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From NAPCC to Net Zero: Tracing India's Evolving Climate Change Strategy and Key Missions

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Abstract

Humanity is now facing what may be the biggest challenge to its existence: irreversible climate change brought about by human activity. Our planet is in a state of emergency, and we only have a short window of time to enact meaningful change. Climate change is expected to bring about major change in freshwater availability, the productive capacity of soils, and in patterns of human settlement, we can say that there may be multifaceted impact of climate change in its totality. Further, different views, issues and mitigation measures are discussed particularly in Indian scenario. In this direction, the "National Action Plan on Climate Change" was set by Indian Prime Minister which encompasses a broad and extensive range of measures, and focuses on eight missions, which will be pursued as key components of the strategy for sustainable development. These include missions on solar energy, enhanced energy efficiency, sustainable habitat, conserving water, sustaining the Himalayan ecosystem, creating a "Green India," sustainable agriculture and, finally, establishing a strategic knowledge platform for climate change. Finally, different steps/approaches pertaining to green, eco-friendly and sustainable technology has been discussed in order to mitigate the impact of global environmental damage originating from increased industrialization and hence appropriately address this global disaster which is being the root cause of North-South debate and global environmental politics.

Keywords *climate change; green house gases; Kyoto Protocol; civil conflict; sustainable; green technology*

`Introduction

Attention to climate change as a global challenge to sustainable development has reemerged in recent years. The debate has reached the highest political levels, as evidenced by the participation

of 80 heads of State or government at the High-Level Event on Climate Change convened by the Secretary-General of the United Nations on 24 September 2007. According to the Intergovernmental Panel on Climate Change (ICCP), the warming of the global climate system is unequivocal, and human activities are contributing to it. Both mitigation and adaptation measures are needed to diminish the risks associated with climate change.

It is also increasingly recognized that climate change is a sustainable development issue and not just an environmental problem. Climate change impacts pose threats to the economic, social and environmental dimensions of sustainable development in almost all countries, climate change mitigation and adaptation polices have an impact on other sustainable development goals, and progress towards achieving other sustainable development goals can contribute to both climate change mitigation and adaptation. Global climate change is of prime concern at global scale in present era of science of technology (Zhang and Liu, 2012). In the present era of Science and Technology, due to the rapid pace of industrialization and urbanization, quantity of natural resources as well as quality of global environment has been altered seriously (Rai, 2008a; Rai, 2008b; Rai and Tripathi, 2009). According to Environmental Protection Agency-USA, (USEPA), with increasing population, more and more countries are facing the problem of global environmental change originating from large expansion of industrial sector. Hand in hand, population growth will cause a rapid increase in number of industries preparing agro-chemical to sustain agriculture as well as will uplift the industrial demand for resources. Economic globalization constitutes integration of national economies into the international economy through trade, direct foreign investment (by corporations and multinationals), short-term capital flows, international flows of workers and humanity generally, and flows of technology: phenomena defined and treated more fully below. Economic globalization is the favoured target of many of the critics of globalization. It is distinct from other aspects of globalization, such as cultural globalization (which is affected by economic globalization) and communications (which is among the factors that cause the deepening of economic globalization). Aforesaid factors resulted in global environmental change. If the views of the Intergovernmental Panel on Climate Change (IPCC) are an accurate gauge of world scientific opinion, then the majority of scientists believe that anthropogenic global warming has either already begun or will become manifest in the very near future, with average global temperatures predicted to rise by 1.5-4.5°C by the middle of next century (IPCC, 1990). Despite an incomplete understanding of the processes at work, there is considerable agreement that this warming will be the result of increased releases and atmospheric accumulation, since the industrial revolution, of carbon dioxide (CO2), nitrous oxide (N20), methane (CH4) and chlorofluorocarbons (CFCs) the primary greenhouse gases (GHGs). Anticipation in some quarters of a host of negative consequences of such warming has led to ever louder calls to initiate strong policy actions to curtail GHG emissions (Wirth and Lashof, 1990).

Some economic strategies for addressing climate change and environmental issues include:

Market-based approaches These include tradable permits and emission taxes, which can incentivize polluters to reduce emissions.

