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National Action Plan on Climate Change

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Introduction

- The **National Action Plan on Climate Change (NAPCC)** was launched in **2008** by the **Prime Minister's Council on Climate Change**.
- It aims at creating awareness among the representatives of the public, different agencies of the government, scientists, industry and the communities on the threat posed by climate change and the steps to counter it.
- There are **8 national missions** forming the core of the NAPCC which represent multi-pronged, long term and integrated strategies for achieving key goals in climate change. These are-
 - **National Solar Mission**
 - **National Mission for Enhanced Energy Efficiency**
 - **National Mission on Sustainable Habitat**
 - **National Water Mission**
 - **National Mission for Sustaining the Himalayan Ecosystem**
 - **National Mission for A Green India**
 - **National Mission for Sustainable Agriculture**
 - **National Mission on Strategic Knowledge for Climate Change**

Salient Features

NAPCC is guided by following principles-

- **Protection** of poor and vulnerable sections of society through **inclusive and sustainable development strategy**, sensitive to climate change.
- **Achievements of national growth** through qualitative changes enhancing **ecological sustainability**.
- **Deployment of appropriate technologies** for both **adaptation and mitigation of GreenHouse Gases emissions** extensively and at an accelerated pace.

GreenHouse Gases (GHG)

- These are gases that **absorb and emit radiant energy within the thermal infrared** range.
- Primary GHGs are **water vapour, carbondiaoxide, methane, nitrous oxide and ozone**.
- Earth's surface temperature would be $-18\text{ }^{\circ}\text{C}$ instead of the present average of $15\text{ }^{\circ}\text{C}$ without GHGs.
- GHGs create **Green House Effect** which is the process by which radiation from a planet's atmosphere warms the planet's surface.
- **Regulatory and voluntary mechanisms** to **promote sustainable development** and engineering new and innovative forms of market.
- **Effective implementation** of plans using **unique linkages** like civil society and local governments through **public-private partnership**.
- **Invite international cooperation** for **research, development, sharing and transfer of data and technologies** enabled by sufficient funding and backed up by a global IPR regime under the **United Nations Framework Convention on Climate Change (UNFCCC)**.

UNFCCC Secretariat (UN Climate Change)

- It was established in **1992** when countries adopted the **UNFCCC**.
- Located in **Bonn, Germany**.
- Focuses on facilitating **intergovernmental climate change negotiations**.
- Provides **technical expertise and assistance on analysis and review of climate change reports** presented by the parties.
- Plays a crucial role in implementation of the Kyoto Protocol and the Paris Agreement.

Approach

- NAPCC addresses the country's critical and urgent needs by **directionally shifting the development path** and **enhancing** the current and planned **programmes and technologies**.
- It **identifies measures** that **promote our developmental goals** and **co-benefits** by addressing **climate change** also.

The Jawaharlal Nehru National Solar Mission

- Governed by **Ministry of New and Renewable Energy**.
- It was **launched in 2010** with the primary aim of achieving **grid parity by 2022** and **with coal-based thermal power by 2030**.
- Aims to increase the share of **solar energy** in India's energy mix.

- It takes the measures of increasing R&D efforts, promoting decentralised distribution of energy by creating cheaper and more convenient solar power systems.
- Emphasis on manufacturing solar panels at the local level and to tie up local research with international efforts.
- Seeks to **reduce the absolute cost** of solar energy to bring it down and make it affordable.

Functions and Goals

- Making **solar water heaters mandatory** in buildings to promote the already proven and commercially viable **solar heating systems**.
- By the **remote village electrification programme**, using solar power as an off-grid solution to provide power to the power deprived poor.
- **Creating conditions for research and application** in the field of solar technology and **support & facilitate** the already on-going R&D projects.
- The ultimate objective is to develop a solar industry in India, **capable of delivering solar energy competitively against the fossil fuel options**.
- It is hoped that **by the end of the third phase, 2022**, India should have installed **20,000 MW** of solar power.

National Mission for Enhanced Energy Efficiency

- Governed by the **Ministry of Power**.
- Based on the **Energy Conservation Act, 2001**.
- It creates a market based mechanism to **enhance cost effectiveness** of improvements on energy efficiency. Switching to cleaner fuels, commercially viable technology transfers, capacity building needs etc are the way forward for this mission.
- **Development with energy efficiency** as a key criterion.

Functions and Goals

- **Spread awareness** about the efficacy and efficiency of energy efficient products and **create demand**.
- **Ensure adequate supply** of energy efficient products, goods, and services by forming a cadre of energy professionals.
- **Create financing platforms** which can make risk guarantee funds, financial derivatives of performance contracts.
- **Formulate** well thought out **evaluation and monitoring mechanisms** to capture energy savings in a transparent manner.
- **Overcome market failures** through regulatory and policy measures.
- Key areas to work upon are **Energy, Efficiency, Equity and Environment**.

