

Climate Changing Stapes of Emerging India

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Abstract: *Climate change is impacting India's natural environment, economy and society with increased frequency and intensity. Heatwaves, floods, monsoons and declining groundwater reserves are some of the extreme challenges that India is facing today. Heatwave risks to wellbeing and GDP have been particularly costly. In 2022, 15 states across India (as of 26th April 2022) struggled with the impacts on health, agriculture and the availability of water from heat waves. Floods have cost India US\$26.3 billion, with damages exceeding approximately 0.5% of its GDP. Several studies point to the devastating economic and social costs of climate-related damages in India due to climate inaction – which could total US\$35 trillion over the next 50 years – with particular impacts in the health and agriculture sectors. Climate change1 is one of the most critical global challenges of our times. Recent events have emphatically demonstrated our growing vulnerability to climate change. Climate change impacts will range from affecting agriculture – further endangering food security – to sea level rise and the accelerated erosion of coastal zones, increasing intensity of natural disasters, species extinction, and the spread of vector-borne diseases.*

Keywords: Heatwaves, flood, devastating, climate change, coastal zone, vector - borne

Objective

1. To emphasize the concept of environment change.
2. To elaborate on growing India's role in the environment.
3. To explain various action plans of growing india for the environment security

I. INTRODUCTION

Research Methodology

The methodology for India's Defence Transformation involved collecting and analyzing data from various sources, including government reports, statistical databases, and research papers. The data was analyzed using statistical tools and techniques, and the findings were presented in the form of tables, charts.. The analysis focused on all the environment security sectors of india: The factors influencing India's security actions were identified by examining the literature on the subject and consulting with experts in the field. The findings were then synthesized and presented in the form of a report.

Introduction

The vulnerability assessment and adaptation studies of climate change were made in various areas such as water resources, agriculture, forests, natural ecosystems, coastal zones, health energy and infrastructure as a part of the Initial National Communication of India² to the United Nations Framework Convention on Climate Change (UNFCCC). Further, the Expert Committee on Impact of Climate Change set up by the Ministry of Environment & Forests in June 2007 assessed the impact of climate change on six areas, namely water resources, agriculture, Natural Ecosystem, Health, Coastal Zone Management and Climate modeling. Reports of the Expert Committee were then prepared and a range of policies and programmes were initiated to address the problem of climate change in the context of sustainable development.

National Action Plan on Climate Change (NAPCC)

The National Action Plan on Climate Change (NAPCC) was released by the Prime Minister on 30th June 2008. It outlines a national strategy that aims to enable the country to adapt to climate change and enhance the ecological sustainability of India's development path. It stresses that maintaining a high growth rate is essential for increasing living standards of the vast majority of people of India and reducing their vulnerability to the impacts of climate change. There are eight —National Missions which form the core of the National Action Plan. They focus on promoting understanding of climate change, adaptation and mitigation, energy efficiency and natural resource conservation.

Missions that come under the National Action Plan for Climate Change

1. National Solar Mission
2. National Mission for Enhanced Energy Efficiency
3. National Mission on Sustainable Habitat
4. National Water Mission
5. National Mission for Sustaining the Himalayan Ecosystem
6. National Mission for a Green India
7. National Mission for Sustainable Agriculture
8. National Mission on Strategic Knowledge for Climate Change

Principles of this plan

- Protecting the poor through an inclusive and sustainable development strategy, sensitive to climate change
- Achieving national growth and poverty alleviation objectives while ensuring ecological sustainability
- Efficient and cost-effective strategies for end-use demand-side management
- Extensive and accelerated deployment of appropriate technologies for adaptation and mitigation
- New and innovative market, regulatory, and voluntary mechanisms for sustainable development
- Effective implementation through unique linkages – with civil society, LGUs, and public-private partnerships

Solar Mission (NSM)

The NSM was launched in January 2010, with the objective of establishing India as a global leader in solar energy, by creating the policy conditions for solar technology diffusion across the country as quickly as possible. The initial target of NSM was to install 20 GW solar power by 2022. This was upscaled to 100 GW in early 2015. Numerous facilitative programmes and schemes under the Mission have driven the grid connected solar power installed capacity from 25 MW in the year 2010-11 to about 36.32 GW as on 31st October 2020. An additional 58.31 GW solar power capacity is currently under installation/ tendering process.

