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# ASSESSING THE REGULATORY AND SOsocietal RESPONSE TO CLIMATE CHANGE IN INDIA

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## Executive Summary

The emission that greenhouse gases formulate is one of the fundamental causes of global warming and climate change. Several countries, inclusive of India, have come up with strategic mechanisms by the incorporation of method of data collection and statistical analysis to understand the scope of prevalence of greenhouse gases. The harmful effects of the emission of greenhouse gases are evident in the spectrum of health, social well-being and economic zones. It is necessary to mitigate climate change by regulating the emission of greenhouse gases through a legal framework. The climate change in India is currently deteriorating the standard of living for the residents of India, especially in cities like Delhi. The government of Delhi has taken various steps to reduce the smog but it is not sufficient and as such many more measures need to be taken before it goes beyond control. The health issues have been on a steep rise because of the quality of air. It has made it difficult for the middle class and lower middle-class families. The pollution has also affected the flora and fauna. Industrialization and increase of vehicles and appliances can be held responsible for the current situation. The present century has witnessed a new wave of technological and industrial development. There has been shift from labor intensive approach to capital intensive approach. This has caused a lot of damage to the environment and climatic conditions. The consequence of this is being felt in various aspects of life. One of them is the problems faced by climate displaced people. Climate change poses a significant challenge for India which can be seen through its natural phenomena like unseasonable rains, floods and extreme weather conditions which have not only impact of human health or the current but also affecting the health of the future generations, and also adverse impact on flora, fauna and livelihood in the country. The Vision of this paper is to formulate a comprehensive policy framework for India to help government mitigate and adapt to climate change challenges.

The policy paper is divided into six chapters. The first part Introduction lays down the overview, scope and limitation of the paper. The second part International developments relating to Climate Change lays down the international framework on climate change which includes the Kyoto Protocol and the Paris Agreement. The third part A National Policy Approach to mainstream climate change adaptation in India discusses in depth the climate resilience mechanism adopted in India and the existing legal regime in India. The fourth part Scientific, Economic and Policy Challenges enumerates the various scientific, economic challenges with respect to climate change. The fifth part societal response to climate change talks about the various facets with respect to climate induced displacement and its impact on the society. The sixth part proposes suggestions and conclusion.

## 1. Introduction

Climate Change is an issue that the world has been battling with for well over two decades now. However, it is continued to be seen that the issue has only worsened since it was first considered a problem. This can mainly be attributed to the fact that the methods used to tackle this problem have been ineffective and inefficient. The various treaties, conventions, and agreements that were formulated in the past have not been able to even remotely address the solutions they aimed to address. Therefore, there needs to be a newer, more novel and innovative method to tackle this issue in the case that the world can solve this issue. Lately, the methods of dealing with climate change have seen a paradigm shift from sanctions, treaties, and conventions to legal recourse**.** On an international platform, Climate Change has been termed as a "Super-Wicked Problem", as it has the power to resist even the most substantial efforts by the world's policymakers. There are three reasons why this problem is considered "Super Wicked". The first reason is that Climate Change becomes lesser and lesser traceable over time. This means that, with an endlessly increasing emission of

Greenhouse Gases, people become committed to continue doing the same, and after a point in time when the problem reaches an acute intensity, are at a loss to find a solution that is effective and acceptable. The second reason is that the people who are the best equipped to combat Climate Change, are the ones who are the primary cause for the problem, and they lack the incentive to take any steps towards combating the same. Furthermore, those people who lack the incentives to mitigate Climate Change, for example, coal mine owners, are the people with the best access to primary information, whereas, those people who are more likely to bear the brunt of the issue, have diffused incentives because these are the people who generally lack primary information. Thirdly, there exists no internationally recognized legal authority that has the sole goal of tackling this issue. This leads to the general lethargic belief that Climate Change Mitigation efforts are a futile, expensive processes that have no fruitful results, and a much lesser output of economic benefits and results.[1] These claims can further be substantiated with statistics from various sources. The National Aeronautics and Space Association (NASA), estimate that there exist 407.62 parts per million (ppm) of Carbon Dioxide in the atmosphere, that global temperatures have risen by $1.8^0$ F since the year 1880, that the Arctic Ice Minimum drops 13.2% per decade, and that sea levels are rising by 3.2 millimetres every year. It is therefore clear that the efforts of the world to mitigate climate change require a[2] more practical approach. This Policy Paper draws valuable lessons through the various National Policies and Legislative initiatives undertaken by the Indian Government to mitigate and adapt to climate change. The aim of the paper is to establish mechanism by which a proactive and collaborative measure can be adopted through government, private institutions, individuals and NGO's in adopting and coping to the various problems and challenges of climate change.

[1] Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future, Richard J Lazarus, 94 Cornell Law Review, 1153, 1160 (2009).

[2] Global Climate Change- Vital Signs of the Planet Climate.nasa.gov, https://climate.nasa.gov

## 2. International Developments Relating To Climate Change

Human beings are decidedly the most evolved species which have faced conditions of high mortality due to famines, accidents, illnesses, infections and war in the past and have survived by procreating in large numbers to ensure the survival of the species. As a consequence of the same, industrialization came forth in the 18th century to meet the growing needs of the large numbers of human beings. This was a very anthropocentric approach as due regard was not given to the environment while producing colossal amounts of products and exploiting the natural resources. Besides the natural resources being exploited, even the atmosphere of the planet was perniciously being affected by the greenhouse gas emissions by these growing industries. The Ozone layer of the atmosphere which plays a predominant role in maintaining the earth's climate compatible to human beings had slowly started depleting due to these activities. Ozone depletion is the gradual thinning of Earth's ozone layer in the upper atmosphere caused by the release of chemical compounds containing gaseous chlorine and bromine from industry and other human activities.[3] It is a major environmental concern as it increases the amount of ultraviolet radiation that reaches Earth's surface, which causes a plethora of ailments to human beings. The Montreal Protocol[4] was the first of several comprehensive international agreements enacted to halt the production and use of ozone-depleting chemicals. Climate change has been at the forefront of legal discussion in the contemporary world due to adverse environmental and ecological consequences that the world is witnessing.

[3]Donald Wuebbles, *Ozone Depletion*, Encyclopaedia Britannica, See, < https://www.britannica.com/science/ozone-depletion>

[4] Montreal Protocol on Substances that Deplete the Ozone Layer, 1987 (a protocol to the Vienna Convention for the Protection of the Ozone Layer, 1985).

Climate Change at an adverse level is a universal problem faced by all humans and is a disastrous evil that has arisen out of the complacency and negligence of mankind towards the planet. Intergovernmental Panel on Climate Change (IPCC)[5] defines climate change as "a change in the state of the climate that can be identified (e.g., using statistical tests) by changes in the mean and/ or variability of its properties, and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity."[6] The definition provided by United Nations Framework Convention on Climate Change (UNFCCC)[7] differs as it emphasizes on a change that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods.[8] There is a dire need for countries across the world to come up with effective solutions to improve their technology, reduce emissions into the atmosphere and also move towards sustainable development goals to ensure intergenerational equity. To ensure efficient results, it is important to understand that no individual country, person, state, or region can solely make any difference.[9]

India is a multicultural developing country growing at a great pace economically. Though India is the seventh-largest country in the world, with a total area of 3,287,469 square kilometres (1,269,299 sq mi), 10 the landmass of this country is merely 2.4% of the earth's total landmass.11 The population of India is 1.34 Billion, which constitutes one-sixth or 17% of the world population[12]. The national income which is barely 2% of the total global income

[5] Intergovernmental Panel on Climate Change.
[6] *Appendix I – Glossary*, Intergovernmental Panel on Climate Change, https://www.ipcc.ch/ipccreports/tar/wg1/518.htm.
[7] United Nations Framework Convention on Climate Change, 1992, New York, 4 June 1992.
[8] *Id*., at Article 1.
[9] UNFCCC summary for policymakers, 2017.
[10] Philip B. Calkins, *India*, Encyclopaedia Britannica, https://www.britannica.com/place/India
[11] Dr. Samir Mazidbhai Vohra, *Population Growth – India's Problem*, 4 (11) Paripex -Indian Journal for Research, 65, at 65 (2015)
[12] *India Population*, worldometers, (Aug. 2, 2018, 7:30 P.M.),http://www.worldometers.info/world-population/india-population/.

shows the tremendous strain of population on the country's economy. There is an exigency to control the proliferating population and improve the Indian approach towards protecting the environment. The earth has a carrying capacity which means that the maximum population size of any organism that an area can support, without reducing its ability to support the same species in the future.[13] The carrying capacity in Indian scenario is greatly being affected by excessive population which has a detrimental effect to the air quality as 13 Indian cities have been listed in the 30 most polluted cities in the world.[14] There are various reasons which have resulted in adverse changes in climate in India among which population explosion, illiteracy, poverty, teeth-less environment policies are a few. Hence, there is a need to evaluate various national policies adopted and international instruments that India is a signatory to.

**2.1 The United Nations Framework Convention on Climate Change (UNFCCC ), 1992**

The United Nations Framework Convention on Climate Change [15] is an international environmental treaty adopted on 9 May 1992 and opened for signature at the Earth Summit in Rio de Janeiro from 3 to 14 June 1992. It came into force on 21 March 1994, after a sufficient number of countries had ratified it. The objective of this convention is to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".[16] Greenhouse Gases are gases in the atmosphere that absorb and emit radiation within the thermal infrared range.[17] The Earth's atmosphere mainly comprises of water-vapour, Carbon Dioxide, atmospheric Methane, Nitrous Oxide, Ozone and Chloro-Fluro-Carbons. Greenhouse effect is a process by

[13] Mona L. Hymel, The Population Crisis: the Stork, the Plow, and the IRS, 77 N.C. L. REV. 13, 18 (1998)
[14] India tops world in bad air quality: Kanpur, Delhi among 15 worst cities, Mumbai 4th most polluted megacity, Times of India, http://timesofindia.indiatimes.com/articleshow/63997130.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst
[15] Supra note 5.
[16] Id., at Article 2.
[17] Statistics Related to Climate Change - India 2015, Government of India Ministry of Statistics and Programme Implementation, Central Statistics Office - Social Statistics Division.

which radioactive energy leaving a planetary surface is absorbed by some atmospheric gases called greenhouse gases.[18] Global warming is a result of the increasing greenhouse effect mostly due to human produced increases of greenhouse gases in the atmosphere. Carbon dioxide is by far the most important greenhouse gas, and originates mainly from the combustion of fossil fuels and biomass. However, other greenhouse gases like methane, Nitrous Oxide and halocarbons also contribute to climate change. Methane is mainly produced by domesticated animals such as dairy cows, pigs etc. rice growing, gas flaring and mining activities. Nitrous Oxide mainly originates from agricultural land management, animal manure management, combustion of fossil fuels, and the production of fertilizers and nitric acid.

**2.2 Salient Features of the United Nations Framework Convention on Climate Change**

Some of the salient features of the convention are that the parties to the convention meet regularly to discuss discrepancies, review the progress, assess the needs, adopt new policies and decide the further course of action in their meetings called the Conference of parties which is the highest-decision making body of the Convention, and usually meets annually. The Permanent Secretariat[19] based in Bonn, Germany is an organization which supports the initiatives taken by the parties to the convention. A number of subsidiary bodies like The Subsidiary Body on Scientific and Technical Advice and The Subsidiary Body for Implementation also advise the Conference of Parties. More recently, two additional bodies have been established. In late 2005, the *Ad Hoc* Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol was established. In late 2007, *Ad Hoc* Working Group on Long-Term Cooperative Action was established. The convention has the Global

[18] Id
[19] *supra* note 5, at Article 8 .

environment facility as its financial mechanism.[20] Other financial resources for implementing the Convention are also available through the Special Climate Change Fund, the Least Developed Countries Fund, and the Adaptation Fund, as well as through donor countries and agencies. The Convention is also supported by a number of expert groups and other constituted bodies. These include the Consultative Group of Experts (CGE) on national communications, the Least Developed Country Expert Group, the Expert Group on Technology Transfer, and the Executive Board of the Clean Development Mechanism (CDM) Joint Implementation Supervisory Committee and a significant number of other international organizations and other groups, including scientific bodies, UN agencies, and other conventions like the Intergovernmental Panel on Climate Change (IPCC) and the *Ad Hoc* Group on the Berlin Mandate (AGBM).

### 2.3 A History of climate change negotiations under the United Nations Framework Convention on Climate Change

The international political response to climate change began with the adoption of the United Nations Framework Convention on Climate Change in 1992. The United Nations Framework Convention on Climate Change sets out a framework for action aimed at stabilizing atmospheric concentrations of greenhouse gases to avoid "dangerous anthropogenic Interference". [21]

However, due to improving technology, improved scientific evidence dealt with great concerns of climate change and it soon became evident to the parties to the convention and policy drafters that enhanced techniques to combat greenhouse gas emissions were required

[20] *supra* note 5, at Article 10.

[21] Introduction to the UNFCCC and Kyoto Protocol, IISD reporting services, http://enb.iisd.org/process/climate_atm-fcccintro.html.

and hence a negotiated agreement might be necessary. In December 1997, delegates at the 3rd conference of parties in Kyoto, Japan, agreed to a Protocol to the Convention which dealt with achieving quantified emission reduction targets. The Annex I parties, agreed to reduce their overall emissions of six greenhouse gases by an average of 5% below 1990 levels between 2008-2012 (the first commitment period), with specific targets varying from country to country. The Kyoto Protocol[22] came into force on 16th February 2005. In November 1998, the 4th conference of parties agreed on the process for finalizing the rules and operational details of the Protocol in a document known as the Action. In the 6th and 7th conference of parties held in the Netherlands and Germany, final drafts were made for the resolutions and the parties came to a consensus. In November 2001 at the 7th conference of parties in Marrakesh, Morocco, delegates reached agreement on the outstanding matters in the Marrakesh Accords which consisted of a package of draft decisions on many of the details of the Kyoto Protocol, including the flexible mechanisms, reporting and methodologies, land use, land-use change and forestry and compliance.

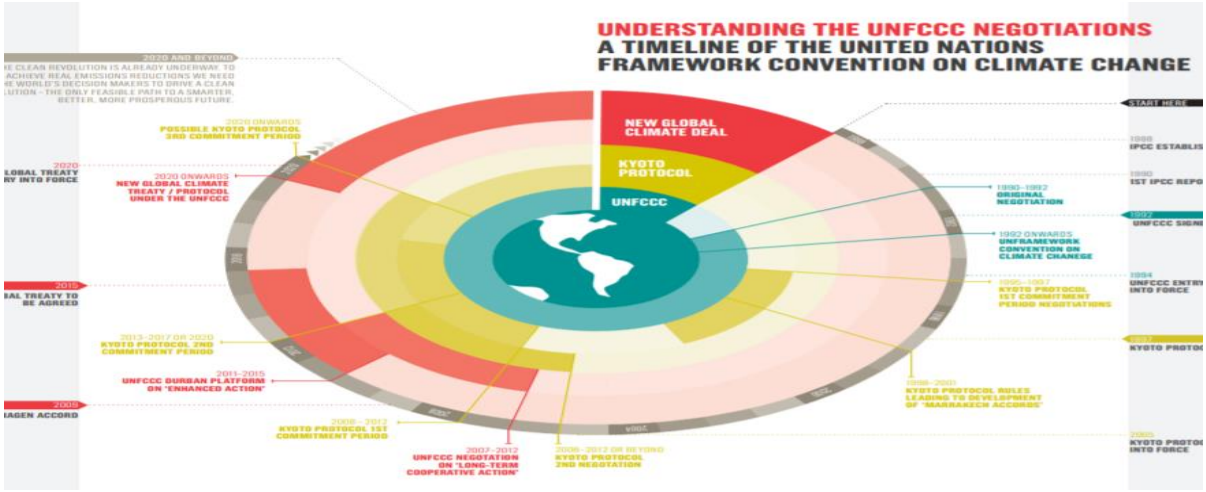
In the 10th conference of parties, countries agreed on two new agenda items focused on adaptation and mitigation, and began informal negotiations on the complex and sensitive issue of how parties might engage on commitments to combat climate change in the post-2012 period. After lengthy negotiations, in parties agreed to consider long-term cooperation under the Convention "without prejudice to any future negotiations, commitments, process, framework under the convention." The Convention Dialogue workshops began with an initial exchange of views on the four thematic areas identified at the 11th conference of parties: advancing development goals in a sustainable way; addressing action on adaptation; realizing the full potential of technology; and realizing the full potential of market-based opportunities.

[22] Kyoto Protocol, Japan, December,1997 to United Nations Framework Convention on Climate Change, 1992, New York, 4 June 1992

The "United Nations Climate Change Conference in Bali" was held from 3-15 December 2007. The outcomes covered a wide range of topics, including finalizing the Adaptation Fund under the Protocol, a decision on reducing emissions from deforestation in developing countries, and outcomes on technology transfer, capacity building, the Kyoto Protocol's flexible mechanisms, the adverse effects of combating climate change, national communications, financial and administrative matters, and various methodological issues. The main focus in Bali, however, was on long-term cooperation and the post-2012 period, when the Kyoto Protocol's first commitment period expires. Negotiators spent much of their time seeking to agree on a two-year process – or "Bali roadmap" – to finalize a post-2012 regime by December 2009. Negotiations were conducted in a number of groups under the aegis of both the Convention and the Protocol. Under the Convention, the discussions focused on how to follow up on the "Dialogue on long-term cooperative action to address climate change by enhancing implementation of the Convention."

