

India's Climate Action — NAPCC, SAPCC vis-à-vis NDC

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From the Director's Desk

Climate change is an immediate issue that affects economies, ecosystems, and lifestyles worldwide; it is no longer a distant or abstract problem. The need for swift and coordinated climate action is highlighted by the increasing frequency of extreme weather events, rising temperatures, water stress, and biodiversity loss. In a nation like India, where climate vulnerability and development priorities are closely intertwined, it is more crucial than ever to integrate sustainability into planning, financing, and administration.

India has emerged as a constructive and prominent voice in global climate negotiations, persistently arguing for equality, climate justice, and common but differentiated responsibilities. India's updated Nationally Determined Contributions (NDCs) demonstrate a strong commitment to balancing developmental aspirations with climate responsibility, with ambitious targets for emissions intensity reduction, renewable energy expansion, carbon sinks, and the promotion of sustainable lifestyles under the LIFE movement.

This edition of Climate Lens, titled "India's Climate Action *i.e.*, NAPCC, SAPCC vis-à-vis NDC," aims to decipher the architecture of India's climate response by looking at the connections between international pledges and domestic action. The emphasis is on understanding how the National Action Plan on Climate Change (NAPCC) and State Action Plans on Climate Change (SAPCCs) implement India's NDC commitments on the ground. The purpose of this topic is to provide policymakers, practitioners, financial institutions, and other stakeholders with clarity on alignment, implementation paths, and possibilities for boosting climate-resilient development across sectors and regions.

India's Climate Policy Landscape

The vulnerability assessment and adaptation studies of climate change were made in various areas such as water

resources, agriculture, forests, natural eco-systems, coastal zones, health energy and infrastructure as a part of the Initial National Communication of India to the United Nations Framework Convention on Climate Change (UNFCCC). Further, based on the report of Expert Committee on Impact of Climate Change set up by the Ministry of Environment & Forests in June 2007, a range of policies and programmes were initiated to address the problem of climate change in the context of sustainable development especially the impact of climate change on six areas, namely water resources, agriculture, Natural Ecosystem, Health, Coastal Zone Management and Climate modelling. The Government of India launched the National Action Plan on Climate Change (NAPCC) in the year 2008 as the country's overarching framework for addressing climate change concerns and fostering long-term economic growth. It outlines a strategic vision and guiding principles for incorporating climate change mitigation and adaptation into national development priorities. The NAPCC seeks to reduce greenhouse gas emissions, improve energy efficiency, expand renewable energy, protect natural resources, and build India's resilience to climate change.

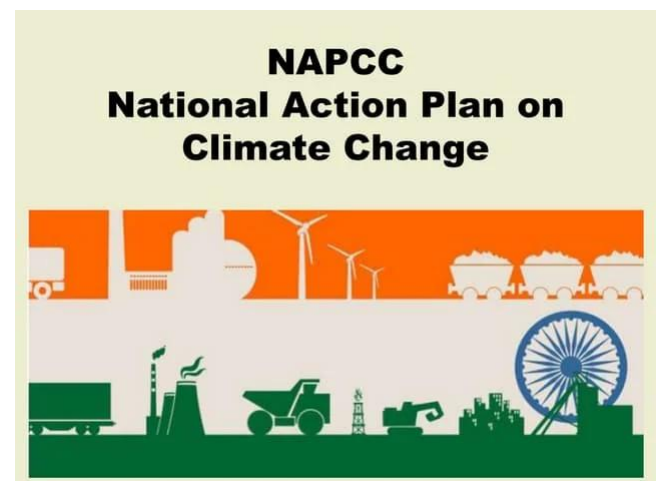


Figure 1: National Adaptation Plan on Climate Change

The guiding principle of NAPCC are: (i) Protecting the poor through an inclusive and sustainable development strategy, sensitive to climate change, (ii) Achieving national growth and poverty alleviation objectives while ensuring ecological sustainability, (iii) Efficient and cost-effective strategies for end-use demand-side management, (iv) Extensive and

accelerated deployment of appropriate technologies for adaptation and mitigation, (v) New and innovative market, regulatory, and voluntary mechanisms for sustainable development. (vi) Effective implementation through unique linkages with civil society, LGUs, and public-private partnerships. There are 08 national missions under NAPCC.

