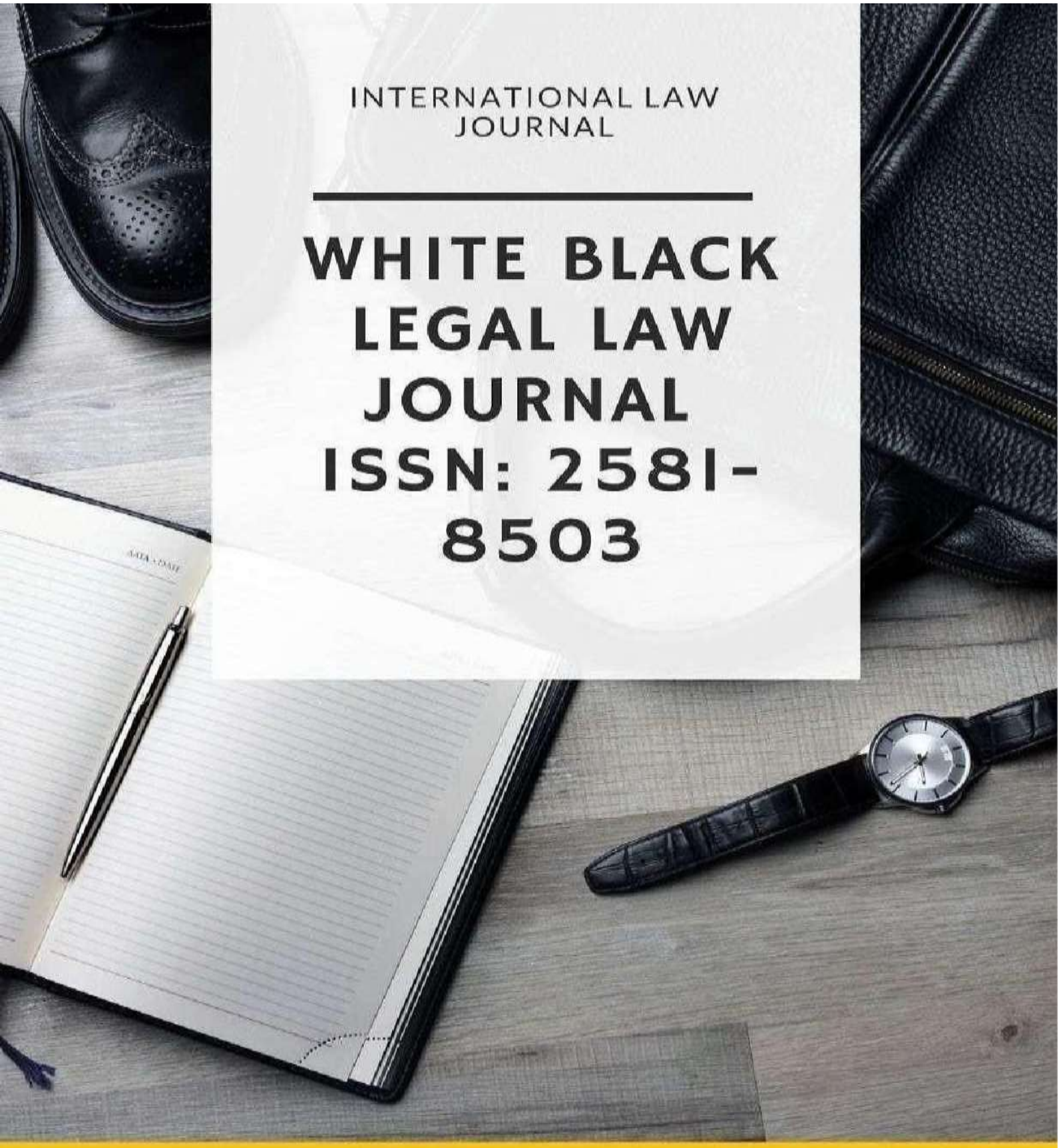

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With this thought, we hereby present to you

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JURISPRUDENTIAL STUDY ON CLIMATE CHANGE WITH SPECIAL EMPHASIS ON INDIAN CONSTITUTION

AUTHORED BY - VIGNESH.T*

INTRODUCTION

Climate change for the purpose of *United Nations Framework Convention on Climate Change, 1992* means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time period.[1] The first concern over climate change could be traced since 1824, when a French Physicist, Joseph Fourier, expressed his views over a term called *Green House Effect*[2]. Green house effect means warming that result when the atmosphere traps heat radiating from Earth towards space.