Following Bali, three negotiations were held during 2008 in the lead-up to the next conference of parties. The 18th Conference of parties which took place in Doha amended the Kyoto Protocol; and the 21st conference of parties was held in Paris and resulted in adoption of the Paris Agreement. Negotiations for the Paris Agreement took place during 22nd Conference of parties in Marrakech, Morocco.

*Fig (i) – UNFCCC NEGOTIATIONS*



## 2.4 Need for Immediate Action

Climate change is recognized as the greatest challenge that will face humanity in the 21st Century.[23] This is partly due to the interconnected nature of social, environmental and economic systems, where changes in climate will have far reaching implications globally. International commitments to significantly reduce greenhouse gas emissions are now widely recognised to be insufficient to avoid many climate change impacts. If the global community continues to release emissions at the rate experienced over the few years, global climate is projected to increase by 4 to 6 degrees Celsius by 2100. Adaptation is therefore inevitable.

Adaptation is defined as an adjustment in natural or human systems in response to actual or expected stimuli or their effects, which moderates harm or exploits beneficial opportunities.[24] Adaptation to the impacts of climate change will be required as natural systems change in response to changes in global climate. Even if there is a significant action to reduce emissions, the global community is committed to degrees of change that will require adjustment and response. Consequently, social, economic and environmental decision-making must be cognitive of the projected changes in climate and how social and environmental systems will respond. Such considerations may inform future planning and management decisions, which seek to ensure sustainable development despite a changing climate.

As there is a direct relation between global average temperatures and the concentration of greenhouse gases in the atmosphere, the key for the solution to the climate change problem rests in decreasing the amount of emissions released into the atmosphere and in reducing the

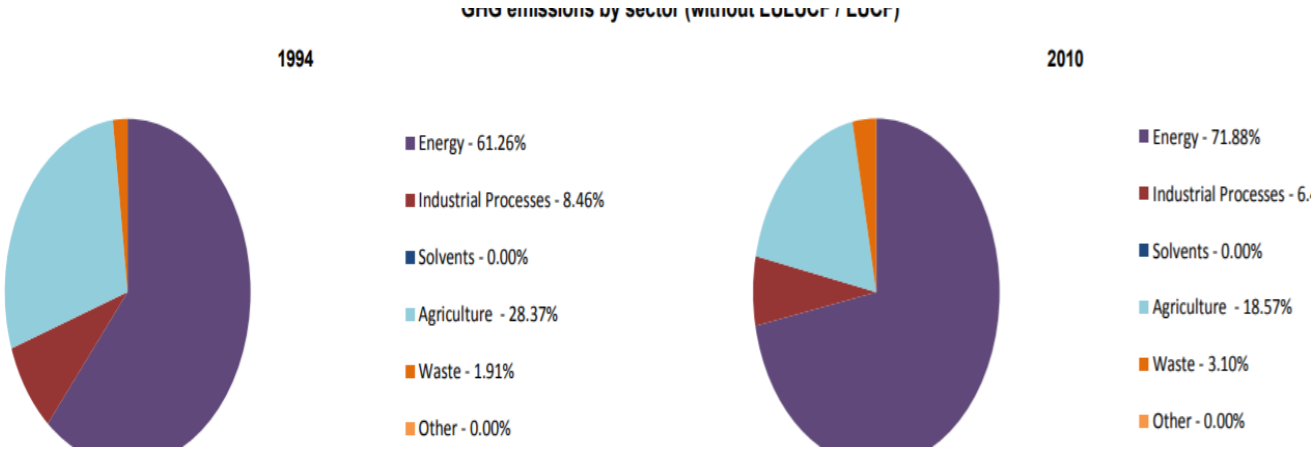
[23] United Nations Development Programme report, 2008.

[24] *supra* note 4.

current concentration of carbon dioxide by enhancing sinks (e.g. increasing the area of forests). Efforts to reduce emissions and enhance sinks are referred to as "mitigation".[25]

The Convention requires all Parties, keeping in mind their responsibilities and capabilities, to formulate and implement programmes containing measures to mitigate climate change. Such programmes target economic activity with an aim to incentivize actions that are cleaner or disincentive those that result in large amounts of Greenhouse gases. They include policies, incentives schemes and investment programmes which address all sectors, including energy generation and use, transport, buildings, industry, agriculture, forestry and other land use, and waste management. Mitigation measures are translated in, for example, an increased use of renewable energy, the application of new technologies such as electric cars, or changes in practices or behaviours, such as driving less or changing one's diet. Further, they include expanding forests and other sinks to remove greater amounts of CO2 from the atmosphere, or simply making improvements to a cook stove design.

*Fig (Ii) – Green House Gases Emission in Various Sectors in India.*[26]




[25] Introduction to Climate change, United Nations Climate change, https://unfccc.int/topics/mitigation/the-big-picture/introduction-to-mitigation

[26] GHG Profiles- Non Annex I, United Nations climate change, http://di.unfccc.int/ghg_profiles/nonAnnexOne/IND/IND_ghg_profile.pdf

India currently needs to take adaptation and mitigation efforts more seriously because the growing Indian population is adding more pressure onto the environment. The emission of greenhouse gases in the energy sector is also increasing greatly. Mitigation efforts must be taken at the earliest to ensure atmospheric balance because if the greenhouse gases increase at the rate it is in contemporary India, efforts of adaptation may prove to be unfruitful as the flora, fauna as well as human beings will not be able to adapt to the surroundings so quickly. To ensure that the situation does not become beyond repair, effective environmental laws which provide for criminalization for excess emissions by making offences cognizable and non-bailable must be adopted. Exemplary damages must also be imposed in all environment law cases to ensure that the mechanisms, rules and regulations are followed properly. Various other measures like reducing population, improving education, improving the current Indian position of poverty can also play a very important role in achieving mitigation as well as adaptation as an aware crowd of citizens would be able to help in achieving the necessary goals and targets of the country.

**2.5 The Kyoto Protocol, 1997**

The Kyoto Protocol was the first convention that made combating climate change its main objective. Moreover, it is the only convention that was binding upon countries. It provides for legally enforceable set of rules and regulations for the countries to follow in order to meet world standards. The countries that were supposed to follow this were mentioned in Annexure 1 of the convention. It was an extension to the UNFCCC charter adopted in 1992, and was first adopted in Kyoto in the year 1997, and it came into force in 2005. Its method of fighting Climate Change was by reducing the emission of Greenhouse Gases by reducing their concentrations in the atmosphere to *"a level that would prevent dangerous*

*anthropogenic interference with the climate system"*[27]. The Kyoto Protocol consisted of two commitment periods. The first commenced in the year 2008, and elapsed in 2012; and the second commenced in 2012 after the Doha amendment to the Protocol was made. The second commitment period enunciated binding targets for thirty-seven countries, namely Australia, the European Union and its 28 countries, Belarus, Iceland, Kazakhstan, Liechtenstein, Norway, Switzerland and Ukraine.

The Kyoto Protocol also had various compliance elements, which when added to the UNFCCC Charter improves the mechanism of the Convention in many ways[28], these include:

1) Increasing the strength of the commitments to the status of being binding, legally;
2) Increasing the quality, and the number of times reports of the implementation of the commitments, and the status of Greenhouse Gases in the atmosphere;
3) Coming up with an increasingly rigorous, and comprehensive review process;
4) Advocating the establishment of mechanisms, procedures and methods to deal with the parties that are found to be in non-compliance of these goals, and targets.

There lies a fundamental difference distinguishing the UNFCCC Convention from the Kyoto Protocol, i.e. the nature in which the commitments of reducing the Greenhouse Gases are mandated. In the former, the parties mentioned in Annex-1 do not necessarily have to return to the 1990 levels of emissions, instead they have to formulate measures, policies, and mechanisms to mitigate Climate Change and reduce Greenhouse Emissions. Further, they undertake to submit timely reports containing detailed information regarding the various policies and measures in place to combat the same. There were also no consequences to those parties that were found to be in noncompliance with the same. On the contrary, the Kyoto

[27]Article 3, Kyoto Protocol To The United Nations Framework Convention On Climate Change (UNFCCC) (1998)

[28] Clare Breidenich Et Al., The Kyoto Protocol To The United Nations Framework Convention On Climate Change, 92 The American Journal Of International Law (1998), Se, < http://www.jstor.org/stable/2998044 >

Protocol establishes a binding set of targets that are clear and crisp. Unlike the former convention, the Protocol in Article 3 sets clear that there would be legal implications if there is found to be any non-compliance, any of the targets. Article 3 further states various steps that are to be taken in order to fight climate change, and since Annex 1 countries have this Protocol legally binding upon them, they must comply with them. For example, in Article 3(4), the Protocol asks the parties to provide sufficient data to the Subsidiary Body for Scientific and Technological Advice, in order for the body to estimate the carbon stocks of the country in the year 1990, and then project the estimates for future years. It also calls for various measures of transparency and measures to take in uncertainties, and ensure the proper execution of the measures advocated by the body to the country.[29]

Even though the Protocol seems to be very stringent and hard to comply with, it allows for some flexibility in implementation at a national and international level.[30] At the internal national level, policies, frameworks, and implementations are left to the individual countries to handle. At the international level, it provides various measures because of the market-based approach it envisages. The Protocol aims to encourage enthusiastic compliance of the parties and implementation of various targets as it gives the parties freedom to develop their own strategies in order to achieve a common goal based upon their individual socio-economic and political conditions. The Protocol further provides directions as to how, when and where to report their progress and the mechanisms that they should be using to measure their emissions.

[29] Article 3(4) Kyoto Protocol To The United Nations Framework Convention On Climate Change (United Nations) (1998)

[30]Clare Breidenich Et Al., The Kyoto Protocol To The United Nations Framework Convention On Climate Change, 92 The American Journal Of International Law (1998), See, < http://www.jstor.org/stable/2998044>

On the face value, the Protocol seems like one that has the capacity to make parties actually achieve their goals, and can further make the world a better place to live in. But like the fate every convention has faced till date, it did not achieve the lofty objectives it aimed for.

Since then, there have been many such treaties and protocols such as the Bali Roadmap (2007), the various Copenhagen Accords, the Durban Agreement (2011), etc. All of the aforementioned treaties and conventions focus on tackling Climate Change through policy changes, legislations, and diplomatic engagement between countries, more than internally trying to seek solutions on a country to country basis. It is evident from international surveys and statistics conducted by various organizations that climate change agreements have delivered very few successes in the past.[31] The only legally binding agreement in the ambit of Climate issues has been the Kyoto Protocol, but even it has witnessed indifferent achievements to Climate Change.

**2.6 The Paris Agreement, 2015**

Climate governance has become a key aim of policy-makers in ensuring that the environment continues to be a safe place for human beings to live in. The objective of governance is to ensure the safe and habitable environment for human survival. However, climate governance has proved to be a mammoth task for policy-makers as they have overlooked the inherent nature of human beings in trying to ensure stable climatic conditions for the benefit of human beings. Humans by nature are selfish and are indifferent to the problems that do not affect them or their kin. With regard to adverse climatic changes, humans are least bothered as to the effects of their activities on the environment as they are not facing any direct threat yet. It is because of this reason that humans are less likely to pay heed to preserving the

[31] Chandra Lal Pandey, the limits of climate change agreements: from past to present, 6 International Journal of Climate Change Strategies and Management (2014)

environment for the safety of the future generations as they would not be benefitting from such activities in the present. Policy-makers have instead focused more on curbing emissions from human activities rather than trying to correct the selfish human behaviour with regard to safeguarding the environment. Since 1992, there has been a surge in international efforts in trying to maintain stable climatic conditions and prevent global warming. As the environment is somewhat of a public good, in order to prevent one person suffering from the selfish activities of the others, there is a need for international co-operation in preserving the climate. Most of these conventions, although not having been successful in its entirety, have been a step forward in changing the human attitude towards environment protection and conservation. Beginning with the UNFCCC[32], adopted in the year 1992, all the parties to the convention represented in the COP (conference of parties) review the convention's implementations and any other legal instruments that the COP may adopt.[33] The COP to a certain extent has ensured international cooperation in preventing and controlling climate change but has not been successful in its policies entirely because of the lack of enforceability of the conventions. International conventions have no absolute binding power on the member nations and hence enforceability has been a major concern for climate governance. This section will focus on the 21st Conference of the Parties (Paris Agreement) in 2015, its effects and the various international developments post the agreement.

### 2.7 Features of the Paris Agreement

The Paris Agreement was a turning point in climate governance and has applied a nexus of top-down and bottom-up approaches to establish a binding system of climate governance post 2020 (Completion of the Kyoto Protocol period). It has been successful in mobilizing 196

[32] The United Nations Framework Convention on Climate Change

[33] Caytas, Joanna Diane "The COP21 Negotiations: One Step Forward, Two Steps Back." Consilience, no. 19 (2018): 1-16. http://www.jstor.org/stable/26427709

members of the COP in establishing a binding system of climate governance. The Paris Agreement has three main purposes: limiting the global average temperature increase, improving adaptation abilities, and securing consistent finance flows for both challenges.[34]

The Paris Agreement has largely overcome the failures of the Kyoto Protocol, 1997 and has been a step forward in ensuring that the member states effectively implement the promises made by them in the Agreement. It has done so by deviating from the Kyoto model of differentiating between the nations as developed and developing. Instead, the Agreement has kept in mind the UNFCCC's principle of "common but differentiated responsibilities and respective capabilities"[35] and has allowed each nation the freedom of discretion in setting the limits of emissions as per their capabilities. Such a flexible approach has ensured that the burden of climate governance does not lie only on the developed countries but on the developing countries as well. Every member state is obliged to submit an "Intended Nationally Determined Contribution"[36] (Hereinafter referred as INDCs) as a part of this agreement. These INDCs represent the goals of each individual country in trying to curb emissions and mitigating global warming and its effects. Such INDCs would be revised every 5 years and would only be accepted by the COP if they were an improvement from the previous goals set-out by the country.[37] Through this mechanism, involvement of the domestic government in the international climate governance has been stepped up. Furthermore, such promises would be binding on the country as it would have the effect of a domestic law rather than an international law. The COP merely plays the role of overseeing

[34]Susanne Dröge, The Paris Agreement 2015: Turning point for the international climate regime, SWP, Feb. 2016, at 30.

[35] Ibid at 23.

[36]Article 4 of the Paris Agreement, 2015
https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf

[37]Article 4(9) of the Paris Agreement, 2015
https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf

the climate governance activities of all the member nations. This is how it has applied a nexus of top-down and bottom-up approaches in climate governance.

The Agreement has further sought to mitigate the effects of global warming by setting out a long-term goal to limit the global average rise in temperature within 2 degrees Celsius or lesser. Every country must provide in their INDCs ways to reduce the global average rise in temperature within the 2-degree Celsius threshold. These goals would come into force only from 2020 onwards. The Agreement has stressed on the concept of "climate neutrality"[38] and hopes to cut down emissions as much as possible to maintain the stability of the climate, without any gradual rise in global temperature. Apart from this, the Agreement has stressed on the concept of adaptation to climate changes and the means to survive in case of adverse global warming. Article 7 of the Agreement focuses on three overarching ways to achieve better adaptation: enhancing adaptive capacities, strengthening resilience and reducing vulnerability. It recognizes the challenge as being global, while its dimensions span from the local up to the global level.[39] The Agreement has also paid special attention to those residual effects of climate change which cannot be avoided through mitigation and adaptation. This is regarded as the "loss and damage" concept and mainly included the impacts of events such as rising sea-levels, melting of glaciers, floods, droughts or cyclones. It has been included in Article 8 of the Agreement to provide for a system of governance that does not include punishing the large emitting nations for the impacts of climate change. Through the Warsaw International mechanism, the Agreement has sought to provide for a less contentious way of treating the issues of loss and damage. Some of the ways suggested are: (a) Early warning systems; (b) Emergency preparedness; (c) Slow onset events; (d) Events that may involve irreversible and permanent loss and damage; (e) Comprehensive risk assessment and

[38] Susanne Dröge, The Paris Agreement 2015: Turning point for the international climate regime, SWP, Feb. 2016, at 30.

[39] *Id.* at 8.

management; and (f) Risk insurance facilities, climate risk pooling and other insurance solutions.[40]

Lastly, in order to bridge the economic gap between the developed and developing nations, the Paris agreement has provided for schemes of climate financing. Until 2020, the developed countries are obligated to fund the mitigation and adaptation processes while other countries can contribute on a voluntary basis.[41] The Agreement has sought a goal of US$ 100 Billion/year until 2025 and post that, this amount will be increased if required. Through this system, it would enable the developing countries to come at a level playing field as the developed countries and in turn would compel such countries to take part in climate governance. With more countries taking part in climate governance, climate change can successfully be prevented.

