



A CRITICAL STUDY OF INTERNATIONAL LAW IN RELATION TO CARBON EMISSION

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Abstract

Climate change is among the leading environmental challenges which the world is trying to address. India as a country is currently dealing with lots of issues. Climate change is the environmental factor associated with numerous adverse impacts on agriculture, water resources, forest and biodiversity, health, coastal management and rise in temperatures. Decline in productivity of agriculture is the primary indicator of climate change effect in India. More than half of the total population is either directly or indirectly dependent upon agriculture. Climate change along with all other factors is making the ecological and socioeconomic systems suffer more which are already under great stress caused by quick industrialization, urbanization and economic growth. The present paper studies the effect of global warming on its different spheres in the Indian situation. In the case of developing nations such as India, they are internationally pushed to adopt a legally binding international agreement that aims at preventing dramatic climate change. But the developing nations did press for any international agreement taking historic and per capita carbon emission into consideration with an obligation for developed countries to reduce their emissions first and the obligation to fund mitigating and adapting of nations. Nevertheless, more recent scholars have contended that the nature of the Indian government climate change discourse is changing, channeled primarily through recognition of “co-benefits” of the congruity between its development and climate objectives, displaying increased “freedom” on the mitigation target.

Keywords: Climate, Carbon Emission, Green House, Mechanism, Carbon Trading

1. INTRODUCTION

India is one of the top polluters of CO₂; the country's carbon footprints are on the rise with the advent of rapid industrialization and urbanization. It is a fact that carbon emissions for climate change problem are immense and very serious environmental problems are arisen due to carbon emissions. The industrial, vehicle and numerous other sources have discharged carbon emissions in addition to which the world's temperature has risen and it has also contributed to increase in temperatures in India. This has caused more frequent and hotter heatwaves that in turn increase the cases of heat-related deaths, damage crops, and disrupt ecosystems. Increases in greenhouse gas from emissions of carbon has disturbed rainfall patterns in the India that further results in irregular monsoon seasons, protracted droughts, and devastating flooding to some areas. This has led in the negative side on economic activities, water resource management, as well livelihoods of the people in the country. Indian Himalayan area is a land of many glaciers that are melting rapidly due to higher temperatures that causing the greenhouse effect in which carbon emission is one of the reasons. This plays an important role in water inventory, as glaciers are serving as the main freshwater source for several rivers in India. In addition, carbon emissions have been a contributing factor to sea level rise at a global level that is another threat to the coastal areas if India. Cities

such as Mumbai, Kolkata, and Chennai are among the worst affected areas by sea level rise and hence more the millions of people who live in these cities are susceptible to flooding and erosion. In addition to this, the additional level of carbon emissions has caused a greater number of frequent and strong disasters like hurricanes, storms, and heavy downpour, that in turn result in widespread damages and mortality in India. The adverse effects of carbon emissions to climate in India cannot be otherwise, and so urgent measures have to be put in place to neutralize it. The government, industries, and individuals must work together to reduce carbon emissions and transition towards a more sustainable and eco-friendly future.

2. CURRENT TRENDS IN CARBON EMISSIONS

- i. Increasing awareness and concern about the impact of carbon emissions on climate change: Increasingly, the global population along with their businesses, as well as governments, are seeking to cut down carbon emissions in order to preserve planet earth from global warming and all its repercussions.

- ii. Transition to renewable energy sources: For instance, various countries have endeavored to use renewable energy resources like solar, wind, and hydropower as an alternative to consume less of fossil fuels and minimize emissions.
- iii. Implementation of carbon pricing mechanisms: Some governments are including carbon taxes in their lists or creating emission-trading systems to encourage companies to decrease their carbon emissions and to focus on cleaner technologies.
- iv. Adoption of electric vehicles: The automobile sector's production and use of electric cars is surging as a manner to decrease carbon emissions in the transportation sector.
- v. Focus on sustainable practices in industries: A shift to sustainability is visible in many industries, ranging from increased energy efficiency, minimization of waste, and meaningful choice of materials to lowering the carbon footprint.
- vi. Carbon offset initiatives: Firms and individuals are frequently doubling their money by investing in carbon reducing projects, including tree-planting initiatives or renewable energy facilities, so as to counterbalance their remaining unavoidable emissions.
- vii. green building practices: The construction industry gradually adopts green building such as utilizing energy efficient materials and technologies for the purpose of reducing the carbon footprint that comes from both construction as well as building operations.

