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# EFFICACY OF CLIMATE CHANGE DIPLOMACY: A Shift from Top down to Bottom up Approach

*Kalyani Acharya\* and Shubham Singh Bagla\**

**[Abstract:** Combating climate change requires a globally coordinated effort. For this reason, international diplomacy is the crucial setting to delineate a strategy that, on the one hand, involves as many countries as possible and, on the other hand, promotes effective measures to contain climate change. This research paper discusses the two different approaches to climate change diplomacy Top down and Bottom up. Failures of the initial top down approach of Kyoto Protocol lead to the formation of a comprehensive mechanism to deal with climate change. So, after several years of deliberations, a historical agreement based on a bottom-up approach was ratified at COP-21 in Paris. This agreement had a unique system of responsibility as NDCs and a long-term goal for climate change mitigation and adaptation. Paris Agreement was a shift of climate change regime from top down to bottom up. Further, the research paper has analyzed the efficacy of the bottom up mechanism of the Paris Agreement based on various reports by the IPCC, UNEP, and other international climate action agencies. On the basis of the suggested data, there has been an implementation gap, and current mitigation and adaptation actions need to be improved to limit the warming to 1.5°C or below 2°C. However, there is hope if we follow the path of zero carbon emission, and soon that will be lost too, if adequate measures are not taken.]

**Keywords:** Top down, Bottom up, Climate Change, Diplomacy, NDCs, Mitigation, Adaptation, Hybrid Multilateralism, etc.]

## I

### Introduction

“Man is both creature and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth. In the long and tortuous evolution of the human race on this planet a stage has been reached when,

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through the rapid acceleration of science and technology, man has acquired the power to transform his environment in countless ways and on an unprecedented scale.”<sup>1</sup> This unprecedented growth of industrialization and urbanization in the preceding century resultantly lead to the global warming and climate change. The Intergovernmental Panel on Climate Change (IPCC) in its first assessment report discovered the harmful effects of green house gases on the environment rise of temperature of planet earth, the report further suggested the need of robust mechanism to deal with the devastating effects of climate change. The United Nation Framework Convention on Climate Change (UNFCCC), adopted at the 1992 Rio Earth Summit and in force from March 21, 1994,<sup>2</sup> was designed to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”<sup>3</sup> Parties committed themselves, among other things, to prepare and submit national inventories of GHG emissions and sinks, establish national programs, and take measures to mitigate and to adapt to climate change. For developed countries, the goal was to reduce GHG emissions to 1990 levels by the year 2000. The framework was created to impede the global effects of climate change. This lead to the origin of Climate change Diplomacy to achieve the goals decided in UNFCCC. In this research paper two kinds of diplomatic approaches has been discussed to tackle the climate change classified as *Top down* and *Bottom up*. These two aspects represent two dimensions of international diplomacy: consensus (i.e., the willingness to be part of an international agreement) and efficacy (i.e., the need to devise norms that will be functional in tackling climate change).<sup>4</sup> As *top down* diplomacy of Kyoto protocol set legally binding emissions reduction commitments for developed countries only, *bottom up* approach of Paris Agreement sought a more equitable and adaptable agreement rather than being negotiated, emissions targets are designed by each party according to its

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<sup>1</sup>United Nations Conference on the Human Environment, *Stockholm Declaration on the Human Environment*, UN Doc.A/CONF.48/14, at 2 and Corr.1 (1972).

<sup>2</sup> UN Framework Convention on Climate Change, U.N. Doc. A/AC.237/18 (May 9,1992), reprinted in 311.L.M. 849.

<sup>3</sup> Margaret Rosso Grossman, *Climate Change and the Law*, 58 Am.J. Comp. L.,228(2010). See also Supplement: Welcoming the World: U. S. National Reports to the XVIIIth International Congress of Comparative Law (2010), pp. 223-255.

<sup>4</sup> Silvia Bacchetta, *From Rio to Paris : International Climate Change Treaties Between Consensus and Efficacy*, GLOBAL CLIMATE JUSTICE 64(Fausto Corvino, Tiziana Andina, 2023).

national circumstance. The research paper is divided into mainly two segments in which first part deals with the above mentioned diplomatic approaches of climate change framework along with the failure of *Top down* approach of Kyoto Protocol. Also the novel features of Paris Agreement have been discusses. In the preceding segment analysis of efficacy of current climate change approach of bottom up has been done on the basis on IPCC synthesis and other climate action reports.

## II

### Climate Change Diplomacy Framework

The present day's ecosystems are under permanent threat, hence the necessity of a common and consistent approach.<sup>5</sup> It is even more valid in relation to urban ecosystem services.<sup>6</sup> The UN Framework Convention on Climate Change is the international community's first genuine attempt to address the issue of global warming. Before the Convention was adopted in 1992 existing international instruments did not really address the greenhouse threat.<sup>7</sup> Initial Climate Change Diplomacy was started with Kyoto Protocol in COP-11.<sup>8</sup>

Climate change diplomacy presents the practice, mechanisms, and response measures aimed at creating the international climate change regime and ensuring its effective operation. It is a logical consequence of the long-lasting concern about nature.<sup>9</sup> *Top down* approach by specifying the emission targets for developed countries as they were considered responsible for climate change due to their industrialization. A *top down* approach refers to the way in which an agreement is managed, which is essentially based upon a multilateral/universal membership. A

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<sup>5</sup> Gunderson Lance *et. al*, *Integrating Ecology and Society to Navigate Turbulence*, 10 Ecology and Society 1(2005).