**2.8 Developments post the Paris Agreement**

The Paris Agreement, although yet to come into force, has been viewed as a step forward in climate governance in comparison to the Kyoto Protocol, 1997. The guidelines of the Agreement will come into effect only post 2020 (once the second period of the Kyoto Protocol ends). It is evident from the provisions of the Agreement that it has tried to ensure the enforceability of the agreement by involving the domestic governments in the decision-making process. By doing so, the shortcomings of international law have successfully been circumvented. However, it is too early to judge the operational mechanisms of the agreement as it came into force in November 2016 but will have an effect only post-2020. Only time will tell as to the extent of enforceability of the Agreement. However, if the Paris Agreement

[40] Article 8 of the Paris Agreement, 2015 See,
<https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf >

[41] Lauriane Wolfe, Ed Procter and Julia Kreienkamp, *Climate governance after the Paris Agreement,* UCL, See, <https://www.rgnul.ac.in/PDF/f7ff0636-9075-47f2-8e17-a5ba7be7a3cf. >

is to be regarded as a success, it is a success only because it has got countries to agree to agree. In reality, it is not a step-forward but two-steps back.[42] The events post the Paris Agreement are testament to this statement.

1. COP 22: The COP 22 conference at Marrakech in 2017 was mainly conducted to fine-tune the Paris Agreement, 2015. The Paris Agreement had come into force in 2016 and therefore it became necessary for the COP to spell out in detail the rules and procedures for the effective implementation of the Paris Agreement.[43] The COP 22 set-out a 2018 deadline for the countries to formulate the necessary rules and procedures for the effective implementation of the Paris Agreement. It mainly sought to overcome certain shortcomings in the Paris Agreement and ensure the effectivity of the Agreement. The convention didn't make many changes but merely described a certain pathway to achieve the goals set-out in the Paris Agreement. Some of the key outcomes of the COP 22 were:

    a) The Head of States of the COP members reaffirmed their commitment to the Paris Agreement but there was still much gloom surrounding the election of Trump as the President of the US, who vehemently argued against the Paris Agreement and threatened to not be a part of it. The Marrakech Action Proclamation[44] was issued by all the heads to reaffirm their commitment to the goals of the Paris Agreement. The only doubt was over the commitment of the US to the Agreement under the

[42] Caytas, Joanna Diane "The COP21 Negotiations: One Step Forward, Two Steps Back." *Consilience*, no. 19 (2018): 1-16. http://www.jstor.org/stable/26427709

[43] Sophie Yeo, COP22: Key outcomes agreed at the UN climate talks in Marrakech, CarbonBrief, https://www.carbonbrief.org/cop22-key-outcomes-agreed-at-un-climate-talks-in-marrakech.

[44] *Id.*

Trump era. Trump is famously known to regard climate change as a hoax[45] and felt the Agreement was largely unfair to the US. Therefore, unlike the Paris Agreement, the COP22 was only able to attain the commitment of the countries on paper. There was still a threat to the continuity of the Agreement because of the impending exit of the US from the Agreement. This would essentially have a domino effect on smaller countries, who would also be inclined to exit the Paris Agreement.

b) Climate financing received a fresh boost by the creation of a new fund that promoted transparency and accountability, with the conference stressing on achieving the US$ 100 Billion/year goal by 2020. Furthermore, the COP agreed that the 'Adaptation Fund' which was formed to serve the Kyoto Protocol would also serve the Paris Agreement, 2015.[46]

c) The heads of the COP formulated a 2018 deadline to analyse the INDCs formulated in the Paris Agreement in 2015 and report back to the COP by 2018 to see whether certain changes have to be made to the INDCs to improve their effectiveness. The INDCs were due to be changed and improved in 2020 and as a sort of a proactive measure, a 2018 deadline was set-up to review the INDCs prior to 2020. This process was dubbed as "facilitative dialogue" and would serve as a system of checks and balances to oversee the extent to which the INDCs are able to reduce the greenhouse gas emissions to meet the goals of mitigation and adaptation.

d) Countries also approved a five-year working plan on "loss and damage", which would start in 2017 and would see countries start to formally address topics such

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[45] Gregor Erbach, Outcomes Of The Cop22 Climate Change Conference, See, <https://epthinktank.eu/2016/11/24/outcomes-of-cop-22-climate-change-conference/ >

[46] Ibid

as slow-onset impacts of climate change, non-economic losses (for example, culture and identity) and migration. In other words, they dealt with the concept of environmental justice[47] and took into consideration the effects of climate change in all spheres of the society.

e) A new forum known as the 'The Climate Vulnerable Forum' was formed to cater to the needs of those countries that were most vulnerable to climate change. This forum was in line with the "loss and damage" concept of the Paris Agreement, 2015 (Article 8)[48]. This forum committed all such countries to update their INDCs before 2020[49], invest resources on the development of new technology that was renewable and environment friendly. It also mandated that such countries focus on the long-term effects of climate change and formulate policies to minimize emission output.

2. US Withdrawal from the Agreement: One of the biggest blows to the Paris Agreement was the declaration of intent of withdrawal by the US from the Paris Agreement in 2017. The main purpose of the Agreement, to ensure international cooperation in climate governance had been defeated by the withdrawal of the US from the Agreement. The Trump administration believed that the Agreement would have no effect on the US climate policy as it is not in line with US energy laws and hence cannot be implemented. Moreover, Trump believed that the Agreement was not fair to all the emitting nations and somewhat hamstrings the US.[50] On the grounds of

[47] M.K Ramesh, Environmental Justice: Courts and Beyond, 3 IJEL, 20-37, 2002.

[48]Article 8 of the Paris Agreement, 2015 https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf

[49] IPIEC, COP22: Highlights and outcomes, http://www.ipieca.org/news/cop-22-highlights-and-outcomes/

[50] Tom McCarthy, David Smith and Sabrina Siddiqui, Donald Trump confirms US will quit Paris climate agreement, THE GUARDIAN, (June 1st, 2017) https://www.theguardian.com/environment/2017/jun/01/donald-trump-confirms-us-will-quit-paris-climate-deal

protecting the interests of the nation from the unfair privileges granted to the other emitting nations, Trump decided to withdraw from the Paris Agreement. In reality though, this reason is flawed as every country submitted their INDCs according to their capabilities. The US had the option of choosing how much it was going to commit itself to reducing emissions.[51] The reason given by the Trump administration is misguided and reflects the US's attitude towards multilateralism, which has been evident since the Kyoto Protocol was also not ratified by the US. However, the withdrawal of one of the biggest greenhouse emitters from the Agreement is a huge blow to the efforts of mitigating and preventing global warming. Participation of the worlds' largest emitters was an absolute necessity to ensure a kind of leadership in climate governance. During the proceedings of the Agreement, the US under Barack Obama played an active role and assumed the role of a leader in the climate governance. This was largely to gain electoral votes during the US elections but benefitted the COP21 as well. The Trump administration on the other hand were skeptical of the idea of climate change and global warming and disassociated themselves from the Agreement. This has created a vacuum with regard to the leadership role in the climate governance. US has taken a back-seat with regard to climate change and there is a lot of deliberation as to whether China or the EU might fill the vacuum. China has been investing heavily on clean renewable sources of energy but has not yet assumed the role of leading on climate governance. The EU on the other hand possess all the necessary tools to implement the guidelines of the Paris Agreement, 2015. It can mobilise existing legal arrangements and economic instruments to accelerate market trends, including leveraging taxation, state aid, green

[51] David Robinson, The Significance of the US Withdrawal from the Paris Agreement on Climate Change, OEC, June 2017, at 4-5.

public procurement, competition law, energy regulation and litigation. However, these mechanisms are still underdeveloped and not aligned with the two-degree threshold of the Agreement.[52] All in all, the lack of any formal leader in the Agreement will definitely lead to a lack of consensus and makes it easier for countries to break away from their promises and not implement their INDCs. Furthermore, the withdrawal of the US from the Agreement would slow down the efforts to reduce greenhouse gas emissions and the development of innovative technology that are clean and renewable. As the US is the second largest emitter in the world, it had promised to contribute US$ 3 Billion to the Green Climate fund, which has now been cancelled.[53] Financing of green activities is essential to meeting the two-degree threshold. With a lack of funds, it imposes an additional burden on the remaining members to cover up the void. Therefore, the process of development of new green technology is slowed down. The lack of funds may cause the Agreement to crumble all together and ultimately, the global effort to reduce greenhouse emissions may fail. Lastly, the withdrawal of the US from the Agreement will force the COP to re-negotiate their aims and policies to reduce emissions. If the US were to continue emitting greenhouse gases at the rate they have been doing, it would be impossible to meet the two-degree threshold. The threshold would have to be tweaked to ensure that the absence of the US is compensated for.

3. Countries that have ratified the Agreement have not legislated a law yet: The flaw in the Paris Agreement has been exposed by the fact that the there exists no enforceability mechanism. No country is legally bound to implement their INDCs

[52]Lauriane Wolfe, Ed Procter and Julia Kreienkamp, Climate governance after the Paris Agreement, UCL, https://www.rgnul.ac.in/PDF/f7ff0636-9075-47f2-8e17-a5ba7be7a3cf.

[53] Yong-Xiang Zhang, Qing-Chen Chao, Qiu-Hong Zheng & Lei Huang, The withdrawal of the U.S. from the Paris Agreement and its impact on global climate change governance, KeAi, December 2017, at 213-219.

before ratification but after ratification, if they fail to do so, the Agreement relies on the "name and shaming"[54] process to punish such countries. The problem of enforceability lies in the nature of international law, which is a soft law and has no binding effect on any country. Once ratified though, a country must legislate a domestic law in accordance to the international law. Yet, this has not been the case with the Paris Agreement, as of the 179 countries that have ratified the Agreement[55], many have not yet followed up with a corresponding domestic legislation to implement their INDCs. This might be due to the fact that the Paris Agreement will have its effect only post-2020 and the countries might be waiting for 2020 to pass the legislation. However, with the lack of any effective enforceability mechanism, countries may choose to break away from their pledges made in the Agreement. This has become an additional threat as demonstrated by the US with their intent to withdraw from the Agreement. Other countries may use that as an excuse to break-away from their promises and follow the path of the US. The true extent of the enforceability of the Agreement can only be assessed post 2020. Although, the current status of the enforcement of the Agreement doesn't look promising as most countries are still in the planning stages of formulating a domestic law to back-up their INDCs. This reaffirms that the Agreement was purely a sort of formality to bring countries together, but actual implementation is lacking and hence is a step backward in climate governance.

[54] David Robinson, The Significance of the US Withdrawal from the Paris Agreement on Climate Change, OEC, June 2017, at 4-5.

[55] United Nations Treaty Collection https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en

COP 23: This was the second round of negotiations post the historic Paris Agreement that integrated 197 countries of the world in tackling climate change. In continuation with the COP22, this conference was held to further fine tune the rules and procedures for implementing the Agreement. For this purpose, a "Paris rulebook" was in the process of being formed to overlook the technical details required for implementing the Paris Agreement. A 2018 deadline was set-up to complete the rule-book. There was a need for this as national action was important in order to meet the two-degree threshold.[56]

4. Hence, the system of checks and balances formulated in the Paris Agreement had to be strengthened to avoid any loopholes and ensure that the INDCs of every country were effective in reducing emissions to an almost pre-industrial era. Furthermore, the rules of the "facilitative dialogue" due to be held in 2018 on the effectiveness of the INDCs for the pre-2020 era was formed. In this conference, the "facilitative dialogue" was renamed as the "Talanoa dialogue" after a Pacific island concept which used storytelling and discussions as a way of making good decisions.[57] This dialogue would assess the implementation of the INDCs based on three fundamental questions - "Where are we? Where do we want to go? How do we get there?"[58] This process would clearly outline a certain pathway to reach the desired goals of the Paris Agreement as well as identify the shortcomings in the present INDCs and hence make it easier to overcome such shortcomings. The dialogue also accepted inputs from non-parties of the COP to further strengthen the global action against climate change. Furthermore, this process would avoid causing conflict among the member nations as

[56] Damian Carrington, *The COP23 climate change summit in Bonn and why it matters*, THE GUARDIAN, https://www.theguardian.com/environment/2017/nov/05/the-cop23-climate-change-summit-in-bonn-and-why-it-matters

[57] *Id.*

[58] Jocelyn Timberley, *COP23: Key outcomes agreed at the UN climate talks in Bonn*, CarbonBrief, https://www.carbonbrief.org/cop23-key-outcomes-agreed-un-climate-talks-bonn

> no single country would be singled out and it would be somewhat of a global effort to help each country help themselves which would eventually cut down global emission levels. The process would finally culminate in 2018 with a sort of a "political phase"[59] to amend the INDCs in accordance with the goals of the Paris Agreement.

However, there was even more chaos and disparity in this conference because of the formal intention of withdrawal by the US from the Paris Agreement. The US, under President Donald Trump, announced that it wished to withdraw from the Agreement on the grounds of it being biased towards other high-emitters and being unfair to the US. The withdrawal of the US could have a large impact on the entire Agreement and may even lead to its end. Smaller countries may also follow suit and break-away from the pledges made in their INDCs. As mentioned earlier, the withdrawal of the US created a void in the leadership of the Agreement. There was speculation over China and the EU to fill that void and lead the world in the action against climate change. China has emerged as a likely party to lead the conference since the US's withdrawal by formulating a high-level committee (Ministerial on climate action coalition)[60] consisting of the EU, China and Canada to tackle climate change issues. The EU as well has endeavored to be at the forefront of the climate change movement by investing large amounts on low-emission technology and renewable sources of energy. Apart from this, the conference saw a kind of a double-faction in the US. This was mainly a retaliation of several US states against the decision of their President to withdraw from the Agreement. A delegation known as the "We are still in" comprising the former Mayor of New York and Governor of California and various leaders of other states of the US was formed.[61] Even though this group could not attend the conference, they made their presence felt by vociferously voicing their opinion against Trump's decision to withdraw from the

[59] *Id.*

[60] Anonymous, *Key achievements from COP23*, https://cop23.com.fj/key-achievements-cop23/

[61] *Id.*

Paris Agreement. Therefore, while the general outlook of the US is for the Paris Agreement, the Trump administration believes otherwise and intends to withdraw from the Agreement. Several states in the US have offered their support and have already begun efforts to use renewable energy and cut emissions. This however would only be effective if the entire country's energy policy was in line with the Agreement. Hence, the withdrawal of the US from the Agreement would indeed be a huge blow as there would be a need to renegotiate the INDCs for each and every country in order to compensate for emissions of the US.

Despite the withdrawal of the US, the positives of the COP23 was the continued commitment of the other members to reduce emissions and achieve the two-degree threshold. The UK and Canada launched an alliance known as the "Powering Post coal Alliance" to phase-out the use of coal.[62] This alliance has been supported by several other countries and the main aim is to reduce or rather restrict the use of coal and convert to renewable sources of energy in order to reduce greenhouse emissions to the desired level. Most of these countries have pledged to phase out coal by 2030. However, this alliance has not been supported by many big users of coal such as the US, China, India and Germany. Garnering the support of these countries is vital to achieving the goals of the Paris Agreement. The COP23 also witnessed a historic break-through in agriculture as it was able to bring about a link between agricultural activities and climate change. The issue had been in discussion ever since 2011 but in this conference a consensus had finally been arrived at. It was an understood fact that methane had certain warming effects on the Earth and hence, the sector had to be controlled in order to reach the low emission goals of the Paris Agreement. This was an important step in ensuring that the mitigation and adaptation measures are successfully carried out in the agriculture sector.

The COP23 also witnessed a lot of confrontations on the issue of climate financing. The key point to this regard was achieving the right balance between the amount given by the

[62] *Id.*

developed and developing countries. Several developing countries like India and China felt that the US$100 billion/year by 2020 goal had not been fulfilled by various developed countries and demanded those sums to be paid up before they fulfill their financial obligations. There was no consensus on this issue and ultimately it was left to be decided in the next conference. Furthermore, the adaptation fund was again agreed to be continued for the Paris Agreement, which was initially formed under the Kyoto Protocol. Countries also pledged in their INDCs to increase their funding to the adaptation fund on account of the withdrawal of the US from the agreement.

**The Road Ahead:**

The task ahead for the COP is not an easy one as there still lies a lot of technical work to be completed in order to effectively bring into force the Paris Agreement in 2020. 2018 has been regarded as the test year for the COP as they prepare to implement the Paris Agreement. The Talanoa dialogue would provide necessary information on the effectivity of the INDCs and necessary changes may have to be made before 2020 so as to serve as a pre-emptive measure to minimize greenhouse emissions. Furthermore, the COP24 will have to deal with the issue of the US leaving the Agreement and the necessary changes that may cause to the goals of the Agreement and the INDCs.