Circular economy

This strategy can help reduce the demand for virgin materials, which can slow down nature degradation. It can also help improve resilience to climate shocks by increasing reuse, repair, and refurbishment.

Watershed management

This strategy focuses on preserving or restoring vegetated land cover and managing stormwater runoff.

Urban development

Cities account for more than 70% of global greenhouse gas emissions, so global sustainability depends on urban policies.

Sustainable development

The UNECE supports the implementation of the Sustainable Development Goals (SDGs) by developing frameworks for managing natural resources.

Low-carbon energy sources

Switching from fossil fuels to low-carbon energy sources can help sustain production levels while reducing emissions.

Government action

The government can dictate specific measures to reduce environmental harm, such as prohibiting highly-polluting industries.

Some of the key initiatives taken by the Central Government are as follows:

International Solar Alliance (ISA)

It's not unusual for temperatures to hit 48 degrees celsius in India's hottest regions, such as Rajasthan. The place becomes nearly uninhabitable for humans. But the region is undoubtedly ideal for one of the biggest solar farms in India. Launched in 2015, the International Solar Alliance is a solar power development project in collaboration with France. ISA is an alliance of the "sunshine countries" to utilise solar energy efficiently. The alliance was formed with solar energy-rich countries to reduce the dependency on non-renewable sources of energy like fossil fuels.

One Sun, One World, One Grid Project

The idea of the One Sun, One World, One Grid (OSOWOG) project was first proposed by honourable Prime Minister Mr. Narendra Modi during the first assembly of the International Solar Alliance in 2018. Through OSOWOG, the programme aims to provide energy to about 140 countries by a common grid that transfers solar power. The project acts as one of the solutions to many of our global problems in the energy sector. The United Kingdom jointly launched the OSOWOG initiative in partnership with ISA and the World Bank Group.

India's climate Nationally Determined Contributions

In 2015, **India** released its Nationally Determined Contributions (NDCs). Back then, the key targets were mainly to increase the cumulative electric power installed capacity from non-fossil sources to 40 percent, and reduce the emissions intensity of GDP by 33 to 35 percent compared to 2005 levels, by 2030. These targets were well overachieved. For example, India's carbon emissions had already reduced by 24 percent by 2016 as compared to 2005 levels. Thus, India revised its NDC in 2022 with new targets in place.

The key highlights of India's updated NDCs include:

- Target to reduce the emissions intensity of India's GDP by 45 percent by 2030;
- Achieve about 50 percent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030; and
- Prime Minister Modi's global initiative to combat climate change—'Lifestyle for the Environment (LiFE) Movement'.

The targets are raised significantly higher than before and accommodate the "Panchamrit"—goals presented by PM Modi at COP26—which are to raise the non-fossil fuel-based energy capacity of the country to 500 GW by 2030; to reduce the total projected carbon emissions by one billion tonnes between now and the year 2030; and to achieve net zero emissions by the year 2070. This NDC serves as a first-of-its-kind step in the journey of realising the goal of net zero, and deeply focuses on improving the share of renewables in the energy sector. It is complemented by several government schemes at home such as PM-UJJWALA, PM-KUSUM, and PM-UJALA yojana, and internationally like the "One Sun, One World, One Grid initiative". Taking a step further, at COP27, India submitted its Long-Term Low Emission Development Strategy (LT LEDS) to UNFCCC, which included plans for rapid expansion of green hydrogen production, three-fold increase in nuclear capacity by 2032, 20 percent ethanol blending in petrol by 2025, and more. With this, India joins the select list of fewer than 60 parties that have submitted their LT LEDS and shows India's readiness to fulfil its climate pledges. While all these steps portray the bold climate leadership of India, but certain areas remai unaddressed.

Climate Investments

The 2022-23 Union Budget announced sovereign green bonds under the government's overall market borrowings in 2022-23, which will be used to raise funds for climate-friendly infrastructure. This is a great milestone accomplished to attract scalable capital for green projects in India. However, when compared with several developed and even developing countries, this move has come slightly late. It will be crucial to continue increasing the size of green bonds in the coming years to realise its true impact and further explore blue bonds to enhance climate action via investments in ocean ecosystems. Moreover, there is a significant need to mainstream climate change in India's budget across sectors.