He stated that the atmosphere protects us from harmful rays of the sun and if some compositional changes occur in the atmosphere it may lead to *Global Warming*. Global Warming is a specific example of the broader term *Climate Change* and refers to the observed increase in the average temperature of the air near earth's surface and oceans in recent decades.[3] In other words, *Global Warming* refers to the long-term warming of the planet.[4] Later, in mid 1800's an Irish Physicist, John Tyndall, found some type of gaseous compounds that were termed as *Green House Gases (CHGs).* One such gas compound was found to be carbon-di-oxide (CO_2). He further enriched the findings of Joseph Fourier by suggesting that the changes in concentration of these gases present in the atmosphere shall result in climate change. Thus in 1896, a Swedish Chemist, Svante Arrhenius, clearly explained the theories propounded by Joseph Fourier and John Tyndall by publishing the first calculation for global warming from

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1 United Nations Framework Convention on Climate Change, 1992. art.1, cl.2, Available at, https://unfccc.int/resource/docs/convkp/conveng.pdf, last seen on 25.01.2019.

2 *IPCC 4th Assessment Report*, 2007, available at, https://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4_wg3_full_report.pdf, last seen on 25.01.2019.

3 Lok Sabha Secretariat, *Climate Change - India's Perspective*, 2013, Reference Note No.25/RN/Ref./August/2013 (Unpublished), available at, http://164.100.47.193/intranet/CLIMATE_CHANGE-INDIA's_PERSPECTIVE.pdf, last seen on 25.01.2019.

4 *Frequently Asked Questions*, NASA, available at, http://climate.nasa.gov/faq/, last seen on 25.01.2019.

human emissions of CO_2.[5] He and Thomas Chamberlin calculated that human activities could warm the earth by adding CO_2 to the atmosphere. He found that the average surface temperature of the earth is about 15^oC because of the infrared absorption capacity of water vapor and CO_2. This is called the 'Natural *Green House Effect*[6]. It was put into lime light that the major cause for increase in CO_2, methane and nitrogen gases in the atmosphere was since the advent of Industrial Revolution in 1750 and other human activities which contributed for the release of CO_2 gas into the atmosphere. Later, the scope of global warming lost its significance on the fact that development of the nation could not be achieved without industrial growth. In recent times, India and other countries are effectively focused to tackle the growing concern of climate change in the context of accomplishing the goals of sustainable development.

The researcher would shed his light on the causes and impacts of the climate change vis-à-vis society and economy. The researcher would delve upon the legal aspects of environmental protection in the context of climate change in consonance with the provisions enshrined under the Constitution of India. The researcher has limited his study with respect to *Stockholm Declaration, United Nations Framework Convention on Climate Change (UNFCCC), Montreal Protocol and Kyoto protocol.* Further, an overview of the steps taken by the government to address the problems of climate change and various judicial pronouncements declared by the judiciary in India are discussed. The researcher would finally conclude with some inferences that would emanate from this paper with some effective suggestions in combating climate change.

CAUSES AND IMPACTS OF CLIMATE CHANGE

Major causes for climate change:

The sun's energy is absorbed by the surface of the earth and then reflected back again into the earth's atmosphere since earth is a bad conductor of heat. These reflected radiations are termed as *Infrared radiations*. The Infrared radiations are absorbed by the freely suspended water vapor particles (H_2O), carbon-di-oxide (CO_2), nitrous di-oxide (N_2O) and methane (CH_4) that are present in the earth's atmosphere and are dispersed into different directions. As a result they are trapped within the atmosphere thereby increasing the earth's temperature.

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[5] Staff, Livescience.com, *The History of Climate Change Science*, LIVE SCIENCE, available at, http://www.livescience.com/1292-history-climate-change-science.html, last seen on 25.01.2019.

[6] S.M.Enzler, *History of The Greenhouse Effect and Global Warming*, LENNTECH, available at, http://www.lenntech.com/greenhouse-effect/global-warming-history.htm, last seen on 25.01.2019.