The objective of the National Solar Mission is to establish India as a global leader in solar energy, by creating the policy conditions for its diffusion across the country as quickly as possible. The Mission adopts a three-phase approach, Phase 1 (up to 2012 - 13), Phase 2 (2013 - 17) and Phase 3 (2017 - 22). The immediate aim of the Mission is to focus on setting up an enabling environment for solar technology penetration in the country both at a centralized and decentralized level.

National Mission for Enhanced Energy Efficiency (NMEEE)

NMEEE aims to strengthen the market for energy efficiency by creating conducive regulatory and policy regime and has envisaged fostering innovative and sustainable business models to the energy efficiency sector. The Mission is implemented since 2011. NMEEE consists of four initiatives to enhance energy efficiency in energy intensive industries:

- Perform, Achieve and Trade (PAT)
- Market Transformation for Energy Efficiency (MTEE)

- Energy Efficiency Financing Platform (EEFP)
- Framework for Energy Efficient Economic Development (FEEED) 7. What is the National Mission on Sustainable Habitat? The National Mission on Sustainable Habitat was approved by the Prime Minister's Council for Climate Change in June 2010.11 The key deliverables of the Mission include:
 - Development of sustainable habitat standards that lead to robust development strategies while simultaneously addressing climate change related concerns
 - Preparation of city development plans that comprehensively address adaptation and mitigation concerns
 - Preparation of comprehensive mobility plans that enable cities to undertake long-term, energy efficient and cost effective transport planning
 - Capacity building for undertaking activities relevant to the Mission

National Water Mission

National Water Mission will ensure integrated water resource management helping to conserve water, minimize wastage and ensure more equitable distribution both across and within states. The Mission will take into account the provisions of the National Water Policy and develop a framework to optimize water use by increasing water use efficiency by 20 per cent through regulatory mechanisms with differential 8 Jawaharlal Nehru National Solar Mission entitlements and pricing. It will seek to ensure that a considerable share of the water needs of urban areas are met through recycling of waste water, and ensuring that the water requirements of coastal cities with inadequate alternative sources of water are met through adoption of new and appropriate technologies such as low temperature desalination technologies that allow for the use of ocean water. NWM13has identified five goals which are mentioned below:

- Comprehensive water data base in public domain and assessment of the impact of climate change on water resource
- Promotion of citizen and state actions for water conservation, augmentation and preservation ● Focused attention to vulnerable areas including over-exploited areas
- Increasing water use efficiency by 20 per cent
- Promotion of basin level integrated water resources management 9. What is the National Mission for sustaining the Himalayan Ecosystem? This particular mission sets the goal to prevent melting of the Himalayan glaciers and to protect biodiversity in the Himalayan region.

Soil Health Management (SHM)

That is one of the components under the National Mission for Sustainable Agriculture (NMSA). SHM aims at promoting Integrated Nutrient Management (INM) through judicious use of chemical fertilizers including secondary and micro nutrients in conjunction with organic manures and bio-fertilizers for improving soil health and its productivity, strengthening of soil and fertilizer testing facilities to improve soil test based recommendations to farmers for improving soil fertility. "Soil Health Card" Scheme has been under implementation in the country since February, 2015 to provide Soil Health Cards to all farmers in the country. Soil Health Card will provide information to farmers on soil nutrients status of their soil and recommendation on appropriate dosage of nutrients to be applied for improving soil health and its fertility.

II. CONCLUSION

India has done well to achieve the targets it set in the 2016 NDC. The improvement in emissions intensity has been faster than projected, and even the enhanced target in the 2022 NDC is likely to be met well in advance of the deadline. That signals the potential for more action toward reducing emissions intensity, though India has not yet indicated whether it will set more stringent targets. India has also ramped up its non-fossil electricity generation capacity since 2016, especially of renewables led by solar. Renewables comprise a remarkable three-quarters of the increase in total electricity generation capacity since 2016, with solar accounting for more than half of the total. The new target in its 2022 NDC, however, calls for an unprecedented level of effort and increase in non fossil capacity. The next few years will show how well India does on this metric to get closer to its net-zero goal.

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