## 2.9 COP 24 Katwoice 2018

The Conference of the Parties (COP - 24) to the United Nations Framework Convention on Climate sought to finalise the rules for implementation of the Paris Agreement. The conference aimed at arriving at a common rule book for all countries to cut carbon emissions and implement better strategies. Apart from this, roundtable discussions included finance and climate action, sustainable development goals 12, 9, 8 and climate; resilience and climate action; land use, water and energy; oceans, coastal zones and transport. [63] Negotiators agreed on multifarious measures that will make the Paris Agreement functional in 2020. The Katowice Agreement ensures that countries cut down their levels of carbon emissions and achieve the goal of keeping the global temperature rise well below two degree Celsius which should have been adhered to a long time ago.[64] An Intergovernmental Panel on Climate Change (IPCC) report stressed on the need to limit global warming to not more than 1.5 degree Celsius. The IPCC further stated that carbon pollution must be cut by half by 2030 and then reach "net zero" by mid-century.[65] Countries such as the United States, Saudi Arabia, Russia and Kuwait objected to this report creating tensions between the parties. These objections were raised despite the findings of the US National Climate Assessment that stated, "With continued growth in emissions at historic rates, annual losses in some economic

[63] International Institute for Sustainable Development - Katowice Climate Change Conference (UNFCCC COP 24)
http://sdg.iisd.org/events/unfccc-cop-24/

[64] Katowice: COP24 Climate change deal to bring pact to life -By Matt McGrath, British Broadcasting Corporation

[65] Intergovernmental Panel on Climate Change. 2018. Global Warming of 1.5 °C: An IPCC Special Report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. http://ipcc.ch/report/sr15/.

sectors are projected to reach hundreds of billions of dollars by the end of the century -- more than the current gross domestic product of many US states."

On the other hand, countries that are economically not well off expected some flexibility with the rules by giving due consideration to their economic capacities for implementing such rules. This essentially points to the fact that there needs to be a basic amount of economic resources that a country must possess to ensure that environmental action is possible. Moreover, the current plans adopted by countries in pursuance of their commitment to the Paris Agreement is nowhere adequate to achieve the goal of curbing rise in global temperature. Scientists feel that the Rulebook independently wouldn't achieve the goal of curbing carbon emissions; there needs to be active initiatives to decrease fossil fuel use and deforestation to eliminate other factors such as heat waves, floods, etc. Moreover, countries that are more susceptible to get engulfed by water due to increasing sea levels pushed to get the Rulebook in place.

## 3. A National Policy Approach to mainstream climate change adaptation in India

### 3.1 National Environment Policy, 2006

India is a developing country whose transformation brings about a multitude of challenges in the social, economic, cultural and environmental areas. There were many other policies which were there to protect the environment management such as the National Forest Policy, 1988, the National Conservation Strategy and Policy Statement on Environment and Development, 1992; and the Policy Statement on Abatement of Pollution, 1992. Some sector policies such as the National Agriculture Policy, 2000; National Population Policy, 2000; and National Water Policy, 2002; have also contributed towards environmental management. All of these policies have recognised the need for sustainable development in their specific

contexts and formulated necessary strategies to give effect to such recognition. But to its contrary, this policy on the National Environment is brought in order to cover the wider ambit as well as to fill the gaps that still exist, but this policy doesn't bring in new laws or any other new innovative ideas for the protection of the environment, rather it just builds up on the existing policies in force. Thus, though the policy is new it focuses on the issues and the remedies which were brought up by the previous policies.

The National Environment policy is made in order to give proper livelihood and securing life and ensure ecological support[66]. The present day consensus reflects three foundational aspirations: First, that human beings should be able to enjoy a decent quality of life; second, that humanity should become capable of respecting the finiteness of the biosphere; and third, that neither the aspiration for the good life, nor the recognition of biophysical limits should preclude the search for greater justice in the world. For this achievement to happen there must be a proper balance and harmony between the economic, social and the environmental needs of the country[67]. But, the objective of the act can be fulfilled only when there is a proper law made which benefits the people, with better environmental standards.

The NEP 2006 derives its legitimacy from the inclusion of objectives such as to provide for intra- and inter-generational equity and integration of environmental concerns in socio-economic development process and from the commitment to be guided in the policy and partnership design by the principles such as internalizing the environmental costs into planning process, precautionary principle, fixing strict liability (even in the absence of legislation or standards) and preventive action, all of which are well-intentioned. But the way the NEP identifies the causes of environmental degradation, it does begin to show that it has no intentions to make a clean break with the existing paradigm of development and

[66] National Environment Policy 2006.

[67]National Environmental Policy 2006.

conservation. For instance, the revised NEP states that "the loss of the environmental resource base can result in certain groups of people being made destitute, even if overall, the economy shows strong growth." But the measures it advocates fail to offer any succor to the poor to give better access to resources and capabilities. Many of the proposed regulatory reforms will be dependent on market-based instruments and would not provide a solution to those problems of environmental degradation that affect the livelihood security of the poor[68].Moreover NEP pursues the process of development rather than making it socially and economically just.

The National Environment Policy (NEP) is also intended to be a statement of India's commitment to making a positive contribution to international efforts. The need for such a policy was felt after the Constitution mandated for a clean environment under Art 48A and Art 51A(g) which was strengthened by the Judicial Interpretation of Art 21 of the Constitution of India. In fact, the NEP completely ignores the issue of elimination of unsustainable practices of production and consumption of non-renewable resources by the corporate sector and affluent classes. It is significant that the revised policy makes no effort to control the penetration of the private corporate world in sectors that are critical to the ecological and livelihood security of a majority of the people[69].

The National Environment Policy is intended to be a guide to action: in regulatory reform, programmes and projects for environmental conservation; and review and enactment of legislation, by agencies of the Central, State, and Local Governments. The dominant theme of this policy is that while conservation of environmental resources is necessary to secure livelihoods and well-being of all, the most secure basis for conservation is to ensure that people dependent on particular resources obtain better livelihoods from the fact of

[68] National Environment Policy 2006 -liberalising Environmental Regulation.

[69]National Environment Policy 20006-liberalising Environment Regulation

conservation, than from degradation of the resources. The policy also seeks to stimulate partnerships of different stakeholders, i.e. public agencies, local communities, academic and scientific institutions, the investment community, and international development partners, in harnessing their respective resources and strengths for environmental management. Environmental degradation has led to a drastic change in the climatic pattern in India.

The key challenges faced by this policy are environmental degradation and poverty. The main objective of this policy is to provide a clean environment but the population growth, inappropriate technology and consumption choices, and poverty, leading to changes in relations between people and ecosystems, and development activities such as intensive agriculture, polluting industry, and unplanned urbanization. However, these factors give rise to environmental degradation only through deeper causal linkages, in particular, institutional failures, resulting in lack of clarity or enforcement of rights of access and use of environmental resources, policies which provide disincentives for environmental conservation (and which may have origins in the fiscal regime), market failures (which may be linked to shortcomings in the regulatory regimes), and governance constraints. Due to the inappropriate waste-treatment and sanitation, industry and transport related pollution adversely affect the air, water and the soil quality and as a result the urban poor are getting affected, as a result of which they couldn't retain or get employment, attend schools and colleges etc. which in turn aggravates the poverty. This Policy doesn't have a proper mechanism to balance both the need for the clean environment as well as not to affect the poor people.

The National Environment Policy 2006 (NEP), states in its Preamble that India ‘recognizes the interdependencies among, and trans-boundary character of, several environmental problems’, and the present policy is ‘a statement of India’s commitment to making positive contribution to international efforts’. The framing of environmental protection as an integral

part of the development process and of intragenerational and intergenerational equity mirrors principles in the Stockholm Declaration and the UNFCCC. Although, the NAPCC (National Action Plan on Climate Change) was initiated primarily in response to developments at the international level, the eight missions focus on India's domestic development needs. The NAPCC itself states India's policy response to climate change will primarily address 'the urgent and critical concerns of the country' with 'co-benefits for addressing climate change' through 'a directional shift in the development pathway', thereby assigning priority to the maintenance of high economic growth. All the policies made with keeping in mind of the NAPCC but they are not effective enough to fulfil its purpose. The NEP thus totally ignores the need to provide a complex setup suitable for solving the problems among the different sects of people. Further it fails to establish buildings and organizing systems for development and place for experimenting and learning by involving interested and affected groups of people.

The NEP specifically recommends that new legislation should be enacted in line with multilateral environmental regimes, and various norms embedded in international agreements such as the Kyoto Protocol are visible in the NEP. These include notions of environmental standards, social responsibility and the offsetting of environmental impact through mechanisms promoting economic efficiency. Though there are legislation which are made for the protection of the environment such as the land, air, water there is still no proper actions which are taken for the protection of the climate change due to this environmental degradation. This Policy mentions various approaches to be used for achieving the goals such as the right to development, sustainable development, precautionary principle, polluter pays principle , fault based liability, Public Trust Doctrine, decentralization but such kinds of approaches are not giving a fruitful result in India because there is lack of concern among the authorities since there are some corrupted people and also the laws are not that strong

enough to make the people liable for the harm caused to the environment as that of in the foreign countries. There is a need for the new legislation as the Environment Protection Act acts as an umbrella legislation and a new legislation in line with the National Environment Policy is need to be made. Moreover, the Govindarajan Committee said that the forest and the environmental clearance are the largest source of delay in the development process and this policy wanted to fix all these issues by taking some action plan by which there is transparency in the faster decision making process and also the responsibility is more on the State level agencies for greater environment regulation and management. All these plans were said to be enforced but there is lack of transparency in the decision-making process as in the countries like the USA and UK. So, there must be a strong legislation which governs the environmental aspects as well as, be helpful in achieving the goals and objectives of the policy.

This policy when compared to the older policy is made more strong and the gaps which weren't covered in the National Environment Policy 2006 , will be focused more and those gaps will be considered as a highly sensitive issue and a committee will be set up accordingly provided with all the money required and all the expenditures will be saved in a computer system and after the entry only the funds will be released for such purposes there by bringing in transparency in the working of the committee. This transparency will help in abolishing poverty which is one of the major backdrop for the development of the country because all the funds thus being allocated by the government to uplift the poor people will be monitored through a computerized system and there would be bare minimal chance of corruption thus leading to the development of this country and also fulfilling the goals of this policy.

### 3.2 Specific Energy Sector Initiatives

Energy is not an end in itself but a means of providing essential services.[70]One of the key issues in the ongoing climate change deliberations is the problem of cost which is highlighted through the statement that cost of delay is perceived to be higher than the cost of immediate action.[71] The Energy policy of a country portrays the ideology adopted by the country in its governance and showcases the main intent of the law and policy makers of the country. An important aspect that has emerged during deliberations is the word 'Energy Efficiency'. Energy efficiency is considered to be an important aspect of environmental and economic policies.[72] There is an increasing need to ascertain the exact meaning of energy efficiency and also to use appropriate policy approaches in attaining the goal of energy efficiency. Thus, it is very pertinent to identify a comprehensive definition of the word 'energy efficiency' combining all aspects derived from the definitions given by varied disciplines like that of economists, sociologists and politicians. The Energy Conservation Act of 2001 does not define the term Energy Efficiency. A subjective definition of energy efficiency can be adopted in this regard which involves the analysis energy inputs that are used to provide certain essential services like energy sources of vehicles and air conditioning of houses and offices.[73] Thus, the main objective of an effective energy policy should be to achieve the role of energy efficiency i.e. to encourage a shift from increasing energy production to energy service and also proving an ideal ground for the research and development of cost-effective technologies to reduce energy consumption and thereby preventing further degradation of the environment.[74] One of the main problems in carrying out the objectives of the various

[70] B. Sudhakara Reddy et al., Energy efficiency and Climate Change 77 (2009).

[71] UNEP UNFCC , information sheet 24 (cite)

[72] *ID.* at 77

[73] Diekman et al., Energy Efficiency Indicators: Statistical Fundamentals ,Theory and decision support for policy 18(1999)

[74] Reddy, supra, at 105

policies has been the implementation aspect which can be remedied to a large extent with a correct approach adopted which initial framing of the policy. Climate change adaptation in India has to be viewed through a mainstreaming approach rather than the much-implemented top down approach as it comprises of climate change specific information which forms the foundation of future plans and policy frameworks which incorporate the climate change elements into the policy making them climate change resilient.[75]

### *3.2.1 Objectives:*

1. To evolve an effective data spine and fill the gaps in the availability of energy data for the law makers and policy makers to effectuate and implement well informed decisions especially in the energy sector as it includes technical concepts and implications and lastly also to promote further innovation in energy efficient technologies and research.[76]
2. To adopt a shift from a climate driven approach to a mainstreaming approach that seeks to incorporate climate resilient elements at the drafting stage of the policy itself.
3. A total reform of the energy sector in India and also to engage in sector specific goals and not on economy wide goals as they do not perpetuate focused policy endeavors that are required for immediate action.[77]
4. To also reduce the perceived conflict between environmental degradation caused by pursuing the goal of ensuring energy security and move towards achieving 'Energy Efficiency', that remedies the conflict.

[75] http://www.al.undp.org/content/dam/albania/docs/misc/Policy%20Paper%20eng.pdf

[76] (cited in the1st citation of the work submitted by centre for policy research)- contribution by the prayas energy group)

[77] Cite lbnl consultation

5. The focus of reducing energy consumption should shift from government to the behavior of individual customer behavior implementing behavioral economic theories called the Nudge theory applied by Prof. Richard Thaler.

**6.** This policy also seeks to encourage research and development in the field of energy technologies designed to increase energy efficiency rather than energy production which is very essential for reducing energy usage by not compromising on energy wastage.

### *3.2.2 Alternative suggestions*

Energy efficiency policy practices of UK and US would be analyzed in this section as to how energy efficiency can be reached through policy interventions. This section shall also talk about energy policies of developing countries and as to how they resolve the conflict between energy security and environmental degradation with the help of the paper titled "Climate change and developing countries: issues and policy implication."

Nudge theory:

As Bernie Sanders said, "A good environmental policy is a good economic policy". This statement merely highlights the interdependence of the disciplines of Environmental law and economics in solving environmental issues encountered as a result of conflicting interests. The Nobel Prize winning application of the Nudge theory by Prof. Richard Thaler the idea which originated from the book he co-authored with Prof. Cass R. Sunstien titled 'Nudge-Improving decisions about Health, Wealth and Happiness'. This theory essentially is applied in the realm of policy making to induce people into making decisions that are in their self-interest by the use of concepts and ideological frameworks like Choice Architecture and Libertarian Paternalism. This is an attempt to combine the disciplines of environmental law and behavioral economics to arrive at possible policy solutions by looking at the usage of this

theory in the energy policies of other countries like the US and UK. This section provides two empirically tested scenarios as to how a simple nudge could be used to encourage energy efficiency.

The first scenario is modelled on the evaluation of behaviorally motivated policies and their implications on nudging energy efficiency among consumers in the US energy markets. Energy efficiency standards and subsidies are to be encouraged and the motivation for which lies in scenario which includes imperfect information and inattention to energy costs largely prevalent in the energy markets.[78] The main underlying objective of the experiment was to evaluate the aforementioned aspects by two experiments. One of the experiments is called the TESS (time sharing experiments for social sciences) which is informed from an idea which has been used to identify consumer bias by providing information.[79] This experiment is primarily based on the assumption that consumers are ill-informed or inattentive to energy costs when they are buying energy using appliances.[80] This premise intrinsically highlights the information asymmetry that is prevalent among the consumers as to optimally choose energy efficient applications such as CFL bulbs as opposed to incandescent light bulbs. This information that has been provided to include the relative prices of CFL and incandescent and also the energy efficiency of the two in relation to their energy usage. This can be essentially used to eliminate what is called the 'energy paradox' which pertains to the hesitation in adoption of energy efficient technologies in spite of it providing savings in terms of heavy energy cost elimination.[81] Thus the result of the experiment was that the market share of CFL

[78] Hunt Alcott , Dmitry Taubinsky , Evaluating Behaviorally motivated Policy: Experimental Experience from the Lightbulb Market, 105 Am Econ J Appl Econ. 2501, 2501 (2015).

[79] Chetty, Raj, Adam Looney,kory Kraft, Salience and Taxation: Theory and Evidence, Am Econ J Appl Econ 99 (4): 1145-77 (2009)

[80]Gillingham, Kenneth T, Karen l,Palmer, Bridging the Energy Efficiency Gap: Policy insights from Economic theory and Empirical evidence, Resoures for the future discussion paper 13-02.

[81]Jaffe, Adam B, Robert N Starvins, The Energy Paradox and the Diffusion of Conservation Technology, Resource and energy economics 16(2): 91-122 (1994).

light bulbs at market price increased by 12 average points which quite proves the whole point of providing information nudges to induce rational decision choices among ill-informed consumers in the energy appliance market.[82]

This scenario includes two experiments: one of them was conducted by a utility company in the US and has achieved energy saving up to 3.3% by providing a comparative analysis of their energy consumption relative to that of their neighbors by giving effective feedback and tips on reducing their consumption of energy.[83] The second area includes methods of information simplification which is the European Union's scheme of mandatory labeling of the energy consumption of particular appliances, by regulating the information presentation style[84] which has also been followed in India in the recent past. This practice can be made more effective by presenting the information of the energy or fuel use into cost per annum as suggested by Thaler and Sunstein in their book titled 'Nudge- Improving decisions about Health, Wealth and Happiness'.[85]Thus it can be now said that energy efficiency can be also achieved by using the theories of behavioral economics in policy making which can be efficient and cost effective to implement.

