PARIS CLIMATE ACCORD AND SETTING UP OF A COLLABORATIVE GOVERNANCE REGIME AT THE LEVEL OF THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

Climate change is a global problem, one that cannot be solved by any one nation or state actor alone. By learning from the failures of recent international climate change action, specifically the failures of the Paris Accord, and best practices of collaborative governance, we recommend creating a Collaborative Governance Regime (CGR) at the level of the United Nations Framework Convention on Climate Change (UNFCCC). The proposed CGR will differ from the Paris Accord, most notably: (i) focus on key actor nations representing the largest CO_2 emitters (to the tune of 64% of the total emissions)(China, United States, India, European Union, Russian Federation and Japan), as opposed to the full international community; (ii) focus on one specific facet of climate change, CO_2 emissions, as opposed to the entire scope of contributing factors to climate change; (iii) increased emphasis on collaboration for ambitious, yet realistic goals, and finally; (iv) increased emphasis on sanctioning to prevent any unilateral withdrawal undermining the collective spirit. In this backdrop, the role of India in terms of the Paris Accord is quite significant. India being one of the leading contributors to the greenhouse gases including CO_2, also has made rapid strides in utilizing renewable sources of energy in pretty quick time. Further, India has an important role to play in the geopolitics and climate sustainability of the South Asian region as a key driver.

Within the section of 'System Context', we elaborate on the importance of existing structures, frameworks, and conditions which will impact the CGR, such as issues of climate justice, resources and opportunities, international and national law, limitations, behaviors and lifestyles, among others. In addition, the 'Drivers' section details the importance of uncertainty, interdependence, consequential incentives and initiating leadership specific to climate change which will influence the formation of the CGR. The 'Case Analysis' section focuses on the missing pieces of the Paris Accord and what could be learnt for any future CGR at the global level. Finally, certain recommendations have been made to make any future collaborative effort sustainable and effective.

INTRODUCTION

"The earth, the air, the land, and the water are not an inheritance from our forefathers but on loan from our children. So, we have to hand over to them at least as it was handed over to us."

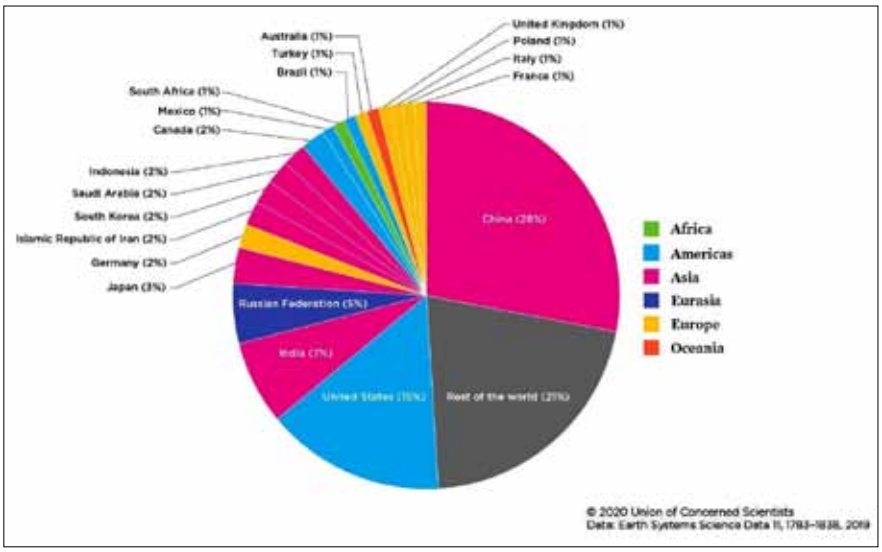
– Mahatma Gandhi

The issue of climate change is not simply an environmental one, but rather one that encompasses all aspects of human and governmental functions. Climate change is an expansive issue that is naturally a social, political, economic, and humanitarian concern that worsens everyday as a result of inaction. The problem to address is the lack of desired responses and swift action carried out by the international community with regards to climate change. Climate change is the biggest threat to humanity at this time, if it is not addressed and met with perceptible action, the consequences will be catastrophically fatal. Every other pressing issue each country faces becomes secondary to climate change, as the potential consequences of the change could drastically change the landscape and inherent context of various nations, for example, small island states and coastal cities and the existential threat of rising sea levels.

The only way to ensure the preservation of human life and to build a climate resilient society is through collaborative action at the international level. While there are various states that are actively engaged in efforts to minimize their carbon footprints, only through a unified global effort there could be any measurable success in

tackling this acute problem. The effects of climate change are not bound by national borders, which means, while the efforts of one country may be valiant and helpful, if other countries are not actively doing anything to curtail their emissions levels, then there will be no real difference in mitigating the larger issue at hand. However, the falling apart of the Paris Accord post unilateral withdrawal of the United States of America had raised serious concerns about the future of climate governance at the global level. Alternatively, things have taken a positive turn with the advent of the new regime in USA and President Biden announcing his strong intent to bring the Accord back on track. This has not only raised the stakes, but also has thrown upon a prism of opportunity to other key nations in the process of building key consensus as well as perceptible action on the ground as per designated milestones. "Mr. Biden's emphasis on multilateralism, which underpins the UN Framework Convention on Climate Change and the Paris Agreement, implies strong emphasis on arrangements to increase funding and transfer of clean technologies that innovation makes possible. These objectives are part of Articles 10, 11, and 13 of the accord." (Ananthakrishnan, G. 2020)

Figure 1: **Each** Country's Share of CO_2 Emissions



(Updated Aug 12, 2020) Source:https://www.ucsusa.org/resources/each-countrys-share-co2-emissions

