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**“Climate Change isn't a prediction, it is Happening!”: Green Economy And SDGs  
A Framework for Climate Change Mitigation**

**Dr. N Vani Shree & Ms. Rajeswari H & Ms. Sushmitha S**

**ABSTRACT**

*Changing climatic conditions is alarming, causing a huge difficulty for everyone and everything on the planet. Climate change can be characterized as a sudden alleviation in the Earth's atmospheric temperature because of the ignition of coal and other fossil fuels which emit greenhouse gasses. It causes a huge commotion in the lives of the present generation making Earth an inhabitable place for the future generation. Therefore, it is essential to choose sustainable alternatives to the combustion of fossil fuels, as this is crucial for various sectors including industry, transportation, residential living, agriculture, and land use, which are the primary contributors to greenhouse gas emissions. This Scholarly article studies about the sustainable development goals in combating climate change emancipating upon the causes and contributors of the greenhouse gasses emissions. It further delves upon the participation of international bodies and other nation's participation in addressing this issue.*

*KEY WORDS: Sustainable development, Climate Change, Greenhouse gasses, alternatives to fossil fuel combustion.*

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## **INTRODUCTION**

The earth's temperature has drastically changed since the time it evolved due to various reasons. But currently, the world is witnessing high temperature contributing many risks to all the living organisms. It is a high time to address the problems caused due to climate change. If it is unchecked, our future generations will be put forward to unclean air and unhealthy living. India, being the seventh largest country, with the population equivalent to 17.8% of the total world population is a vulnerable country and has been deeply affected by greenhouse gas emissions. According to United Nations, Climate change can be referred as “Long-term shifts in temperature and weather patterns”<sup>1</sup>. Climate change is a serious threat and because of this many species have become extinct. Despite of framing all the rules and regulations to protect the environment, India is emitting 4 billion metric tons of carbon di oxide equivalent of greenhouse gases<sup>2</sup>. India is also experiencing climatic changes resulting in water stress, disrupting rainfall patterns, low agricultural yield, frequent heat waves and drought, severe storms, landslides and floods which is a serious harm on both ecology and ecosystem. This is Mainly caused because of human activities, usage of electricity, chopping of trees and Burning fossil fuels. Climate change is linked with sustainable development. It not only impacts human existence but also present risks to natural environment and socio-economic development of the country Climate change is also called as “Threat Multiplier” as it is a global crisis that affects the world in many ways. Temperature in India has raised by 0.7° C between 1901 and 2018. According to the recent report published by Climate Change Performance Index, India stands in seventh position for mitigating climate change<sup>3</sup>. Recently, UN report has stated that if India wants to fulfil its 2030 climate promises, it must take stronger initiations such as transformation towards net-zero greenhouse gas emission in electricity supply<sup>4</sup>. It is true that technology contributed to climate change and with the help of the same the adverse effects of climatic changes can be blocked. New technologies are invented to remove excess emission of greenhouse gasses. Shifting to renewable sources will also help to evaluate the effects of climate change. India is a signatory country with many international conventions to tackle the problems of posed by climate change. Changes can be brought, sustainable development can be achieved and we can fight against the critical problems given by climatic changes with the cooperation by the government, laws, international conventions, policies, stake holders and active participation by the citizens of the country.

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Available at <https://www.un.org/en/climatechange/what-is-climate-change> (accessed on 18th October 2024 at 4 pm)

Available at <https://www.statista.com/statistics/606019/co2-emissions-india/> (accessed on 20th October 2024 at 2 pm)



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This research work contributes the importance to address climate changes, studies the causes and impacts caused by climate changes and also discusses about the National and International legal frameworks regulating against the perils of climate change.

### **IMPORTANCE OF THE STUDY**

Our life style choices are resulting in various harm to the planet. Some issues have to be addressed before it's too late to take precautions. Current situation has disturbed eco and biological balance in the environment. Government of India has undertaken many climate friendly measures to improve the situation of climate change yet it has failed to implement due to the negligence of humans. Recent report by The Reserve Bank of India suggests that up to 4.5 percent of India's GDP could be at risk by 2030, owing to lost labour hours from extreme heat and humidity due to climate change. Only by adopting green goals and shifting to green economy India will be safe from climatic changes.

It is important to address this issue because the following reasons:

**1. Himalayan Quail are not found since 150 yrs:** The reason behind the downfall in its population was climatic and habitat changes of the birds. The tragic reduction the loss is due to low elevation habitat of these species when they migrate downslope in winter. Raising temperature has declined their existence making it extinct. Not only Himalayan quail, but many species such as Bengal Florica, nilgiri tahr, red panda, forest owlet etc are threatened by the climate change.