The main causes of climate change and global warming is broadly distinguished into two factors viz. *Natural and 'Anthropogenic factors*. Natural factors such as variations in sun's energy, volcanic eruptions and change in concentration of the *Green House Gases (GHGs)* present in the earth's atmosphere. Anthropogenic factors are human induced activities that contribute to climate change and global warming. The human activity that contributes to climate change can be further broadly classified unto the following heads. They are:-

a. Increased consumption of natural resources;
b. Change in the patterns of land use;
c. Excessive emissions of pollutants into air, water and soil.

Factors such as industrialization, deforestation, use of appliances that releases Chloro-Fluro-Carbons (CFCs) into the atmosphere, natural phenomena like breathing, farting etc. are said to be human induced activities or anthropogenic factors that contribute to climate change and global warming.

It was found that these anthropogenic activities have increased by 70% between 1970 and 2004 and has probably contributed for about 90% over the past 50 years towards global warming.[7] The major credit goes to the industrial revolution since 18th century till date. The main reason for industrial revolution in 1750 was with the motto of development and growth of the nations. It was the time when the world nations believed that industrial development would develop the nation's economy. As a result of which the production increased and the products were exported to other countries and vice versa. This gave a boost to the national economy in monetary value but failed to emphasis on the idea of environmental protection.

Major impacts of climate change:

As more the nations relied on competing with other nations to gain economic superiority over the other, they failed to adopt alternatives to compensate the harm caused by them to the environment. This has resulted in a very serious impact in today's world which is detrimental to mankind. These impacts have diluted the concept of sustainable development[8]in today's world. Sustainable development means development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

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[7] *IPCC 4th Assessment Report*, 2007, available at, https://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4_wg3_full_report.pdf, last seen on 26.01.2019.

[8] *United Nations Report of WCED*, 1987, Our Common Future, available at, http://www.exteriores.gob.es/Portal/es/PoliticaExteriorCooperacion/Desarrollosostenible/Documents/Informe%20Brundtland%20(En%20ingl%C3%A9s).pdf, last seen on 26.01.2019.

The harmful impacts on climate change are as follows:-

a. Rise of sea levels;
b. Melting of ice-caps in mountains and glaciers;
c. Change is ocean currents and ocean temperature;
d. Change in rainfall or precipitation patterns;
e. Change in energy demands;
f. Extreme hot weather;
g. Extremities of floods and droughts;
h. Poor agricultural productivity;
i. Water shortage;
j. Changes in weather conditions;
k. Threat to livelihood and health conditions of the people especially in the coastal areas;
l. Migrations of human beings and livestock.

As per the *National Communication Report of India to the UNFCCC*, it is likely that the impact of climate change shall be on all natural ecosystems as well as on the socio-economic ecosystems in India.[9] The sociological impacts of climate change would result in adverse effect on the national economy. Say, if there is a rise of sea level or sudden floods in the country, the government has to spend more on the rescue operations wherein a huge pool of money is to be utilized for an unforeseeable event or an event that would probably be prevented if there exists a pinch of environmental concern in the conscience of every individual in the country.

India has an agrarian form of economy, which means 85% of its population depends on agriculture. In India, agriculture is fully dependent on monsoon. Climate change causes serious threat to the climate of India such as monsoon failure, irregular rainfall patterns etc. As a result the agricultural sector would poorly contribute to the nation's *Gross Domestic Product (GDP).* This would further cause a serious threat to food security and water security in India. Hence, the focus of the world nations has shifted towards addressing the problem of climate change at global level.

[9] Ministry of Environment and Forests, Government of India, *India Second National Communication to the United Nations Framework Convention on Climate Change*, 2012, Available at, https://unfccc.int/resource/docs/natc/indnc2.pdf, accessed on 26.01.2019.

LAWS AND CLIMATE CHANGE

International response to Climate Change:

The concern over climate change regained its momentum since *Stockholm Conference 1972* which was said to be the first *Environmental Action Plan.* It warned about warming up of the planet earth to an extent of 2^{o}C and also about the future aspects of long-term global warming in the long run. *United Nations Environment Programme (UNEP)* agency was established in 1972 which was the outcome of Stockholm Conference, 1972. Further the concept of sustainable development in the context of environment was emphasized in the *Brundtland Report, 1988* which recommended for an international agreement to achieve the goals of sustainable development. In 1989, the *Intergovernmental Panel on Climate Change (IPCC)* was established by the joint efforts of *World Meteorological Organization (WMO)* and *United Nations Environment Programme (UNEP).*