### 3.3 National Action Plan on Climate Change, 2008

The report of the Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment report notes, "sufficiently disruptive climate change could preclude any prospect for a

[82]Alcott , supra, at 4

[83] Allcott, Hunt , 'Social norms and energy conservation' Journal of Public Economics, Vol. 95 No. 9–10, pp. 1082–1095 (2011).

[84] Ölander, F. and J.. Thøgersen 'Informing Versus Nudging in Environmental Policy' Journal of Consumer Policy, pp. 1–16.(2004).

[85]Oksana Mont Mathias Lehner and Eva Heiskanen, Nudging – A tool for Sustainable Behavior https://www.researchgate.net/publication/271211332_Nudging_A_tool_for_sustainable_behaviour

sustainable future".[86] According to German Watch Report of 2017, India has been recognized as the 4th most vulnerable country to face the effects of climate change.[87]In order to combat the challenges posed by climate Change, The National Action Plan on Climate Change with an eight mission approach aimed at addressing climate change as an issue which had been largely ignored in the past. The initiative aimed at achieving two outcomes: to facilitate climate change adaptation, and enhance the ecological sustainability of India's development path.

### *3.3.1 National Mission for Sustainable Agriculture (NMSA)*

The mission aims at ensuring soil health, water conservation and bringing an integrated approach to ensure sustainability in agriculture. The key components of this Missions are Rain-fed Area Development (RAD),On-farm Water Management(OFWM),Soil Health Management(SHM) and Climate Change and Sustainable Agriculture Monitoring, Modelling and Networking (CCSAMMN). This mission can be viewed as a precursor and harbinger of various food security related measures such as Pradhan Mantri Krishi Sinchai Yojana (PMKSY) and legislations like the National Food Security Act, 2013. This mission recognized as a part of the NAPCC highlights that there is recognition of the intrinsic relationship between climate change and food security and serves as an effective starting point of analysis of climate change considerations in food security measures in India.

[86]Fleurbaey, et all (2014): "Sustainable Development and Equity" in Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (O Edenhofer, R Pichs-Madruga, Y Sokona, E Farahani, S Kadner, K Seyboth, A Adler, I Baum, S Brunner, P Eickemeier, B Kriemann, J Savolainen, S Schlömer, C von Stechow, T Zwickel and J C Minx (ed.)) (Cambridge: Cambridge University Press), United Kingdom and New York, NY, US, pp 293

[87] SönkeKreft, David Eckstein and Inga Melchior, Global Climate Risk Index 2017, Briefing Paper (August 30, 2018, 11:30 PM) https:// germanwatch.org/en/download/16411.pdf

### *3.3.2 National Mission for Enhanced Energy Efficiency (NMEEE)*

NMEEE is based on the Electricity Act, 2001 and is under the aegis of the Bureau of Energy Efficiency (BEE) aimed at meeting the energy requirements and demands of the country in an attempt to achieve energy efficiency. The key components of the NMEEE comprise 4 initiatives; namely Energy Efficiency Financing Platform (EEFP), Perform, Achieve and Trade (PAT), Market Transformation for Energy Efficiency (MTEE) and Framework for Energy Efficient Economic Development (FEEED).[88]A number of other initiatives have also commenced, including distribution of energy-efficient appliances, where the government has distributed about 23.39 crore LED lights under the Pradhan Mantri Ujjwala Yojana to provide free clean cooking gas connections to women below the poverty line.[89]

### *3.3.3 National Mission for a Green India (GIM)*

This mission aims at improving the forest cover and improving the quality of forest cover in India. The 12th FYP (2012–17) outlines the same objectives and aims to increase forest and tree cover on 2.5 mega hectare of land (mha), improve quality of forest cover on another 2.5 mha, improve ecosystems services, increase forest-based livelihood income in order to enhance annual CO2 sequestration.[90] One of the most noteworthy features of the Mission is the decentralized approach wherein it follows a bottom-up approach. The mission seeks to bring primacy to the Gram Sabhas to oversee mission implementation at the village level.[91]

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[88] Planning Commission, Government of India,Twelfth Five Year Plan (2012–2017) Faster, More Inclusive and Sustainable Growth http://planningcommission. gov.in/plans/planrel/12thplan/pdf/12fyp_vol1.pdf

[89]VijetaRattani 2018, Coping with Climate Change: An Analysis of India's National Action Plan on Climate Change, Centre for Science and Environment, New Delhi page 23http://www.indiaenvironmentportal.org.in/files/file/coping-climate-change-NAPCC.pdf

[90] Planning Commission, supra 4 at 220

[91]Vijeta,supra 5 at 18

### *3.3.4 National Mission on Sustainable Habitat (NMSH)*

Under this mission, six sub-committees mandated with the task of identifying standards in six areas, including that of energy efficiency in the residential and commercial building sectors [92], urban transport,water supply and sewerage,urban planning have presented standards on these.

### *3.3.5 National Mission for Sustaining the Himalayan Ecosystem (NMSHE)*

This mission is aimed at evolving conservation measures by establishing a monitoring network to facilitate community-based management for the sustenance and safeguard of Himalayan glaciers and mountains.[93]

### *3.3.6 National Mission on Strategic Knowledge for Climate Change (NMSKCC)*

This mission has aimed at creating a knowledge base for climate change in order to facilitate the tracking of existing climate change agendas and identifying gaps in reaching the objectives of such agendas. It aims at bringing about technical reports, and creating a sound technical expertise body of knowledge by engaging with trained climate change professionals to create public awareness and enhance the climate change knowledge base of India.[94]

### *3.3.7 National Solar Mission (NSM)*

[92]Ministry of Urban Development 2011, Report of the sub-committee for development of National Sustainable Habitat parameters for energy efficiency in Residential and Commercial Buildings, http://moud.gov.in/upload/uploadfiles/files/Energy_ Efficiency.pdf

[93]Ministry of Environment, Forest and Climate Change 2017, Mission Progress, http://envfor.nic.in/division/introduction-22

[94] Vijeta, supra 5 at 21

This mission aims at promoting research and development in harnessing India's vast solar energy potential, estimated to be over 750 GW[95], as a viable alternative in contrast to fossil fuels. In order to achieve the objectives outlined in the NSM, the Ministry of New and Renewable Energy (MNRE), has adopted a three-phased approach to achieve the objectives of the mission by 2022.

### *3.3.8 National Water Mission (NWM)*

This mission was under the aegis of the Ministry of Water Resources, River Development and Ganga Rejuvenation to ensure equitable distribution of water within the States by means of conservation of water by minimizing wastage to create an integrated system of water resource management.[96]

The National Water Mission has been further been decentralized in the form of State Specific Action Plans (SSAP) to further give impetus to the implementation of NWM in the States. This is also with due consideration to water being a subject in the State list. These SSAP have to look into the various issues related with respective States water policies, and also create water budgets to ensure sustainability and water security.[97] In addition to the 8 mission plan, the Ministry of Environment, Forests and Climate Change are also suggesting 2 more missions such as missions with the intent to address the impact of climate change on health, coastal zones and waste-to-energy.[98]

## 3.4 State Action Plan on Climate Change

[95]Ministry of New and Renewable Energy, Mission Document, http://www. mnre.gov.in/file-manager/UserFiles/mission_document_JNNSM.pdf

[96]Vijeta, supra 5 at 15

[97] Ministry of Water Resources (2010), Mission Document, http://documents. gov.in/central/15658.pdf

[98]Special Correspondent, Climate change plan to get new missions, The Hindu,January 25, 2017

In pursuance of achieving the objectives of the National Action Plan on Climate Change, The Government requested the States to come up with State Action Plans on Climate Change in 2009.[99]This is to be viewed as a measure of decentralisation and to give impetus to the plan and expand its horizons from restricting itself to the 8 missions, as most of the subjects like water and agriculture are subjects in the State list which are critical to climate adaptation.[100] The State Action Plan on Climate Change (SAPCC) aims at achieving the advantages of co-benefits which promote development while addressing issues of climate change.[101]The plans follow a uniform structure, wherein the vulnerability assessments are to be carried out pertaining to the conditions prevalent in the State.[102]

The recommendations for the 12th five-year plan echo the same idea wherein States are considered to be the implementation facilitators by formulating their own state action plans as a means of pursuing climate change mitigation. [103]

### *3.4.1 Weather based Crop Insurance Scheme*

The Weather based Crop Insurance Scheme (WBCIS) serves as a pertinent point of analysis of the effectiveness and vision that State Action Plan for Climate Change had to further the cause of the National Action Plan on Climate Change. This is because Weather Based Crop

[99] Prime Minister's Council on Climate Change, Government of India (GoI) (2008), "National Action Plan on Climate Change" (New Delhi: GoI, 2008), pp 1-49, http://pmindia.nic.in/climate_change_english.pdf

[100]Navroz K Dubash, Anu Jogesh, From Margins to Mainstream? State Climate change planning in IndiaVol. XLIX no. 48 86,86(2014)

[101]Kirsten Jörgensen, Arabinda Mishra & Gopal K. Sarangi, Multilevel climate governance in India: the role of the states in climate action planning and renewable energies, J INTEGR AGR Vol.12:4,235, 273(2015)

[102]India's state action plans on Climate Change: towards meaningful action , page 2,Oxford Policy Management, (https://www.opml.co.uk/files/Publications/corporate-publications/briefing-notes/bn-india-state-action-plans-climate-change.pdf?noredirect=1

[103] Inputs on Key Strategy Challenges for the 12th Five Year Plan, page 24 FICCI, http://ficci.in/SEDocument/20217/FICCI_Final_inputs_forXIIPlan.pdf,

Insurance Scheme has been employed as a strategy for enabling climate change resilience by assessing the impact of climate change in agriculture by 23 State Action Plans out of 32.

The Weather based Crop Insurance Scheme incorporated the "homogenous area approach". According to this approach, an area is homogenous if the annual crop output of a majority of the farmers in the area above and below the normal yield.[104] This approach is centered on indexing the weather for insuring the crop due to the effect of weather variations which impedes the yield. The claim payments to the farmers based a system of weather index insurance reduced the problem of moral hazard and adverse selection which had been confronted in the "individual approach" which was the predecessor of the "homogenous area approach".[105] The major drawback of WBCIS is the basis risk i.e. the mismatch between the actual crop loss suffered by the insurance buyer and the indemnity received on the basis of the weather index.

### 3.5 Reasons for the ineffectiveness of State Action Plan on Climate Change

1. **The lack of vulnerability impact assessments at the State level**- The importance of the vulnerability impact assessment is paramount as it helps to enhance understanding of the vulnerability of some regions over other and to provide an overall overview of the decision-making process regarding climate change in the State.
2. **Lack of finance- No incentive for States to implement SAPCC-** The finance needed for the implementation of the State Action Plans has not been provided by the Centre and these plans have to be either adjusted in the implementation funds of other national level schemes such as MNREGA and NAPCC. In order to avail funding from the National Adaptation Fund certain criteria has to be met, however the capping of this

[104] Anshu Ogra, A Strategy for Adapting to Climate Change:Weather Based Crop Insurance Scheme, vol LIII no 31, EPW,96,96(2018)

[105] Clarke, Daniel Jonathan; Mahul, Olivier; Rao, Kolli Nageswara; Verma, Niraj. 2012. Weather based crop insurance in India (English). Policy Research working paper; no. WPS 5985. Washington, DC: World Bank. http://documents.worldbank.org/curated/en/693741468269445619/Weather-based-crop-insurance-in-India

Fund is Rs. 25 crores.[106].This amount appears to be too meagre in order to carry out the State Action Plans on Climate Change.

### *3.5.1 Climate Change Adaptation and Disaster Risk Management*

The integration of climate change and disaster risk management is indispensable due to the intertwined nature of the overlapping areas it intersects. Through the analysis of the provisions of the Disaster Management Act, the most important point of integration happens to be aspects of mitigation and adaptation to climate change is not recognized under the Disaster Management Act, 2005 even though the definition of 'disaster' as per the Act is inclusive of 'damage to loss to environment'. The effectuation of the Disaster Management Act at the National and State level will aid climate change adaptation processes. The National Action Plans do not include future climate risks by means of disasters as done in the US President's Climate Action Plan of 2013.[107] Out of the US model, 2 propositions in the Indian context seem to be the need of the hour as these help combat the problems faced due to disasters.

1. **Preparing for future floods**- The geographical location of India makes it vulnerable to floods. The US model creates flood risk reduction standards by means of analysis of certain scientific standards such as sea levels rise.[108] This model can be adopted in India by creating a body of technical expertise which deals with the preparation of flood risk reduction standards for India which can work under the Meteorological department. The meteorological department must work in consonance with the

[106] Vineet Kumar, Coping with Climate Change Volume II: An Analysis of India's State Action Plans on ClimateChange, Centre for Science and Environment, New Delhi, page 40 , http___cdn.cseindia.org_attachments_0.40897700_1519110602_coping-climate-change-volII.pdf

[107]The President's Climate Action Plan, The President's Climate Action Plan, The Executive office of the President,June2013https://obamawhitehouse.archives.gov/sites/default/files/image/president27sclimateactionplan.pdf

[108]*Id*. at 15

Disaster Management Authorities in order to combat the challenges of natural calamities to facilitate adequate arrangements for evacuation of people in the time of floods.

2. **Establishing a State, Local, and Tribal Leaders Task Force on Climate Preparedness[109]:** This taskforce is basically a facilitator in ensuring that various stakeholders are involved in the process of decision making. This can further be seen as a decentralized approach like that of the State Action Plan on Climate Change in order to facilitate better implementation and stakeholder participation in the event of a natural calamity. This task force will constitute representatives of regions who are well aware of the demography, climatic conditions in their particular region. The task force can specialize and customize the course of action that has to be taken with respect to particular regions as measures dealing with climate change cannot follow a 'one size fits all approach'.

### 3.6 Critiques of National Action Plan on Climate Change

Lacks sound analytical foundation-The National Action plan on Climate Change fails to develop a vision for the future development though its objective seems to be the achievement of ecologically sustainable growth. The technical documents such as Integrated Energy Policy and related documents were used as the analytical foundation for the formulation of NAPC. It is to be noted that these documents had no climate change considerations whatsoever which renders the Plan devoid of valid sources. This might hinder its implementation considering the kind of challenges climate change poses and the wide arenas climate change has implications upon.[110]

The approach is too broad and lacks specifics- All the missions of the National Action Plan on Climate Change do not have quantified targets like that of National Solar Mission which

[109] *Id* at *13*

[110] Climate Change: Not vision, not plan,Vol.43,no.28,EPW, Vol.43 no. 28 5,5(2008)

makes implementation of missions such as National Mission for Sustaining the Himalayan Ecosystem purely adaptive. This stagnates the implementation of such mission which makes a few missions more successful than the others.[111]

Overlapping nature of missions hampers monitoring and evaluation systems- A climate action plan requires a robust monitoring system to oversee the implementation and the effectiveness of these missions in combating the problems posed by climate change. However, the monitoring and evaluation in the form of progress reports is not to be found for all the missions except NSM, NMEEE and NWM.[112] This is largely due to the fact that there is lack of coordination among the ministries which have been entrusted with the implementation of these missions. The overlapping nature of the missions call for revamp of these missions to group like missions together, in order to congregate adequate technical expertise and manpower to oversee the implementation of the missions.

### 3.7 The Way Ahead for India in the Arena of Climate Change

India being a signatory to the Paris Agreement, has unveiled a national strategy known as the National REDD+ Strategy to increase its forest cover in coherence with the obligations under the Agreement. This forms a part of the Nationally Determined Contributions (NDCs) of the United Nations Framework Convention on Climate Change seeking to address problems of deforestation and aiming to enhance sustainable forests through REDD+.[113] It has been proven that 12% of the greenhouse gas emissions have been offset by carbon sink action of forests and croplands.[114] This is the reason why the strategy focuses on increasing forest

[111] Vineet, supra at 31

[112] *id.* at 32

[113] Press Information Bureau, Environment Minister Releases India's National Redd+ Strategy http://pib.nic.in/newsite/PrintRelease.aspx?relid=183155

[114] Ministry of Environment, Forest and Climate change, India First Biennial Update Report to the United Nations Framework Convention on Climate Change https://unfccc.int/files/national_reports/non-annex_i_parties/biennial_update_reports/application/pdf/indbur1.pdf

cover by decreasing deforestation and forest degradation. In effect, this would greatly boost the National Forest Mission and would provide an impetus to other missions in the same area. The ultimate goal is to achieve ecological sustainability by increasing forest cover by using advanced strategy. As per the Emissions Gap Report, 2017, an assessment of the estimates show that India is progressing towards meeting its emission reduction targets without any deviation by 2020.[115] It further suggests that the targets submitted by India under the NDC will be achieved by 2030. With the addition of this new strategy, there seems to be no possible threat for India to reach the targeted emission levels.