An Overview of the Eight National Missions under NAPCC

Mission	Focus/ Objective
National Solar Mission (NSM)	Expand solar energy capacity to reduce fossil fuel dependence and promote renewable energy transition.
National Mission for Enhanced Energy Efficiency (NMEEE)	Improve energy efficiency in industry, buildings, and appliances to reduce emissions intensity of GDP.
National Mission on Sustainable Agriculture (NMSA)	Promote climate-resilient farming practices, resource efficiency, and food security under changing climatic conditions.
National Mission on Sustainable Habitat (NMSH)	Encourage energy-efficient buildings, sustainable urban planning, and effective waste management.
National Water Mission (NWM)	Ensure integrated water resource management, water-use efficiency, and conservation to address climate-induced water stress.
National Mission for a Green India (GIM)	Enhance forest and tree cover to improve ecosystem services and create additional carbon sinks.
National Mission on Strategic Knowledge for Climate Change (NMSKCC)	Strengthen research, climate modelling, data systems, and capacity building for informed decision-making.
National Mission for Sustaining the Himalayan Ecosystem (NMSHE)	Conserve the fragile Himalayan ecosystem, protect biodiversity, and improve resilience of mountain communities.



Figure 2: Overview of NAPCC Missions

India's climate action framework is a multi-tiered and integrated approach where the National Action Plan on Climate Change (NAPCC) and the State Action Plans on Climate Change (SAPCC) serve as the domestic implementation mechanisms for achieving the internationally Nationally Determined Contributions (NDC) commitments under the Paris Agreement.

The Connection Framework: The NAPCC, SAPCC, and NDC commitments are connected through a top-down and bottom-up policy alignment. India's NDCs are the formal pledges made to the United Nations Framework Convention on Climate Change (UNFCCC) under the Paris Agreement. These define India's national targets for reducing emissions intensity, increasing non-fossil fuel capacity, and creating carbon sinks.

National Action Plan on Climate Change (NAPCC): Launched in 2008, the NAPCC is the overarching national strategy that guides India's response to climate change. It comprises eight core missions designed to promote sustainable development while addressing climate challenges. The missions under the NAPCC have been updated to align with the enhanced NDC targets.

Sub-national Implementation through State Action Plans for Climate Change (SAPCC): The NAPCC mandates that all States and Union Territories prepare their own SAPCCs. These plans translate the national objectives into region-specific strategies, considering local vulnerabilities, priorities, and resources (e.g., coastal region adaptation in Kerala, water management in drought-prone areas). The SAPCCs are explicitly aligned with the broader NAPCC framework and the NDC goals.

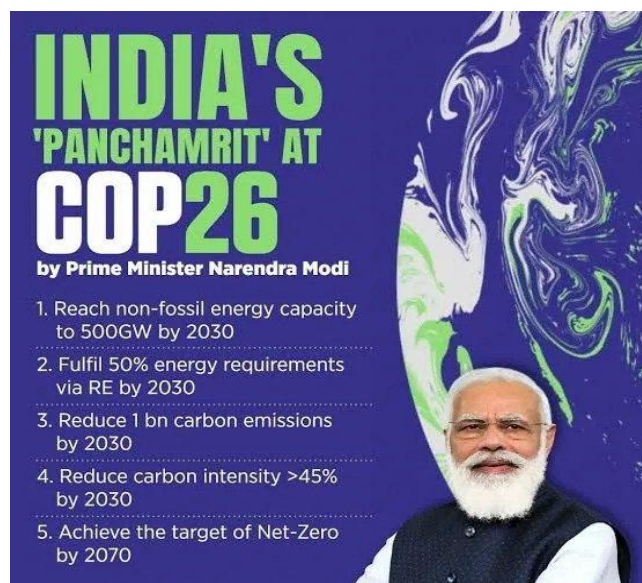


Figure 3: India's Panchamrit at 'COP 26'

India's Climate Action: Connecting NAPCC, SAPCC

Key NDC Commitments and Alignment: India's updated NDC (submitted in August 2022) translates its 'Panchamrit' (five nectar elements) announcement at COP26 into concrete targets for 2030:

NDC Commitment	NAPCC/ SAPCC Alignment
Reduce Emissions Intensity of GDP by 45% from 2005 levels.	Implemented through missions like the National Mission for Enhanced Energy Efficiency (NMEEE) and the promotion of green transport and industries.
Achieve 50% cumulative electric power installed capacity from non-fossil fuel sources.	Driven by the National Solar Mission and the push for renewable energy generation across states.
Create an additional carbon sink of 2.5 to 3 billion tonnes of CO ₂ equivalent through forest/tree cover.	Executed via the National Mission for a Green India.
Propagate a mass movement for 'LiFE' (Lifestyle for Environment).	Integrated into various schemes that promote sustainable living and citizen contributions.

Alignment of National and Sub-National Strategies with India's Global Climate Targets

In essence, the NAPCC and SAPCC provide operational and decentralised roadmap for India to achieve its ambitious, nationally determined contributions on the global stage.

At the **national level**, the **NAPCC** serves as the principal framework for operationalising India's NDCs. Its thematic missions, covering renewable energy, energy efficiency, sustainable agriculture, water, ecosystems, and strategic knowledge, directly correspond to India's commitments to reduce emissions intensity, expand non-fossil energy capacity, enhance carbon sinks, and promote sustainable lifestyles. Sectoral policies and flagship programmes further reinforce these missions by integrating climate objectives into development planning.