In the year 1992, the first international treaty known as *United Nations Framework Convention on Climate Change (UNFCCC)* was adopted at the *Earth Summit in Rio de Janeiro.* IPCC prepares reports in support of the UNFCCC convention. The main objective of UNFCCC is to stabilize the concentration of GHGs present in the atmosphere and to prevent human interference with the climate system. A special emphasis on sustainable development with regard to climate change was adopted under Article 3.1 of UNFCCC. India is a signatory and has ratified the convention. This convention further explained a concept known as *emission*[10]. It also gave a soft target for industrialized countries to return to 1990 levels of GHG emissions by 2000.[11] In 1984, British Antarctic Survey scientists first discovered the ozone depletion and reported their observations in May 1985 in the Journal Nature.[12] It was found that the ozone layer is a natural shield present in the atmosphere that protects us from the harmful Ultra Violet – B (UV – B) rays reaching the earth surface. Also that the GHGs released into the atmosphere due to the anthropogenic activities is detrimental to the ozone layer and thus depletes it by causing holes on it.

The depletion of ozone layer causes to harmful UV – B rays to reach the earth surface which

[10] United Nations Framework Convention on Climate Change, 1992. Art.1, Cl.4, Available at, https://unfccc.int/resource/docs/convkp/conveng.pdf, last seen on 26.01.2019.

[11] *Climate Change and India – Some Major Issues and Policy Implications*, 9, Working Paper No.2/2009-DEA, Department of Economic Affairs, Ministry of Finance, Government of India (2009), available at, https://dea.gov.in/sites/default/files/Working%20paper%20Climate%20Change.pdf, last seen on 26.01.2019.

[12] Pawan Bhartia, *Discovering the Ozone Hole: Q&A With Pawan Bhartia*, NASA, available at, http://www.nasa.gov/topics/earth/features/bhartia-qa.html, last seen on 27.01.2019.

could cause health hazards such as skin cancer etc. So, to protect the ozone layer from depletion a new protocol for the *Vienna Convention for Protection of Ozone Layer, 1985* was adopted in the year 1987. This protocol was named to be the *Montreal Protocol, 1987*. The protocol chalks out the effective management plan of GHGs and provides for constituting a multilateral fund for the implementation of the protocol and to assist the developing countries. In 1992, a convention on climate change was adopted by the participating nations of the Rio Conference. In 1997, *Kyoto Protocol* was adopted by the member nations of UNFCCC. This protocol was the most significant and legally binding protocol.[13] The Protocol also offers them an additional means to meet their targets by way of three market-based mechanisms, namely:-

a. International Emission Trading (IET);
b. Clean Development Mechanism (CDM); and
c. Joint Implementation (JI).

The protocol gave a holistic approach to tackle the problem of climate change with a futuristic view. There was subsequent *Conference of Parties (COP)* to the above discussed conventions like Bali conference, Doha conference etc. All these conventions, protocols and conferences significantly contributed to the growing concern of climate change. The very recent Conference of Parties – 21 (COP – 21) on UNFCCC held at Paris in the Month of December 2015 was a milestone in the arena of climate change.

Indian perspective on climate change:

India being inspired by the agenda and the resolutions of the conference became a signatory to the Stockholm Declaration and also amended the Constitution of India in the year 1976. The so called *42nd Constitutional Amendment, 1976* inserted an explicit provision for the environmental protection by the State (Article 48A)[14] under Part IV: Directive Principles of State Policy and a provision imposing a duty on the citizens to protect the environment (Article 51A (g))[15] under Part IVA: Fundamental Duties. In India, the paradigm shift towards environmental protection was earmarked since 1972. Subsequently, India has enacted various legislations of environmental importance which majorly focuses on the concept of sustainable development. In 1986, India enacted an umbrella legislation known as Environment (Protection) Act, 1986 which provided for a comprehensive framework for the central and state

[13] *Supra* 14.
[14] Constitution of India. Art.48A.
[15] Constitution of India. Art.51A, Cl.(g).

governments to work in co-ordination to protect the environment as under the Water (Prevention and Control of Pollution) Act, 1974, *The Forest (Conservation) Act, 1980 and the Air (Prevention and Control of Pollution) Act, 1981.*

The Indian judiciary has many at times invoked Article 21[16] to protect the citizens in the context of environmental protection. It has held that 'Right to Life' under Article 21 includes 'Right to have a wholesome environment'.