<sup>6</sup> Puay Yok Tan *et al.*, *A conceptual framework to untangle the concept of urban ecosystem services*, 200 Landscape and Urban Planning 11 (2020).

<sup>7</sup> Geoffrey Palmer, *New Ways to make Environmental Law*, 86 American Journ.Int'l Law 259 (1992).

<sup>8</sup> United Nations Climate Change, COP-11 Highlights, available at- <https://unfccc.int/process/conferences/pastconferences/montreal-climate-change-conference-december2005/statements-and-resources/COP-11-Highlights>. (last visited on Jan. 11, 2022).

<sup>9</sup> Jedediah Purdy, *The Politics of Nature: Climate Change, Environmental Law, and Democracy* 119 YLJ 1122(2010).

'top down' approach to a problem is a situation that begins at the highest conceptual level and works down to the details, i.e., it refers to the way in which an agenda for negotiations is prepared so as to define the overall shape of the agenda first and then proceed to consider how to deal with individual components.<sup>10</sup> Although there is no legal definition of a *bottom up* approach,<sup>11</sup> the idea behind it - which envisions the international climate change effort as an aggregation of nationally defined programs put forward by countries on a strictly voluntary basis is to aim at economic change towards a low-carbon future through promoting energy efficiency and inducing technological breakthroughs throughout the economy.<sup>12</sup> The purpose of this approach is to make bottom-up climate arrangements a useful supplement, and not a replacement, to top-down climate policies. Each country would determine what is socially, economically, politically, and technically feasible based on national circumstances.<sup>13</sup>

### ***Top down Approach of Kyoto Protocol***

The Kyoto Protocol is a highly centralized, top-down agreement on climate change which has proven to be very rigid in its approach to reducing GHG emissions.<sup>14</sup> The Kyoto Protocol, signed in 1997 and in force since 2005, was a standard "top-down" international treaty, which mandated legally-binding emission reduction targets. Article 3 of United Nations Framework Convention on Climate Change (UNFCCC) established guiding requirements for climate policy implementation for the Protocol, such as the idea of legally binding mitigation commitments,<sup>15</sup> common but differentiated mitigation responsibilities between developed and developing

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<sup>10</sup> Andreas F. Lowenfeld, INTERNATIONAL ECONOMIC LAW, 610-622 (2008).

<sup>11</sup> Rafael Leal-Arcas, *A Bottom-up Approach for Climate Change: The Trade Experience*, 2 Asian J.L&Econ 25(2011).

<sup>12</sup> Ted Nordhaus & Michael Shellenberger, *The End of Magical Climate Thinking* (2010), available at : <http://www.foreignpolicy.com/articles/2010/01/13/the-end-of-magical-climate-thinking>. (last visited Jan 5, 2022).

<sup>13</sup> Reinstein, Robert A, *A Possible Way Forward on Climate Change*, 9 Mitig Adapt Strateg Glob Chang 295-309 (2004).

<sup>14</sup> Raymond J. Kopp, *The Climate has Changed - So Must Policy*, RFF, Issue Brief (March 11, 2011) available at : <https://www.rff.org/publications/issue-briefs/> (last visited May 20, 2023).

<sup>15</sup> Bodansky, Daniel, and Lavanya Rajamani. *The Issues That Never Die*, 12 (3) CCLR 184(2018).

countries,<sup>16</sup> equity and benefits of present and future generations.<sup>17</sup> Kyoto Protocol was negotiated in order to place binding obligations on Annex I (developed country) parties to reduce GHG emissions.<sup>18</sup> The Protocol also features one of the more robust compliance mechanisms among multilateral environmental agreements ("MEAs"), consisting of a facilitative branch and an enforcement branch, the latter of which compels non-compliant parties to act<sup>19</sup>. These particular features-legally binding obligations and the enforcement of those obligations-impose top-down rigor, derived from the authority of international agreement. It bound only the developed-country Parties,<sup>20</sup> which were required to cut their emissions on average by 5.2% below 1990 levels by 2012.<sup>21</sup> To make sure that developed countries delivered, the Protocol put in place reporting and verification procedures.'

#### *Failure of Top Down Approach of Climate Diplomacy*

*Top down* approach of climate change regime failed as many developed countries either not ratified or did not abide to the ratified emission reduction targets. Having set legally binding emissions reduction commitments for developed countries only, the Protocol lost both the participation of the United States, whose government had grown chary of international environmental cooperation without the involvement of China<sup>22</sup>, and the confidence of parties,

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<sup>16</sup> Joyeeta Gupta, *A History of International Climate Change Policy* 1(5)Wiley Interdisciplin. Rev. Clim. Change 636 (2010).