**2. Our future generations should remember our good deeds:** As we continue to emit greenhouse gases, we are forgetting that we leave the world one day and our present actions will risk the lives of future generations. It may result in significant impacts on health, food security and infrastructure. Recently, in *M.K. Ranjitsinh & Ors. v. Union of India*<sup>5</sup>, the Supreme Court has established a new constitutional right to be protected from the adverse effects of climate change, deriving this from Article 21 and Article 14 of the Indian Constitution.

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Available at <https://ccpi.org/country/ind/> (accessed on 30th october 2024 at 11 pm)  
<https://indianexpress.com/article/india/national-plans-to-tackle-climate-change-short-of-target-un-report-9643554/>

**3. Climate change may result in end of the earth:** Due to high warming in the ocean, the aquatic animals are getting extinct, due to floods the animals, humans and their assets are getting destroyed, due to raise in temperature, drought the whole ecosystem is under threat. Developing country like India is already facing lot of problems and climate change has to be addressed before it becomes impossible to address the issue.

#### **CAUSES AND IMPACT OF CLIMATE CHANGE:**

Man is a greedy animal amongst all the species. His activities are not only causing menace to the environment but also to himself. The consequences of climatic changes are impacting negatively on country's biodiversity. It is not only caused by human driven actions but also by both internal and external forces. Internal forces comprise with the changes within the climate system. It effects the ocean, water cycle, clouds etc. External forces effect the climate system while being outside the climate system itself and includes solar variations, orbital variation, sun spots etc.

1. Although there are various reasons for causing climatic changes. Some of the causes are:

**1. Natural cause:** The ocean level is increasing, forests are decreasing, glaciers are dissolving and the nature is contributing for the climate change. Natural factors such as cosmic rays, solar radiation, Himalayan glaciers melting, water vapour and geomagnetic field are causing impact on climate change.

**2. Human activities:** If natural causes are contributing 10-20% for climate changes, human activities are contributing up to 90-80%. They are the main culprits for causing climatic changes on the globe. This includes population growth and consumption patterns, management system, biomass burning, mining, industrial processes, etc. Groundbreaking ‘Carbon Majors’ research finds 100 active fossil fuel producers are linked to 71% of industrial green gas emissions.

**3. Greenhouse gases:** It is a gas that traps heat in the Earth's atmosphere, causing the greenhouse effect. Greenhouse gases keep the earth's surface warm to support human existence but some natural causes and human activities are adding greenhouse gases to the core that now it has resulted in climatic changes and global warming. Green House gases are emitted through carbon dioxide, methane, and water vapor. Other greenhouse gases include nitrous oxide, ozone, methene and fluorinated gases. The reasons for greenhouse gases are volcanic eruptions, transportation, industry, livestock farming consumption patterns etc. Annual GHG emission report says that Since 2015, GHG emissions in India have risen by 17 percent. On the other hand, if the country is consistent with limiting global warming to 1.5 degree Celsius, India's emissions would drop to approximately one GtCO<sub>2e</sub> by the year 2050<sup>7</sup>.

**4. Other factors:** Apart from all the above-mentioned causes, climate change is also caused by melting permafrost, forest blazes, chlorofluorocarbons, industry, building, agriculture etc. The impacts can be so worst that it may result in causing many health diseases such as lung cancer, death, waterborne diseases, impacts on childbirth and children. Climate change may also impact on mental health such as anxiety, depression etc.

### **INCEPTION TO THE PROBLEMS RELATING TO CLIMATE CHANGE**

The increase in temperature and extreme heat causes numerous challenges for both urban and rural regions. The onset of climate change provides us with a clearer understanding of these issues and potential strategies for mitigation. The inception dates back centuries, but it was brought into notice by an amateur scientist known as Guy Stewart Callender, who established the Carbon dioxide theory of climate change. Guy Stewart Callendar discovered that global warming could be brought about by increases in the concentration of atmospheric carbon dioxide due to human activities, primarily through burning fossil fuels. In the year 1938<sup>7</sup>.

Callender was a steam engineer who wanted to take a break from his every day work and started collecting weather reports of 147 weather stations all across the world and by doing all the calculations with the mathematics he knew found out that our Earth was warming dangerously by 0.3 degrees over the last 50 years, and he further found that all these were man made. He was heavily criticized for his statement back then yet it was the truth. In 1958, Dr Charles Davis Keeling presented the first evidence that Carbon dioxide levels are alleviating<sup>8</sup>. He was young geochemist, who found that there is a presence of Carbon dioxide in the Earth's atmosphere, with an experiment conducted on the top of the Mauna Loa volcano in Hawaii. He studied the atmosphere in that area for 5 years and provided an unequivocal proof of the presence of Carbon dioxide in atmosphere. He was also able to prove that this rise in carbon dioxide was because of the burning of fossil fuels.

