified goal for financial resources from a floor of US$100 billion per year. The goal should take into account the needs and priorities of developing countries. Parties may take into consideration the information from the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts. However, the financial pledges are not an enforceable commitment by developed country Parties. Many stakeholders argue, nonetheless, that the resources are essential to help low-income countries contribute to GHG abatement and adaptation in the context of sustainable development. The financial flows are also important politically—in part to build confidence in the functionality of the UNFCCC and PA and to build trust between the lower and higher income economies. At COP24 and since then, some countries made pledges toward this goal. Some developing country Parties submitted NDCs with GHG mitigation targets they would achieve unconditionally and more ambitious targets that they would achieve with adequate financial and technical support (UN, 2018:3, Lattanizo, 2018: 5 and Report of UNFCCC, 2016:7). However lucid these views may sound, the 2020 pandemic further worsen the challenge of non-commitment of developed and developing Parties towards their respective ambitions and finance.

In similar perspective, Report of Organisation for Economic Co-operation and Development (2018: 9), further stressed that;

There are a number of challenges that must be overcome by Parties if the Paris Agreement's ambitious goals are to be met, both individually and through the Paris Agreement's transparency and review provisions. First, the international community will need to successfully reconcile the disconnect between the bottom-up ambition in current NDCs and the Paris Agreement's top-down, long-term temperature goals. The aggregate level of pledged emissions reductions specified in current NDCs is not nearly sufficient to meet the Paris Agreement's mitigation goals. Again, Parties' efforts to finalize the Paris Agreement's "rulebook" by the end of this year, including the development of modalities, procedures and guidelines for the Agreement's transparency framework, are therefore fundamental to the future success of international efforts, not just a minor technical exercise. The joint OECD-IEA Climate Change Expert Group (CCXG), which engages

directly with Parties on technical issues within the UNFCCC process, is supporting Parties' efforts to meet the challenge of making the Paris Agreement operational. More also achieving the goals of the Paris Agreement will require emission reductions beyond industry and energy sectors. Globally, emissions from agriculture, forestry and other land-use (AFOLU) contribute around a quarter of total GHG emissions. Land sectors act as both a source of GHGs, for example methane from livestock and rice, carbon dioxide from land-clearing, and nitrous oxide from fertilizer use, and as a sink for greenhouse gases (e.g. sustainable forestry). Enhancing resilience will require capacity development and policy reforms. Current development patterns are often increasing countries' exposure to climate change impacts: for example, through the growth of low-lying coastal cities or the degradation of ecosystems and the services they provide. These patterns can lock-in vulnerabilities to climate change that will be difficult and expensive to reverse in future. To prevent this, there needs to be sufficient awareness and data to understand climate risks.

2.3 Recent Development in Paris Agreement

Emphatically, Kyoto Protocol and Paris Agreement represent strategic efforts of member countries of UNFCCC amid issues and daunting challenges that stem from domestic realities of industrialized countries and developing economies. As underscored in Kyoto Protocol, United States failed to negotiate with other super powers, Russia, China, Britain and France to ratify provisions of the Protocol in 1997 and its enforcement in 2005. Russia, China and European Union however approved the provisions of the Protocol. United State Government stressed the reason of domestic socio-economic implications such as job losses, downward trend of national GDP among other conditions which may undermine its national security and economy.

Impliedly, this situation inextricably resonate the suspicion of cold war era and further reinforce the shift in allegiance and fidelity of participating developing countries to the former Communist Powers (Russia and China), United States' foes. And, further constitute a serious threat to the unipolarity of the international system. This is further seen in subsequent UN Climate Action Framework in 2009 Copenhagen Accord where United States also refrained from its negotiations and resolutions in bid to protect its national interest. Hence, the Paris Agreement in 2016 which Trump Presidency in United States accepted without Congressional approval but dramatically in 2017 withdrew from the Agreement citing concerns of fairness and challenges of socio-economic realities. Basically, it is instructive to note that GHG pledges in selected NDCs indicates that United States before its withdrawal from the Paris Agreement pledged reduction of GHG emissions to 26 percent to 28 percent below 2005 levels in 2025. Also, China intend by 2030 to peak its carbon dioxide CO2 emissions, lower at CO2 emissions per unit of gross domestic product (GDP) by 60 percent to 65 percent below 2005 levels and increase the non- fossil fuel share of energy consumption to around 20 percent. However, the emergence of Joe Biden as United States President elicits the optimism of re-negotiation with the Parties of Paris Agreement. Hence, the Report of Congressional Research Service (2021) indicated that on January 20, 2020, President Joe Biden accepted on behalf of the United States, the Paris Agreement (PA), an international accord to address climate change for decades to come. The acceptance takes effect on February 19, 2021- 77 days after the United States' withdrawal took effect under the Trump Administration exactly four years after United States first become a Party to the Paris Agreement under the Obama Administration.