<sup>17</sup> Dr. Paramjit S. Jaswal *et al.* (eds.), ENVIRONMENTAL LAW 135(2023).

<sup>18</sup> United Nations Framework Convention on Climate Change, Kyoto Protocol, Dec. 10, 1997, U.N. Doc FCCC/CP/1997/7/Add.1, 37 I.L.M. 22 (1998).

<sup>19</sup> *Id.*, See also, Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol, Report of the Conference of the Parties serving as the meeting of the parties to the Kyoto Protocol on its first session, held at Montreal from 28 November to 10 December 2005, Decision 27/CMP. 1: Procedures and Mechanisms Relating to Compliance Under the Kyoto Protocol, U.N. Doc. FCCC/KP/CMP/2005/8/Add.3

(Mar. 30, 2006), <http://unfccc.int/resource/docs/2005/cmpl/eng/08a03.pdf#page=92> . (last visited Jan., 12, 2022).

<sup>20</sup> *Supra* note 15.

<sup>21</sup> UN, *Industrialized Countries to Cut Greenhouse Gas Emissions by 5.2%* (Dec. 11, 1997) available at: <https://unfccc.int/cop3/fccc/info/indust.htm> . (last visited Feb.12,2022).

<sup>22</sup> Julian Borger, *Bush Kills Global Warming Treaty*, THE GUARDIAN (Mar. 29, 2001), available at: <https://www.theguardian.com/environment/2001/mar/29/globalwarming.usnews> (last visited May 5, 2022).

who have found the resulting treaty lopsided and ineffective<sup>23</sup>. The Kyoto Protocol was effectively obsolete from the outset. For one, the U.S., the world's largest emitter at the time, refused to ratify it, in part because it imposed no limits on China and other rapidly growing economies. Indeed, China overtook the U.S. as the world's largest emitter in 2006-just one year after the Kyoto Protocol entered into force." Moreover, the entire global emissions landscape changed significantly, yet the climate regime failed to keep pace. In 1992, when the UNFCCC was negotiated, developed countries were responsible for most new emissions. By 1994, total GHG emissions from the developing world exceeded those of the industrialized nations.<sup>24</sup> This meant that over 50% of new global emissions were outside of the climate regime. In other words, any emissions cuts made by the small club of Kyoto Parties (which got even smaller after Canada's exit from the regime in 2011) were dwarfed by the soaring emissions from the non-Kyoto countries. Meanwhile, emerging climate science showed that a greater global effort would be required to avoid catastrophic impacts. Thus, when it came time to extend the Kyoto Protocol, or to negotiate its successor treaty, it was apparent that a new universal, legally-binding agreement would be needed to govern climate change post-2020. The new treaty had to find a way to coax the top three emitters-China, the U.S., and India-into joining, none of which wanted to be bound by a Kyoto-style treaty, in addition to garnering support from all other developing countries,<sup>25</sup> which was a failure of a climate change diplomacy as there was no consensus of major emitters to be part of the agreement to limit green house gases which also turned down the efficacy of the protocol as well.

### III

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<sup>23</sup>Daniel Bodansky, *The Paris Climate Change Agreement: A New Hope?*, 110 AM. J. INT'L L. 288 (2016). *See*, In 2010, Japan announced its intention not to support the Kyoto Protocol's second commitment period, citing the lack of participation by the United States and China. MINISTRY OF FOREIGN AFFAIRS OF JAPAN, Japan's Position Regarding the Kyoto Protocol (Dec. 2010).

<sup>24</sup> Johannes Friedrich & Thomas Damassa, *The History of Carbon Dioxide Emissions*, WORLD RES. INST. (2014), available at: <https://www.wri.org/insights/history-carbon-dioxide-emissions>. (last visited Apr. 11, 2022) This includes emissions of all GHGs and emissions stemming from land-use change and forestry (e.g., deforestation and tree-clearing for agriculture); if we count only CO<sub>2</sub> emissions, the reversal moves to 2007.

<sup>25</sup> Maria L. Banda, *The Bottom-up Alternative: The Mitigation Potential of Private Climate Governance after the Paris Agreement*, 42 HARV. ENVTL. L. REV. 325 (2018).

## A Shift towards Bottom-up Approach: Paris Agreement

### *Need for New Approach*

The Copenhagen COP 15 failed in its effort to replace the Kyoto Protocol with a more comprehensive agreement.<sup>26</sup> A number of factors contributed to the diplomatic failure, including: the different views of the relative roles of developed versus developing nations, the sheer number of nations negotiating with one another, and the difficulty simply agreeing on what global greenhouse gas concentration is necessary to avoid "dangerous" climate change.<sup>27</sup> While the Copenhagen COP did not achieve the grand international agreement envisioned in the Bali Action Plan, negotiators were able to salvage the UNFCCC process by reaching agreement on a limited set of steps.<sup>28</sup> Kyoto Protocol to the 1992 Framework Convention on Climate Change (UNFCCC) was doomed to face serious difficulties ab initio because it places the responsibility of reducing greenhouse gas (GHG) emissions only with developed countries because of which it lost consensus of major emitters.

