

## National Action Plan on Climate Change in India

### Overview

India is faced with the challenge of sustaining its rapid economic growth while dealing with the global threat of climate change. This threat emanates from accumulated greenhouse gas emissions in the atmosphere, anthropogenically generated through long-term and intensive industrial growth and high consumption lifestyles in developed countries. While engaged with the international community to collectively and cooperatively deal with this threat, India needs a national strategy to firstly, adapt to climate change and secondly, to further enhance the ecological sustainability of India's development path.

Climate change may alter the distribution and quality of India's natural resources and adversely affect the livelihood of its people. With an economy closely tied to its natural resource base and climate- sensitive sectors such as agriculture, water and forestry, India may face a major threat because of the projected changes in climate.

India's development path is based on its unique resource endowments, the overriding priority of economic and social development and poverty eradication, and its adherence to its civilizational legacy that places a high value on the environment and the maintenance of ecological balance.

In charting out a developmental pathway which is ecologically sustainable, India has a wider spectrum of choices precisely because it is at an early stage of development. Our vision is to create a prosperous, but not wasteful society, an economy that is self-sustaining in terms of its ability to unleash the creative energies of our people and is mindful of our responsibilities to both present and future generations.

Recognizing that climate change is a global challenge, India will engage actively in multilateral negotiations in the UN Framework Convention on Climate Change, in a positive, constructive and forward-looking manner. Our objective will be to establish an effective, cooperative and equitable global approach based on the principle of common but differentiated responsibilities and respective capabilities, enshrined in the United Nations Framework Convention on Climate Change (UNFCCC). Such an approach must be based on a global vision inspired by Mahatma Gandhi's wise dictum—The earth has enough resources to meet people's needs, but will never have enough to satisfy people's greed. Thus we must not only promote sustainable production processes, but equally, sustainable lifestyles across the globe.

Finally, our approach must also be compatible with our role as a responsible and enlightened member of the international community, ready to make our contribution to the solution of a global challenge, which impacts on humanity as a whole. The success of our national efforts would be significantly enhanced provided the developed countries affirm their responsibility for accumulated green- house gas emissions and fulfill their commitments under the UNFCCC, to transfer new and additional financial resources and climate friendly technologies to support both adaptation and mitigation in developing countries.

We are convinced that the principle of equity that must underlie the global approach must allow each inhabitant of the earth an equal entitlement to the global atmospheric resource.

In this connection, India is determined that its per capita greenhouse gas emissions will at no point exceed that of developed countries even as we pursue our development objectives.

### **Principles**

Maintaining a high growth rate is essential for increasing living standards of the vast majority of our people and reducing their vulnerability to the impacts of climate change. In order to achieve a sustainable development path that simultaneously advances economic and environmental objectives, the National Action Plan for Climate Change (NAPCC) will be guided by the following principles:

- Protecting the poor and vulnerable sections of society through an inclusive and sustainable development strategy, sensitive to climate change.
- Achieving national growth objectives through a qualitative change in direction that enhances eco- logical sustainability, leading to further mitigation of greenhouse gas emissions.
- Devising efficient and cost-effective strategies for end use Demand Side Management.
- Deploying appropriate technologies for both adaptation and mitigation of greenhouse gases e- missions extensively as well as at an accelerated pace.

Engineering new and innovative forms of market, regulatory and voluntary mechanisms to promote sustainable development.

- Effecting implementation of programmes through unique linkages, including with civil society and local government institutions and through public- private-partnership.
- Welcoming international cooperation for research, development, sharing and transfer of technologies enabled by additional funding and a global IPR regime that facilitates

technology transfer to developing countries under the UNFCCC.

## **Approach**

The NAPCC addresses the urgent and critical concerns of the country through a directional shift in the development pathway, including through the enhancement of the current and planned programmes presented in the Technical Document.

The National Action Plan on Climate Change identifies measures that promote our development objectives while also yielding co-benefits for addressing climate change effectively. It outlines a number of steps to simultaneously advance India's development and climate change-related objectives of adaptation and mitigation.

## **The Way Forward: Eight National Missions**

In dealing with the challenge of climate change we must act on several fronts in a focused manner simultaneously. The National Action Plan hinges on the development and use of new technologies. The implementation of the Plan would be through appropriate institutional mechanisms suited for effective delivery of each individual Mission's objectives and include public private partnerships and civil society action. The focus will be on promoting understanding of climate change, adaptation and mitigation, energy efficiency and natural resource conservation.

There are Eight National Missions which form the core of the National Action Plan, representing multi-pronged, long-term and integrated strategies for achieving key goals in the context of climate change. While several of these programmes are already part of our current actions, they may need a change in direction, enhancement of scope and effectiveness and accelerated implementation of time-bound plans.