In focusing primarily on CO_2 emissions, bringing together the largest contributors to the global carbon emission seems the most pragmatic way to tackle the issue. "While it is only an early step in the right direction, given the failures of the Kyoto Protocol as well as the Paris Climate Accord, it seems best to begin with a small group of actors that accounted for about 56% of the total carbon emissions every year" (Friedrich, 2019). While looking at the current status of nations, "the UN said that the renewed pledges would see emissions drop less than one percent compared with 1990 levels – a far cry from the 45 percent cut that the UN's climate panel says is needed to limit warming to 1.5C. Further, more than 100 countries representing 65 percent of global emissions have yet to formally set a date by which they must achieve climate neutrality." (Phys.org, 2021) This further establishes the urgent need for key actor nations to walk the talk and rebuild the trust and confidence on global climate governance. These key actor nations represent the largest CO_2 emitters (to the tune of 64% of the total emissions) being-- China, United States, India, European Union, Russian Federation and Japan. These key actor nations are leading polluters at this juncture and the ones who could move other nations to achieve the desired goals with varying priorities, visions of success, cultural and political dynamics in this Collaborative Governance Regime (henceforth mentioned as CGR). With this as the driver, the CGR makes it easier to reach to a consensus for moving forward to build the agreed upon vision of success. Finally, through the successes of this CGR in the manifestation of Paris Accord, the UNFCCC can continue, adapt, and expand and bring other nations to the table and amplify and coordinate global efforts to combat climate change.

PROBLEM STATEMENT

Climate change is an issue that must be addressed by the global community, including state actors. This paper examines climate change (specifically carbon emissions), the failures of the Paris Climate Accord, India's role under the Accord, and provides recommendations to establish a collaborative governance regime led by the UNFCCC to focus on carbon emission reductions. In practice, what makes climate change a wicked problem is the lack of any universal understanding of what the problem actually is as well as what it entails. As the

World Bank Research Manager Mike Toman put it, "Climate change is an issue that presents great scientific and economic complexities, some very deep uncertainties, profound ethical issues, and even lack of agreement on what the problem is" (The World Bank, 2014). Due to a lack of universally accepted definitions, measurements, and visions of success, the efforts to combat climate change have become difficult to achieve.

Looking at the failures of previous efforts that have tried to mitigate the effects of climate change, one gets an insight into what is to be avoided while moving forward. First and foremost, in the past, there have been several attempts to address the consequences of climate change at an international level, which shows that this is a global problem that can only be mitigated by a united global effort. While the Paris Climate Accord did learn from the shortcomings of the Kyoto Protocol and previous Conference of Parties (COP), it had some drastic shortcomings of its own. While the Kyoto Protocol failed to have enough of the relevant stakeholders at the table such as China and the United States, the Paris Climate Accord included too many actors in the agreement. Given the varying political, cultural, and economic dynamics and values of every country present at the negotiation table, the issue becomes harder to tackle this way since there was no universally accepted definition of the problem, measurement of progress and success, and an unanimously accepted vision for success. The role of India in terms of the Paris Accord is quite significant. India being one of the leading contributors to the greenhouse gases including CO2, also has made rapid strides in utilizing renewable sources of energy in pretty quick time. Further, India has an important role to play in the geopolitics and climate sustainability of the South Asian region as a key driver. This along with unrealistic targets and no means by which to hold stakeholders accountable– which is why it was so easy for the USA to unilaterally withdraw from the Paris Accord placing focus on its domestic market contradictions. Each and every reason for the non-achievement of the desired goals must be looked into and corrective measures needs to be necessitated.

CASE ANALYSIS: WHY DID THE PARIS ACCORD FAIL & WHAT ARE THE LEARNING POINTS?

Before moving towards the reasons as to what led to the failure of the Paris Accord, it may be prudent to look at significant markers of the Accord. The most important starting point is self-defined goals in terms of Nationally Determined Contributions (NDC). Even though it was presumed that with *sui generis* targets, Paris Accord could lead to remarkable success in dealing with an existential crisis of climate change, in reality it is far from true. The question has kept researchers, climate scientists and nation states hooked at the possible fallout of the global governance system. The failure of Paris Accord can be attributed to many factors, but the most significant of them being the lack of collaborative efforts to count on each other's strengths and weaknesses. In fact, in the inception, President Obama had signed the Paris Accord in 2015, there were still lots of murmurs in the domestic industry lobbyists that with unilateral reduction in emission norms and capping of exploration of fossil fuels, USA could lose the tag of global supplier of crude and related industry items for the world. But the leadership was focused, clear and envisioned larger common good for the global climate environment with signing of the Paris Accord. Thus, all these concerns and possible roadblocks were transcended through leadership initiative. However, things changed significantly with President Trump in 2016 indicating his discomfort in staying on with the Accord and wanted to exit at the earliest. As summarized, "First, he believed that Paris Agreement is harmful to the U.S. and could damage the domestic economy, thus causing job losses. Second, he thought that the goals of the Paris Agreement would negligibly mitigate climate change. Third, he claimed that large developing countries, like China and India, made an unfair agreement against the U.S." (Zhang et.al, 2017).

The withdrawal from the Accord marked the biggest ever upset to the global level efforts to challenge climate change. As it has been observed, unless the bigger powers come together shedding their inhibitions and narrow political interests, trading off potential economic growth, it would not be possible to converge on any issue of significance. Paris Accord was one of those international treaties, which has very high legitimacy and acceptability, yet fewer real-life achievements. As seen in case of any collaborative governance regime, when some leaders do not follow the agreed upon norms or path, the apparently strong agreement start to fall through and each member moving away with their own narrow interests. This was pretty evident with the fall of Paris Accord.