At the **sub-national level**, **State Action Plans on Climate Change (SAPCCs)** translate national priorities into region-specific strategies. States assess local climate risks and vulnerabilities and align mitigation and adaptation actions with NAPCC missions and NDC targets. This allows states to prioritise interventions such as renewable energy deployment, climate-resilient agriculture, forest conservation, urban resilience, and water security in

accordance with their unique socio-economic and environmental conditions.



Figure 4: India's NDC Commitments & NAPCC/ SAPCC Alignment

Vertical integration between the NDCs, NAPCC, and SAPCCs is strengthened through **policy guidance, financing mechanisms, capacity building, and monitoring frameworks**. Central ministries provide technical and financial support, while states play a critical role in implementation and innovation. Increasingly, climate considerations are also being embedded in budgeting, financial regulation, and project appraisal, ensuring that climate goals influence decision-making across sectors.

Together, this alignment enables India to pursue its global climate commitments while advancing national development priorities. By linking international targets with national missions and state-level action, India's climate governance framework promotes coherence, accountability, and scalability, being the key elements for achieving long-term climate resilience and low-carbon growth.

State Action Plans on Climate Change (SAPCC): Implementation Framework for India's Climate Response

When it comes to addressing climate change in a country as geographically diverse as India, a one-size-fits-all approach simply doesn't work. From the Himalayan glaciers in the

north to coastal areas in the south, each region faces unique climate vulnerabilities. This reality led India to develop State Action Plans on climate Change (SAPCC), transforming climate action from a centralized policy framework into a localized implementation strategy that recognizes regional differences. India's vast geographical expanse covers multiple agro-climatic zones, each with distinct environmental conditions and vulnerabilities. Climate data at disaggregated levels reveals that vulnerabilities and opportunities are better understood at state and local levels than through national averages alone. This understanding formed the foundation of India's decentralized climate policy approach.

Following the release of the NAPCC in June 2008, the Government of India recognized that states would be crucial for implementing climate policies effectively. In 2009, all state governments and union territories were directed to prepare their own climate change plans aligned with both state priorities and national goals. The development of SAPCCs followed a structured process designed to ensure comprehensive climate planning. After a national consultation workshop in August 2010, the Ministry of Environment, Forest and Climate Change (MoEFCC) established a common framework with sufficient flexibility for all states and union territories to prepare their respective plans. This framework included several key components. States conducted baseline assessments of current conditions, evaluated vulnerability to climate change impacts, examined future climate projections, and identified knowledge gaps. The process involved multiple stakeholders, formation of new committees, cross-sectoral deliberations, and workshops that brought together new research with existing policy programmes.

Recognizing that many states have limited capacity for developing comprehensive climate plans, international organizations like GiZ, UNDP, World Bank and UK Department for International Development provided technical assistance to states. This support helped states develop robust plans that balance adaptation and mitigation while advancing development objectives.

The UNDP partnered with MoEFCC to develop a framework for SAPCC preparation. This framework enabled consistent methodology for identification and implementation of state priorities while allowing coherent approaches to developing adaptation and mitigation options tailored to local contexts. The SAPCCs were subjected to an approval process before implementation from MoEFCC, to ensure alignment with national climate goals while maintaining state-specific focus.

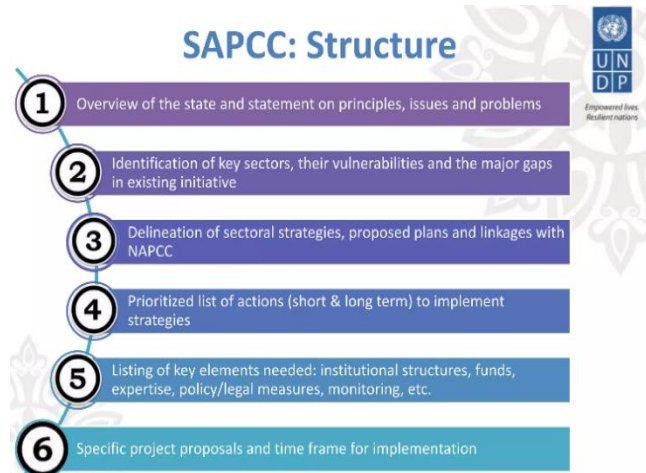


Figure 5: Structure of SAPCC

States assess their specific vulnerabilities, whether to sea level rise, changing monsoon patterns, glacier retreat, or agricultural impacts. They then develop targeted strategies that address these vulnerabilities while considering local economic, social, and environmental conditions. For example, coastal states focus heavily on sea level rise and cyclone preparedness, while Himalayan states emphasize glacier monitoring and mountain ecosystem preservation. The plans typically address key sectors including agriculture, water resources, forestry, energy, urban development, health, and disaster management. Each state prioritizes sectors based on their specific climate vulnerabilities and economic profile. This sector-specific approach ensures that climate action integrates with existing development programs rather than creating parallel structures.



