

# **ACTION ON CLIMATE CHANGE**

## **INTRODUCTION**

### **WHAT IS CLIMATE CHANGE?**

Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas.

Burning fossil fuels generates greenhouse gas emissions that act like a blanket wrapped around the Earth, trapping the sun's heat and raising temperatures.

The main greenhouse gases that are causing climate change include carbon dioxide and methane. These come from using gasoline for driving a car or coal for heating a building, for example. Clearing land and cutting down forests can also release carbon dioxide. Agriculture, oil and gas operations are major sources of methane emissions. Energy, industry, transport, buildings, agriculture and land use are among the main sectors causing greenhouse gases.

### **People are experiencing climate change in diverse ways**

Climate change can affect our health, ability to grow food, housing, safety and work. Some of us are already more vulnerable to climate impacts, such as people living in small island nations and other developing countries. Conditions like sea-level rise and saltwater intrusion have advanced to the point where whole communities have had to relocate, and protracted droughts are putting people at risk of famine. In the future, the number of "climate refugees" is expected to rise.

### **What Is Causing Earth's Climate to Change?**

Many things can cause climate to change all on its own. Earth's distance from the sun can change. The sun can send out more or less energy. Oceans can change. When a volcano erupts, it can change our climate.

Most scientists say that humans can change climate too. People drive cars. People heat and cool their houses. People cook food. All those things take energy. One way we get energy is by burning coal, oil and gas. Burning these things puts gases into the air. The gases cause the air to heat up. This can change the climate of a place. It also can change Earth's climate.

### **Action plan by Indian government**

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

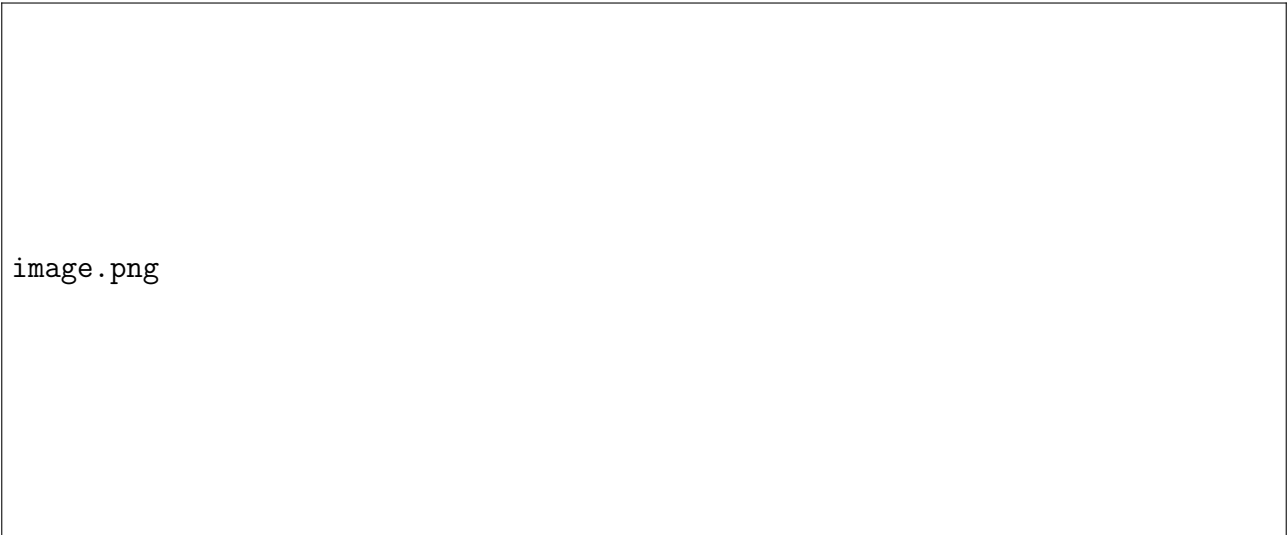


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Figure 1: statistics of climate change

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.

## 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 Government of India launched National Action Plan on Climate Change (NAPCC) on 30th June, 2008 outlining eight National Missions on climate change. These include:

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 Eco-system
6. National Mission for a Green India
7. National Mission for Sustainable Agriculture
8. National Mission on Strategic Knowledge for Climate Change

#### 1. 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.

#### 2. 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 11th Five Year Plan in 2012. To enhance energy efficiency, four new initiatives will be put in place.

#### 3.. 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.

#### 4.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.

#### 5.. 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.

#### 6. National mission on Green India

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%. The Mission on Green India will be taken upon 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 crore 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.

#### 7. 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.

#### 8. 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.

### **Programme Implementation**

The implementation is carried out through a mix of top down and bottom up approaches by carrying out pro-active objective mapping of institutions and scientists for consideration of support. Project formulation is adopted for the co-development of project proposals with various stakeholders. Society and policy interventions are integrated at the project formulation stage itself. Coordinated efforts for strong linkages with all line ministries working in climate change domain are vital for creating synergism in the field. In addition, creation of inter-linkagages amongst institutions and programmes supported by Climate Change Programme are also essential for developing a network of institutions and investigators working in the CC science and nurturing them on a longer-term basis.

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