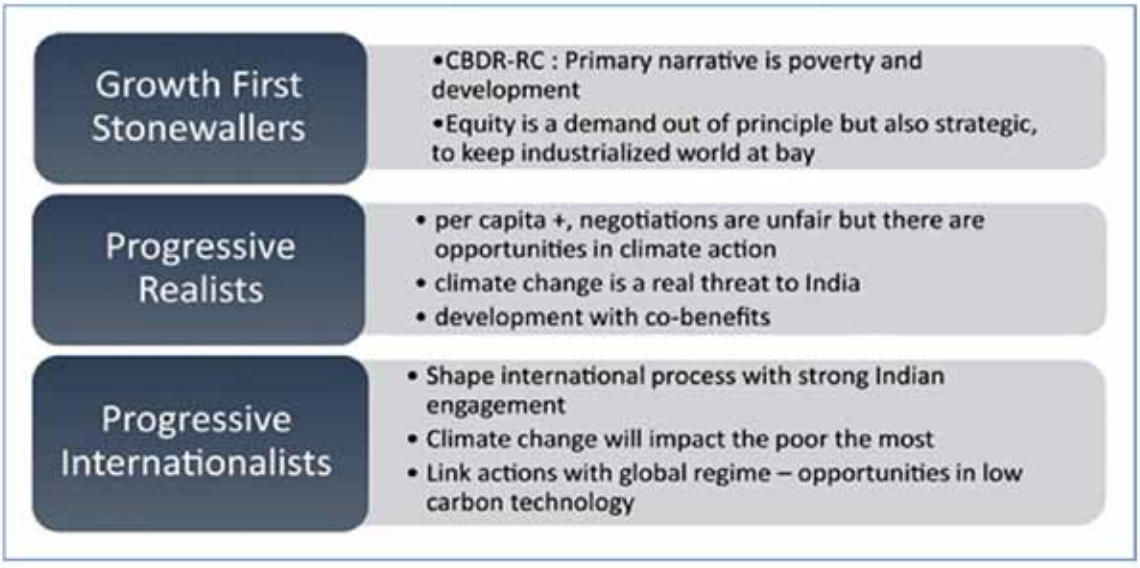
Thus, let us look at what are the learning points from the failure of the Paris Accord at the collaborative governance level. As rightly provided, "under United Nations rules, China and India are considered developing countries and are not obligated to curb emissions. They agreed to do so as part of the Paris Agreement in large part because the United States was taking action." (Friedman, 2019). The most important question is how to get to a shared theory of change, whereby every participating member can contribute and feel part of the process and not left out of the grand narrative. To achieve this most important goal, a no-holds barred discussion and deliberation need to be pursued so that the entire concern of each participating side could be gathered and recorded by a scribe. Further, the issues of concern need to be brainstormed and possible solution to each of the concern is to be jotted down. Then, all possible solutions need to be deliberated and the non-serious ones are to be left out to reach to a few credible solutions.

The next challenge is to capture the concern of the different communities, interest groups, the fringe elements, the lobby groups such as: energy-efficient technology, waste management, renewable energies, food systems, lifestyles, resilient livelihoods, marginalized groups like indigenous communities, climate migrants, economically challenged, etc. through setting up of sub-groups who can articulate each of their concerns separately in a focused way. Further, each participating country may be encouraged to come up with country-wise proposals after undergoing detailed internal deliberations with all possible factions and stakeholders, so that at a later stage, no community or stakeholder group should feel left out or unheard of or even uncertain of the future outcomes. This process is very important to ensure future level uncertainty or disjointed efforts as has been observed in the case of Paris Accord and internal discomfort and lack of support or faith in the process by different participants – be it federal states, industries or communities are taken cognizance of. Further, they are keen in funding lots of research and development projects along with pursuing their economic and trade interests. All stakeholder groups are equally important as any future pruning of emission or exploration depends on the cutting down of production, which was the biggest factor for this industry not to back the Paris Accord. Thus, any future movement must incorporate their concern in the paradigm.

INDIA & PARIS CLIMATE ACCORD

Like other 195 nations, India had also been a worthy signatory of the coveted Paris Accord. Being a responsible nation among the fast moving emerging economies of the world with a population of 1.38 billion and an almost decade long GDP growth rate of 6-8 per cent, the challenges before the nation is to balance development in the modern parlance of unitary capitalism with that of being sensitive to the needs of climate

Figure 2: Narratives of Indian Climate Policy (Dubash 2009)



change. The conventional mode of brick and mortar economic substructure needs to be strengthened with climate resilient infrastructure. While the developed nations could spare billions and trillions of resources to create such infrastructure, nudge its citizens to adopt a lifestyle which might be relatively costlier than any normal living, for emerging economies this might require lots of heavy-lifting while balancing priorities. A predominant school of thought might argue that it may be most important for the state to provide basic minimum services and a lifestyle, which is affordable and to feed millions who struggle for a square meal. At this juncture, first, it may be necessary to look at sustenance of livelihood than prudent to be climate compliant in every sphere of life. Both are critical, one for the present and the other for the future. The Indian experience with regard to climate policy swung from one extreme to the other. "Dubash (2009) has characterized the narratives of Indian climate policy as a tussle between Growth First Stonewallers; Progressive Realists; and Progressive Internationalists. The three categories and their respective worldviews are shown in Figure 1" (Dubash as quoted in Aniruddh, 2017). Even though the analysis is more than a decade old, but the policy frontier has not veered from the path adopted.