Manabe and Wetherald's climate model, in 1967, researchers Syukuro Manabe and Richard Wetherald, produced a climate model demonstrating the climatic changes Earth has undergone in the past years, the present condition and the impact of increase in the CO<sub>2</sub> levels in the atmosphere.

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• James Roger Fleming, "The Callendar Effect: The Life and Work of Guy Stewart Callendar (1898-1964)" University of Chicago Press; Illustrated edition (1 January 2009)

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Available at <https://press.uchicago.edu/ucp/books/book/distributed/C/bo8670161.html> accessed on 24th october 2024 at 5 pm )

Manabe and Wetherald penned that : According to our estimate, a doubling of Co<sub>2</sub> content in the atmosphere has the effect of raising the temperature of the atmosphere (whose relative humidity is fixed) by about 2°C.”<sup>9</sup>

Followed by the warning of scientists about the melting of glaciers, in the year 1968, Dr John Mercer, a glaciologist at Ohio State University in Columbus, warned that the global warming could cause Antarctic ice sheets to collapse, leading to a disastrous rise in sea levels<sup>10</sup>.

In 1969, NASA launched a satellite named NIMBUS III it provided for the world’s first accurate measurements of global atmospheric temperature which revolutionized the research on climate change<sup>11</sup>.

In the year 1985, discovery of depleting ozone layer by chlorofluoro carbons made us understand about the effect and impact of the greenhouse gases. There was an urgent call for the international authorities to take up the responsibility of this issue.

## **INTERNATIONAL FRAMEWORK**

Ensuring the right to a dignified livelihood and a healthy environment has consistently been a priority for all international organizations, reflecting a growing recognition of the interconnectedness of human rights, environmental sustainability, and economic development. The fundamental belief that every individual deserves access to resources that support a decent standard of living is at the core of many international agreements and initiatives. This commitment is particularly crucial in the face of escalating global challenges, including poverty, inequality, and environmental degradation. Climate change, a significant factor impacting the ecological equilibrium of our planet, poses an existential threat to all forms of life. Its effects are far-reaching, influencing weather patterns, sea levels, and biodiversity, while exacerbating existing social and economic disparities. Vulnerable populations, particularly in developing countries, are disproportionately affected, facing increased risks of food insecurity, displacement, and health crises. As such, addressing climate change is not merely an environmental issue; it is a matter of social justice and human rights.

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- Harris, D.C., 2010. Charles David Keeling and the story of atmospheric CO<sub>2</sub> measurements.
  - Available at <https://www.discover.ukri.org/a-brief-history-of-climate-change-discoveries/index.html> (accessed on 18th october 2024 at 4 pm)
  - Mercer, John Hainsworth. "Antarctic ice and Sangamon sea level." (1968): 217-225.

- Available at <https://space.oscar.wmo.int/satellites/view/nimbus> (accessed on 18th october 2024 at 9 pm)

International organizations, including the United Nations, the World Health Organization, and various non-governmental organizations, have a critical role to play in tackling this pressing issue. They must advocate for policies that promote sustainable development, support the transition to renewable energy sources, and encourage practices that protect natural ecosystems. Furthermore, these organizations should facilitate international cooperation and knowledge sharing, enabling countries to learn from one another and adopt best practices in climate resilience and adaptation.

The inception to climate action began with the United Nations Scientific Conference on the Conservation and Utilisation of Resources was the first UN body to address the issue of depletion of natural resources in the year 1949 it was on the economic and social perspective not for the conservation of nature yet laid a bedrock foundation for the UN to hold the very first United Nations Conference on the conservation of Human Environment, popularly called as the Earth Summit or the Stockholm Conference. This summit set out principles for the preservation and enhancement of the human environment, and an action plan containing recommendation for international environmental action<sup>12</sup>. This conference addressed the issue of climate change and urged member states to monitor and consider their activities that could contribute to its exacerbation. These conferences led to the formation of various stations to monitor long-term trends in the atmospheric constituents and properties, which might cause meteorological properties, including climatic changes. Those programmes were to be coordinated by World Meteorological Organisation. The Conference additionally urged the organization of a second meeting focused on environmental issues and established the Governing Council of the United Nations Environment Programme (UNEP), which has its secretariat located in Nairobi, Kenya, along with the Environment Fund and the Environment Coordination Board.