### *Planetary Social Contract of Historic Proportions*<sup>29</sup>

In 1997 Kyoto Protocol applied a *top down* strategy with highly differentiated approach to combat climate change, whereas in 2009 Copenhagen Accord and in 2010 Cancun Agreement tried to punt into place a "*bottom up*" mechanism. Both architectures offered some advantages, but in the end the disadvantages were greater, leading both climate regimes to fail. Nevertheless, these previous regimes were useful because they paved the road to build a novel climate regime, namely the Paris Agreement that focused both on consensus and efficacy. The key task of the Paris Agreement is to grant some flexibility to foster broad agreement and widespread participation without sacrificing the promotion of viable and effective mitigation and adaptation goals – that should possibly be set at each country's terms<sup>30</sup>, while addressing

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<sup>26</sup> David G. Victor, *Why the UN Can Never Stop Climate Change*, THE GUARDIAN, Apr. 4, 2011.

<sup>27</sup> Richard B. Stewart et al., *A New Strategy for Global Climate Protection*, 120 Clim.Change.1, 2 (2013).

<sup>28</sup> UNFCCC, *Copenhagen Accord*, U.N. Doc. FCCC/CP/2009/11/Add.1, Decision 2/CP.1 (Mar. 30, 2010).

<sup>29</sup> Gurdip Singh, *Paris Climate Agreement: A Victory or Defeat of Climate Justice*, 7 RMLNLUJ 1 (2015).

<sup>30</sup> Radoslav S. Dimitrov, *The Paris Agreement on Climate Change: Behind Closed Doors*, 16 GEP 1–11 (2016).



also pressing matters of global distributive justice.<sup>31</sup> So the negotiations towards Paris Agreement were launched with the Durban Platform for Enhanced Action adopted at COP 17 in 2011. The Conference of Parties (COP-19) in Warsaw called on Parties to submit “*Intended Nationally Determined Contributions*” (INDCs) well before the Paris Conference signaling an important “*bottom up*” feature of the emerging agreement.<sup>32</sup> Finally at COP-21 held in Paris, Parties to the UNFCCC reached a landmark agreement to combat climate change which was negotiated and adopted by consensus of representatives of 196 countries. It first time brought all nations into a common cause to undertake ambitious efforts to combat and adapt to its effects with enhanced support to assist developing countries to do so.

### ***Novel Bottom up Measures of Climate Change Diplomacy***

#### Long Term Goals

*Bottom up* approach of Paris agreement envisions the international climate change effort as an aggregation of nationally defined programs put forward by countries on a strictly voluntary basis to achieve the mitigation targets of temperatures rise below 2°C, with the efforts to keep the rise below 1.5°C,<sup>33</sup> is to aim at economic change towards a low-carbon future through promoting energy efficiency and inducing technological breakthroughs throughout the economy. The purpose of this approach is to make bottom-up climate arrangements a useful supplement, and not a replacement, to *top down* climate policies. Each country would determine what is socially, economically, politically, and technically feasible based on national circumstances. There are clear benefits to a bottom-up approach: it is feasible i.e., it is easier to reach consensus and implement the outcomes than it is in a *top down* approach. It is effective i.e., it can attract the world's largest GHG emitters for purposes of reducing the emissions of GHGs;

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<sup>31</sup> Darrel Moellendorf, *Climate Change and Global Justice*, 3(2) Wiley Interdiscip. Rev. Clim. Change 131–43 (2012).

<sup>32</sup> *Supra* note 14.

<sup>33</sup> United Nations Framework Convention on Climate Change, *Paris Agreement*, T.I.A.S. No. 16-1104, Article 2, (Dec. 12, 2015).

and it is practical i.e., it may become an implementation platform for multilateral climate policies.<sup>34</sup>

### Nationally Determined Contributions (NDCs)

With the development of the Paris Agreement, policymakers tried to pursue these objectives through a novel climate regime that integrates both a bottom-up and a *top down* mechanism – albeit prioritizing the former. As a matter of fact, the Paris Agreement consists in a binding agreement with mandatory provisions regarding mitigation and adaptation goals that each country can adapt to its own needs.<sup>35</sup> The Paris Agreement thus inverted the Kyoto model. Instead of imposing *top down* emissions reduction targets, it asked countries to develop bottom-up mitigation approaches, in line with their own national circumstances. The concept of Nationally Determined Contributions (NDCs) takes into account the outcomes of both Warsaw COP 19 and Lima COP 20. Specifically, under Article 4, "[e]ach Party shall prepare, communicate and maintain successive nationally determined contributions ["NDCs"] that it intends to achieve [ ]" and "pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions."<sup>36</sup> According to each party's ability, any country can be part of an international climate regime (with all the side perks, such as international recognition, participation in international talks, geopolitical weight, and potentially fruitful economic connections) without the hassle of meeting top-down commitments. Indeed, even though each country is free to pledge whatever mitigation or adaption goal it deems appropriate, these pledges are integrated into a 'legally binding framework that builds around them a range of important procedural obligations<sup>37</sup>', including periodical checks on each country's progress in

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<sup>34</sup> *Supra* note 8.

