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Climate Change and India's Role in International Agreements, Its Outcomes and Failures

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"We are the first generation to feel the impact of climate change and the last generation that can do something about it."

India is both a major greenhouse gas emitter and one of the most vulnerable countries in the world to projected climate change. The country is already experiencing changes in climate and the impact of climate change including water stress, heat waves and droughts, severe storms and flooding and associated negative consequences on health and livelihood. This paper focuses on the urgency of talking climate change issue with zero carbon footprints and climate positive attitude.

This paper is divided into four sections :-

- 1) The first section deals with the introduction and back ground
- 2) The second section highlights India's role of international agreements on climate change
- 3) The third section summarizes the most important impacts of climate change in India
- 4) The last section relates to the conclusion and future prospects of climate change issues in India

INTRODUCTION AND BACK GROUND

Climate scientists have showed that humans are responsible for virtually all global heating over the last 200 years. The average temperature of the Earth's surface is now about 1.1°C warmer than it was in the late 1800s and warmer than any time in the last 100,000 years. The last decade (2011-2020) was the warmest on record.

In a series of UN reports thousands of scientists and government reviewers agreed that limiting global temperature rise to no more than $1.5^{\circ}C$ would help us avoid the worst climate impacts and maintain a livable climate. Yet policies currently in place point to a $3^{\circ}C$ temperature rise by the end of the century.

With 1.4 billion, but growing population and dependence on agriculture India probably will be severely impacted by continuing climate change. According to the World Bank, India's per capita water availability declined from 1,816 cubic meters in 2001 to 1,544 cubic meters in 2011 and is projected to future decline to 1,140 cubic meters by 2050. India faces a number of issues that heighten the dangers of global warming. With nearly 310 million people living in coastal areas that will be affected by global sea level rise, nearly 30% of the population living below the poverty line, and over 50% of the people working in the farm industry, global warming will have an impact on every aspect of Indian society.



India's Role in International Agreement on Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC) was established on 1992 and its subsequent agreements like the Kyoto protocol and the Paris Agreement. As a rapidly developing country with a large population and growing economy, India has been vocal about the need for developed nations to take the lead in emissions reductions while allowing developing countries like itself room for economic growth. India has committed to reducing its emissions intensity and increasing its share of renewable energy as part of its nationally determined contributions (NDCs) under the Paris Agreement (2015).

The UNFCCC organized its first Conference of Parties (COP) in 1995 in Berlin for the unite aim of preventing dangerous human interference with the climate system. The major COP event is the Kyoto Protocol and the Paris Agreement and in both India's engagement reflect its responsibility for nature.

• The Kyoto Protocol-1997

The Kyoto Protocol was adopted at the third Conference of the Parties (COP-3) to the UNFCCC in 1997. India's participation in the Kyoto Protocol an international treaty aimed at reducing greenhouse gas emissions, is a significant aspect of its engagement in global climate governance.

India's participation in the Kyoto Protocol exemplifies its commitment to global climate action and its proactive approach to addressing climate change while advancing its development goals.

• The Paris Agreement: 2015

India's pivotal role in the Paris Agreement adopted in 2015 at the 21st Conference of Parties (COP 21) to the UNFCCC, underscores its commitment to global climate action. Throughout the negotiations, India emerged as a strong advocate or equity, common but differentiated responsibilities (CBDR), and climate justice. It steadfastly underscored the historical responsibility of developed nations for climate change and championed differentiated commitments that acknowledge the diverse capacities and development stages of countries.

Nationally Determined Contribution (NDC) : Central to India's commitment under the Paris Agreement in its NDC, a comprehensive roadmap outlining its climate actions and contributions, India pledged to reduce the emissions intensity to its GDP by 33-35% by 2030 compared to 2005 levels. Additionally India set a target to achieve 40% cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030, demonstrating its ambition in transitioning to renewable energy sources.

• COP 24

The Paris Agreement of 2015 (COP 21) became quite controversial due to several reasons, one being the delay in finalizing the 'rulebook' for its implementation . The 24th meeting of Conference of Parties (COP24) to the UNFCCC was held at Katowice, Poland. The major agreements which the countries were able to reach at the conference were as follows:



Agreement on the rulebook which ensures that each tone of emissions released into the atmosphere is accounted for (making emission measurable). It also includes certain other provisions related to cut in emission-how government will measure, report and verify their emissions- cutting efforts. This deal will apply from 2020.

To initiate the work on setting up the new collective finance goals post 2020 from the floor of US\$ 100 billion.

India reiterated its commitment to the Paris Agreement in a collective manner and followed an approach guided by the principles of Equity and Common but Differentiated Responsibilities and Respective Capability (CBPR-RC).

• COP 28

The 28th Conference of Parties (COP 28) took place in Dubai, UAE, with representatives from 197 countries presenting their initiatives to curb global warming and engaging in discussions on future climate actions.

The conference yielded a mix of positive outcomes and disappointments, making a substantial step forward since the Paris Agreement. While some hail it as the conclusion of the fossil fuel era, there are apprehensions about deficiencies in adaptation efforts and troubling gaps in mitigation strategies.

COP 28 calls for tripling renewable energy capacity globally and doubling the global average annual rate of energy efficiency improvements by 2030. It calls for substantially reducing non CO2 emissions, including in particular, methane emissions globally by 2030.

COPs are crucial in the battle against climate change but the road ahead is both challenging and promising. Its success requires collective determination, unwavering commitment, and recognition that the stakes are high. By embracing determined contributions and forging genuine partnerships, the global community can built a sustainable and resilient future.