In 1988, the problems relating to global warming and ozone layer depletion gave impetus to the formation of a panel called intergovernmental panel for climate change which acts as an authority for the supervision of greenhouse gas emissions and global climate change. IPCC was formulated by the United Nations Environment Programme and the World Meteorological Organisation. IPCC has published six reports crafted by renowned experts on climate change, greenhouse gas emissions, sea level rising and various other problems. The general assembly sternly decided to convene a conference in Rio de Janeiro, Brazil, the United Nations Conference on Environment and Development in the year 1992. This is also known as the Earth Summit which gave rise to the Rio

Declaration and Agenda 21. This was formed as a result of the international agreements to safeguard the integrity of the global environment. Which resulted in a worldwide agreement on the importance of development and environmental collaboration. Chapter 9 of Agenda 21 focused on atmospheric protection, highlighting the connections among scientific research, sustainable development, energy production and usage, transportation, industrial growth, stratospheric ozone depletion, and cross-border air pollution.

The United Nations Framework Conference on Climate Change was adopted in 1992 by the end of this conference. 158 states have signed it. The objectives of this piece of legislation is,

To stabilize and neutralize the concentration of greenhouse gases in the Earth's atmosphere that would prevent dangerous anthropogenic interference with the climate system.

Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change,

Ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner<sup>13</sup>

The Convention, formally known as the United Nations Framework Convention on Climate Change (UNFCCC), is widely acknowledged as the most significant international initiative to date aimed at addressing the pressing issue of climate change. Its primary objective is to stabilize the concentrations of "greenhouse gases" in the atmosphere at a level that would prevent dangerous human-induced disruptions to the climate system. This recognition stems from the growing scientific consensus on the detrimental effects of climate change, which include rising global temperatures, extreme weather events, and adverse impacts on ecosystems and human societies.

The Convention officially came into effect in 1994, marking a pivotal moment in global environmental governance. It established a framework for international cooperation and set the stage for subsequent negotiations and agreements aimed at mitigating climate change. In March 1995, the inaugural Conference of the Parties (COP) to the Convention was held in Berlin, where representatives from various countries gathered to discuss the urgent need for action.

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• Peter Jackson, “From Stockholm to Kyoto: A Brief History of Climate Change”, From Vol. XLIV, No. 2, "Green Our World!", June 2007 Available at <https://www.un.org/en/chronicle/article/stockholm-kyoto-brief-history-climate-change> (accessed on 22nd October, 2024 at 7:30 pm.)





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During this first COP, the Berlin Mandate was endorsed, which served as a crucial turning point in the climate negotiations. The Mandate recognized that while the Convention laid the groundwork for addressing climate change, there was a pressing need to develop a more robust legal framework that would impose stricter obligations on developed nations, as well as those countries undergoing transition from centrally planned economies to market-oriented systems. This acknowledgment was rooted in the principle of "common but differentiated responsibilities," which asserts that developed countries, having historically contributed the most to greenhouse gas emissions, should take the lead in reducing emissions and providing support to developing nations.

The discussions initiated by the Berlin Mandate ultimately paved the way for the development of the Kyoto Protocol, which was adopted in 1997 and came into force in 2005. The Protocol established legally binding commitments for developed countries to reduce their greenhouse gas emissions, thereby representing a significant step forward in the global effort to combat climate change. The ongoing evolution of international climate agreements, including the Paris Agreement adopted in 2015, can be traced back to the foundational work of the Convention and the subsequent initiatives that emerged from the Berlin Mandate. In summary, the Convention not only set the stage for international climate negotiations but also highlighted the need for a collaborative approach to address the complex and multifaceted challenges posed by climate change. Its legacy continues to influence global climate policy and action, underscoring the importance of international cooperation in safeguarding the planet for future generations.

### **LEGAL FRAMEWORK ADDRESSING CLIMATE ACTION IN INDIA:**

The constitution of India has guaranteed environmental protection under Article 14, 21, 47, 48A and 51A(g). In the case *M.C Mehta v. Kamal*<sup>14</sup>, the Supreme Court has highlighted that Article 48A and Article 51A(g) should be interpreted along with Article 21 of the Indian Constitution. The court also applied the principles such as 'POLLUTER PAY PRINCIPLE', 'PUBLIC TRUST DOCTRINE' and 'PRINCIPLE OF DETERENCE'. Recently Supreme Court has also addressed the effects of climate change by highlighting A. 21 and A. 14 of the Constitution of India in *M.K Ranjitsinh and others v. UOI*<sup>15</sup>. The court also stated that just because there is no single legislation to address the issue of climate change, that does not mean people have no right against the adverse effect of the climate change.