Although India has only 2.4 percent of the world's land area and is using only 6.1 percent of the world's primary energy, it supports around 18 percent of the global human and the largest livestock population in the world. The actions India is taking to support climate action

while over 228.9 million Indians live in poverty are unparalleled. However, looking at the magnitude of the challenge staring at us, more needs to be done. To go the extra mile, international climate finance (grants and concessional loans) can play a very significant role. At COP27, India pushed for climate finance (including implementing the annual funding from the floor of US$100 billion), but the progress has been slow. India must take a leading role in helping operationalise the finance and stocktaking mechanisms of the UNFCCC and the historic loss and damage fund adopted at Sharm el-Sheikh. Ambition and prioritisation of climate action in national policies coupled with fuelling international cooperation can help India overcome the climate crisis and ambitiously lead global climate action to safeguard the future of our planet.

Swachh Bharat Mission

The Swachh Bharat Mission is another landmark initiative by the Honourable Prime Minister, Mr. Narendra Modi. The initiative covered 4,041 statutory towns to clean the streets, roads, and infrastructure of India and provide sanitation facilities for every household. Under the initiative, all villages, districts, and gram panchayats in India declared themselves "open defecation free" by 2nd October 2019, on the 150th birth anniversary of Father of the Nation, Mahatma Gandhi. The initiative helped build over 100 million toilets in rural India.

COP26 Glasgow Summit

While addressing the world leaders at the annual conference of United Nations COP26 in Glasgow, the Hon'ble Prime Minister of India listed five commitments of India to combat climate change. The announcements were:

- India will achieve a target of net zero emissions by the year 2070.
- By 2030, India will meet 50 percent of its energy requirements from renewable sources.
- India will decrease the total projected carbon emissions by one billion tonnes by 2030.
- India will take its non-fossil energy capacity to 500 GW by the end of 2030.
- The nation will reduce carbon intensity by more than 45% by 2030.
- Climate Tech & Indian startups

Climate tech is a solution that involves providing new and feasible solutions to combat climate change. Climate tech includes finding ways to minimise greenhouse gas emissions and offering environment-friendly alternatives to existing technologies.

According to the Economic Survey 2021-22, India is the third-largest startup ecosystem in the world, In terms of how holistic the overall growth has been, startups in India have spread over 56 industries, with the top 5 being IT services, Healthcare & Lifesciences, Professional & Commercial Services, Education, and Agriculture.[source] Climate tech is one of the latest additions to this list, as several startups have emerged that are focusing on India's climate crisis.

The Current Scenario

With people becoming increasingly aware of climate change, the Indian government has also shifted its focus to the climate crisis. At the 26th session of the Conference of the Parties (COP26), India presented five nectar elements (Panchamrit) as its climate action:

- Reach 500 GW of Non-fossil energy capacity by 2030.
- Generate fifty percent of India's energy requirements from renewable energy by 2030.
- Reduce total projected carbon emissions by one billion tonnes from now to 2030.
- Reduce the carbon intensity of the economy by 45 percent by 2030, over 2005 levels.
- Achieve the target of net zero emissions by 2070.
- The government has already started taking the necessary steps in the right direction to combat climate change. As a result, the climate-tech sector is experiencing a huge boom.

The Impact

Today, several investors (both angel investors and venture capitalists) prefer to do business with companies that value the planet and offer solutions to ease the ongoing climate crisis. Although it takes a lot of effort to generate sufficient traction and attract investors, climate tech startups have an obvious advantage with them. This is the reason why they appear as a better option to investors, as compared to others.

Typically, investors prefer to put their money into ideas that promise potential and can effectively address a few of the most common real-world problems. The climate-tech domain is just the right fit, with plenty of opportunities. And the focus of these startups is on the environment, which is a plus!

If you are running a climate-tech startup, you should visit the Startup India website today to get a host of benefits, from tax exemption to showcase opportunities. Startup India is a nationwide platform where you can connect with industry experts and other startup founders for knowledge sharing and finding opportunities that help your business scale.