Reduction of emission is just the beginning of dealing with the phenomenon of climate change. The reduction of emission levels is crucial, even though it might seem really small when compared to the magnitude of the climate change problem we face as a country. The National Action Plan on Climate Change (NAPCC) serves as an effective starting point to initiate discussion on climate change as a phenomenon. Considering it to be India's very first attempt in dealing with climate change, the merits of NAPCC stand undisputed. The question that hovers around the effectiveness of NAPCC in dealing with climate change depends majorly on the adequacy of the Plan. The worst affected by climate change in India is the large agrarian population. The lack of technical expertise in climate patterns and changes stands to be a major hurdle in dealing with such a growing issue. Further, climate change in India has been dealt with in an isolated manner. It is to be taken into consideration that climate change is a phenomenon that is influenced by the intersection of a lot of other factors that need to be understood individually and then, as a collective whole. There needs to be a strategy that enables the assessment of the effect of each individual factor resulting in the creation of a robust framework for India. This can be achieved by coordinated effort between all the decentralized bodies which have been entrusted with the implementation of the Plan.

[115] UNEP (2017), The Emissions Gap Report 2017, United Nations Environment Programme (UNEP), Nairobi https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR_2017.pdf

### 3.8 The Policy Approach

The 'Public Policy Approach' to administration is a key tool to understand the effect of governmental policies on the masses. Such an approach is crucial for creation a pool of knowledge from which recommendations can be drawn[116]. India being a welfare state, gives utmost importance to the principles of equitable distribution of wealth and equality of opportunity. It also lays emphasis on the responsibility of the government to facilitate better standards of living especially to those who are unable to avail the minimal provisions to lead a good life[117]. A welfare state is also inclusive of a sustainable development system that strengthens the principles of welfare state. Therefore, the adoption of the welfare approach would be most feasible to make an efficient environmental policy for India.

Another way to look at the problem would be the 'mainstreaming approach.' Initially, this approach gained popularity as it looked to tackle issues that affect development such as gender inequality, environmental degradation, etc. This became a holistic approach as it did not aim to address separate initiatives, but instead, it sought to understand that various intersecting issues collectively cast an influence on mainstream activities related to development. This approach has been applied in the context of climate change where it has been described as a 'development first' approach where development agendas have been integrated into mitigation and adaptation objectives.[118] This is a relatively new approach that can be put in tandem with the public policy approach to create a whole new way of dealing with the problem of climate change.

[116] Frederick C. Mosher,Public Policy Approach Https://Www.Britannica.Com/Topic/Public-Policy-Approach

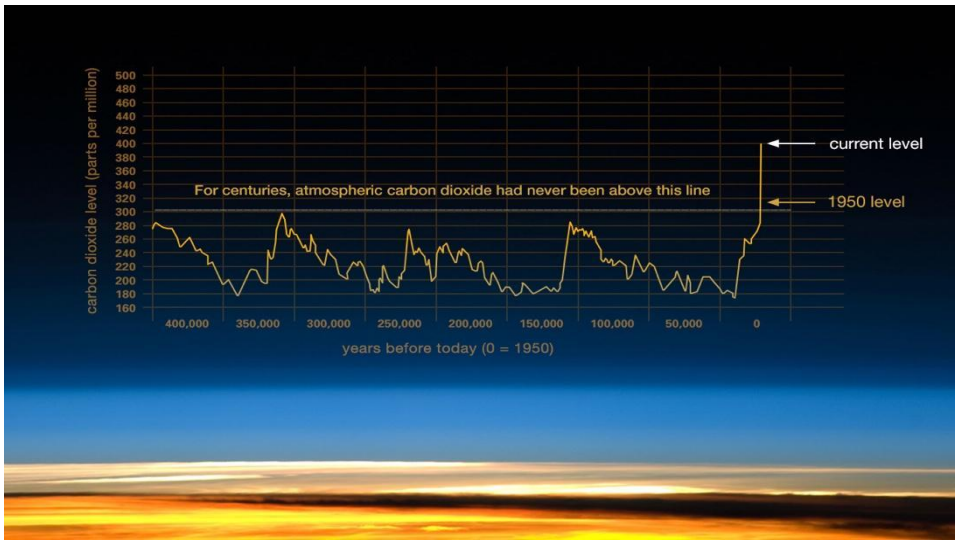
[117] India – A Welfare State, Democracy At Work See, <https://nios.ac.in/media/documents/secsocscicour/english/lesson-17.pdf >

[118] The 'mainstreaming' approach to climate change adaptation: insights from Ethiopia's water sector By Naomi Oates, Declan Conway and Roger Calow - Overseas development institute - April 2011

## 4. Scientific, Economic and Policy Challenges

### 4.1 Scientific Evidence on Climate Change

The Earth's climate has consistently changed throughout history but the detrimental effects of such changes was not posing a threat as much as it is now. In the last 650,000 years, there have been about seven cycles of glacial advance and retreat, with the abrupt end of the last ice age about 7,000 years ago marking the beginning of the modern climate era and of human civilization. Most of these changes are attributed to very small variations in Earth's orbit that change the amount of solar energy our planet receives. The current warming trend is of particular significance, because most of it is the consequence of human activity since the mid-twentieth century and is proceeding at an alarming rate.[119]




It is evident from the above graph that there has been a significant increase in the level of atmospheric $CO_2$ since the Industrial Revolution. Certain gases are known for their ability trap heat and act like a blanket that increases the temperature of the planet. So, the higher the emission of such gases become, higher is the temperature of the earth. Moreover, carbon

119 IPCC Fifth Assessment Report, Summary for Policymakers; B.D. Santer et.al., "A search for human influences on the thermal structure of the atmosphere," Nature vol 382, 4 July 1996, 39-46; Gabriele C. Hegerl, "Detecting Greenhouse-Gas-Induced Climate Change with an Optimal Fingerprint Method," Journal of Climate, v. 9, October 1996, 2281-2306; V. Ramaswamy et.al., "Anthropogenic and Natural Influences in the Evolution of Lower Stratospheric Cooling," Science 311 (24 February 2006), 1138-1141;B.D. Santer et.al., "Contributions of Anthropogenic and Natural Forcing to Recent Tropopause Height Changes," Science vol. 301 (25 July 2003), 479-483.

dioxide is generated in abundance as it is released into the atmosphere by a lot of human activities, especially those involving the burning of fossil fuels.

Ice cores drawn from Greenland, Antarctica and tropical mountain glaciers are indicative of the Earth's response to changes in greenhouse gas levels. Evidence can also be found in tree rings, ocean sediments, coral reefs and layers of sedimentary rocks that are slowly degenerating. Further, this also reveals that current warming is occurring roughly ten times faster than the average rate of ice-age-recovery warming.[120]

Multiple studies published scientific journals[121]show that, '*Climate-warming trends over the past century are extremely likely due to human activities'*. Global climate change is already inching towards being the cause of observable effects on the environment. Effects that had been predicted in the past are now occurring at a quick pace: melting of glaciers, accelerated rise in the sea level and longer, more intense heat waves.

Scientists affirm that global temperatures will continue to rise for decades to come, largely due to the production greenhouse gases. The Intergovernmental Panel on Climate Change (IPCC), which includes more than 1,300 scientists from the United States and other countries predicts a temperature rise of 2.5 to 10 degrees Fahrenheit over the next century. Further, the

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[120]National Research Council (NRC), 2006. Surface Temperature Reconstructions For the Last 2,000 Years. National Academy Press, Washington, D.C.

[121] J. Cook, et al, "Consensus on consensus: a synthesis of consensus estimates on human-caused global warming," Environmental Research Letters Vol. 11 No. 4, (13 April 2016); DOI:10.1088/1748-9326/11/4/048002
Quotation from page 6: "The number of papers rejecting AGW [Anthropogenic, or human-caused, Global Warming] is a miniscule proportion of the published research, with the percentage slightly decreasing over time. Among papers expressing a position on AGW, an overwhelming percentage (97.2% based on self-ratings, 97.1% based on abstract ratings) endorses the scientific consensus on AGW."
J. Cook, et al, "Quantifying the consensus on anthropogenic global warming in the scientific literature," Environmental Research Letters Vol. 8 No. 2, (15 May 2013); DOI:10.1088/1748-9326/8/2/024024
Quotation from page 3: "Among abstracts that expressed a position on AGW 97.1% endorsed the scientific consensus. Among scientists who expressed a position on AGW in their abstract, 98.4% endorsed the consensus."
W. R. L. Anderegg, "Expert Credibility in Climate Change," Proceedings of the National Academy of SciencesVol. 107 No. 27, 12107-12109 (21 June 2010); DOI: 10.1073/pnas.1003187107.
P. T. Doran & M. K. Zimmerman, "Examining the Scientific Consensus on Climate Change," Eos Transactions American Geophysical Union Vol. 90 Issue 3 (2009), 22; DOI: 10.1029/2009EO030002.
N. Oreskes, "Beyond the Ivory Tower: The Scientific Consensus on Climate Change," Science Vol. 306 no. 5702, p. 1686 (3 December 2004); DOI: 10.1126/science.1103618.

Panel has also stated that,' *taken as a whole, the range of published evidence indicates that the net damage costs of climate change are likely to be significant and to increase over time.*'

### 4.2 Effects of Climate change

Global climate is expected to change drastically over the century and beyond. The magnitude of change depends primarily on the amount of heat-trapping gases emitted globally. Human-induced warming has superimposed the natural variations expected in climate leading to disruptions in the uniformity that is expected.

On the other hand, the intensity, frequency and duration of North Atlantic hurricanes as well as the frequency of the strongest (category 4 and 5) hurricanes have all increased since the early 1980s. Hurricane associated storm intensity and rainfall rates are projected to increase as the climate continues to warm.

Furthermore, global sea level has risen by about 8 inches since reliable record keeping began in 1880. This is a direct consequence of the rise in temperature and needs to be curbed to avoid massive destruction. Over the decades, storm surges and high tides combined with rising sea level and land subsidence will further aggravate the problem of flooding in many regions. This also throws light on the preparedness of States to deal with such natural calamities pointing to a policy that urges States to be proactive in their approach.

### 4.3 Permutation of the Policy within the Nation

In climate science, uncertainty refers to the inability to predict the scale, intensity, and impact of climate change on human and natural environments. As a result, uncertainty poses a problem because it impedes the ability of local policymakers and governments to accurately predict or plan for future events and disasters. Climate studies are concerned with climatic patterns that span over a long time-horizon and cover larger spatial scales, whereas weather refers to shorter-term phenomena occurring within hours, days or weeks. However, weather patterns are embedded in interactions within an evidently more erratic climatic system.

Local people are usually more concerned with immediate weather, whereas climate scientists are concerned with a different tempo-spatial scale. Scientific advances and the introduction of cutting-edge technology including satellites, radar systems, supercomputers, construction of historical data sets and fine-tuned models have helped improve the reliability of weather forecasts and climate projections. Cyclone track projections, known through cone-shaped scenario maps have consistently improved and are immensely valuable for disaster management today.

Nevertheless, forecasts, especially at the local level, often throw up unexpected "surprises," as in the case of violent thunderstorms and lightning. Lead times to detect them can be extremely short, falling in the narrow range of hours to minutes. Even if identified, it is a challenge to precisely locate impacts which explains why IMD bulletins describe likely affected areas, not villages or households where impacts ultimately materialize.

### 4.4 Effectiveness of Mitigation and Adaptation Measures

The primary objective of mitigation measures involves reducing the flow of heat-trapping greenhouse gasses into the atmosphere, by capping the sources and developing the locations where these gases are stored.

The goal of mitigation is to erase the interference of mankind with the ecosystem and ensure the ecosystem adapts itself to the climate change naturally. However, the primary concern with respect to the effectiveness of mitigation lies in the cooperation of the states. Furthermore, efforts to mitigate climate change vary from country to country as a result of which, framing an effective mitigation policy is often difficult.

### 4.5 Funding by International Financial Institutions (IFIs)

Climate Change negotiations are often fraught with uncertainty and tension. Developing countries urge the developed countries to compensate for their industrial development which is fueled by carbon emissions. The developed countries like the US and Germany want

countries like India to commit to sustainable growth and development. In order to strike an equilibrium between the two wants from two types of countries, there is an innate need for a secure and an enduring funding, apart from Domestic funds appropriated by the Government; both State and Central. Being the need of the hour, funding from International Financial Institutions dedicated for this very purpose is of paramount importance. Global Public finance by dedicated climate change funds or multilateral development banks like the World Bank or the Asian Development Bank are the primary ways of generating funds for this particular purpose. India has reportedly received 1 billion out of the 15.3 billion dollars approved by climate funds. It is more than what any other country receives as funding. Even though India is the country that received the largest funds, most of it was directed to renewable energy.

**4.6 Carbon Trading**

Carbon trading is one of the effective ways of incentivizing industries to reduce the carbon emissions. This novel concept was initiated by the Kyoto Protocol and adopted by several nations. India, being a signatory of the protocol, lacks effective implementation of this policy. Carbon markets aim to reduce greenhouse gas emissions cost-effectively by setting limits on emissions and enabling the trading of emission units, which are instruments representing emission reductions. Industries that release high level of such greenhouse gases automatically face a higher cost of reducing such emissions whereas, the ones that emit lesser amount of these fall within the category that can reduce emissions at lower costs.

Putting a price on carbon emissions and improving carbon market mechanisms help internalize the environmental and social costs of carbon pollution, encouraging investors and consumers to choose lower-carbon paths. There are two main categories of carbon markets: Emissions Trading Systems (ETSs) and a new voluntary scheme defined in the Paris Agreement, article 6.2.

Units being sold in the carbon market can be in the following forms:

- Removal unit (RMU) is based on the positive activities performed by countries in reducing the carbon emissions, which includes activities on the basis of land use, land-use change and forestry (LULUCF) activities such as reforestation, etc.
- An "Emission reduction unit" (ERU) is a unit issued pursuant to Article 6 and requirements thereunder, and is equal to one metric tonne of carbon dioxide equivalent, calculated using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5.
- Certified emission reduction (CER) is a unit issued pursuant to Article 12 and requirements thereunder, and is equal to one metric tonne of carbon dioxide equivalent, calculated using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5. It is generated from a clean development mechanism project activity mentioned under Article 12 of the Kyoto protocol.

Further, according to the Kyoto protocol, in order address the concern that Parties could "oversell" units, and subsequently be unable to meet their own emissions targets, each Party is required to maintain a reserve of ERUs, CERs, AAUs and/or RMUs in its national registry. This reserve, known as the "commitment period reserve", should not drop below 90 per cent of the Party's assigned amount or 100% of five times its most recently reviewed inventory, whichever is lowest.

### 4.7 Carbon tax and Emission Trading

Carbon Tax, and its aspects can be often be understood as the taxation on the burning of fuels such as coal, natural gas and oil, and their use, with the ultimate aim reducing the levels of emissions in a given nation, at a point of time. With this, the governments are given two ways to price carbon. They can levy a tax on each tonne of CO2 emitted; an approach pioneered by Finland in 1990 or a fixed number of pollution permits can be issued to

companies that can then trade the permits with others. The European Union (EU), a handful of American states and China have opted for some version of this "cap-and-trade" approach. The issue lies in the fact that these schemes tend to be limited to a few carbon-intensive industries, such as power generation, oil-refining and steel- and cement-making.

Emission trading, on the other hand, involves a market-based approach that involves tradable pollution permits allowing an industry or organization to pollute only to the extent that the permit allows them to do so. These regimes allow industries to internalize costs with respect to the pollution so inflicted upon the environment and thereby focus on a balanced approach towards the protection of the environment. These are also drawn from Article 17 of the resolution laid down by the Kyoto Protocol, which clearly establishes that the various signatory States are to draw out principles, modes, instruments, rules and guidelines under which the aspects of emission trading and any other connected activities or pursuant measures are to be implemented.

Thus, the States are under an obligation by virtue of being signatories to fulfil the obligations laid down in pursuance of the protection of the ecological system. India, on account of being a signatory to the treaty and also having ratified it in the year 2005, is under a positive obligation to ensure that the measures are taken in this regard.

In light of this, the Court in the case of TN Godavarman Thirumalpad v. Union of India (through KM Chinappa), sought to establish a balance, wherein, if there were to be a conflict, there would have to be a balance between the interests of people and the protection of the ecology.

It is to be taken into consideration that, India as a nation must strive towards achieving a perfect equilibrium in the creation and implementation of measures that would benefit maximum number of entities, and also reduce any burdens or costs that might be incurred in this regard. In furtherance of this proposition, it is submitted that measures need to be

introduced to bring in a regime of carbon taxation and emission trading in pursuance of the various international obligations.