Let us look at where India stands. "Most climate scientists understand that China and India are significant sources of global carbon emissions. According to the Union of Concerned Scientists website, the top five emitters (2018 data) are: China 10.06GT; United States 5.41GT; India 2.65GT; Russian Federation 1.71GT & Japan 1.16 GT" (Shepherd, M. 2020) As reported, within the Accord, "the NDC has eight goals including three quantitative goals namely a reduction in the emissions intensity of Gross Domestic Product (GDP) by 33 to 35% by 2030 from 2005 level; achieving about 40% cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030; and creating an additional carbon sink of 2.5 to 3 billion tonnes of carbon dioxide equivalent through additional forest and tree cover by 2030". (*The Hindu,* 2020) Having defined the self-imposed targets, "the Modi government has repeatedly touted schemes as National Action Plan on Climate Change (NAPCC); National Clean Air Programme; Swachch Bharat Mission; Pradhan Mantri Ujjwala Yojana; Namami Gange policy, etc., saying that they are helping India reach its climate goals." (Soni, 2020) Further, "Green India mission (GIM) which is one of the 8 missions under the NAPCC was launched in 2015 with objectives in line with meeting the Paris agreement. GIM aims to increase India's forest cover by 5 million hectares & enhance carbon sequestrations over a span of 10 years." (Saju, 2021)

Now, let us look at where India stands today on the targeted path. "Taking a closer look, India is on track to achieve two of the three components of its Paris target. First, India has already reduced emissions intensity by 21% given its target to reduce emissions intensity of GDP by 33-35% by 2030. Second, with 38% of non-fossil fuel capacity (includes renewables, large hydro and nuclear), India is just 2% short of its 2030 target of 40% of installed non-fossil fuel electricity capacity. But on the third component, to achieve 2.5 to 3 billion tonnes of carbon dioxide equivalent in forest cover by 2030, much more work is needed." (Jaiswal & Joshi, 2020)

SYSTEM CONTEXT

Climate change is no longer a theoretical construct, but a reality each one of us is living with and through on a daily basis. All research unequivocally indicates that the reasons behind the present form of climate change are anthropogenic, caused by the growing influence of man on the natural environment and the ever-increasing materialistic demands exacting a heavy toll on the earth every day. The Collaborative Governance Regimes (CGRs) are not formed in isolation and are greatly affected by a complex system which mainly includes the social, economic, cultural, environmental and political conditions those are not only interconnected, but also multifaceted. The system context in case of a CGR for climate change too would be affected by a number of factors which have been elaborated upon in the following paragraphs.

Public Service and Resource Conditions: The effects of climate change are not uniform across the world and the impacts are not manifested equally among the different regions in the world as well as the different sections of the population. The countries that are majorly responsible for the global warming are totally different from the countries that are bearing the burden of global warming. As shown in Figure A and B, "the impact on the economies due to the climate change is mainly on the developing countries whereas the carbon dioxide emissions are mainly from the developed countries" (Borunda, 2019).

Figure 3.1: CO_2 Emissions Per Capita in the World

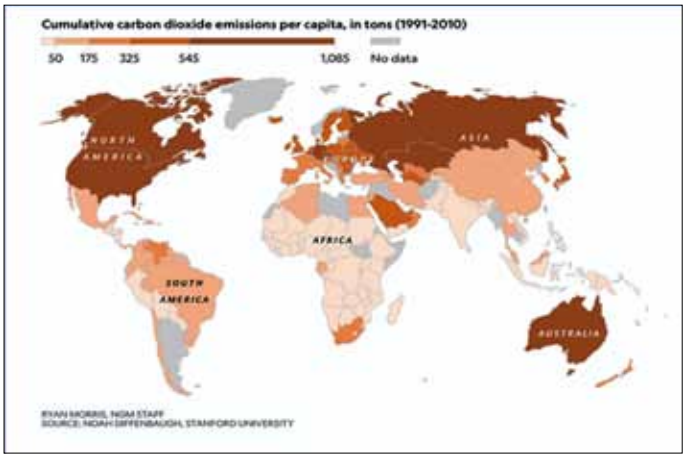
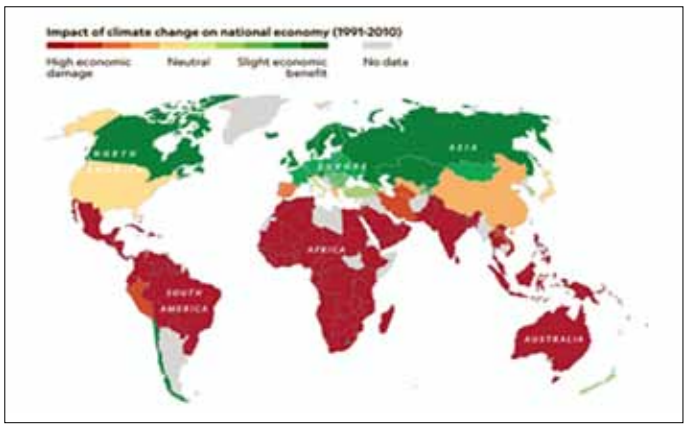


Figure 3.2: Climate Change Impact on the Economy in the World



The developing countries lack the resources required to improve their adaptability to climate-related disasters. The poor and the vulnerable populations suffer the most and are worst hit because of climate change. Recovering from disasters like hurricanes, floods or drought is more challenging when resources are thin, and humans and crops are already near their limits. This has led to the emergence of the concept of climate justice which looks at the climate crisis through a human rights lens. The carbon dioxide levels are global indicators but speak nothing of the equity aspect. Equity is necessary if any agreement has to become functional at a global scale. This clearly indicates that the richer countries have to reduce their emissions at a much faster rate so that the poor countries can increase their living standards by building infrastructure such as roads, providing electricity and clean drinking water, hospitals and schools, which the developed world has already built. There is growing support for the concept of common but differentiated responsibility, referring to the fact that developed nations share a greater part of the responsibility to mitigate climate change due to a higher share in industrial emissions. There is a strong belief that by working together the world can create a better future for the present and future generations. Addressing the World Sustainable Development Summit (WSDS), Prime Minister Modi said "the road to fighting climate change is through climate justice. At the root of climate justice is the principle of being large-hearted. Climate justice is also about thinking about the bigger and long-term picture". (*The Print*, 2021)