Climate change is expected to affect the human well being in many different ways such as capital, ecosystem, disease and migration. Irrespective of the importance of the issue, it is not clear how to compute the value with the current state of the art of economics. A meaningful development involves at least transformation from agricultural to a nonagricultural economy reducing the dependence on agriculture. Since most of the labor force—about 70%—directly and indirectly depends on the sector for livelihood and employment, it is when this sector is more productive and ensures food self-sufficiency that it will release the necessary labor and capital for the manufacturing and service sectors. In the context of the current debate about climate change, it is necessary to show, far from beinginactive in India, that considerable actions in terms of policies, programs and projects are being taken. Technology transfer can speed up the modernization process and additional funds can accelerate government in energy conservation. However, policies for poverty alleviation must be given priority

References:

1. Eckstein D., Kunzel V., Schafer L. (2021). Global Climate Risk Index 2021. *GermanWatch*.
2. Bello L. (2022, June 27). Rooftop solar: The missing piece of India's renewable ambitions. *The Third Pole*.

3. Byravan S., Rajan S. (2012). An Evaluation of India's National Action Plan on Climate Change. *Center for Development Finance (CDF), IFMR, and Humanities and Social Sciences, IIT Madras.*
4. Department of Economic Affairs, Ministry of Finance. (2020). Report of the Sub-Committee for the Assessment of the Financial Requirements for Implementing India's Nationally Determined Contribution (NDC). Government of India.
5. Gap between resource availability, requirement pose challenge in NDC implementation: Eco Survey. (2021, Jan 29). *Economic Times.* https://economictimes.indiatimes.com/news/economy/policy/gap-between-resource-availability-requirement-pose-challenge-in-ndc-implementation-eco-survey/articleshow/80590515.cms
6. Jain S. (2021). Five Ways How India Can Fuel Its Ambitious Renewable Energy Drive. *Outlook.* https://www.outlookindia.com/website/story/business-news-five-ways-how-india-can-fuel-its-ambitious-renewable-energy-drive/403252
7. Khanna N., Purkyastha D., Jain S. (2022, Aug 10). Landscape of Green Finance in India 2022. *Climate Policy Initiative.*
8. Kumar P. (2022, Aug 10). Energy Conservation Amendment Bill 2022: It all boils down to targets for industries. *Down To Earth.* https://www.downtoearth.org.in/blog/energy/energy-conservation-amendment-bill-2022-it-all-boils-down-to-targets-for-industries-84252
9. Ministry of New and Renewable Energy (https://mnre.gov.in/solar/current-status/)
10. Narasimhan E., Gopalakrishnan T., Gallagher K. (2021, Nov 11). India's policy pathways for deep decarbonisation. *Observer Research Foundation.* https://www.orfonline.org/expert-speak/indias-policy-pathways-for-deep-decarbonisation/
11. Pandey K. (2022, June 2). State of India's Environment in figures: India recorded 280 heat wave days across 16 states in 2022 — most in decade. *Down To Earth.* https://www.downtoearth.org.in/news/climate-change/state-of-india-s-environment-in-figures-india-recorded-280-heat-wave-days-across-16-states-in-2022-most-in-decade-83131
12. Picciariello A., Colenbrander S., Bazaz A., Roy R. (2021). The costs of climate change in India – A review of the climate-related risks facing India, and their economic and social costs. *ODI Literature Review.*
13. Rattani V. (2018). Coping with climate change – An analysis of India's National Action Plan on Climate Change. *Center for Science and Environment.*
14. RBI Bulletin. (2021). Green Finance in India: Progress and Challenges.

15. Sami N., Singh C., Bazaz A. Climate Change Policy in India and Goal 13. *Indian Institute of Human Settlements*.
16. View: Energy storage is the missing link in wider adoption of renewables. (2022, Apr 05). *EconomicTimes*. https://economictimes.indiatimes.com/industry/renewables/view-energy-storage-is-the-missing-link-in-wider-adoption-of-renewables/articleshow/90660853.cms?from=mdr

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