<sup>35</sup> Lavanya Rajamani, *The 2015 Paris Agreement: Interplay Between Hard, Soft and Non-Obligations*, 28 J. Environ. Law 337–58 (2016).

<sup>36</sup> Robert O. Keohane & David G. Victor, *The Regime Complex for Climate Change* 9 APSA 14 (2011). See Also Paris Agreement (Dec. 12, 2015), U.N. Framework Convention on Climate Change ("UNFCCC"), Rep. of the Conf. of the Parties on its Twenty-First Session, Addendum, U.N. Doc. FCCC/CP/2015/10/Add.1 (Jan. 29, 2016), <https://perma.cc/KT8D-RUY6>. The Paris Agreement is annexed to Decision 1/CP.21 adopted in Paris.

<sup>37</sup> David Held and Charles Roger, *Three Models of Global Climate Governance: From Kyoto to Paris and Beyond*, 9 Glob. Policy 527–37 (2018).

implementing domestic policies to reach its pledged target. Yet, the Paris Agreement was also able to promote the efficacy dimension. Moreover, the Paris Agreement aims to promote a more ambitious overall mitigation target than the previous treaties. Even though it still maintains the goal of keeping the temperatures rise below 2°C, it also encourages efforts to keep the rise below 1.5°C. Thanks to these mechanisms, within the Paris climate regime it is possible to combine a consensus-based architecture with the promotion of effective mitigation and adaptation goals to reduce GHG emissions, overcoming the main flaws of both the Kyoto Protocol and the Copenhagen Accord.<sup>38</sup>

This is the legally binding heart of the Paris Agreement, which is essential for the treaty's success. The inclusion of these procedural provisions, as well as the substantive commitment to pursue a 1.5 °C target, reflects in part the efforts of a "High Ambition Coalition" of States to secure a binding and more ambitious deal, which the U.S. joined in Paris. The NDCs do not have the force of international law, but they represent policy commitments for which Parties can be held publicly accountable (even if they cannot be penalized for noncompliance). The force of the Paris Agreement thus relies on the assumption that the normative pull generated by its near-universal membership and peer pressure will lead countries to deliver on their voluntary pledges and increase their ambition over time, through persuasion and cooperation, potentially resulting in stronger implementation modalities post-Paris.

### Hybrid multilateralism

Paris Agreement reflects a hybrid approach, blending the bottom-up flexibility of the Copenhagen Accord with *top down* rules, like those of the Kyoto Protocol<sup>39</sup>. Moreover, it reflected a fundamental shift away from the categorical binary approaches that linked a country's commitments under the Convention to its relative level of development: though it includes Paris Agreement takes a *bottom up* approach to commitments. Rather than being

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<sup>38</sup>, Clive L. Spash, *This Changes Nothing: The Paris Agreement to Ignore Reality* 13 Globalizations 928–33 (2016).

<sup>39</sup> Conference of the Parties, Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015, Decision 1/CP.21: Adoption of the Paris Agreement, U.N. Doc. FCCC/CP/2015/10/Add.1, available at- <http://unfccc.int/resource/docs/2015/cop21/eng/10.pdf>.

negotiated, emissions targets are designed by each party according to its national circumstance. The idea is to attract wide participation, especially by all the major emitters of greenhouse gases, and although it may sound counter-intuitive to promote greater ambition by removing the fear of sanctions for non-compliance.<sup>40</sup> Beyond the largely bottom-up approach to targets, the Paris outcome created platforms and other opportunities for non-state actors to take on commitments for emissions reduction and participate in the multiple processes<sup>41</sup>. This strategy is expected to augment or supplement national governments' goals and commitments. This approach, also called "*hybrid multilateralism*" by some authors, is characterized by an intricate entanglement of public and private authority and involves a "more integrated role for non-state actors in multilateral processes through monitoring of national action and experimentation with local, regional and transnational mitigation and adaptation strategies'.<sup>42</sup>

#### IV

##### **Efficacy of Bottom-up Diplomacy**

Climate Change Diplomacy has been the heart of UNFCCC. As Kyoto Protocol failed because of the priority of legally binding targets Paris Agreement tried to balance through nonbinding commitments. Though the *bottom up* approach has been helpful for the consensus and 192 countries are part of the climate change regime of the Paris Agreement, on the efficacy part, non-binding commitments of Nationally Determined Contributions are lacking to achieve the long-term goal of the Paris Agreement of 2°C as per the IPCC synthesis report. According to IPCC Synthesis Report, Current Mitigation and Adaptation Actions and Policies are not sufficient. There are the following gaps which are a question regarding the efficacy of the bottom-up approach of the current climate change regime:

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<sup>40</sup> Rafael Leal-Arcas, *Re-Thinking Global Climate Change: A Local, Bottom-up Perspective*, 20 WHITEHEAD J. DIPL. & INT'L REL. 4 (2018).