Policy/Legal Framework: The United Nations Framework Convention on Climate Change (UNFCCC) that was adopted in May 1992 opened up for signatures at the Earth Summit of UNCED in Rio de Janeiro, bringing the entire world together to curb greenhouse gas emissions and adapt to climate change. The UNFCCC came into force from March 1994. Countries that signed the convention are known as Parties and they meet annually at the Conference of Parties (COP) to negotiate multilateral responses to climate change. With 196 Parties, UNFCCC has the membership of almost the entire world to take appropriate action for mitigating the climate change. Many countries had hoped that UNFCCC would be able to address the commitments of carbon dioxide reductions, which never happened. The Kyoto Protocol, in 1997, ended with no serious commitments to CO_2 reduction in spite of using several measures being used like carbon trading to keep the rich countries happy, but USA withdrew from this in 2001. Later, in 2015 under the Paris agreement, all the countries are now on their own to mitigate, adapt and pay for the costs of climate impacts. "Human activities are estimated to have caused approximately 1.0°C of global warming 5 above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate." (IPCC, 2018) to avoid catastrophic impacts of climate change. "The atmospheric concentration of carbon dioxide, the main GHG, has increased from 358 parts per million (ppm) in 1994 to 412 ppm in 2018. The global energy systems have hardly changed in the last many years. 80% of the primary energy supply came from fossil fuels in 1994 and still remains the same," (Bhushan, 2019). The frequency and intensity of extreme climate events such as storms, wildfires, droughts have increased, destroying livelihoods all around the world. Looking at the situation during the time of this Pandemic, we can see that the stakes involved are high and if political, economic, technological and societal solutions are not found, the future of the living community is exceptionally bleak.

Socio-economic and Cultural Characteristics: The socio-economic and cultural characteristics mainly refer to the diversity in the education, health and income levels of the communities or populations directly connected to the issue. Therefore, we can see that in case of a CGR concerning climate change, there is a vast difference in the way of life and the consumption patterns of people across the globe. The ways of life of the indigenous populations are not damaging to the environment as compared to the ways of life of the urban populations with materialistic needs and wasteful food habits.

Network Characteristics: UNFCCC is not an independent body but falls under the purview of the United Nations. The UN itself does not have an independent authority, because of its functional and funding requirements which are met by the rich countries of the world. Therefore, the decisions of the UN are not binding on its member states and lack the power of enforcement. The UNFCCC has now reduced itself to a platform to collect, integrate and circulate data and information. It has struggled to drive global collective action to combat climate change. Therefore, in such a situation, it would be appropriate to direct the energies to better media coverage and effective strategies of collaboration at the UNFCCC through successful implementation of the Paris Accord.

Political Dynamics, Power Relations and the History of Conflict: The existing political and economic relations among the participating nations would have a significant impact on the creation of the CGR. The presence of strong climate denialist groups in countries and the political influence they enjoy, the network of the industrial powers within a country and some other factors such as the freedom of press and the civil society organizations are also noteworthy elements which would influence the creation of a successful CGR for climate change. The current political structure and the type of regime, their response to the climate change problem and the effectiveness of authority within the countries is also the part of the system context influencing the CGR on climate change.

DRIVERS

Now moving to the drivers which represent the conditions which facilitate or discourage the creation of the CGR. These conditions either hinder or ensure smooth cooperation between the various stakeholders during the process of collaboration. Kirk Emerson and Tina Nabatchi identified "four major drivers of collaboration namely – uncertainty, interdependence, consequential incentives and initiating leadership" (Emerson & Nabatchi, 2015), which are elaborated as below:

Uncertainty: The uncertainty driver is one of the most basic facilitation forces in climate change CGR because of many explicit reasons. First, there is no one fixed definition of climate change and even the IPCC does not give any specific definition of climate change. But the impact of this global warming is not uniform across the nations but varies from one place to another. Some countries face heavy rains and flooding, but others may face irregular precipitation causing drought. Some areas can have melting glaciers or devastating fires. Second, there are no good/bad or true/false solutions to this wicked problem. There can be no fixed time frame of finding a solution and it is difficult to say whether there is any perfect solution to climate change. Third, the social cost of climate change and the return of investment in mitigating climate change are mostly value judgements and is dependent on the individual country's socio-cultural and economic conditions. Fourth, there has been no precedence to this problem which can help us to deal with it in an easier and effective manner and lastly there is no way in which we can effectively and universally measure our success in combating the climate change.

Interdependence: This is another important driver which increases the probability of collaboration processes in controlling climate change. "Climate change involves different stakeholders, all of whom have different perspectives and solutions about the problem" (Carney et. al, 2009). Secondly, the problem of climate change is interconnected with several other problems and it is extremely difficult to find the root cause of the problem. Further, the effects of climate change are not limited to the country causing the greatest damage to the climate but are faced by the countries all across the globe. Therefore, the actions of one affect all and therefore requires action and cooperation at a global level.

Consequential Incentives:

The Positive Incentives include:

- This would give the participating nations an international reputation and leverage where they are working with international partners to improve global environmental standards affecting humanity.
- All the different stakeholders would also get long term benefits of group action such as efficient use of resources by moving to clean economy and restore biodiversity.

Negative Consequential Incentives includes:

- Every solution we choose would have consequences and anyone who goes ahead with a solution has to face outcomes. For example, every political structure would face accountability for slowdown of economic growth because of its attempts to protect the humanity and the global common resources such as oceans and atmosphere.
- Combating climate change has economic trade-offs because of reduction in the use of fossil fuels which would directly impact the industrial growth of the different countries causing internal turmoil.
- There would also be a fear of economic sanctions which would be levied on countries for non-participation in this global cause and concern.

Initiating Leadership: Now, we move on to discuss the last and one of the most important drivers to the collaboration process. We are all aware of the importance of a leader in initiating any change or process. Similarly initiating leadership holds a prime place in the creation of a collaborative governance regime for climate change. The responsibility for participation and cooperation for climate change lies on the shoulders of key actor nations. which have to set standards of global cooperation and take the lead for the other countries to follow. Further, India could take a lead role in technology innovation and adoption by showing the world as to how to balance between development and sustainability by shifting from fossil fuel driven economy to green economy.