National Mission on Sustainable Habitat

- Governed by the **Ministry of Urban Development**.
- **Manifold agenda** mission because it looks at energy efficiency within buildings, waste disposal from these buildings and betters the public transport system.
- Plans to make **urban areas more climate friendly** and **less susceptible to climate change** by a **multi-pronged approach** to mitigate and adapt to it.

Functions and Goals-

- To create and adopt a more holistic approach for **solid and liquid waste management**, ensuring their full potential for energy generation (**conversion of solid waste into energy**), recycling, reusing and composting.
- To **encourage alternative transport systems** and **establish fuel efficiency standards and reduce fuel consumed per passenger travel** by the provision of pedestrian pathways.
- To provide for **adoption and creation of alternative technologies** mitigating climate change and to **encourage community involvement** for it.
- Creation of **one building code** for the entire nation.
- A system to **enforce law and order**.
- Establish **financial incentives** based on **green rating**.
- **Reduce** need for pumping of water, **proper treatment of waste** water and use of **better designed toilets**.
- **Promote** use of **natural gas** and alternative & renewable fuels.
- **Comprehensive urban renewal master plan** proposals with sustainable designs.

A master plan is a dynamic long-term planning document that provides a conceptual layout to guide future growth and development.

Better enforcement of Urban Development Plan Formulation and Implementation (UDPFI) guidelines.

National Water Mission

- Governed by the **Ministry of Water Resources, River Development and Ganga Rejuvenation**.
- Ensures **better integrated water resource management** leading to **water conservation, less wastage, equitable distribution** forming better policies.
- Looks into the issues of **groundwater and surface water management, domestic and industrial water management, improvement of water storage capacities and protection of wetlands**.

Functions and Goals

- **Review and data collection** on the network of hydrological, automatic weather and automated rain gauge stations.
- Expediently **implement water projects in climate sensitive** regions.
- Promotion of **water purification and desalination techniques**.
- **Enactment of a bill** for the regulation and management of **groundwater sources**.
- **Research** in water use efficiency in industry, agriculture and domestic sectors.
- Providing **incentives for water neutral & positive technologies**.
- **Review National Water Policy** to include **integrated water resources** management, **evaporation** management and **basin level** management.
- Water data base in the public domain and the assessment of impact of climate change on water resource
- **Promotion of citizen and state action** for water conservation, augmentation and preservation.
- More focused attention to **over-exploited** areas.
- **Improving water use efficiency by 20%** through regulatory and pricing mechanisms.

National Mission for Sustaining the Himalayan Ecosystem

- Governed by the **Department of Science and Technology**.
- Created to **protect** the **Himalayan ecosystem**. The mandate is to evolve measures to **sustain and safeguard the Himalayan glaciers, mountain ecosystems, biodiversity and wildlife conservation & protection**.

Functions and Goals

- **Human and knowledge capacities**- appointing trained personnel who can capture, store and apply knowledge relating to vulnerability and changes in the region.
- **Institutional capacities**- creating capability to conduct long term observations, studies to understand and warn of changes in the Himalayan ecosystem
- **Evidence based policy building and governance**- creating a platform for Himalayan states and the Centre to interact with various bodies.
- **Continuous self learning for balancing** between forces of Nature and actions of mankind by creating strong linkages with community based organisations.
- Establishing of a **modern centre of Glaciology, standardisation of data collection to ensure interoperability and mapping of natural resources** in the area.
- **Identification and training of experts and specialists** in the area relevant to sustaining the Himalayan ecosystem.

National Mission for Green India

- Governed by the **Ministry of Environment, Forest and Climate Change**.
- It has the **mandate of reviving degraded forest land** with a focus on **increasing**

forest cover & density and **conserving biodiversity**.

- Works towards **reducing fragmentation of forests, enhancing private public partnerships for plantations, improving schemes based on joint forestry management etc.**
- Makes plans to tackle the challenges posed by climate change.

Functions and Goals

- **Enhancing carbon sinks** in **sustainably managed forests**.
- **Enhancing the resilience of vulnerable species and ecosystems** to **adapt** to climate change.
- **Enabling forest dependent communities** to **adapt** to climate variability.
- **Double the area** to be taken up for **afforestation**.
- **Increase greenhouse gas removals** by Indian forests.
- **Enhance resilience of forests and ecosystems** falling under the mission.