3. CLIMATE CHANGE IMPACTS IN INDIA

India, along with other countries, is one of the most vulnerable places with many people negatively impacted by frequent extreme weather events such as heatwaves, droughts, floods, and cyclones.

- i. Water scarcity: As a result of climate change, there are rainfall pattern's changes which eventually manifest as water scarcity in numerous parts of the country. It is thus, creating a crisis for water resources to be used for agriculture, drinking water, and sanitation.
- ii. Agriculture: The warm temperatures as well as fluctuating patterns of rainfall are affecting crop yields and food security in India. Farmers are encountering difficulties like low yields in crops, pests' attacks and water scarcity and in the end the whole sector is losing money.
- iii. Health impacts: The temperatures have been increasing which in turn is leading to the prevalence of heat-related illnesses and deaths, particularly in urban centers. Global warming is also provoking the emergence of vector-borne diseases like dengue and malaria.
- iv. Coastal vulnerability: India has a long coastline, and coastal communities are threatened by higher levels of the sea, seas rushing up and extreme weather events such as cyclones.

Climate change is responsible for coastal land destruction and loss of fishing lifestyle for the coastal communities.

- v. Biodiversity loss: Climatic change is jeopardizing the existence of different species as well as ecosystems in India, leading to problems in the biodiversity and ecosystem services. Coral reefs are in a danger of death due to the rising temperatures of seawater, also forests will collapse because of the changing rain patterns and temperature.
- vi. Urban infrastructure: India's urban areas are experiencing high vulnerability to climate change disasters including flooding, heat waves and water shortage. Unplanned and ineffective urban planning and infrastructure enhance the risk levels. The communities exposed to higher risk are the urban poor especially those who reside in the informal settlements.
- vii. The climate change consequences have been well experienced in India, bringing out many crucial problems for human health, agriculture, water supply, biodiversity and urban infrastructure. The urgent need of the mitigation and adaptation of the impacts is required to ensure the health of India's population and the people's sustainability.

4. LINKAGES BETWEEN CARBON EMISSIONS AND CLIMATE CHANGE

The strong relationship between CO₂ emissions and climate change, as CO₂ is one of the greenhouse gases that keeps heat, the Earth's atmosphere is concerned. Whenever we depend on fossil fuels as an energy source, CO₂ is being released in huge quantities to the atmosphere. Thus, from this large amount of CO₂, the "Greenhouse effect" will arise where the incoming energy from the sun will be caught in the atmosphere and will, finally, warm the Earth's surface. The view of sun ray, which is caused by this greenhouse effect is a great threat to climate system. It leads unfortunately to more heatwaves, hurricanes, rainfall changes, and melting of ice and glaciers. This subsequently affects the sea level rise, marine life hardships and population's health suffering. Bringing down carbon emissions is one main measure toward reducing the repercussions of climate change. The use of renewable energy as a replacement of our current fossil-fueled sources, an increase in the energy efficiency and an implementation of policies that reduce emissions coming from the industry sector and transportation are among the solutions we have in order to stabilize the climate and make the planet safe/healthy for the generations to come.

5. POLICY AND REGULATORY FRAMEWORK

India has undertaken comprehensive set of policies and legislations dedicated to alleviating carbon emissions and climate change. The main policies and regulations in India for carbon emissions and climate change include: The main policies and regulations in India for carbon emissions and climate change include:

- i. National Action Plan on Climate Change (NAPCC): NAPCC is a nationwide plan launched by Indian government in 2008 which focuses on the national policy and guidelines to fight against climate change. The plan incorporates eight national missions who's at the heart of climate change are to improve access to affordable solar energy, water and improve agriculture.
- ii. National Clean Air Programme (NCAP): NCAP was started in 2019 when the government raised this issue because of growing air pollution in Indian cities. The target of the project is to decrease PM levels by 30.42% in the city of 102 by 2024. On the one hand, it also imposes specific targets from reducing emissions from numerous sources incorporate like automobiles and industries.
- iii. Energy Conservation Act, 2001: This act was enacted for encouraging more energy efficiency in different sectors such as buildings, industry and transportation. The legislature framework demands that certain energy-intensive companies agree to use energy according to the Industrial Energy Conservation Plan and take energy auditing as one of the obligations.
- iv. Renewable Energy Policy: India has put forward impressive goals for raising renewable energy level in the energy frame. India targets to get 175 GW solar energy by 2022 end and 450 GW by 2030. A myriad of policies and incentives, like feed-in tariffs and tax rebates; are among the strategies being employed to encourage the growth of renewable energies.
- v. Emissions Trading Scheme (ETS): The Ministry of Environment and Forest has drafted ETS (Emission Trading System) for industrial sector in order to govern emission amount for greenhouse gases released from industry. The system was designed to lay the ground for a market-based framework in which companies would exchange emission permits and give a positive incentive to funnel into clean technology.
- vi. Climate Change Adaptation and Mitigation Initiatives: The states of India are also, as its own state-specific plans, at the tail of this process and have contributed to addressing the impact of climate change by bringing forward their own different initiatives. These could, e.g., be based on activities like afforestation, water conservation, and sustainable land management practices among others.