Figure 6: Key Objectives of SAPCC

The financial requirements for implementing these plans were substantial with a combined budgetary requirement of approximately Rs 11.32 lakh crore for implementing all the SAPCCs, reflecting the scale of climate action needed across India's diverse regions.



Figure 7: India's Climate Finance Requirement

As of recent updates, 34 states and union territories have prepared their SAPCCs. This represents significant progress in India's decentralized climate planning effort. These plans outline sector-specific and cross-sectoral priority actions, including adaptation measures and climate resilient infrastructure development. These SAPCCs are designed to address both adaptation and mitigation needs while simultaneously advancing India's development objectives by identifying measures that yield benefits across multiple sectors, recognizing that climate action doesn't happen in isolation from broader development goals.

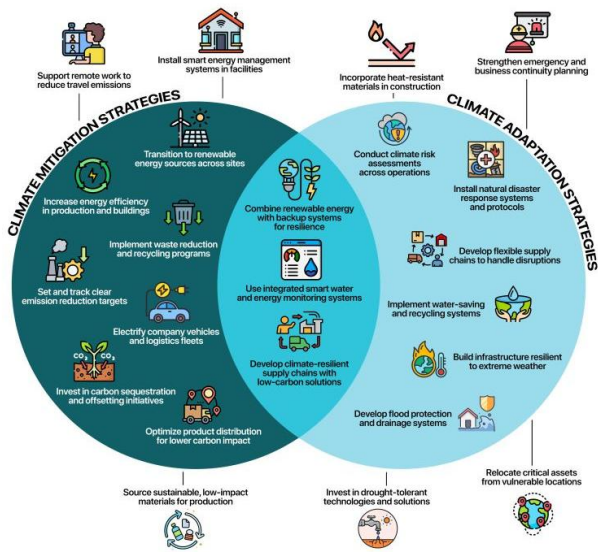


Figure 8: Climate Change Mitigation and Adaptation Strategies

Despite the comprehensive planning process, implementation faces several challenges. Resource constraints represent a significant hurdle, as states often assume funding would come from central government or international sources. The sheer scale of required investment makes financing a persistent challenge. Institutional capacity varies significantly across states.

Drawing from the sources, the following table details the major interventions and adaptation strategies proposed by

the eight major states. These interventions are primarily implemented through existing sectoral programmes and schemes as part of the State Action Plans on Climate Change (SAPCC).

State	Agro-climatic / Regional Context	Key Climate Risks	Major Gaps Identified in SAPCC	Proposed Priority Interventions
Gujarat	Gujarat Plains & Hills, Coastal Belt	Droughts, heatwaves, sea-level rise, cyclones	Weak coastal adaptation focus; low allocation to agriculture & vulnerable communities	Coastal zone climate adaptation planning; mangrove & bioshield restoration; climate-resilient agriculture; livelihood diversification for coastal communities
Madhya Pradesh	Central Plateau & Hills	Droughts, forest degradation, heat stress	Limited district-level vulnerability assessments; weak energy focus	District-wise vulnerability mapping; forest-water-agriculture integrated adaptation; climate-resilient farming systems
Mizoram	Eastern Himalayan Region	Landslides, heavy rainfall, forest degradation	No detailed vulnerability assessment or climate projections	Himalayan ecosystem resilience; landslide risk mapping; community-based forest and water management
Odisha	Eastern Plateau & Coastal Plains	Cyclones, floods, droughts, coastal erosion	Agriculture & water under-prioritized; weak future climate projections	Coastal resilience planning; climate-resilient agriculture & fisheries; disaster risk reduction integration
Punjab	Trans-Gangetic Plains	Heat stress, groundwater depletion, crop vulnerability	Minimal stakeholder consultation; weak agriculture & water focus	Sustainable water management; crop diversification; climate-smart agriculture; farmer income protection mechanisms
Tamil Nadu	Southern Plateau & Coastal Region	Cyclones, droughts, sea-level rise	Limited stakeholder consultation; partial vulnerability assessment	District-level climate projections; urban & coastal adaptation; water security and heat action plans
Uttar Pradesh	Upper & Middle Gangetic Plains	Floods, heatwaves, agriculture stress	Micro-level sectoral vulnerability missing	District-level sectoral vulnerability mapping; climate-resilient agriculture; flood & heatwave preparedness
Uttarakhand	Western Himalayan Region	Landslides, flash floods, glacier retreat	Absence of detailed vulnerability & projection studies	Mountain-specific climate risk mapping; disaster-resilient infrastructure; community-based adaptation

States with stronger environmental departments and research institutions tend to develop more robust plans and implement them more effectively. Others struggle with coordination across multiple departments and sectors. The top-down approach to SAPCC development has sometimes led to lack of leadership and political will at the state level. When climate change strategies are perceived as externally imposed rather than locally driven, implementation suffers. Additionally, monitoring and evaluation of ongoing activities

remain weak, making it difficult to track progress and adjust strategies.