MAJOR POINTS IN MOVING TOWARDS A COLLABORATIVE GOVERNANCE REGIME UNDER PARIS ACCORD

In order to move towards a CGR the following points have to be looked into to find a way ahead:

i. *Climate beliefs, behaviors of the society:* To collect information on climate beliefs and behaviors, regional and national governments will aggregate public survey data and private sector industry reports and provide this in a report to the CGR. The data will support discovery of economic, consumer, and lifestyle issues by nation, and contribute to problem definition and discovery of a full spectrum of problem-solving options. Diversity and inclusion are critically important in the discovery phase, and this data must represent and include, for example, lobbyists both for and against; conventional and emerging industries; educational institutions, researchers, and scientists; religious institutions, and others, for a wide-ranging and representative group of information. This will support knowledge-building, discovery, and legitimacy. "Thematic items will include: energy-efficient technology; waste management; renewable energies; culture, lifestyles, and individual/collective behaviors. The report should also incorporate the impact of: food demand, mobility demand, and household demand" (Van de Ven, 2018)

ii. *Capacities and constraints:* In the report, regional national governments of each key actor nation will assemble reports on their particular opportunities, such as financial, technological, scientific, developments which put them in a position to act. This will be completed in partnership with economists and industry leaders, as well as civil society organizations that can help identify community assets and

resources that may not be easily qualifiable, such as social capital. In the same way, each government will report on limitations to their ability to act. From these capacities and constraints, nations will have an opportunity for: discovery and definition, but also for capacity for joint action, such as ways to pool resources and share strategies for mutual benefit and increased collective success. These discussions will be critical for deliberation and determination in order to set goals that are both ambitious and realistic. Finally, disclosing such information will support trust-building among key actors.

iii. *Climate justice:* The UN and UNFCCC, working with contributing nations (those not among the key actor nations) will represent data for other nations and resilient livelihoods—those that currently bear the greatest burden of climate change impacts. The data will include voices of marginalized groups, such as indigenous populations, women, children, socio-economic groups, climate refugees, and others. This information will be critical, as the goal of deliberation is "coming to a public judgement on what represents the common good" (Roberts, 2004, p. 332 as cited in Emerson & Nabatchi, 2015, p. 62). In addition, this will support accurate definition of climate change, mutual understanding of its impact, and bolster key actors' commitment to CGR efforts.

iv. *Definition of climate change specific to the CGR:* The key actor nations will engage in a series of cross-nation, cross-sector discussion and deliberation based on the material collected in the reports. Through this process, "the CGR will aim to reach definitions of: Climate change, climate justice, other terms and variants of terminology by sector; Global consequences for failing to mitigate CO_2 emissions; Expectations of self, others" (Emerson & Nabatchi, 2015). Once again, this supports mutual understanding and commitment among key actors. Further, it supports a more productive deliberation process as well as clear determinations of targets.

v. *Accountability:* A critical conversation needed to help overcome the shortcomings of the Paris Accord is accountability. There must be appropriate measures and reporting and comprehensive and specific structure of sanctions and enforcement over time. Included in this discussion, the CGR must decide how to prevent withdrawal from the CGR's agreed-upon plan for action on climate change.

RECOMMENDATIONS

i. *Build trust, collective vision:* The first and foremost act is to strengthen and deepen the collaborative spirit among the participating nations to create a nucleus of trust, mutual empathy and respect. This may be crucial to make any progress under a CGR. What has been seen lacking at this global stage is the fact that each country is concerned about its own prospects and economic progress, while losing sight of the larger common issue of concern pertaining to climate change. There is a feeling that the pandemic has put the focus back on multilateralism, through which "we will be able to build consensus around a concerted effort to fight climate change in the decades to come" (Vetter, 2021) As an international authority on mitigating climate change, the UNFCCC is best positioned to move this work forward on an international level. By limiting key actors to the largest CO_2 emitters, the CGR will be able to hold meaningful deliberations to determine specific, achievable goals among the nations with greatest impact, thus making a significant impact to mitigate global CO_2 emissions, while also creating a foundational framework for broader collaborations among larger working groups of nations in the future. Highlighting the importance of collective efforts, a study of Chinese local government argued that the "role [of central government] needs to be complemented with local initiatives" (Qi et.al, 2008, p. 379) Further, another European Union case study showed the impacts of behavioral change, specifically food, mobility, and housing demand on climate change. "The results from this study imply that policymakers should put more effort in education and awareness programs in order to promote green behaviour by citizens" (Van de Ven, 2018, p. 875).

ii. *Define current state of climate change efforts:* The next important assignment before the UNFCCC is to call for a summit at the highest level to take stock of the progress made on the agreed parameters as of 2015 during the Paris Accord and see where each one of the participants are standing with reference

to the 2030 target and recalibrate as per year 2050 to keep the global warming under sustainable levels. "This means reducing emissions as much as possible, by way of greater Renewable Energy (RE), electrified transport, energy efficiency and carbon capture and storage technologies. This also includes the use of carbon sinks and carbon offset measures to balance out the remaining carbon in the atmosphere." (Bhattacharya, 2020b)

iii. *Collect and share data and public input:* The next action involves collecting public input–both from individuals, community brokers, and civil society organizations–as well as providing data reports that will serve the CGR by strengthening the legitimacy of its actions; informing realistic targets and goals; identifying realistic limitations; guiding structuring of sanctions, enforcement, and accountability, and; pressure leaders of the key actor nations towards compliance. This information exchange, detailed in the Major Points of Discussion in Collaboration section, will do much to overcome one of the failures of the previous Paris Accord, in that it will help the CGR deliberate on specific data, define realistic goals, and reach clear determinations on sanctions.