Article 32 and Article 226 of the Constitution of India are the Writ Jurisdiction of the Supreme Court of India and other High Court of the States in India respectively. Article 32 by itself is a Fundamental Right under Part III of the Constitution. Hence the citizens can invoke Writ Jurisdiction of the Supreme Court of India under Article 32 or Writ Jurisdiction of the High Court of the States in India under Article 226 if they are abridged of their fundamental rights prescribed in the Constitution of India.

Further, the *74th Constitutional Amendment Act, 1992* added Part IXA to the Constitution of India which established democracy at the grass – root level viz. municipalities. The state legislature is empowered to enact legislation for the subject of environmental protection under Article 243W (a) (ii) and the Twelfth Schedule Entry No. 8. The State legislature is further empowered to constitute District Planning Committee under Article 243ZD and such District Planning Committee shall take into due regard the matters relating to environmental conservation under Article 243ZD(3)(a)(i). Similarly, the State legislature is further empowered to constitute Metropolitan Planning Committee under Article 243ZE and such Metropolitan Planning Committee shall take into due regard the matters relating to environmental conservation under Article 243ZE(3)(a)(ii).

Article 253 of the Constitution of India empowers the Indian Parliament to make any law for implementing any international treaty, agreement or convention[17]. All these constitutional provisions and legislations show that India is well committed to address the issue of climate change and environmental protection. It is also clear that India respects and considers any international treaty, agreement or conventions that is beneficial for the welfare of the people while drafting its internal law.

[16] Constitution of India. Art.21.
[17] Constitution of India. Art.253.

ROLE OF THE JUDICIARY

The judiciary many at times had stepped into the shoes of the legislators to ascertain the real intention of the legislation. The judiciary has propounded many principles and doctrines to make the polluter liable in all circumstances of environmental pollution. Some of the principles and doctrines propounded by the Indian Judiciary are:-

a. Principle of Absolute Liability;[18]
b. Polluter Pays Principle;[19]
c. Precautionary Principle;[20]
d. Public Trust Doctrine;[21]
e. Doctrine of Sustainable Development;[22]
f. Doctrine of Inter-Generation Equity.[23]

Similarly, by the concept of Environmental Jurisprudence the Supreme Court of India has held *right to livelihood*[24] and *right to health*[25] as the integral part of Article 21 of the Constitution of India. Hence, Judiciary in India has intervened in many environment related aspects and has lent its arm to safeguard the interest of the vulnerable. But in recent days the judgments delivered by the judiciary is for a common objective i.e., for the purpose of public wellbeing.

CONCLUSION

Climate change is of increasing importance and can be controlled through joint participation of all nations. Even if we stop emitting GHGs today, Global Warming would continue to happen for at least several more decades if not centuries. That's because it takes a while for the planet to respond, and because CO_2, the predominant heat trapping gas lingers in the atmosphere for hundreds of years.[26]

Government of India has taken various initiatives to encounter the menace of climate change. The major Government initiatives are as follows: -

National Environment policy 2006 which portrays the India's response to climate change by

[18] M.C.Mehta v. Union of India, AIR 1987 SC 1086.
[19] Indian Council for Enviro–Legal Action v. Union of India, (1996) 3 SCC 212.
[20] Vellore Citizens Welfare Forum v. Union of India, (1996) 5 SCC 647.
[21] M.C. Mehta v. Kamalnath, (1997) 1 SCC 388.
[22] Rural Litigation and Entitlement Kendra v. State of U.P., AIR 1985 SC 652.
[23] State of Tamil Nadu v. Hind Stone, AIR 1981 SC 711.
[24] Hoskot v. State of Maharstra, AIR 1978 SC 1533.
[25] Bandhua Mukti Morcha v. Union of India, AIR 1984 SC 802.
[26] *Supra* 4.

identifying the key vulnerabilities in India associated with climate change. It also makes way to India's participation in Clean Development Mechanism (CDM),

Prime Minister's Council on Climate Change is a high level advisory group on climate change which comprises of government representatives and non- governmental representatives. It advises on the pro-active measures to be adopted by the government to effectively deal with climate change. It also recommends various National Action Plans for mitigating climate change.

The *National Action Plan on Climate Change (NAPCC)* coordinates the Ministry of Environment, Forests and Climate Change and provides for eight core national missions to effectively mitigate and adapt climate change.