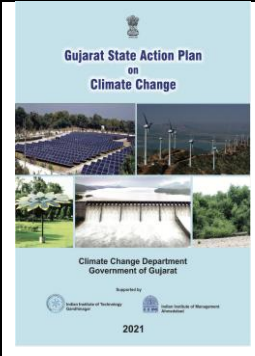
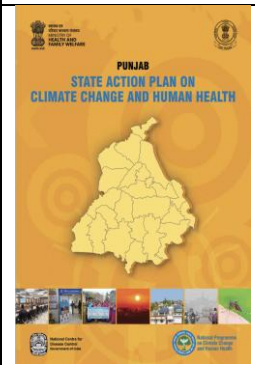
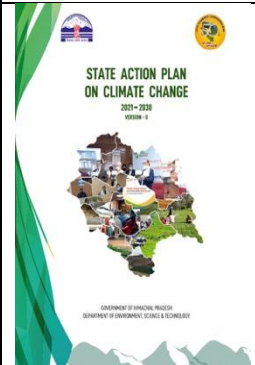
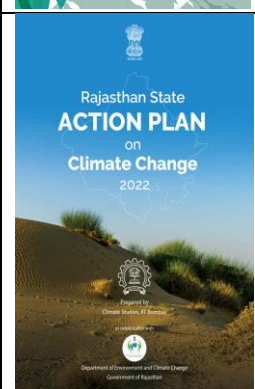
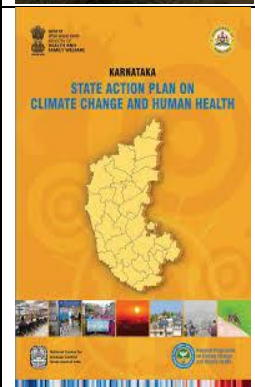
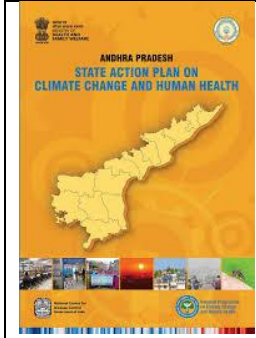

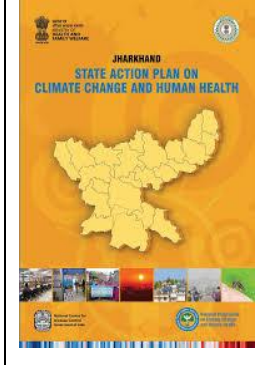
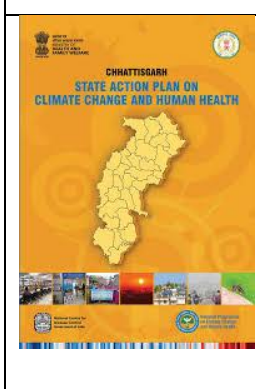
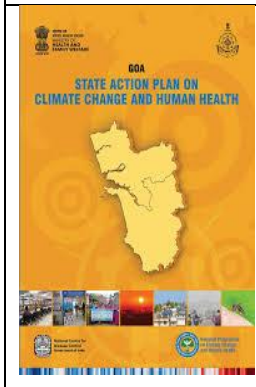
Building state-level capacity for climate action extends beyond plan preparation. The Department of Science and Technology has established State Climate Change Centres in some states to conduct vulnerability assessments, provide institutional capacity building, and organize training programs for government officials, researchers, and community organizations. These centres also work to raise awareness about climate change and its impacts among the public, helping build broader support for climate action. The focus on capacity building recognizes that effective climate response requires skilled personnel at multiple levels of government and society.

The development of State Action Plans on Climate Change represents an important milestone in India's climate policy. These plans acknowledge that climate vulnerabilities and response strategies must be tailored to local contexts rather than imposed uniformly across the country. The framework provides states with the flexibility to address their specific challenges while ensuring alignment with national climate goals. As implementation progresses, the focus is shifting from plan preparation to actual execution of climate actions on the ground. Success will depend on sustained political commitment, adequate financing, strong institutional capacity, and effective coordination across sectors and levels of government.