<sup>41</sup> Galvanizing the Groundswell of Climate Actions, *How Can Funders Accelerate Climate Action to 2018-2020?: Building A Catalytic "Ecosystem "for Subnational and Non-State Actors* (Memorandum), March 2017, <https://www.cisl.cam.ac.uk/publications/publication-pdfs/ggca-memorandum-to-funders-on-sub-non-state-climate-actionmar-2017-1.pdf>.

<sup>42</sup> Karin Backstrand, *et al.*, *Non-state actors in global climate governance: from Copenhagen to Paris and Beyond*, 26 Environ. Polit. 561-79 (2017).

### *Substantial Emission Gap with the Implementation of NDCs*

There is no common-agreed standard to measure the adequacy of NDCs or the actual progress towards them. Instead, the UNFCCC process relies on periodic stocktakes that shall ‘inform Parties in updating and enhancing, in a nationally determined manner, their actions’.<sup>43</sup> To evaluate progress over time is essential to make the Paris Agreement ambition-raising mechanism work. Since the Paris Agreement was adopted, several countries updated their NDCs, which vary in content and implied absolute emission levels but collectively result in emissions lower than the original ones.<sup>44</sup> Countries now also announce long-term pledges to reach net zero emissions.<sup>45</sup> Temperature estimates based on meeting NDCs and net zero targets show an increase in the likelihood of limiting end of century warming temperature increase to 1.5 °C.<sup>46</sup> Countries’ pledges are not equivalent to actions and still fail to secure the global temperature goals but got a boost since the adoption of the Paris Agreement. Several developments since 2015 affect countries’ ability to meet these pledges.

**A substantial ‘emissions gap’ exists** as global GHG emissions in 2030 associated with the **implementation of NDCs** announced prior to COP26 would be similar to or only slightly below 2019 emission levels and higher than those associated with modelled mitigation pathways that limit warming to 1.5°C (>50%) with no or limited overshoot or to 2°C (>67%), assuming immediate action, which implies deep, rapid and sustained global GHG emission reductions this decade. The magnitude of the emissions gap depends on the global warming level considered and whether only unconditional or also conditional elements of NDCs are considered. Modelled pathways that are consistent with NDCs announced prior to COP26 until

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<sup>43</sup> UNFCCC (2018) Decision 19/CMA.1: matters relating to the Article 14 of the Paris Agreement and paragraphs 99–101 of decision 1/CP.21: FCCC/PA/CMA/2018/3/Add.2,p.53., available at- <https://unfccc.int/documents/193408>. (last visited Jan. 15, 2022).

<sup>44</sup> Climate Action Tracker Climate action tracker: country assessments. New Climate Institute, Ecofys, Climate Analytics, (2015). Available at- <https://climateactiontracker.org/countries.html> . (last visited Feb. 10, 2022).

<sup>45</sup> Fankhauser, S, et. al., *The meaning of net zero and how to get it right*, 12 Nat. Clim. Chang. 15–21 (2022). available at- <https://doi.org/10.1038/s41558-021-01245-w> (last visited Feb. 15, 2022).

<sup>46</sup> Malte Meinshausen, et. al., *Realization of Paris Agreement pledges may limit warming just below 2 °C*, 604 Nature 304–309 (2022). available at- <https://doi.org/10.1038/s41586-022-04553-z> (last visited Jan. 20, 2022).

2030 and assume no increase in ambition thereafter have higher emissions, leading to a median global warming of 2.8 [2.1–3.4] °C by 2100. If the ‘emission gap’ is not reduced, global GHG emissions in 2030 consistent with NDCs announced prior to COP26 make it likely that warming will exceed 1.5°C during the 21st century, while limiting warming to 2°C (>67%) would imply an unprecedented acceleration of mitigation efforts during 2030–2050.<sup>47</sup>

### ***Policy Implementation Gap***

The adoption of each additional climate policy likely reduces national emission intensity.<sup>48</sup> However, the addition of policies alone does not ensure their collective effectiveness.<sup>49</sup> Policies are sometimes also insufficient to meet countries’ own NDCs.<sup>50</sup> Policies remain absent in important mitigation areas<sup>51</sup> and a mismatch between policy adoption and implementation is observed in key emitters.<sup>52</sup> Non-policy factors influence emissions as well. The global COVID-19 pandemic, for example, resulted in short-term emission decrease and a global economic downturn.<sup>53</sup> Yet, despite the multiple calls to use this moment to increase low carbon investments, current recovery spending remains insufficient to put countries in a low-carbon

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<sup>47</sup> UNFCCC, *Nationally determined contributions under the Paris Agreement Synthesis Report*, FCCC/PA/CMA/2022/4(2022), available at-<https://unfccc.int/documents/619180>. (last visited May 20, 2022).

<sup>48</sup> Shaikh M. S. U. Eskander & Sam Fankhauser, *Reduction in greenhouse gas emissions from national climate legislation*, 10 Nat. Clim. Chang., 750-756 (2020), available at- <https://doi.org/10.1038/s41558-020-0831-z>. (last visited Feb. 11, 2022).