iv. *Define how CGR will promote climate justice:* The CGR must understand challenges facing developing nations and create an amicable and collaborative governance regime whereby the developing nations' needs and aspirations are addressed by active coordination and acceptance by the developed nations to provide them the required elbow room to construct those additional schools, hospitals and infrastructure projects to help those nations come out of poverty and work for sustainable development with nature at its core.

v. *Prioritize diversity and inclusion of marginalized populations:* The CGR must identify, address, and accommodate the aspirations of the millions of persons in the fringe, the communities with the least resources, the climate migrants or refugees, the most vulnerable ones who could be uprooted due to forest fires, inundation due to rising sea levels, frequent floods, impending severe droughts, changing rainfall patterns and emerging desertification, the new age renewable technology lobby groups, resurgent livelihoods, and so forth, so that the future policy shares each one's concerns establishing legitimacy.

vi. *Engage climate change deniers and dissenters:* The CGR must engage groups or factions who could threaten or jeopardize the entire progress on mitigating climate change in future, like the fossil fuel lobby groups, the large polluting and high energy consuming industries, or political figures who undermine the environment, who would be crucial to any future cut on emissions or consumptions. All efforts must be made to engage these entities in meaningful dialogue and take them into confidence regarding future production curbs and possible shifting of business model or reengineering of the existing capacities.

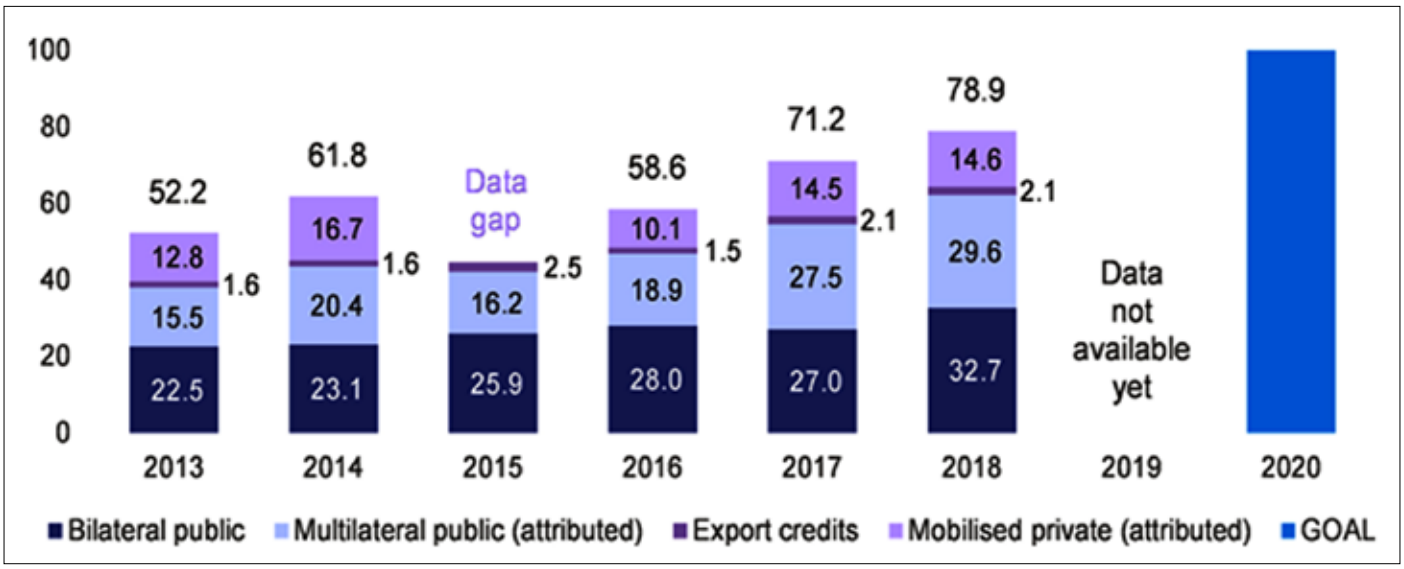
vii. *Determine realistic and specific target goals:* By focusing the task at hand to carbon dioxide emissions, and by limiting the key actors to the world's largest emitters, the CGR will be in a stronger position to determine target goals that are both realistic and specific. This recommendation will help build a foundation for compliance and mitigate the national exists and resulting leadership voids that have been identified as failures of the Paris Accord. Recently, "the UK announced that it would seek to cut emissions by 68% (compared to 1990 levels) by 2030, and earlier this year, China announced that its emissions would peak by 2030, and reach net zero by about 2060. A recent report on G20 nations stated that India is doing its "fair share" to meet the 2 degrees Celsius warming target". (Bhattacharya, 2020b)

viii. *Determine sanctions:* An agreement needs to be built into the structure pertaining to stricter provision regarding sanction, whereby any unilateral withdrawal from the Accord would attract huge financial sanctions, which could be put to a fund to help in transition of developing economies to leapfrog into high sustainable technology growth path. The increase of current three-year period of withdrawal of any country may be extended up to five years to instill serious thoughts on any possible future disengagement and throwing the entire process off the cliff as happened in the past in 2017. However, the key dimension is that the sanctions need to be debated, deliberated and accepted in totality, so that any concern or reservation regarding it may be resolved internally strengthening the group dynamics.

ix. *Determine capacity, funds, and resources:* Creating adequate funding capacities may be the key to achieve the climate goal. As provided, "the 'special report' from the IPCC on how to hold global warming to 1.5°C makes clear that we need rapid and far-reaching transitions in energy, land, urban, infrastructure and industrial systems. To start with, this means rethinking how finance manages fundamental questions of time and space." (Robins, 2018) While looking at where we stand, "broader financing needs in energy, demand-side management, transport and other infrastructure to achieve the 2°C temperature goal would amount to US$6.38 trillion annually according to the OECD. In contrast to these financing needs, Climate Policy Initiative estimated in 2019 that global climate finance amounted to US$546 billion in 2018, leaving a significant 'billion to trillion' climate finance gap to be bridged." (Lazaro-Touza, 2021)

The size of the gap amounted to US$21.1 billion in 2018 according to the OECD, as shown in Figure 4.