Salient Features of SAPCCs of States

	<ul style="list-style-type: none"> • Prioritize sustainable agriculture, solar energy, energy efficiency, sustainable habitat, water resources, and strategic knowledge. • Establishment of the Climate Change Authority (UPCCA) to facilitate, implement, and monitor the plan. • Promotion of renewable energy, energy audits, and increasing green cover. • Focus on water conservation, drought management, climate-resilient agriculture, and health sector initiatives.
	<ul style="list-style-type: none"> • Primary focus is on vulnerability assessment and developing adaptation strategies for critical sectors, including agriculture, water, forestry, and health. • Prioritize Gender and Climate Change issues, participatory and consultative processes, and access to climate finance. • Ensure that state actions, including the long-term low-carbon development strategy, align with India's Net Zero targets and the "Viksit Madhya Pradesh@2047" agenda.

	<ul style="list-style-type: none"> • Four Core Pillars: <ul style="list-style-type: none"> ✓ Tamil Nadu Climate Change Mission (TNCCM) ✓ Green Tamil Nadu Mission (GTNM) ✓ Tamil Nadu Wetlands Mission (TNWM) ✓ Tamil Nadu Coastal Restoration Mission (TN SHORE) • Emphasize "hard" (infrastructure, engineering) and "soft" (institutional, social) adaptations to manage climate change risks.
	<ul style="list-style-type: none"> • Promotion of climate-resilient crop varieties (short-duration pulses/millet), and sustainable water management. • Strategies for agriculture, water, health, tourism, and forests, alongside mitigation measures in energy, transportation, and industry. • State Cooling Action Plan (aligned with India's NAPCC) to address rising temperatures and set up cold chain to reduce food waste. • "Maji Vasundhara" initiative, focusing on actionable, district-level, and, in some cases, village-level planning.
	<ul style="list-style-type: none"> • Prioritizes sustainable agriculture through water resource, forestry, biodiversity, energy efficiency and sustainable habitat management. • Capacity building of farmers for resilient agricultural practices. • Renewable energy for low emission. • Integrating climate adaptation with disaster management risk mitigation strategies. • Establishing climate cells at various levels to implement strategies. • "Green Budget" for implementing projects related to sustainable development.
	<ul style="list-style-type: none"> • Identifies investments in flood management, infrastructure, and disaster relief, including upgrading 15 District Emergency Operations Centers (EOCs) and creating 50 Circle Quick Response Teams. • Enhanced training for local emergency response teams and development of 50 Village Disaster Mitigation Plans (VDMPs). • Integrating climate adaptation and mitigation actions with SDGs to track development progress.
	<ul style="list-style-type: none"> • Focus on agriculture, water, health, habitat, and forestry, with specialized strategies for the sensitive Sundarbans and Darjeeling Himalayan regions. • Equip medical colleges and district hospitals with CCU/ HDU facilities to handle climate-induced illnesses. • Integrate flood, drought & cyclone risk reduction in development planning. • Promotes research, data sharing, and technology transfer for climate-resilient agriculture and natural resource management.