India stands out with the measures aimed at repression of climate change and reduction of emissions of carbon at the level of Nation, State and at the State level through different policies, regulations and initiatives. Nevertheless, the existence of the stricter rules enhances the possibility of their effective implementation and enforcing that leads to a success use of these measures.

6. MITIGATION STRATEGIES AND INITIATIVES

- i. Promoting renewable energy sources: Besides that, India can spend and encourage lowering of the fossil fuels and carbon emission rate through applying the power of renewable resources such as solar, wind and hydropower.
- ii. Improving energy efficiency: The industry and places power plants and the transport sector all could benefit the adoption of energy efficient measure. They help minimize energy consumption and carbon emissions.
- iii. Afforestation and reforestation: Forest cover could keep its constant, when you increase the presence of afforestation and reforestation, which will be able to suck out carbon dioxide gas from the air and will enable us to control the climate change.
- iv. Enhancing public transportation: Promoting the choice of public transport, cycling, and walking will help to cease the rising in greenhouse gases concentration from vehicles. Use our AI to write for you about: light pollution modern society statistics
- v. Strengthening waste management: It is possible to drop the emissions of methane from landfills by means of an efficient system of waste management, for example, recycling and composting.
- vi. Implementing carbon pricing: The adoption of carbon tax, or cap-and-trade system as a mechanism, can be a way encouraging businesses to cut their carbon footprint.
- vii. Promoting sustainable agriculture: One way of doing this is to support farming methods that are environmentally friendly, for example organic farming and agroforestry, which can help to reduce the emissions from agriculture.
- viii. Investing in climate-resilient infrastructure: Construction of climate resist infrastructure, for instance, using flood barriers and green roofs, can prevent disastrous consequences of climate change.
- ix. Promoting green buildings: Supporting the designing and building of power-efficient and eco-friendly buildings could help cut out carbon from the buildings industry.
- x. Collaborating with international partners: Working closely with countries and international organizations at tackling the issue of climate change mitigation can contribute to accomplishment of India's target of lower emissions.

Air quality in India is becoming poor day by day due to growing levels of carbon emissions and climate change. These factors are causing an increase in patients with respiratory diseases, heart diseases and other ailments. This brings forth a lot of pressure on the health system and

also increase the healthcare costs for private individuals and the government.

7. SOCIOECONOMIC IMPLICATIONS

Climate change is really making life impossible for the majority of India's population, who rely on agriculture as their main source of income. Changeable weather patterns and events such as droughts, floods and pest infestation are reducing the crop yield hence putting the food security at risk. This sector impacts the economy as much agriculture, contributing to the nation's GDP. Climate change and carbon emissions will pose a negative threat to India's economic growth. It is possible that extreme weather events like cyclones, floods, and droughts can wreck the infrastructure, break supply chains and industry such as agriculture, tourism and construction. This implies reduced productivity, increased production costs, and a decrease of revenue in enterprises and individuals.

India, in the present, is heavily dependent on fossil fuels and that adds carbon to emissions and thus aids climate change. The substitution of renewable energies to some extent can be a key factor in the reduction of carbon emissions and the improvement of energy security. Also, this transition would require considerable investment in infrastructure and technology, which can be the problem because India is among the developing countries in the world. Social inequality in India caused by climate change and carbon production may get worse due to this. The socially disadvantaged groups like the poor, women, children, and minority groups, are always disproportionately vulnerable to the effects of climatic change. As they may lack to adjust to changing climatic conditions and will have a higher probability of experiencing consequences of severe weather events. The carbon emissions and climate change in India has such importance of the sustainable development and the well-being of the people in the country. It necessitates a combination of strategies that consider socioeconomic consequences, engaging all stakeholders such as the government, industry, civil society and the individuals themselves. To avoid climate change and its adverse effects, the mitigation and adaptation techniques, such as carbon emissions reduction, building resilience, and ensuring good sustainable future are being implemented.