Remarkably, President Joe Biden of United States convened a virtual summit of 40 world leaders on 22nd and 23rd April, 2021 to galvanize global efforts to address the climate crisis. However before the summit, on 21st April, 2021, the European Parliament and Council agreed on the text of European Climate Law with legally binding targets of at least 55 percent net emissions reductions by 2030 on 1990 levels, and climate neutrality by 2050. To realize these ambitions, numerous Fit for 55proposals are sustainable finance package was also released on 21st April. On Biden Summit, the President of United States announced new targets of cutting US net greenhouse gas (GHG) emissions by between 26 and 28 % by 2025 , and by between 50 percent and 52 percent by 2030, compared with 2005 levels. Biden also announced initiatives to help developing countries decarbonise, and encouraged other countries to match US ambition. The summit represents one of a number of events leading up to the (delayed) 26th United Nations Climate Change Conference of the Parties (COP26) in Glasgow (United Kingdom) in November 2021, which prompted several countries to pledge new targets. The outcome of the Biden summit in April, 2021 entrenched new 2025 and 2030 emissions targets, accelerated measures to decarbonisation and financial support for developing countries occasioned with new partnership such as India-US Climate and Clean Energy Agenda Partnership for 2030, US-Danish Mission Innovation Initiative, etc (Report of European Parliament, 2021). This development not only reclaims the prestige and leadership of United States in global climate change regime but reinforce the confidence and commitment of Parties to Paris Agreement targets in view of current global challenges and realities.

3. CONCLUSION AND RECOMMENDATIONS

The Kyoto Protocol is indeed a historic effort inspite of its limitations. The provision of the Protocol which outlines differentiated roles or responsibilities was however trailed with suspicion and politics. Hence, the non-involvement of United States and its subsequent collapse is an indication that underscored the need for alternative approach and re-

engagement among Parties under a new framework. Hence, the Paris Agreement emerged to strengthen the viability of United Nations Framework Convention on Climate Change to the crises of global warming.

Today, expectations are high as member countries of UNFCCC prepare for 26th United Nations Climate Change Conference of the Parties (COP26) in Glasgow (United Kingdom) in November 2021. Remarkably, the COP26 conference will indeed leverage on President Joe Biden's Climate Change summit in April, 2021 which yielded some positive outcomes. As noted, the Report of European Parliament (2021) remarked that the summit prompted several countries to pledge steeper emission cuts and to announce a range of sectorial technology innovation partnership. Japan increased its 2030 targets from 26 % to 46% and 50% below 2013 level. United Kingdom intends 78% below 1990 level in 2035 and Canada from 30% to 45% below 2005 levels. South Korea will strengthen its emissions reduction contribution towards its 2050 neutrality goal and promised to put an end to public oversea coal financing. However, it is observed that leading Parties like India, China, Australia and Russia left their emissions ambition unchanged. Even the countries that made pledge in emission cuts, there were however serious concerns in the level of feasibility and implementation of emission ambition in view of domestic adverse realities and pressure. And, these concerns obviously illuminate the bedeviling challenges of the Kyoto Protocol and Paris Agreement as extensively discussed in the preceding sub-themes of this discourse. Hence, the need for more advocacy and commitments of Parties to pledges of target ambitions in credence to the broad objectives of Paris Agreement. This lofty ideal is however premised on better negotiations among sovereign states on the fundamentals of equity and fairness as hallmark of United Nations Framework Convention on Climate Change, UNFCCC. This is imperative for inclusive and effective participation of countries in global climate action irrespective of socio-economic status and domestic anxieties.

Furthermore, the need for industrialized countries to provide viable leadership for global action in climate change. Russia, China are expected to look beyond politics and demonstrate more commitment to encourage developing Parties to the objectives and targets of the Paris Agreement. Pertinently, it is also advocated that national governments of Parties should scale up climate policy action in the agriculture, forestry and other land-use sectors of their respective economies. Hence, the need to initiate nature-based solutions for mitigation such as protecting current stocks of carbon in tropical forests, grasslands and other ecosystems and enhancing the ability of ecosystems to act as carbon sinks wherever possible (e.g. reforestation, conservation and recovery of soils as carbon stocks); research, development and deployment of technologies to boost GHG-efficiency and reduce the emission intensity of agriculture while improving yields to meet rising food demand.

Finally, it is also suggested that specialized international agencies should assist national governments of Parties to overcome the barriers to more ambitious and urgent action. In this vein, the Report of Organisation for Economic Co-operation and Development (2018) indicates that OECD will continue to support governments in their implementation of the spectrum of domestic and international measures required to transition to low-emissions, climate-resilient development pathways and meet the Paris Agreement's goals, building on and coordinating where appropriate with the International Energy Agency, the International Transport Forum, the Nuclear Energy Agency and other international organisations. Priority areas include:

- Scaling up work on synergies and trade-offs in policies and institutional frameworks across the climate, land-use, ecosystems and food nexus. The OECD is uniquely placed to provide empirical and policy analysis, drawing on its expertise on spatial data and indicators and in-depth understanding of agricultural, biodiversity and climate policy issues.
- Helping governments to integrate social and distributional aspects of climate policy more effectively into policies and planning, to ensure that exposure to climate risks does not disproportionately impact specific segments of society and that the transition to low-emissions economies is inclusive. This will include work on the challenges of adapting to rising sea levels in coastal communities.
- Making finance flows consistent with the goals of the Paris Agreement. This is a core focus for the OECD, in terms of the Paris Collaborative on Green Budgeting, the Centre on Green Finance and Investment, the OECD-Development Assistance Committee's work and that of the Research Collaborative on Tracking Private Climate Finance.
- Supporting efforts to build resilience and adaptive capacity. This will span work on financing, risks and distributional questions as well as ecosystem-based approaches. The Roundtable on Water Financing will complement this work with its focus on mapping and estimating finance flows in water security, assessing policies that impact on investment flows and promoting ways to facilitate investment.

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