 <p>Gujarat State Action Plan on Climate Change Climate Change Department Government of Gujarat 2021</p>	<ul style="list-style-type: none"> • Significant focus on green energy transition, including development of large solar parks and rooftop solar. • Managing vulnerabilities to climate change, including restoration of mangroves and protection of saline deserts. • Promotion of low-carbon industrial growth, green hydrogen pilots, and sustainable, zero-waste initiatives. • Data-driven approaches to climate risks - Gujarat Climate Action Tracker.
 <p>PUNJAB STATE ACTION PLAN ON CLIMATE CHANGE AND HUMAN HEALTH</p>	<ul style="list-style-type: none"> • Promotion to Direct Seeded Rice (DSR) for crop diversification, and agro-forestry for water conservation • Straw management machinery to mitigate stubble burning. • Pilot scheme on "Paani Bachao Paise Kamao," which uses DBT to incentivize electric power saving for irrigation. • Promotion of solar power • Establishing a State Climate Change Knowledge Centre for capacity building
 <p>STATE ACTION PLAN ON CLIMATE CHANGE 2011-2030 VISION-2 DEPARTMENT OF FINANCIAL SERVICES DEPARTMENT OF ENVIRONMENT, SCIENCE & TECHNOLOGY</p>	<ul style="list-style-type: none"> • Sustainable lifestyles, clean economic growth, and enhancing carbon sinks. • Conservation agriculture, crop diversification, precision farming, water management, and, stress-resilient cultivars. • Contains 73 action points, with 5 working groups for adaptation and 3 for mitigation to address climate change risks. • Health System Strengthening • Adoption of renewable energy, such as solar power for emission reduction.
 <p>Rajasthan State ACTION PLAN on Climate Change 2022 Department of Environment and Climate Change Government of Rajasthan</p>	<ul style="list-style-type: none"> • Identifies crucial sectors for action, including water resources, agriculture, health, energy, forestry, and biodiversity. • major focus is on renewable energy, with over 21000 MW of installed solar capacity and the goal of reaching 115 GW by 2030, supported by projects like the Bhadla Solar Park. • Establishment of Climate Change and Clean Development Mechanism (CDM) Cell within Rajasthan State Pollution Control Board (RSPCB) to act as the nodal agency.
 <p>KARNATAKA STATE ACTION PLAN ON CLIMATE CHANGE AND HUMAN HEALTH</p>	<ul style="list-style-type: none"> • Focus on dryland farming, weather-based cropping, and developing drought-resistant crop varieties. • 38 GW of renewable energy by 2030. • Prioritises rainwater harvesting, groundwater regulation, and the rejuvenation of lakes and open wells. • Large-scale afforestation and the creation of carbon sinks: Greening of Urban Areas" and mangrove conservation. • Enhancing electric vehicle (EV) infrastructure and public transport networks
 <p>ANDHRA PRADESH STATE ACTION PLAN ON CLIMATE CHANGE AND HUMAN HEALTH</p>	<ul style="list-style-type: none"> • Adopt climate-resilient crops, bio-fertilizers, and implementing climate-resilient dairy interventions in coastal and arid areas. • Enhancing tsunami warning system, and restoring mangroves to protect 974 km coastline from sea-level rise. • 8.5 GW of renewable energy capacity by 2031. • 100% electrification of public transport by 2030 through EV adoption. • Remodelling sewage and water supply systems.
 <p>KERALA STATE ACTION PLAN ON CLIMATE CHANGE AND HUMAN HEALTH 2022</p>	<ul style="list-style-type: none"> • Focus on reducing GHG emissions by increasing RE capacity to 3.46 GW by 2030 and increasing the share of EVs in public transport. • Promoting sustainable farming techniques, reducing on-farm energy demand by and setting up models like the carbon-neutral farm in Aluva. • Decentralized waste management • Green building practices through mandatory rooftop solar installations for buildings above 500 square meters. • Disaster and Climate Action Tracking (DCAT)
 <p>JHARKHAND STATE ACTION PLAN ON CLIMATE CHANGE AND HUMAN HEALTH</p>	<ul style="list-style-type: none"> • Address climate impacts on agriculture, forestry, health, industry, mining, power, transportation, and water sectors. • Reduce morbidity, mortality, and health vulnerabilities, with a specific focus on children, women, and marginalized groups. • Efforts to reduce GHG emissions from mining heavy industries. • Recognizes 14 districts as critically vulnerable, with specific focus needed on high agriculture vulnerability.
 <p>CHHATTISGARH STATE ACTION PLAN ON CLIMATE CHANGE AND HUMAN HEALTH</p>	<ul style="list-style-type: none"> • 08 key sectors: Agriculture, Forestry & biodiversity, Water resources, Urban development, Transport, Energy, Industry & mining, and Human health. • Twofold strategy of "adaptation from forests" and "forests for adaptation" to manage climate risks. • Emissions reduction from mining and energy sectors, aiming for sustainable industrial practices. • Mitigation of health risks from climate-sensitive illnesses. • 'Mukhyamantri Vriksh Sampada Yojana' to increase carbon sinks.
 <p>GOA STATE ACTION PLAN ON CLIMATE CHANGE AND HUMAN HEALTH</p>	<ul style="list-style-type: none"> • Covers various sectors including power, transportation, waste management, agriculture, and forests to create a cohesive climate response. • Emphasizes protecting coastal areas, particularly in districts like North and South Goa experiencing significant sand erosion through infrastructure vulnerability assessments. • Strict plastic ban, waste treatment facilities, and the protection of mangroves and traditional <i>Khazans</i> (wetlands). • Establishment of Goa State Climate Change Cell (GSCCC).

Gaps in alignment between India's NDCs, national missions, and state action plans

The figure illustrates critical misalignment points between national climate commitments (NDCs), implementation mechanisms under the National Action Plan on Climate Change (NAPCC), and State Action Plans on Climate Change (SAPCCs). Key gaps include uneven state capacities, financing limitations, implementation bottlenecks, and weaknesses in data availability and monitoring, which collectively affect progress toward NDC targets.