## **National Solar Mission**

A National Solar Mission will be launched to significantly increase the share of solar energy in the total energy mix while recognizing the need to expand the scope of other renewable and non-fossil options such as nuclear energy, wind energy and biomass.

India is a tropical country, where sunshine is available for longer hours per day and in great intensity. Solar energy, therefore, has great potential as future energy source. It also has the advantage of permitting a decentralized distribution of energy, thereby empowering people at the grassroots level. Photovoltaic cells are becoming cheaper with new technology. There are newer, reflector-based technologies that could enable setting up megawatt scale solar power plants across the country. Another aspect of the Solar Mission would be to launch a major R&D programme, which could draw upon international cooperation as well, to enable the creation of more affordable, more convenient solar power systems, and to promote

innovations that enable the storage of solar power for sustained, long-term use.

### **National Mission for Enhanced Energy Efficiency**

The Energy Conservation Act of 2001 provides a legal mandate for the implementation of the energy efficiency measures through the institutional mechanism of the Bureau of Energy Efficiency (BEE) in the Central Government and designated agencies in each state. A number of schemes and programmes have been initiated and it is anticipated that these would result in a saving of 10,000 MW by the end of 11<sup>th</sup> Five Year Plan in 2012.

To enhance energy efficiency, four new initiatives will be put in place. These are:

- A market based mechanism to enhance cost effectiveness of improvements in energy efficiency in energy-intensive large industries and facilities, through certification of energy savings that could be traded.
- Accelerating the shift to energy efficient appliances in designated sectors through innovative measures to make the products more affordable.
- Creation of mechanisms that would help finance demand side management programmes in all sectors by capturing future energy savings.
- Developing fiscal instruments to promote energy efficiency
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### **National Mission on Sustainable Habitat**

A National Mission on Sustainable Habitat will be launched to make habitat sustainable through improvements in energy efficiency in buildings, management of solid waste and modal shift to public transport. The Mission will promote energy efficiency as an integral component of urban planning and urban renewal through three initiatives.

(I) The Energy Conservation Building Code, which addresses the design of new and large commercial buildings to optimize their energy demand, will be extended in its application and incentives provided for retooling existing building stock.

(II) Recycling of material and Urban Waste Management will be a major component of ecologically sustainable economic development. India already has a significantly higher rate of recycling of waste compared to developed countries. A special area of focus will be the development of technology for producing power from waste. The National Mission will include a major R&D programme, focusing on bio chemical conversion, waste water use, sewage utilization and recycling options wherever possible.

(III) Better urban planning and modal shift to public transport. Making long term transport plans will facilitate the growth of medium and small cities in ways that ensure efficient and convenient public transport.

In addition, the Mission will address the need to adapt to future climate change by improving the resilience of infrastructure, community based disaster management, and measures for improving the warning system for extreme weather events. Capacity building would be an important component of this Mission.

### **National Water Mission**

A National Water Mission will be mounted to 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% through regulatory mechanisms with differential 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.

The National Water Policy would be revisited in consultation with states to ensure basin level management strategies to deal with variability in rainfall and river flows due to climate change. This will include enhanced storage both above and below ground, rainwater harvesting, coupled with equitable and efficient management structures.

The Mission will seek to develop new regulatory structures, combined with appropriate entitlements and pricing. It will seek to optimize the efficiency of existing irrigation systems, including rehabilitation of systems that have been run down and also expand irrigation, where feasible, with a special effort to increase storage capacity. Incentive structures will be designed to promote water-neutral or water-positive technologies, recharging of under- ground water sources and adoption of large scale irrigation programmes which rely on sprinklers, drip irrigation and ridge and furrow irrigation.

### **National Mission for Sustaining the Himalayan Ecosystem**

A Mission for sustaining the Himalayan Ecosystem will be launched to evolve management measures for sustaining and safeguarding the Himalayan glacier and mountain eco-system. Himalayas, being the source of key perennial rivers, the Mission would, *inter-alia*, seek to understand, whether and the extent to which, the Himalayan glaciers are in recession and how the problem could be addressed. This will require the joint effort of climatologists, glaciologists and other experts. We will need to exchange information with the South Asian countries and countries sharing the Himalayan ecology.

An observational and monitoring network for the Himalayan environment will also be established to assess freshwater resources and health of the ecosystem. Cooperation with neighboring countries will be sought to make the network comprehensive in its coverage.

The Himalayan ecosystem has 51 million people who practice hill agriculture and whose vulnerability is expected to increase on account of climate change. Community-based management of these ecosystems will be promoted with incentives to community organizations and panchayats for protection and enhancement of forested lands. In mountainous regions, the aim will be to maintain two-thirds of the area under forest cover in order to prevent erosion and land degradation and ensure the stability of the fragile eco-system.