India and Climate Change

India has been very sensitive to the issue of climate change and has been active in mitigating the crisis with the global community. The National Action Plan on Climate Change (NAPCC), launched in 2008, was India's first multi dimensional step in this direction. The action plan has objectives of adaptation and mitigation through focused national missions. India decided to revise the NAPCC in line with its INDCs under the Paris Agreement to make it more comprehensive in terms of priority areas. The progress of implementation of the eight national missions is briefly explained below:

The Perform, Achieve and Trade (PAT) scheme under National Mission for Enhanced Energy Efficiency (NMEEE) is designed on the concept of reduction in energy consumption. By 2020, about 20 Mtoe of energy savings is estimated under the scheme.

The National Solar Mission aims to increase the share of solar energy in the total energy mix. The target has been set at 100 bGW via grid connected rooftop projects, and large and medium size land-based



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solar power projects. A cumulative 32.5 GW of solar electric generation capacity was installed by NOV 2019.

The National Water Mission focuses on monitoring of groundwater, aquifer mapping, capacity building, water quality monitoring and other baseline studies. There are 1071 assessment units categorized as over-exploited as per the assessment of the Central Ground Water Authority (CGWA). Rain water harvesting has been made mandatory for drawing groundwater.

The National Mission for a Green India envisages a holistic view of greening and focuses on multiple ecosystem services along with carbon sequestration and emission reduction. The mission emphasizes the landscape approach to treat large contiguous areas of both forest and non-forest, public and private lands with a key role of the local communities in planning, implementation and monitoring. Actions taken under it are afforestation activities, promoting alternate energy at household level etc.

The National Mission on Sustainable Habitat is being implemented through three programmes: Urban Transformation, Swachh Bharat Mission and Smart Cities Mission.

The National Mission for Sustainable Agriculture aims at enhancing food security and protection of resources. Key targets include covering 3.5 lakh hectare of area under organic farming, 3.70 under precision irrigation, 4.0 lakh hectare under the system of rice intensification, 3.14 lakh hectare under diversification to less water consuming crops, 3.09 lakh hectare additional area under plantation in arable land and 7 bypass protein feed making. The mission has resulted in the formation of the network project NICRA (National Innovations on Climate Resilient Agriculture).

The National Mission for Sustaining the Himalayan Ecosystem aims to evolve suitable management and policy measures for sustaining and safeguarding the Himalyan ecosystem. The key achievements include setting up of a Centre of Glaciology at the Wadia Institute of Himalayan Geology, thematic task forces in 6 lead institutions, state climate change centres n 11 Out of 12 Himalayan states, 40 training programmes under state climate centre's organized with 5500 people trained and formation of an Inter-University Consortium of 4 universities on Himalayan cryosphere and climate change.

The National Mission on Strategic Knowledge for Climate Change seeks to build a knowledge system that would inform and support national action for ecologically sustainable development. The key achievement include setting up of 11 centres of excellence and 10 state climate change centres, training programmes, 7 human capacity building and national knowledge network programmes in the areas of climate change science, adaptation and mitigation, and 8 global technology watch groups in the areas of renewable energy technology, advanced coal technology, enhanced energy efficiency, green forest, sustainable habitat, water, sustainable agriculture and manufacturing.

Conclusion and future prospects of Climate Change

Climate change is a global phenomenon with a far- reaching consequences, and India, as one of the most populous and diverse countries, is significantly affected. The changing climate patterns, characterized by rising temperatures, erratic rainfall, and extreme weather events, pose sustainable challenges to India's socio economic fabric.



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Unpredictable monsoons and altered precipitation patterns have led to increased instances of droughts and floods, severely affecting crop yields. The loss of biodiversity is also a consequence, affecting ecosystems and the delicate balance of various species. Access to resources, health facilities, and educational opportunities becomes even more challenging in the face of extreme weather events. The melting of Himalayan glaciers poses a threat to the major river systems, affecting water availability for agriculture and consumption.

United Nations new report says it is still possible to hold global warming to relatively safe levels, but doing so will require global cooperation, billions of dollars and big changes. India, with its diverse geography and socio-economic landscape, must prioritize sustainable practices, invest in renewable energy sources, and implement adaptive measures to mitigate and adverse impacts of climate change. Collaborative efforts among nations to develop and enforce policies, agreements like the Paris Agreement, and sharing technological advancements are vital in combating climate change on a global scale.

Growing number of countries is committing to net zero emissions by 2050, emissions must be cut in half by 2030 to keep warming below 1.5° C. Climate action requires significant financial investments by governments and businesses. But climate inaction is vastly more expensive. Transitioning to a net-zero world is one of the greatest challenges human kind has faced. It calls for nothing less than a complete transformation of how we produce, consume and move about. Both the United States and European Union have set goals of reaching net zero emissions by 2050, while China has set a 2060 goal and India is aiming for 2070. But in light of the report's findings, it is said that all countries should move faster and wealthy countries should aim to reach net zero by 2040.

The energy sector is the source of around three quarters of greenhouse gas emissions today and holds the key to averting the worst effects of climate change. Replacing polluting coal, gas and oil fired power with energy from renewable sources such as wind or solar, would dramatically reduce carbon emissions.

The biggest thing that companies, countries and individuals around the world alike can do is strive to be more climate positive instead of merely joining the movement to transition to net zero emissions. To be "Climate Positive" is when a company or individual seeks to directly reduce their own carbon footprints rather than investing in carbon offsets to even out the amount of carbon emissions they produce. In conclusion, climate change is not a distant threat but an immediate and pervasive challenge that requires urgent and coordinated action.

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