Parliamentary Forum on Global Warming and Climate Change helps the parliamentarians to discuss the impacts of climate change with the specialists working on the aspects of global warming and climate change. It helps the members to participate in various meetings and discussions on various subjects relating to climate change.

Climate Change Action Programme (CCAP) is a collaboration between Ministry of Environment, Forests and Climate Change and the Ministry of Earth Sciences, the Indian Space Research Organization, the Ministry of Science and Technology and other associated agencies to enhance the understanding of the role of Black Carbon in climatic change through monitoring and assess the impacts of black carbon through various modeling techniques.

Indian Network for Climate Change Assessment (INCCA) is group of 127 research institutions tasked with undertaking research on the science of Climate Change and its impacts on different sectors of economy across various regions of India.

All the above stated Government initiatives have significantly contributed as an effective redressal mechanism. The main emphasis was laid to the agricultural sector so as to protect the interest of the farmers. The next major focus was on energy sector. Various government programmes like *National Solar Mission, National Mission for Enhanced Energy Efficiency* in Industry, *National Mission on Sustainable Habitat, National Water Mission, National Mission for Sustaining the Himalayan Ecosystem, National Mission for a Green India, National Mission for Sustainable Agriculture, National Mission on Strategic Knowledge for Climate*

Change etc. have created an awareness among the people about the importance of preserving environment and to tackle climate change. The world is now trying to adopt or rely majorly upon renewable energy sources such as sun and wind energy. Similarly sustainable agricultural practices are adopted by farmers to ease out the menace of climate change.

So it is very clear that one man or one government alone cannot stop the climate catastrophe. The ends of sustainable climate can be achieved only by collective participation and co-ordination between different nations. The developed countries must recognize the livelihood of the people residing in other developing and underdeveloped countries and must adhere to the cap fixed for carbon emission. Methods like *carbon sink*[27] and *Carbon Capture and Storage (CCS)* technology equipped power plants that can capture up to 90% of the carbon dioxide (CO_2) emissions produced from the use of fossil fuels in electricity generation and industrial processes, preventing the carbon dioxide from entering the atmosphere shall be adopted to curtail the free flow of carbon in the atmosphere.

Afforestation of trees shall be adopted to minimize the risk of climate change. The government and the people shall join hands and plant trees such as American Sweetgum, Ponderosa Pine, Red Pine, White Pine, London Plane, Hispaniolan Pine, Douglas Fir, Scarlet Oak, Red Oak, Virginia Live Oak and Bald Cypress that absorbs high amount of carbon-di-oxide from the atmosphere. It shall be necessary to identify the trees that best suits our climate and vegetation and shall be then planted. A pilot study shall be conducted in case of planting trees before afforestation is carried out at a large scale.

Green Tax could be levied on persons who pollute nature in large scale. The focus or claim made at the global level against the developed countries can be narrowed down within India in such a way that the government shall quantitatively restrict the largely polluting industries, companies and factories from excessive emission of GHGs into the atmosphere. Special initiatives such as the *Polluter Pays Principle" and "Precautionary Principle* shall be adopted directly by the government and compel the major polluter to pay more as environmental compensation. The government shall mandate the polluters to contribute towards Green Fund which would help the government to compensate victims who are vulnerable to the threat of climate change and environmental degradation. Legislation aspects such as the *Compensatory*

[27] United Nations Framework Convention on Climate Change, 1992. Art.1, Cl.8, available at, https://unfccc.int/resource/docs/convkp/conveng.pdf, last seen on 28.01.2019.

Afforestation Bill, 2016 are of a welcoming move.

The lacunae in the laws have paved way to judicial restraint in cases involving international concern. In such cases, the Judiciary can utmost direct the Indian government for international negotiations as it involves the concept of sovereignty. In the Bhopal gas leak case,[28] the Union Carbide Company was a registered company United States of America and the question was which country has the *locus standi* to conduct trial. As a result of which the Indian judiciary was unable to render proper justice to its citizens.

It is not only the duty of the State which has to have an eye over the environmental protection. The people of India are also vested with the duty to protect and preserve the environment. The people can contribute to safeguard environment from being degraded. In this aspect the State shall levy Cess similar to that of Swachh Bharath Cess so that each and every individual shall make an indirect contribution towards environmental protection. It is without the people's participation the sustainable development goals cannot be achieved.

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[28] Union Carbide Corporation v. Union of India, AIR 1986 SCC (2) 540.