### 4.8 The Economic Front

It is observed that most environmental protection regimes around the world regulate pollution and emissions by imposing a fine upon the polluter or by making the act of pollution that exceeds the emission limit a punishable offence. Such a system imposes great costs upon a person, organization or industry as a consequence of the risks and hazards caused by their processes. As enumerated in the case of Indian Council for Enviro-Legal Action v. Union of India; there is liability that is affixed upon the polluting agency to make good of a loss or damage so caused by the industry or organization, irrespective of the reasonable care or diligence taken with respect to the carrying out of activities. Such costs are imposed in two circumstances, namely; the damages to be paid for the harm caused to the environment and the aspects of restoring the environment or ecology to a status quo ante. Furthermore, such a system as observed in the case of Deepak Nitrate Ltd. v. State of Gujarat would seek to also involve the aspects of the broad spectrum of risks and the harm that such an industry would bring forth with it.

In spite of an approach that seeks to have public enforcement costs, it is observed that such a system does not serve the purpose of achieving the ultimate goal of efficiency and sustainability. This would result in the failure of achieving the optimal level of balanceable interests. Furthermore, such parochial measures would fail to incentivize private parties to invest in research and development of environmentally efficient techniques and methodologies. In addition to this, these regulations would be inadequate when it comes to legal action by victims against polluters whereby the liability that can be affixed upon a polluting industry cannot be determined. Thus, raising the economic transaction costs of such transgressions.

By introducing a policy on par with carbon taxes and emission trading, there would be greater economic efficiency and far greater percentage as to the optimal use and distribution of resources. This can be attributed to the existence of private property rights over a resource that incentivizes the owner to protect his resources in the best possible manner. Such regimes, intend to avert the 'Tragedy of Commons' as propounded by Professor Garett Hardin, and ensure efficient resource allocation amongst all industries and organizations. Such regulations have been largely advocated and endorsed by economists who are of the view that such a regime would be to sustain growth and development, on a great scale in the nation. It would come as no surprise, that economists have stressed and constantly vouched for the existence of private property rights to facilitate growth and development of a nation over prolonged periods of time.

## 5. Societal Response to Climate Change

### 5.1 Disaster Management and Human Rights

#### *5.1.1 Introduction*

The term disaster as defined by the United Nations means, "a serious disruption of the functioning of a society, causing widespread human, material or environmental loss, which exceeds the ability of the affected society to cope using its own resources." The recent humanitarian crisis caused by the increase in number of disaster situations have raised new challenges, especially with reference to the protection of the basic human rights of the victims affected by the disaster. The need for protecting human life through the promotion of good governance policies is one of the important aspects in development of *rights-based approach.* This adds a new dimension to the existing studies relating to preparedness, relief, rehabilitation, mitigation and ensures effective steps for disaster management.

The human rights framework empowers people through legal tools and institutional structures that protect the rights of people affected by the disaster. Repercussions that arise from all kinds of disasters ultimately establish a co-relationship between sustainable development and disaster management. The integral facet of development implies the stringent need for protection of human rights of individuals during disasters and post - disaster recovery periods.

**5.2 International Efforts**

The unparalleled study on climate and global warming has provided unchallenged evidence that climate change has enhanced the frequency and intensity of natural hazards. These hazards, when coupled with poor preparedness and inadequate response strategies result in disasters that disrupt human life, affect livelihoods, overwhelm capacities to respond and cause forced displacement.

The United Nations High Commissioner for Refugees (UNHCR) has given a warning stating that climate change will add to the scale and complexity of human mobility and displacement.[122] The United Nations Inter-Agency Standing Committee (UN-IASC) has actively laid emphasis on humanitarian dimensions of climate change and disasters within the context of the global climate talks.[123] The European Court of Human Rights has ruled that states have obligations to implement preventive measures to protect people from the risks posed by disasters in order to protect the right to life.[124]

Even though human rights treaties do not include specific provisions on the protection of people displaced by disasters, under human rights law, states have the duty to advocate

[122] U.N. High Commissioner for Refugees (UNHCR), Climate Change, Natural Disasters and Human Displacement: A UNHCR Perspective 1 (2009)

[123] 2011 Tulane Environmental Law Journal, 24 Tul. Envtl. L.J. 239

[124] Budayeva & Others v. Russia, App. Nos. 15339/02, 21166/02, 11673/02, 15343/02, Eur. Ct. H.R. (2008)

universal respect for, and observance of, all human rights and freedoms without distinction as to race, sex, language, or religion for all people living in its jurisdiction.

The International Strategy for Disaster Reduction (ISDR), is guided by the internationally agreed Hyogo Framework for Action that aims to increase the flexibility of communities and nations through building capacities to use proven tools for reducing disaster risk. The Hyogo Framework for Action has three tactical goals in disaster management viz: integration of disaster risk reduction into sustainable development policies and planning, development and strengthening of institutions, mechanisms and capacities to build resilience to hazards, systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programmes.

The concept of Human Rights protection is widely recognized as a crucial element of humanitarian strategies at times of emergency and disaster situations even though the longer-term aspects connected to the promotion and definition of a human rights-based approach in disaster prevention and reduction are still limited.[125]

The World Conference on Natural Disaster Reduction was held at Yakohama in Japan in May, 1994 where the Yakohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation was adopted. The United Nations Under-Secretary-General for Humanitarian Affairs accurately stated that, "Earthquakes and cyclones will happen. There is nothing we can do about that, but we can be prepared for them when they do strike. Disaster reduction can take place at any point in the process which we call disaster. It can comprise prevention and preparedness, relief and development as well as measures to reduce the effects of such disasters."[126] The conference affirmed that the impact of natural

[125] "Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters p.6 www.unisdr.org/eng/hfa/hfa.htm

[126] Dr.S.K.Kapoor, International Law and Human Rights (Central Law Agency, Allahabad 15 Edn, 2004) p.415-416

disasters in terms of human and economic losses has gradually risen and society has become more vulnerable to such disasters over the past two decades. Earthquakes, volcanoes, landslides, droughts and other natural events had killed some million people and inflicted injury, displacement and misery on countless more.

Even though the Hyogo Framework for Action is a non-binding international instrument, it urges states to try to reduce the risk of disasters.[127] A long-sighted policy of the United Nations in collaboration with local governments to manage disasters can substantially reduce damage.

**5.3 Disaster Management And Reduction – A Human Rights Perspective**

The important issues that arise in disaster management and reduction *inter alia* include the following key areas of concern viz: non-discrimination of disaster affected victims based on gender, age, ethnicity etc.; right to equality in matters of legal protection, shelter and housing, right to security, access to health services, clean water, education, compensation etc.

In the case of *Vincent Parikurlangara v. Union of India*[128], the Hon'ble Supreme Court held that the right to maintenance and improvement of public health is included in the right to live with human dignity enshrined in Article 21. A healthy body is the very basis of all human activities. It is the obligation of the welfare State to ensure the creation and sustenance of conditions congenial to good health. The liberal interpretation of this judgment on lines of human rights-based approach would clearly point out that, during the times of disaster it is the prime duty and responsibility of the State to provide medical care and access to health services to the victims of disaster. Disasters cause wide scale destruction taking away lives, livelihoods and shelter leaving behind the destabilizing effect on the social fabric of communities in the aftermath leading to increased vulnerability of the marginalized

[127] Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters," Extract from the final report of the World Conference on Disaster Reduction (A/CONF.206/6)

[128] AIR (1989) SC 142

communities. The prime concern in such circumstances is the urgent need for immediate relief and provide support to the affected population. These measures also require action in terms of rehabilitation and development by aiming for a gradual transition from emergency disaster response, relief operations, rehabilitation and ultimately, reconstruction and development.

The rights available to every individual affected by any disaster must include a wide range of rights especially the right to protection and assistance at times of emergencies under the protective shield of the international humanitarian laws and national legislations. The communities living in disaster-prone areas have the right to protect their development efforts and achieve sustainable development.

### 5.4 Disaster Relief As A Human Right In India

The heart of the Indian Constitution is Article 21 that reads as, 'No person shall be deprived of his life or personal liberty except according to procedure established by law.' After the Maneka Gandhi Case[129], the courts have expanded the scope of 'life' and 'personal liberty' under Article 21. The Supreme Court has also deduced an affirmative obligation on the part of the state to preserve and protect human life. Right to life, being the most important of all human rights also implies the right to live without the deleterious invasion of pollution, environmental degradation and ecological imbalances.[130] A collective reading of judgments will lead to the logical conclusion that the right to rescue, relief and rehabilitation is a fundamental right guaranteed under Article 21.

In 2005, the Disaster Management Act was passed. The Act establishes a National Disaster Management Authority and other authorities at various levels to coordinate activities pertaining to disaster management. The Act defines "disaster management"[131] as a continuous

[129] AIR 1978 SC 597

[130] S.Shanthakumar, Introduction to Environmental Law (Wadhwa & Co, Nagpur 2007) p.91

[131] Section 2(e)

and integrated process of planning, organizing, coordinating and implementing measures which are necessary or expedient for mitigation or reduction of risk of any disaster or its severity or consequences;[132] preparedness to deal with any disaster;[133] rehabilitation and reconstruction[134]. The Act inter-alia deals with provisions regarding the protection of human rights by virtue of providing specific guidelines with reference to minimum standards of relief to be provided to persons affected by disaster. This shall include the minimum requirements in relation to shelter, drinking water, medical and sanitation[135].

These legal provisions are considered to be the sacrosanct legislative measures as the intent of enacting this Act was to provide for the effective management of disasters and to uphold the human rights of the disaster affected people.

### 5.5 Right Based Approach

A rights-based approach should constitute the very core of disaster management practices. This will enable response planners to address systemic injustices that contribute to continuing poverty and social unrest. Disaster management programmes need to be informed of the international legal standards pertaining to key aspects of disaster response including human rights, the rights of vulnerable groups such as women, children, etc. While existing human rights obligations already require nations to take measures to mitigate the risks of natural or man-made disasters, it is important to recognize that failing to take feasible preventive measures in cases of foreseeable disasters amounts to the violation of the state's responsibility to protect its citizens. Human rights standards play a critical role in empowering survivors of natural disasters to demand necessary measures to restore the situation to normalcy.

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[132] Section 2(e) (ii)

[133] Section 2(e) (iv)

[134] Section 2(e) (viii)

[135] Section 12

The need of the hour is to promote people-centric human rights-based disaster risk reduction strategies. The vulnerability analysis in disaster management must take into consideration human rights issues among their social, economic and cultural criteria. Disaster management fundamentally deals with a response to human misery and loss of people's livelihoods and assets, while disaster risk management is concerned with mitigating or preventing such losses; both of which are tedious processes. The response towards disaster management must stem from the humanitarian approach so as to attain the objectives of damage control during times of disaster.

**5.6 Environmental Migrants (Climate Refugees):**

Environmental migrants are people who are forced to leave their homes due to sudden or long-term changes to their local environment. These people usually are engaged in activities that are vastly dependent on climate patterns or get displaced due to sudden disasters. Climate refugees may choose to flee to or migrate to another country, or they may migrate internally within their own country**.**

***6.6.1 Introduction:***

Risk-informed development strategies and policies are paramount, and have the potential to reduce vulnerability and enhance the ability of an individual, community or country to cope with, respond to and acquire the necessary skills to deal with shocks and stressors, including those posed by climate change. In this context, Nationally Determined Contributions (NDCs), national adaptation and disaster management processes and plans can play an important role.

If carefully managed and with the necessary resources, adaptation and disaster management processes and plans have the potential to reduce vulnerability and ensure individuals, communities and countries have the necessary skills to cope with and respond to climate-related hazards; determine the flows, conditions and impacts of human mobility; support migrant and displaced workers and communities. This potential will be lost unless these

strategies and policies are based on and account for the ways in which climate-related hazards affect people's needs, welfare, income, and subsequent decisions to move or stay. Such plans must operate in both origin and destination communities especially by acknowledging the heterogeneous nature of those moving and account for permanent, temporary and circular migration. To be able to effectively operate in this way, additional financing and technical support from the international community is required.

At the global level, the conceptual framework and organizational architecture around migration and displacement are embedded within an international response machinery developed over seven decades. But this machinery has not yet managed to integrate the complexity of 21st-century mobility into its politics or institutions. The links between climate change and human mobility have been recognized and are starting to be addressed to varying degrees within many global regimes. These include the United Nations Framework Convention on Climate Change (UNFCCC), the Sendai Framework for Disaster Risk Reduction 2015–2030 (SFDRR) and the United Nations Convention to Combat Desertification (UNCCD). The Platform on Disaster Displacement (PDD) plays an important role in supporting national governments to mainstream approaches regarding human mobility into broader policies. The 2030 Agenda for Sustainable Development (2030 Agenda) includes Sustainable Development Goals (SDGs) and targets both climate change and migration, though explicit links between the two are absent.

The ND-GAIN Index, which ranges from 0 to 100, measures a country's vulnerability to climate change in combination with its readiness to improve resilience. The lower the number, the more vulnerable the country.

Rural-to-urban migration; both cyclical and temporary has steadily increased in India over the past few decades. The landless poor constitute majority of the migrants, many being from lower castes and indigenous communities, and from regions with poor economic

performance. In Rajasthan, agriculture is rainfall-dependent and the summer monsoon rains have become increasingly erratic since 1980. In years of late or failed rains, and when groundwater supplies are overdrawn, marginalized farmers are often pushed into economic distress and the lack of other job opportunities has frequently left breadwinning family members with little choice other than to migrate when crops fail. Overdrawn aquifers do not support the irrigation necessary to adapt to climate hazards such as heat waves, warmer seasons and drought. Both male and female family members cyclically migrate to towns and cities in search of urban employment and better living conditions. Women tend to migrate for periods of three months or less and stay within their home districts, while males tend to migrate further away and for up to a year at a time.[136]

### *5.6.2 Internal Displaced Monitoring Centre (India)*

Displacement in India is largely driven by disasters and to a lesser extent by small scale, protracted conflict. Case studies have highlighted the phenomenon of development-induced displacement that which arises from rapid economic growth and urbanization.

Displacement figures have mainly been associated with flood and storm events, although India is exposed to a range of natural hazards with approximately 68% of the country's land area prone to drought, 59% of the land area prone to earthquakes and 76% of the coastline exposed to cyclones and tsunamis. These physical factors combined with the country's high population density, poverty as well as rapid urbanization and environmental degradation poses a higher chance of displacement in South Asia.

The type of hazards varies across geographic regions. Areas on the east coast are exposed to tropical storms and cyclones from the Bay of Bengal, while states in the north bordering Nepal and Pakistan experience frequent seismic activity. While most of the country faces the

[136] ISET and CEDSJ (2011)

impact of the monsoon, flood-prone areas include the Brahmaputra, Ganges and Meghna River basins in the Indo-Gangetic-Brahmaputra plains in north and northeast India.

Major events in recent years include the flood in 2016 that particularly affected Bihar and Assam about 1,670,000 and 495,000 new displacements respectively. The tropical cyclone 'Komen' that hit West Bengal and Manipur lead to 506,000 new displacements. In 2017, majority displacements occurred due to floods again leading to a total of approximately 1,344,000 new displacements across 8 states, the worst affected being Bihar where 855,000 evacuations took place. Conflict-induced displacement is also an issue, although it can be complex to track and obtain comprehensive data in this area as conflicts are sometimes very localized. It can include violent secessionist and identity-based movements or localized violence based on religion and caste. The main long-standing conflicts are ongoing clashes in Kashmir, insurgency in the North-Eastern states, as well as the insurgency in the so-called "Red Corridor" group of central and eastern states predominantly Chhattisgarh and Jharkhand. In addition, localized violence such as the 2013 Muzaffarnagar Riots can quickly lead to high levels of displacement.

Finally, development projects also have the potential to displace significant numbers of people. This includes projects such as dams, mines and industrial plants, but also urban renewal projects and environmental conservation. An IDMC study conducted in 2016 found that the risks posed by development-induced displacement are high, as large-scale land acquisitions can exacerbate pre-existing inter-ethnic and inter-religious tensions. In the long term, this can fuel conflict over land access and use. Although it is difficult to obtain comprehensive data on this topic, the Housing and Land Rights Network India, an NGO specialized this area has presented an estimate through its National Eviction and Displacement Observatory stating that nearly 260,000 people got displaced in 2017 due to housing demolitions for a range of development projects. Meanwhile, preliminary results

from an IDMC analysis of resettlement plans for World Bank-financed projects between 2014 and 2016 found that 11,000 people were at risk of becoming displaced because of 11 different projects.

**5.7 Policies and Legal Framework:**

In recognition of the specific risks and impact of displacement due to development, India is one of the only countries in the world to have drafted specific policies and legal frameworks on this issue starting with the National Policy on Resettlement and Rehabilitation for Project Affected Families, 2004. This was updated in the year 2007 and came to be known as the National Rehabilitation and Resettlement Policy, which aimed to reduce large-scale displacement caused by development projects, ensure the implementation of adequate rehabilitation packages, and improve communication and cooperation between development planners and affected families.

In 2013, protection for people displaced by development projects was introduced by a piece of legislation, "The Right to Fair Compensation and Transparency in Land Acquisition, Resettlement and Rehabilitation Act" (LARR). This Act took things a step ahead of the recommendations stipulated in related policies and sought to introduce the legal power of prior consent or refusal of land acquisitions by project-affected families, the possibility of market transactions for the transfer of land and improved compensation rates, and an improved institutional capacity for resettlement and rehabilitation.