<sup>49</sup> Navroz K. Dubash, *Varieties of climate governance: the emergence and functioning of climate institutions*, 30 Environ.Poli. 1-25 (2021).

<sup>50</sup> Takeshi Kuramochi, *et.al.* *Greenhouse gas emission scenarios in nine key non-G20 countries: an assessment of progress toward 2030 climate targets*, 123 Environ Sci Policy 67–81 (2021), available at- <https://doi.org/10.1016/j.envsci.2021.04.015>. (last visited Jan. 20, 2022).

<sup>51</sup> Leonardo Nascimento, *et. al.* *Twenty years of climate policy: G20 coverage and gaps*, 22 Clim. Policy. 158-174 (2022), available at- <https://doi.org/10.1080/14693062.2021>. (last visited Apr. 20, 2022).

<sup>52</sup> Celso H. L. Silva Junior, *The Brazilian Amazon deforestation rate in 2020 is the greatest of the decade*. 5 Nat Ecol Evol 144– 145(2021), available at- <https://doi.org/10.1038/s41559-020-01368-x>

<sup>53</sup> Corinne Le Quéré, *et. al.*, *Temporary reduction in daily global CO2 emissions during the COVID-19 forced confinement*. 10 Nat. Clim. Chang. 647–653(2020). available at- <https://doi.org/10.1038/s41558-020-0797-x>. (last visited Feb. 20, 2022).

trajectory.<sup>54</sup> To periodically track changes in emission projections under adopted policies, not only pledges, is fundamental to assess progress towards meeting the goals of the Paris Agreement. Projected global emissions under adopted policies lead to higher emissions when compared to pledges.<sup>55</sup>

Diverse integrated assessment models show that recent policy-based emission projections remain insufficient to meet global temperature goals.<sup>56</sup> The median of emissions across studies that use distinct quantification methodologies indicate that global emissions under adopted policies have not yet peaked and are not expected to do so before 2030.<sup>57</sup> The comparison with current domestic mitigation policies allows an assessment of the additional emission reductions needed to achieve the NDCs' reduction targets. Countries will likely need to implement additional or more stringent policies to further reduce global GHG emissions by about 4.5 GtCO<sub>2</sub>eq to achieve the unconditional NDCs<sup>58</sup> by 2030, and by about 6.1 GtCO<sub>2</sub>eq to achieve the conditional NDCs.<sup>59</sup> Only six economies are responsible for the largest share (about 75% for the unconditional NDCs and about 60% for the conditional NDCs<sup>60</sup> of the required reductions, namely the USA, China, Canada, EU-27, Japan and Brazil. The emission target levels of under the NDC scenario for several countries (among which India, Russian Federation, Saudi Arabia, Turkey and several non-G20 members, such as Iran) are projected to be above the estimated current policies scenario levels. These countries are expected to overachieve their NDC targets

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<sup>54</sup> Frederic Hans (2022) *Unpacking the COVID-19 rescue and recovery spending: an assessment of implications on greenhouse gas emissions towards 2030 for key emitter*, 1 *Clim Action* 3(2022).available at- <https://doi.org/10.1007/s44168-022-00002-9>. (last visited Apr. 22, 2022).

<sup>55</sup> United Nations Environment Programme, *Emissions Gap Report 2021: The Heat Is On – A World of Climate Promises Not Yet Delivered*. Nairobi (2021).available at- <https://www.unep.org/emissions-gap-report-2021>. (last visited Jan. 10, 2022).

<sup>56</sup> Ida Sognnaes, et. al. *A multi-model analysis of long-term emissions and warming implications of current mitigation efforts*, 11 *Nat Clim Chang* 12(2021), available at- <https://doi.org/10.1038/s41558-021-01206>. (last visited Jan. 11, 2022).

<sup>57</sup> *Supra* note 50.

<sup>58</sup> 'Unconditional' elements of NDCs refer to mitigation efforts put forward without any conditions.

<sup>59</sup> IPCC, 2022: *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*.

<sup>60</sup> 'Conditional' elements refer to mitigation efforts that are contingent on international cooperation, for example bilateral and multilateral agreements, financing or monetary and/or technological transfers.

with current policies. In our assessment, we assumed that these countries follow their current policies emission trajectory and over achieve their NDCs, leading to additional net reductions at the global level of 4.1 and 2.5 GtCO<sub>2</sub>eq for the unconditional and conditional NDC scenario, respectively. Climate action policy is still falling short of Paris Climate goal with no credible avenue towards 1.5 °C. only an acute transformation can save human species from an accelerating climate disaster. From current progress of NDCs there is only 66% chance to limit global warming that too up to 2.6 °C by the end of the century. Further with the current policy framework there are grave chances of hike of up to 2.8 °C.<sup>61</sup>