National Mission for Sustainable Agriculture

- Governed by the **Ministry of Agriculture**.
- It works towards **devising strategies** to make **Indian agriculture less susceptible to climate change**.
- It would **identify and develop new crop varieties**, use **traditional and modern agricultural techniques**.
- This mission sees **dry land agriculture, risk management, access to information and use of biotechnology** as **areas of intervention**.

Functions and Goals

- **Strengthening agricultural insurance, develop a system based on Geographic Information System (GIS) and remote sensing** to map soil resource and land use.
- **Providing information and collation** of off-season crops and **preparation of state-level agro-climatic atlases**.
- **Strategise to evolve low input agriculture** with **enhanced water and nitrogen efficient** crops.
- **Nutritional strategies** to manage heat stress in dairy animals.
- Using of **micro irrigation systems**.
- Promotion of agricultural techniques like **minimum tillage, organic farming and rain water conservation**.
- **Capacity building** of farmers and other stakeholders.
- **Production of bio-fertilizer, compost** along with subsidies for **chemical fertilizers**.
- **Strengthening of National Agricultural Insurance Scheme**.

National Mission on Strategic Knowledge for Climate Change

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- Governed by the **Department of Science and Technology**.
 - It **identifies challenges and requisite responses** to climate change. This will be done through **open international collaboration** and **would ensure sufficient funding** for this research.
 - There is a need for strong strategic knowledge system on climate change.

Functions and Goals

- **Develop regional climate science.**
- **Leverage international cooperation.**
- The efforts undertaken here would feed into the **Indian National Network for Climate Change Assessment (INCCA)** which is a **stock taking exercise conducted every two years as part of the national obligations under UNFCCC**.
- Creation of a **data generation and sharing system** by mapping resources on knowledge relevant to climate change.
- **Identifying knowledge gaps** and inspiring from global technological trends to select and test technologies.
- **Creating new centres dedicated to climate research** within existing institutional framework.

Achievements

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- **The World Wide Fund for Nature-India (WWF)** feels that the National Action Plan is fairly **comprehensive** and has **cross-sectoral links** through the eight National Level Missions. The **focal point** is India's impetus on **following on a low carbon energy path without impending economic growth** and quality of life of people.
 - NAPCC brings a **balanced perspective on mitigation and adaptation** through some new dimensions like creation of National Mission on Strategic Knowledge for Climate Change as this would **ensure exchange of knowledge and informed research** in India.

Challenges and Suggestions

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- India has the potential to do things differently because it is in an **early stage** of development and it **contributes very little to the changing climatic conditions**. It can leapfrog to a **low carbon economy by using high-end and emerging technologies**.
 - The plan report **makes no commitment to cut the country's carbon emission** which should have been an integral part of it.
 - The **focal point** of NAPCC **seems to be solar power mission only** and the government's efforts to maximise the solar energy seemingly approve it. **Equal emphasis on all missions with equal inputs** would have enabled the county to yield

fast and visible results.

- Missions related to sustainable habitat, water, and agriculture and forestry are **multi-sectoral, overlapping, multi-departmental, advisory and very slow moving** in nature. Several ongoing activities are in principle aligned with the objectives of these missions which should **either be integrated** with the missions or **scrapped** to save the time and cost.
- Another challenge is the **monitoring systems**, which are **either ineffective or absent**. Progress reports for NSM, NMEEE, and NWM are currently available but mapping of progress for other missions has been difficult due to their cross-cutting nature.
- Ministries are **required to report progress and have regular meetings** with the PM's Council on Climate Change.
- Finally, it can be said that **institutional, systemic and process barriers**— including **financial constraints, inter-ministerial coordination, lack of technical expertise and project clearance delays**—stand as **major challenges** in the efficient implementation of the missions.
- The **cross-cutting subjects** of the missions have **not yielded any positive results** on grounds yet **so a new approach is needed** to solve this and bring the agenda of climate change to the mainstream.
- While these challenges have drawn criticisms, they also provide us with the opportunity for discussion on the approaches to deal with climate change in India and understand the best way ahead to mainstream climate change.

Way Forward

- Recognising that climate change is a global challenge, the plan promises that India will **engage actively in multilateral negotiations** in the UN Framework Convention on Climate Change, in a **positive, constructive and forward-looking manner**.
- It is now clear that initiatives to prevent climate change have been started but, most importantly, these **initiatives must be continuous and sustainable** and every individual of every country will need to contribute to prevent climate change.
- By releasing the NAPCC, the **Indian government has shown its commitment** to address climate change issues and also **sent a positive message** to the public, industries, and civil society about the government's concern to address the climate change issue through concerted action.
- Issues related to the **awareness** regarding global warming and climate change **among the general population** and the **issue related to agriculture and health hazards** due to climate change **must be addressed strongly and effectively**.