A noteworthy policy on disasters is the National Disaster Management Plan (2016), which has been developed in accordance with the provisions of the Disaster Management Act (2005) and the guidance given in the National Policy on Disaster Management (2009), along with other established national practices. It provides a foundation regarding all phases of the disaster management cycle, in accordance with the approach given in the Sendai Framework for Disaster Risk Reduction. India has also produced a National Action plan on Climate

Change (NAPCC). While not explicitly mentioning displacement, it addresses some of the underlying issues that fuel disaster risk and thus disaster-induced displacement in 8 national "missions"; including a focus on protection of certain vulnerable eco-systems such as the Himalayas and coastal areas.

India does not currently have national policies specifically addressing conflict-induced displacement. This is an opportunity for improved humanitarian response, because a national policy would provide more clarity on who constitutes an IDP in this situation and allow for funding for humanitarian response to be channelled more effectively to particularly affected states.

### 5.8 Externally Displaced (Climate Refugees)

India signing the Paris agreement on climate change is a stepping stone in moving closer to achieving its goal of reducing carbon emissions. But, the human cost of climate change, i.e, the displacement of millions by natural disaster is not addressed by the climate pact nor the United Nations summit for refugees and migrants.

Climate change often forces the affected populations to move from their habitual place of residence. According to the Internal Displacement Monitoring Centre, 19.3 million people were displaced worldwide in 2014 due to climate change[137], with studies indicating that the number could be anywhere between 250 million and one billion by 2050.

The geographically diverse Indian subcontinent is particularly vulnerable to a wide variety of natural disasters, and India, as the largest country in the region, often bears the effects of the large-scale displacement it causes. Floods, storm surges, saltwater intrusions and cyclones have pushed millions of people from rural Bangladesh into India. Earthquakes and water-induced disasters in Nepal, droughts in Pakistan and Afghanistan, and the rise in sea levels around the Maldives are also likely to cause large-scale migration into India in the future.

[137] http://www.internal-displacement.org/publications/global-estimates-2015-people-displaced-by-disasters

Moreover, the vulnerability of populations to climate change-related disasters goes beyond physical risk. There are also economic, social and cultural fallouts from such disasters, and these also drive migration, making it difficult to distinguish between environmental and economic migrants.

A community that is less equipped to anticipate, cope with and recover from a natural disaster, is more likely to migrate. Thus, a population that is already battling poverty will find it more difficult to rebuild their livelihood after a major natural disaster and would have no option other than leaving the area in an attempt to start afresh elsewhere.

Conversely, climate change can also cause an escalation in political unrest and push people to migrate in search of a more peaceful country. The Syrian refugee crisis is an example of this phenomenon. Syria was plagued by a severe drought between 2007-2010, which resulted in the migration of more than a million people from rural to urban areas and triggered a social unrest that contributed to the popular uprising in 2011. Environmental change and socio-political change are thus often intertwined, which makes it difficult to pinpoint the exact cause of migration of a particular set of people.

### *5.8.1 Legal Issues Arising from Migration.*

The issue of internal displacement is more complicated when it is across borders, raising the question of whether or not they can avail the protection of their new country of residence, and if so, under what legal framework. There is no internationally accepted instrument to govern this category of migrants. The cross-border displaced who have migrated due to climate change are not recognized as refugees under the 1951 Refugee Convention[138] or its 1967 protocol[139], and thus do not qualify for protection under national or international legal frameworks for refugee protection. In fact, the international community is yet to agree even on a definition of this category of displaced persons. Very few countries recognize

[138] http://www.unhcr.org/1951-refugee-convention.html

[139]http://www.unhcr.org/protection/basic/3b66c2aa10/convention-protocol-relating-status-refugees.html

environmentally-displaced persons as a specific group, notable among them being Sweden and Finland. Some, like the US and the EU, have instruments of temporary protection addressing sudden onset natural disasters but are less applicable to slow-onset adverse environmental change. While there has been a growing recognition of climate change-induced cross-border displacement, experts are divided on how to address this crisis. Countries like the Maldives and Bangladesh have in the past proposed amending the 1951 convention to include 'climate refugees' within its mandate, but some scholars feel that doing so would dilute refugee protection as it exists.

**5.9 Relevance of the 1951 Refugee Convention**

The term 'refugee' is a legal term of art. The legal definition of a 'refugee', and the rights and entitlements which a refugee is owed, are set out in the 1951 Refugee Convention relating to the Status of Refugees, read in conjunction with its 1967 Protocol. A 'refugee' is defined as someone who owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable, or owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.

First, the refugee definition only applies to people who have already crossed an international border. As noted above, much of the anticipated movement in response to climate change will be internal, and thus will not meet this preliminary requirement. Secondly, there are difficulties in characterizing 'climate change' as 'persecution'. 'Persecution' entails violations of human rights that are sufficiently serious, either because of their inherent nature, or because of their repetition (for example, an accumulation of breaches which, individually, would not be so serious but which together constitute a severe violation). It remains very

much a question of degree and proportion. Whether something amounts to 'persecution' is assessed according to the nature of the right at risk, the nature and severity of the restriction, and the likelihood of the restriction eventuating in the individual case[140]

Although adverse climate impacts such as rising sea-levels, salination, and increases in the frequency and severity of extreme weather events (e.g. storms, cyclones, floods) are harmful, they do not meet the threshold of 'persecution' as this is currently understood in law. Part of the problem in the climate change context is identifying a 'persecutor'. For example, the governments of Kiribati and Tuvalu are not responsible for climate change as a whole, nor are they developing policies which increase its negative impacts on particular sectors of the population. One might argue that the 'persecutor' in such a case is the 'international community', and industrialized countries in particular, whose failure to cut greenhouse gas emissions has led to the predicament now being faced. These are the very countries to which movement might be sought if the land becomes unsustainable. This is a complete reversal of the traditional refugee paradigm: whereas Convention refugees flee their own government (or private actors that the government is unable or unwilling to protect them from), a person fleeing the effects of climate change is not escaping his or her government, but rather is seeking refuge from—yet within—countries that have contributed to climate change. This presents yet another problem in terms of the legal definition of 'refugee': in the case of Tuvalu and Kiribati, the government remains willing to protect its citizens, although the extent of its ability to do so over time is unclear.

Finally, even if the impacts of climate change could be characterized as 'persecution', the Refugee Convention requires such persecution to be on account of an individual's race, religion, nationality, political opinion, or membership of a particular social group. Persecution alone is not enough. The difficulty here is that the impacts of climate change are

[140] See G. S. Goodwin-Gill and J. McAdam, The Refugee in International Law (3rd edn, Oxford: OUP, 2007) 92.

largely indiscriminate, rather than tied to particular characteristics such as a person's background or beliefs. Although climate change more adversely affects some countries, by virtue of their geography and resources, the reason it does is not premised on the nationality or race of their inhabitants. An argument that people affected by its impacts could constitute a 'particular social group' would be difficult to establish, because the law requires that the group must be connected by a fundamental, immutable characteristic other than the risk of persecution itself.

Superior courts around the world have explained that the Refugee Convention does not cover 'individuals in search of better living conditions, and those of victims of natural disasters, even when the home state is unable to provide assistance, although both of these cases might seem deserving of international sanctuary.'[141] The High Court of Australia has stated that the requirement of 'persecution' limits the Convention's 'humanitarian scope and does not afford universal protection to asylum seekers. No matter how devastating may be epidemic, natural disaster or famine, a person fleeing them is not a refugee within the terms of the Convention.'[142] People fleeing 'natural disasters and bad economic conditions' fall outside the Convention.[143] The House of Lords has also observed that the Convention does not provide protection in all cases.

The applicant may have a well-founded fear of threats to his life due to famine or civil war or of isolated acts of violence or ill-treatment for a Convention reason which may be perpetrated against him. But the risk, however severe, and the fear, however well founded, do not entitle

[141] Canada (Attorney General) v. Ward [1993] 2 SCR 689, 732 (emphasis added).

[142] Applicant A v. Minister for Immigration & Ethnic Affairs [1997] HCA 4; (1997) 190 CLR 225, 248 (Dawson J)

[143]Minister for Immigration v. Haji Ibrahim [2000] HCA 55; 204 CLR 1, para. 140.

him to the status of a refugee. The Convention has a more limited objective, the limits of which are identified by the list of Convention reasons and by the principle of surrogacy.[144]

India is not a signatory of this convention and also has no plans to ratify it, even though there has been pressure on the government. By the analysis of the definition under this convention and looking into the case laws across the world who has ratified this convention, has denied the inclusion of Climate refugees under the ambit of this convention, Hence, no specific provisions alone cannot be adopted from this.

### 5.10 Relevant Universal And Complementary Protection Standards

It is a trite observation that climate change will impact upon people's enjoyment of human rights. Climate processes, such as shoreline erosion, coastal flooding and rising sea levels, as well as more frequent and intense severe weather events, such as storms and cyclones, will affect agriculture, infrastructure, services, and the continued habitability of certain parts of the world. This, in turn, may threaten rights such as the right to life, health, property, culture, means of subsistence, and, in extreme cases, self-determination. The worst effects of climate change are likely to be felt in communities where human rights are already precarious, given that the most drastic impacts of climate change will be felt in the poorest parts of the world where human rights protection is often weak.

The following table provides a summary by the Office of the High Commissioner for Human Rights of how climate impacts may affect human rights.[145] Only a handful of these rights are presently recognized as giving rise to a protection obligation (based on the principle of nonrefoulement).

| EFFECTS | EXAMPLES OF RIGHTS AFFECTED |
|---|---|

[144] Horvath v. Secretary of State for the Home Department [2001] 1 AC 489, 499–500 (Lord Hope).

[145] UN Doc. A/HRC/10/61, note 14 above, Annex.

| | |
|---|---|
| Extreme weather events | Right to life |
| Increased food insecurity and risk of hunger | Right to adequate food, right to be free from hunger |
| Increased water stress | Right to safe drinking water |
| Sea level rising and flooding | Right to adequate housing |
| Stress on health status | Right to the highest attainable standard of health |

Human rights law has expanded countries' protection obligations beyond the 'refugee' category, to include (at least) people at risk of arbitrary deprivation of life, torture, or cruel, inhuman or degrading treatment or punishment. This is known in international law as 'complementary protection'.

The key rights to consider in the complementary protection context are: (a) the right to life (sometimes expressed in the removal context as the right not to be subjected to arbitrary deprivation of life); and (b) the right not to be subjected to torture or cruel, inhuman or degrading treatment or punishment. While these are not necessarily the only rights which encompass a non-refoulement obligation, they are the two which are clearly recognized in international law as giving rise to such an obligation, and which have been incorporated into a number of domestic complementary protection regimes

**5.11 State Practice Relating to Complementary Protection**

So far, most responses to cross-border climate-related or environmental displacement have been domestic ones rather than international agreements. They include temporary humanitarian assistance, through schemes such as Temporary Protected Status in the United States; potentially temporary protection in the European Union; and longer-lasting refugee like protection in countries such as Sweden and Finland.

I. **Temporary protection:**

A number of countries have mechanisms for providing temporary protection to people displaced by sudden disasters. The scope of the protection is set out in law, but often, as in the case of the European Union and the United States, an executive decision is required before the protection can be accessed.

a. **United States:**

Temporary Protected Status (TPS) is a discretionary status in the United States designed to provide safe haven for people who are fleeing, or reluctant to return to, potentially dangerous situations in their home country. Protection is not automatic: The Secretary of Homeland Security must first 'designate' a country before its nationals are eligible.

The Secretary of Homeland Security may 'designate' a country where there is an on-going armed conflict threatening people's personal safety, or where:

(i) there has been an earthquake, flood, drought, epidemic, or other environmental disaster in the state resulting in a substantial, but temporary, disruption of living conditions in the area affected,

(ii) the foreign state is unable, temporarily, to handle adequately the return to the state of aliens who are nationals of the state, and

(iii) the foreign state officially has requested designation under this subparagraph.

[146]

TPS is thus a blanket form of relief granted on the basis of objective country of origin conditions, rather than circumstances particular to the individual. A grant of TPS enables the beneficiary to work, and precludes deportation for the period of the designation. TPS can be

[146] Immigration and Nationality Act § 244, 8 USC § 1254.

granted for periods between six and 18 months, and it can be extended if country conditions do not change. However, as its name implies, it is a temporary status, and people on TPS are not eligible to become legal permanent residents (LPRs) in the US without a special act of Congress.

b. **European Union:**

The EU Temporary Protection Directive was designed as an exceptional mechanism[147] to respond to mass influx on account of armed conflict, endemic violence or generalized human rights violations. It could potentially be activated to respond to a sudden influx of people on account of environmental or climate change impacts since article 2(c), which sets out the Directive's scope of application, does not exhaustively define it.[148]

The drafting history reveals that Finland sought have included in the definition recognition of displacement by natural disasters, but this was not supported by other Member States, with Belgium and Spain noting that "such situations were not mentioned in any international legal document on refugees".

Given empirical evidence on the likely nature of climate change-related movement, it remains uncertain whether the EU would ever be faced by a 'mass influx' from a climate affected country sufficient to overwhelm the regular asylum processing procedures and warrant the exceptional grant of temporary protection on a prima facie basis.

**c. Asylum – type Mechanisms:**

**European Union:**

The EU Qualification Directive, which provides the framework for individual protection in the European Union, does not contain an express provision on

[147] Council Directive 2001/55/EC of 20 July 2001 on Minimum Standards for Giving Temporary Protection in the Event of a Mass Influx of Displaced Persons and on Measures Promoting a Balance of Efforts between Member States in Receiving Such Persons and Bearing the Consequences thereof [2001] OJ L212/12, art. 2(a).

[148] Ibid. art. 2(c).

protection from environmental or climate change-related impacts, although the potential for such movement to be covered under 'inhuman or degrading treatment' (based on article 3 of the ECHR). Although the Commission had raised the possibility of including 'environmental disasters' as a ground of subsidiary protection, this does not seem to have ever been entertained seriously in deliberations and certainly given the nature of negotiations, it was very unlikely to ever be adopted.

**National laws:**

At the national level, Swedish asylum law contains a provision extending protection to people who are 'unable to return to the[ir] country of origin because of an environmental disaster'. To date, however, it has never been used. In any case, it is unclear if this would extend to people displaced by climate change, since seems that it was only ever intended to cover people fleeing specific environmental disasters such as Chernobyl, rather than climate induced displacement more broadly.

Finnish asylum law also provides that a person may be granted asylum if he or she faces a 'threat of death penalty, torture or other inhuman treatment or treatment violating human dignity, or if they cannot return there [to the country of origin] because of an armed conflict or environmental disaster'. This is available in individual cases (where it results in permanent residence), as well as in cases of mass influx (where up to a three-year permit may be granted). Again, the law is untested in relation to climate change displacement.

## 6. RECOMMENDATIONS

The global consensus on the issue of climate change displacement has been elusive. There remains the need to reach an agreement on the very definition of environmental refugees, as well as on the principles of responsibility-sharing and protection. In the absence of this agreement, a regional framework or bilateral agreement would be the most viable alternative for South Asia. Needless to say, it would be in India's interest to drive such an initiative. Such an agreement would consider the existing geopolitical and economic relations, and allow the countries involved to take measures based on their political will and capacity. It would also allow for good practice to be developed and exchanged within the region.

India is neighbor to Maldives and Bangladesh, both of which face dire consequence of rising sea water levels and whose citizens might have to flee the country seeking refuge elsewhere.

One of the main initiatives that India can do is to adopt the best practices that were outlined in the policies of all the other countries. India must recognize that it influences and plays a huge impact on the way the world looks at the issue of climate change. The country has already shown a great amount of initiative in taking up the cause of Solar Energy and spearheading the global conversation on this topic.

India can adopt the policies held by the Carbon Pricing Leadership Coalition, and work towards making the policies more adaptable to the Indian scenario. The Pigouvian principles of the "Polluter pays" are a very efficient method of laying down the base principle in which Environmental policies in India should be structured.

## 7. Conclusion

The phenomenon of climate change is not new, but has existed since the Earth was formed. This phenomenon has gone from being natural to being the most pressing and difficult question for environmental sustainability in the past five decades or so. The uncomfortable truth is that up till 1992, the global community did not acknowledge the urgency and the importance of addressing this issue collectively. Since, a number of global initiatives have been undertaken, their futility realised and the models of dealing with Climate Change have since evolved and continue to evolving. It is a continuous cycle of developing ways of climate change adaptation and mitigation and each and every country, has tailored a model and presented it to the global community as their approach towards battling climate change. India, in itself has developed its unique approach of offering its commitment towards the Paris Agreement and bringing about legislative and procedural changes in the domestic laws and regulations. The change is gradual and slow, but with continued and tireless efforts and keeping alive the possibility of being dynamic in nature, the country may be able to successfully achieve its target of reducing the carbon emission in the atmosphere and is able to mitigate the ill-effects of global warming.