### ***Mitigation Gaps and Barriers***

All mitigation strategies face implementation challenges, including technology risks, scaling, and costs. Almost all mitigation options also face institutional barriers that need to be addressed to enable their application at scale. Current development pathways may create behavioural, spatial, economic and social barriers to accelerated mitigation at all scales (high confidence). Choices made by policymakers, citizens, the private sector and other stakeholders influence societies' development pathways. Structural factors of national circumstances and capabilities (e.g., economic and natural endowments, political systems and cultural factors and gender considerations) affect the breadth and depth of climate governance. The extent to which civil society actors, political actors, businesses, youth, labour, media, Indigenous Peoples, and local communities are engaged influences political support for climate change mitigation and eventual policy outcomes.<sup>62</sup>

### ***Adaptation Gaps and Barriers***

1. Despite progress, adaptation gaps exist between current levels of adaptation and levels needed to respond to impacts and reduce climate risks.

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<sup>61</sup> United Nations Environment Programme(2022). *Emissions Gap Report 2022 : The Closing Window – Climate Crisis calls for rapid transformation of societies*. Nairobi, available at- <https://www.unep.org/emissions-gap-report-2022>. (last visited Jan. 20, 2022).

<sup>62</sup> *Supra* note 59.



2. Soft and hard adaptation limits<sup>63</sup> have already been reached in some sectors and regions, in spite of adaptation having buffered some climate impacts.
3. There is increased evidence of maladaptation<sup>64</sup> in various sectors and regions.
4. Systemic barriers constrain the implementation of adaptation options in vulnerable sectors, regions and social groups.<sup>65</sup>

## V

### Conclusion and Suggestions

In the realm of climate justice climate change diplomacy has played a vital role. A reconstruction of the history of the international climate change regime, this research shows how each regime tried to balance the need to produce results regarding climate change adaptation and mitigation and the need to involve as many countries as possible. This overview skims almost 30 years of climate regimes, pinpointing how efficacy and consensus have been balanced in two different approaches. Initially, the top-down approach of the Kyoto Protocol prioritized efficacy over consensus. Then the Copenhagen Accord tried unsuccessfully to combine consensus and efficacy on the misguided assumption that in an entirely voluntary climate regime, countries would have set ambitious mitigation and adaptation goals for themselves. Eventually, the Paris Agreement integrated specific mechanisms to accommodate consensus and efficacy. Apart from the specificity of each climate regime, throughout the years, international diplomacy has always found a way to overcome obstacles and enact an operative climate regime.

Nevertheless, these climate regimes have yet to produce significant progress in combatting climate change. IPCC synthesis report shows that the central problem of the implementation

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<sup>63</sup> Adaptation limit: The point at which an actor's objectives (or system needs) cannot be secured from intolerable risks through adaptive actions. Hard adaptation limit - No adaptive actions are possible to avoid intolerable risks. Soft adaptation limit - Options are currently not available to avoid intolerable risks through adaptive action.

<sup>64</sup> Maladaptation refers to actions that may lead to increased risk of adverse climate-related outcomes, including via increased greenhouse gas emissions, increased or shifted vulnerability to climate change, more inequitable outcomes, or diminished welfare, now or in the future. Most often, maladaptation is an unintended consequence.

<sup>65</sup> *Supra* note 40.

gap in dealing with climate change is translating pledges into actual environmental policies to be implemented in each country. It is not difficult to bring countries with different interests and needs to the table and make them agree on a common institutional framework. Instead, the real challenge is to make countries follow up their international commitments with actual domestic policies. Instead, pledges mostly become empty promises as countries systematically fail to implement mitigation or adaptation policies: climate change policymaking is indeed affected by a systematic problem of non-compliance. The problem of non-compliance, which includes both the problem of implementation and free-riding, adds a further challenge to the already complex issue of climate change. The problem is twofold: On the one hand, there is the need to prompt countries to implement climate change policies to reduce GHG emissions and curb climate change, while on the other hand, it is vital to discourage free-riding to make each country contribute to combatting climate change. There are certain suggestions to combat the overshooting of global warming and climate change:

1. When combined with other supportive actions, addressing needs and gaps and broadening equitable access to domestic and international finance can act as a catalyst for accelerating mitigation and shifting development pathways.
2. Climate resilient development can be initiated by increased international cooperation, including mobilizing and enhancing access to finance international financial, technology, and capacity-building support to developing countries, enabling more effective implementation and more ambitious actions. By integrating equity and climate justice, national and international policies can help to facilitate shifting development pathways towards sustainability, especially by mobilizing and enhancing access to finance for vulnerable regions, sectors, and communities.
3. Multilateral governance efforts can help reconcile contested interests, world views, and values about how to address climate change. International environment and sectoral agreements, and initiatives in some cases, may stimulate low GHG investment and reduce emissions.

4. Support for successful low-carbon technological innovation includes public policies such as training and R&D, complemented by regulatory and market-based instruments that create incentives and market opportunities such as appliance performance standards and building codes.
5. Technological innovation can have trade-offs that include externalities such as new and more significant environmental impacts and social inequalities, rebound effects leading to lower net emission reductions or even emission increases, and overdependence on foreign knowledge and providers.

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