### **National Mission for a Green India**

A National Mission will be launched to enhance eco- system services including carbon sinks to be called Green India. Forests play an indispensable role in the preservation of ecological balance and maintenance of bio-diversity. Forests also constitute one of the most effective carbon-sinks.

The Prime Minister has already announced a Green India campaign for the afforestation of 6 million hectares. The national target of area under forest and tree cover is 33% while the current area under forests is 23%.

The Mission on Green India will be taken up on degraded forest land through direct action by communities, organized through Joint Forest Management Committees and guided by the Departments of Forest in state governments. An initial corpus of over Rs 6000 crores has been earmarked for the programme through the Compensatory Afforestation Management and Planning Authority (CAMPA) to commence work. The programme will be scaled up to cover all remaining degraded forest land. The institutional arrangement provides for using the corpus to leverage more funds to scale up activity.

### **National Mission for Sustainable Agriculture**

The Mission would devise strategies to make Indian agriculture more resilient to climate change. It would identify and develop new varieties of crops and especially thermal resistant crops and alternative cropping patterns, capable of withstanding extremes of weather, long dry spells, flooding, and variable moisture availability.

Agriculture will need to be progressively adapted to projected climate change and our agri- cultural research systems must be oriented to monitor and evaluate climate change and recommend changes in agricultural practices accordingly.

This will be supported by the convergence and integration of traditional knowledge and practice systems, information technology, geospatial technologies and biotechnology. New credit and insurance mechanisms will be devised to facilitate adoption of desired practices.

Focus would be on improving productivity of rainfed agriculture. India will spearhead efforts at the international level to work towards an ecologically sustainable green revolution.

### **National Mission on Strategic Knowledge for Climate Change**

To enlist the global community in research and technology development and collaboration through mechanisms including open source platforms, a Strategic Knowledge Mission will be set up to identify the challenges of, and the responses to, climate change. It would ensure

funding of high quality and focused research into various aspects of climate change.

The Mission will also have, on its research agenda, socio-economic impacts of climate change including impact on health, demography, migration patterns and livelihoods of coastal communities. It would also support the establishment of dedicated climate change related academic units in Universities and other academic and scientific research institutions in the country which would be networked. A Climate Science Research Fund would be created under the Mission to support research. Private sector initiatives for development of innovative technologies for adaptation and mitigation would be encouraged through venture capital funds. Research to support policy and implementation would be undertaken through identified centres. The Mission will also focus on dissemination of new knowledge based on research findings.

### **Implementation of Missions**

These National Missions will be institutionalized by respective ministries and will be organized through inter-sectoral groups which include in addition to related Ministries, Ministry of Finance and the Planning Commission, experts from industry, academia and civil society. The institutional structure would vary depending on the task to be addressed by the Mission and will include providing the opportunity to compete on the best management model.

Each Mission will be tasked to evolve specific objectives spanning the remaining years of the 11th Plan and the 12th Plan period 2012-13 to 2016-17. Where the resource requirements of the Mission call for an enhancement of the allocation in the 11th Plan, this will be suitably considered, keeping in mind the overall resources position and the scope for reprioritization. Comprehensive Mission documents detailing objectives, strategies, plan of action, timelines and monitoring and evaluation criteria would be developed and submitted to the Prime Minister's Council on Climate Change by December 2008. The Council will also periodically review the progress of these Missions. Each Mission will report publicly on its annual performance.

Building public awareness will be vital in supporting implementation of the NAPCC. This will be achieved through national portals, media engagement, civil society involvement, curricula reform and recognition/ awards, details of which will be worked out by an empowered group. The Group will also consider methods of capacity building to support the goals of the National Missions.

We will develop appropriate technologies to measure progress in actions being taken in terms of avoided emissions, wherever applicable, with reference to business as usual scenarios. Appropriate indicators will be evolved for assessing adaptation benefits of the actions.

These Eight National Missions, taken together, with enhancements in current and ongoing programmes included in the Technical Document, would not only assist the country to adapt to climate change, but also, importantly, launch the economy on a path that would progressively and substantially result in mitigation through avoided emissions.

## **Institutional Arrangements for Managing Climate Change Agenda**

In order to respond effectively to the challenge of climate change, the Government has created an Advisory Council on Climate Change, chaired by the Prime Minister. The Council has broad based representation from key stake-holders, including Government, Industry and Civil Society and sets out broad directions for National Actions in respect of Climate Change. The Council will also provide guidance on matters relating to coordinated national action on the domestic agenda and review of the implementation of the National Action Plan on Climate Change including its R&D agenda.

The Council chaired by the Prime Minister would also provide guidance on matters relating to international negotiations including bilateral, multi-lateral programmes for collaboration, research and development.

The NAPCC will continue to evolve, based on new scientific and technical knowledge as they emerge and in response to the evolution of the multilateral climate change regime including arrangements for international cooperation.