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• United Nations Framework Convention on Climate Change (UNFCCC), 1992, Article 3

Some of the important legislations that are addressing the climate change are as follows:

- The environment (Protection) Act, 1986: The purpose of the act is to implement the decisions of United Nation Conference and protect the environment by preventing the pollution. The Act was last amended in 1991. The Act has framed many laws to prevent the emission of greenhouse gases by promoting the renewable energy. The act has given powers for Central and State government to improve the conditions of environment.
- The Forest Conservation Act of 1980: This act was brought in order to protect the forest. After the enactment of this Act all forests in India became the reserved property of the government. The act gave full authority to central government to carry the purpose of this Act.
- The Air Prevention and Control of Pollution Act, 1981: the Act has established Central and State pollution control boards to prevent air pollution and check the air quality. Chapter V of the act speaks about the prevention and control of air pollution. Sec. 37 to 41 speaks about the penalties that can implemented under the act.
- The Water Prevention and Control of Pollution Act of 1974: The Act was established to prevent and control water pollution. Sec. 24 of the Act speaks about the prohibition on use of stream and well for disposal of polluting matter, etc. The act has established central and state boards for prevention and control of water pollution.
- The Energy Conservation Act, 2001: The Act aims to promote sustainable development by targeting climate change. The Act also includes Bureau of Energy Efficiency to implement energy conservation activities. The act empowers Central Government to specify energy consumption standards for buildings, vehicles and vessels.
- The National Green Tribunal Act. 2010: The Act was established to deal with environmental protection. It is an inspiration drawn from A. 21 of the Constitution of India. The act deals with cases relating to environment protection, climate change and conservation of forests.

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- (1997) 1 SCC 388
- 2024 SCC OnLine SC 805



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Some recent climate change legislation in India includes: The council on climate change bill, 2021, Energy conservation act amendment, 2022, Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme etc. The government has launched programme such as “Ek Ped Maa Ke Naam” to plant trees and promote afforestation.

### **SUGGESTIONS AND CONCLUSIONS**

One of the primary obstacles to effective climate change action is the insufficient engagement of communities in environmental protection efforts. Additionally, a significant lack of awareness regarding sustainable development poses a considerable challenge to its implementation. Another critical issue is the scarcity of resources and the difficulty in establishing capacity-building programs in numerous countries.

Climate change is an inevitable phenomenon that cannot be entirely reversed, but it can be mitigated. It is crucial to take immediate action; otherwise, future generations will face significant hardships. The prevalence of diseases is likely to rise, and the Earth may become an inhospitable environment for human survival.

Mitigation strategies encompass the shift towards renewable energy sources, the improvement of energy efficiency, the implementation of regenerative agricultural methods, and the conservation and restoration of forests and vital ecosystems.

- Shifting away from fossil fuels

Transforming the reliance on fossil fuels to renewable energy sources such as solar, wind, and geothermal, along with promoting sustainable transportation methods, is essential for addressing the challenges posed by climate change. This transition is not merely a technological shift; it represents a fundamental change in how we produce and consume energy, impacting economic, social, and environmental dimensions of our lives.

- Improving energy efficiency

Reducing overall energy consumption across various sectors, including buildings, industries, public and private spaces, energy generation and transmission, and transportation, contributed to lower emissions. The objective can be accomplished through an implementation of thermal comfort standards, enhanced insulation, energy-efficient appliances, and advancement in building design,

energy transmission system, and vehicles.

- Transformative farming practices

Certain agricultural practices contribute significantly to the emission of methane and nitrous oxide, both of which are powerful greenhouse gases. In contrast, regenerative farming techniques such as improving soil health, minimizing emissions from livestock, employing direct seeding methods, and utilizing cover crops facilitate mitigation efforts, enhance resilience, and alleviate financial pressures on farmers.

- Conservation of forests

Forests serve as significant carbon sinks, capturing carbon dioxide and diminishing the overall levels of greenhouse gases present in the atmosphere. Implementing strategies to curb deforestation and forest degradation is essential for climate mitigation and yields numerous supplementary advantages, including the conservation of biodiversity and the enhancement of water cycles<sup>16</sup>.

In summary, these mitigation strategies are interconnected and collectively contribute to a more sustainable future. By prioritizing renewable energy, improving energy efficiency, adopting regenerative agricultural practices, and conserving vital ecosystems, we can effectively combat climate change, protect our natural resources, and promote a healthier planet for future generations.

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• Report by UNDP, “What is climate change mitigation and why is it urgent?” Available at <https://climatepromise.undp.org/news-and-stories/what-climate-change-mitigation-and-why-it-urgent> (accessed on 12<sup>th</sup> October 2024, 5:30)