Figure 4: Climate finance provided and mobilised (2013-18, USD billion)



Note: *"Multilateral public" does not represent total outflows from multilateral institutions to developing countries but only the share calculated by the OECD as attributable to developed countries. The data gap in 2015 for mobilised private finance results from the implementation of enhanced measurement methods (see (OECD DAC, 2020[6]). As a result, grand totals in 2016-17 and in 2013-14 are not directly comparable.*

Source: *Based on Biennial Reports to the UNFCCC, OECD Development Assistance Committee statistics, OECD Export Credit Group statistics, as well as complementary reporting to the OECD.*

As far as the important stakeholders are concerned, "G20 countries have made investment commitments worth $151 billion dollars towards fossil fuels in an effort to aid economic recovery. Just 20% of these projects are subject to requirements such as climate targets or pollution reduction targets. In comparison, clean energy projects worth $89 billion have been committed to, but only 29% of these are subject to environmental safeguards and can be said to be truly "clean"". (Bhattacharya, 2020a) Alternatively, a dedicated Climate Sustenance Fund needs to be deliberated in the next session to set up at the UNFCCC level with an initial corpus of $500 billion to set up a financial support stream to carry on technology development and adoption at the global level and to incentivize efficient use of cutting-edge technology to lead to green economy practices. This Fund can be replenished from time- to- time making it resourceful and effective. In addition to funds, key actor nations should engage in resource-sharing, from information and knowledge to science and technological resources. By sharing resources, the CGR members increase joint capacity for action, as well as strengthen a foundation of trust, as discussed earlier. Rightly so, recently "during her meeting with Kerry on Tuesday, India's Finance Minister Nirmala Sitharaman underscored the need for developed countries to keep their $100 billion annual

commitment in funding for developing countries so they can take significant steps to address global warming". (Sharma, 2021)

CONCLUSION

On 2 December 2020, the UN secretary general António Guterres said, "We face three imperatives in addressing the climate crisis. First, we need to achieve global carbon neutrality within the next three decades. Second, we have to align global finance behind the Paris Agreement, the world's blueprint for climate action. And third, we must deliver a breakthrough on adaptation to protect the world and especially the most vulnerable people and countries from climate impacts." (UNFCCC, 2020) Having discussed and deliberated different collaborative governance strategies to strengthen the UNFCCC with focus on the key stakeholders in terms of CO_2 emissions and the potential for any future mitigation to achieve concrete timelines and emission standards in near future, the challenge is to bring them together on one platform and provide a comprehensive strategy to take on the future. The underlying themes of CGR- i.e. shared motivation and the capacity to develop a collaborative vision to execute a joint action, needs to be adopted in true letter and spirit. Climate change fight at the collaborative global level must embrace all the virtues of togetherness, mutual trust and commitment for the larger cause, pick on each other's strengths, make practices accountable to build on a regime meant for a concerted and concrete action to take on the wicked problem of climate change. In addition, more research and mainstreaming of global environmental politics may provide valuable insights to climate governance and policy making space. "The study of global climate politics will benefit from the unique disciplinary attributes that are housed under the field of international relations and political science. Insights from these disciplines can help break deadlocks in climate negotiations by revealing the deeper strategic preferences of critical actors, which may help to increase the collective ambition of action to take on one of the most pressing challenges of our times." (Aniruddh, 2017) The Proposed CGR could take a leaf out of this analysis.

The ongoing pandemic has given certain important learning points. As provided, "truly sustainable economic growth and development means recognising that our long-term prosperity relies on rebalancing our demand of nature's goods and services with its capacity to supply them. It also means accounting fully for the impact of our interactions with Nature across all levels of society. COVID-19 has shown us what can happen when we don't do this." (Dasgupta, 2021) Further, "the challenges of both climate and Covid-19 emphasized the "importance of internationalism and collaboration in breeding innovation," giving the examples of the new coronavirus vaccines that have been developed at record speed." (Stern, N. as quoted in Vetter, 2021) As far as the future of Indian approach is concerned, "India is leading efforts with the International Solar Alliance (ISA), Kigali Amendment to the Montreal Protocol, International Coalition for Disaster Resilient Infrastructure (CDRI), and Leadership Group for Industry Transition. India recently created an Apex Committee for Implementation of Paris Agreement (AIPA). The aim of AIPA is to increase coordination among 14 key ministries and to engage business, stakeholders and the U.N. on delivery of the Paris Agreement" (Jaiswal & Joshi, 2020).

At the global governance level, the distrust and hostility between key nations must stop. The key nations at the helm of UNFCCC need to come together shedding individual concerns and aspirations while getting glued to the collaborative cause to take on the wicked problem of climate change building capacities and adopting innovative practices. Whether we would be able to engage the most powerful fossil fuel lobbyists on a collaborative dialogue to convince them to cut down on future explorations and productions by adopting stricter emission norms and re-engineer the business processes to shift to non-polluting endeavors remain the critical challenge. Can we do that as a community, a nation, a body of individuals who are experts in engaging them? Without that it may always be elusive to find a credible solution to the problem and a possible solution, which most of us would agree. What the climate change fight might be looking for is broad vision, clarity of thoughts and action and an overzealous drive to bring new technologies based on renewable energy, cutting down of carbon emissions, strong tab on any exploration of coal or fossil fuel mining or explorations, adoption of a sustainable growth model which is non-exploitative. Before, time runs out and so do the options to keep the house in order, the following statement aptly captures- *'The cost of acting on climate change is far, far less than the cost of inaction.'-Nicholas Stern*

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