8. FUTURE OUTLOOK AND RECOMMENDATIONS

Future course of carbon emissions and climate change commitment of India will play a decisive role in accomplishment of global sustainability concerns. Since the country is one of the biggest greenhouse gases emitters, its contributions to global emission reduction will produce a great impact on the environment. In order to combat carbon emissions and take action against climate change, the Indian government alongside the businesspeople and the citizens need to collaborate in implementing the best practices and policies. undefined

- i. Transition to renewable energy sources: Enhance investments in solar, wind and hydropower so as to shift away from the traditional fuels and bring about a low carbon emission in the country.
- ii. Improve energy efficiency: Utilize energy-saving technologies in the industrial,

commercial, and transportation sectors to lower the power consumption and carbon dioxide emission.

- iii. Promote public transportation and cycling: Promote the use of public transit, walking and chancing to cut the emissions from transport vehicles.
- iv. Enhance waste management practices: There is a need to implement waste management and recycling processes to cut the emission of methane gasses from landfills.
- v. Restore and protect forests: Protect existing forests and promote added wooded areas where carbon dioxide can be stored and deforestation can be alleviated.
- vi. Strengthen climate policies and regulations: Impose emissions controls, encourage carbon costing, and give financial rewards in the form of grants, subsidies, or tax rebates to organizations adhering to green practices.
- vii. Raise awareness and educate the public: Teach people how climate change affects us and why they should stick to environmentally friendly living.

Taking up the recommendations we come up with here, India can advance considerably in the fight against carbon emissions and of the climate change, to have at the end of it a better and more resilient country with the whole planet in mind as its priority.

9. CONCLUSION

Climate change research has a long history that stretched during the sixteenth century when the Greeks claimed the humankind was powerful enough to change the climate system. On the other hand, it hinted only as early as the second half of the twentieth century when the acceptance of human influence on the climate system appeared to be widespread. Climate change is a true concern that people are very concerned about now. There is today a pretty agreement that while anthropogenic factors, for example, the burning of fossil fuels, elevate the CO₂ concentration in the atmosphere, and this in turn warms the climate and causes the current climate change.

The impacts of climate change on biotic and abiotic resources are dependent on the location and are not uniform within countries, and across the globe, the effects range from one extreme to another. India is directly affected by the effects of the global climate change. The effects of a changing nation are influencing the abundance of natural resources and also creating more frequent intense weather events. These will ultimately challenge the development of the cultural and economic aspects of a country as a significant factor. The two geologic and paleoclimatic studies confirm that the climate changes are not new. The earth has experienced previous climatic occurrences of interglacial and glacial periods, some of which have led to profound destruction of life on earth. World history had five absolutely great mass extinctions and several less important minor extinctions. Many of these could have been Boolean values (both a trigger or worsen the situation) or vital for their survival. The danger

of global warming to mankind and environment is not a hypothetical scenario but a test nationwide to stop it. For though we dwell on and breath the same atmosphere, we the whole world urgently need to take actions in mitigation of the negative impacts of climate change which must involve all nations both developed and developing. No country, not even a collective crew, can single-handedly bring down the global temperature but there is no second thought that the burden has to be shoulder-shared. Although a lot of work is done but the efforts would have to be more substantive to have significant emissions reductions and to maintain the targets of international agreements such as the Paris Agreement. Also, dealing with Carbon emissions must be synchronized with endeavours to boost communities' ability to cope with and to be adaptive to the consequences of climate change impacts, especially that are faced by the vulnerable population. For that, the governments need to have resilient infrastructures, disaster management approaches which are effective and the pockets should develop policy that is not egalitarian but consider urgent of the affected party. Through and through, reducing emissions of carbon and bringing in the climate change to an end calls for joint efforts on the behalf of the government and industry as well as from the nongovernmental institutions and individual people. By joining hands in transforming a low-carbon and eco sustaining future, India can avoid the very difficult outcomes of climate change and develop a country that is more vibrant and powering through for the future generations.

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