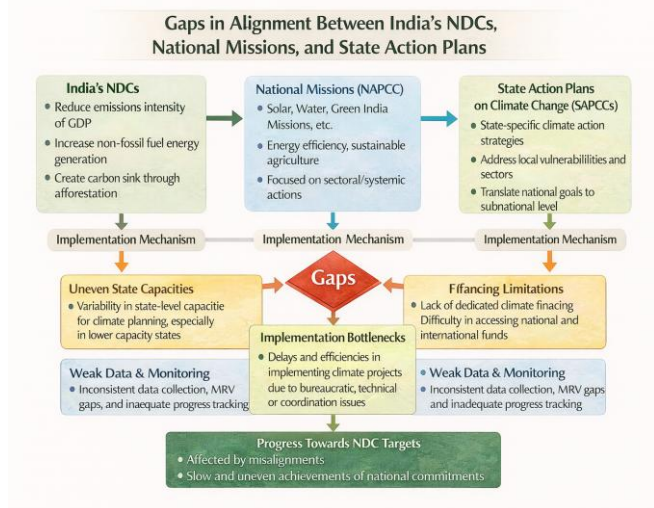


Figure 9: Gaps in Alignment between India's NDCs, National Missions and State Action Plans

Addressing existing gaps presents significant opportunities to strengthen the alignment between India's NDC commitments and national and sub-national climate action frameworks. Strategic interventions across governance, finance, data systems, and capacity building can substantially enhance implementation effectiveness.

Policy Watch: What is new in India's Climate Action?

1. New Government Initiatives

- Lifestyle for Environment (LiFE) Mission** promoting low-carbon, sustainable lifestyles through citizen participation.
- National Green Hydrogen Mission** to accelerate decarbonisation in industry, transport, and energy sectors.
- National Carbon Market Framework** enabling emissions trading and market-based mitigation mechanisms.

- Mission LiFE-linked programmes** across urban development, waste management, and energy efficiency sectors.
- Climate-resilient agriculture initiatives** under NAFCC, PM-KUSUM, and Natural Farming missions.

2. Recent Policy Announcements

- Updated Nationally Determined Contribution (NDC) targeting:**
 - ✓ 45% reduction in emissions intensity of GDP by 2030 (from 2005 levels)
 - ✓ 50% installed electricity capacity from non-fossil fuel sources
- Long-Term Low Emissions Development Strategy (LT-LEDS)** outlining India's net-zero pathway by 2070.
- Green Finance and ESG guidelines** for banks and financial institutions, aligned with global best practices.
- Strengthening SAPCCs** with enhanced monitoring, climate budgeting, and integration into state development plans.

3. Global Partnerships

- International Solar Alliance (ISA)** leadership to promote solar deployment in developing countries.
- Coalition for Disaster Resilient Infrastructure (CDRI)** for climate-proofing infrastructure globally.
- G20 Climate Action Agenda** focusing on climate finance, adaptation, and energy transitions.
- Green Climate Fund (GCF) & Adaptation Fund (AF)** engagement through NABARD as National Implementing Entity (NIE).
- Bilateral and multilateral collaborations** on green hydrogen, climate-smart agriculture, and low-carbon technologies.



Figure 10: Policy Watch: What is new in India's Climate Action

Opportunities for better integration of NDCs with National and State Action Plans

1. Strengthening Monitoring, Reporting, and Verification (MRV) Systems:

Robust MRV systems are central to tracking progress toward NDC targets and ensuring transparency and accountability.

- Development of standardised MRV frameworks applicable across states
- Integration of geospatial technologies, remote sensing, and digital dashboards for real-time monitoring
- Harmonisation of state-level reporting with national and UNFCCC reporting requirements
- Improved data quality to support evidence-based policy decisions

Strengthened MRV mechanisms can bridge the gap between planning and measurable outcomes.

2. Green Financing Mechanisms: Innovative and diversified financing instruments offer substantial potential to overcome resource constraints.

- Expansion of green bonds, blended finance, and public-private partnerships
- Integration of climate priorities into state budgeting and fiscal planning
- Enhanced access to international climate finance through improved project design and fiduciary systems
- Strengthening financial tracking of climate-related expenditures

These mechanisms can mobilise sustained financial flows aligned with NDC priorities.

3. Improved Inter-State Knowledge Sharing

Cross-learning among states provides an effective pathway to scale successful climate actions.

- Platforms for sharing best practices, policy innovations, and technological solutions
- Peer-learning networks facilitated by national institutions
- Replication of successful state-led initiatives across regions with similar contexts

Such collaboration can reduce disparities in implementation capacity and accelerate progress.

4. Capacity Building at Local Levels

Local institutions and communities play a critical role in translating climate policies into action.

- Training programs for **local governments, line departments, and technical staff**

- Strengthening district- and city-level climate planning and implementation mechanisms
- Inclusion of **community-based organisations and local knowledge systems**
- Building long-term technical and institutional capacity rather than project-specific skills

Local-level capacity building ensures sustained and inclusive climate action.

Synthesis

By leveraging these opportunities, India can move toward a more integrated, transparent, and scalable climate governance framework, ensuring that NDC commitments are effectively realised through coordinated national and state-level actions.

Achievements and Progress under NAPCC

The NAPCC, which was introduced in 2008, has given India's climate action a strategic framework that directs activities in several sectors for both adaptation and mitigation. Implementing the eight national missions, incorporating state-level policies, and encouraging multi-stakeholder participation have all seen notable advancements.

Key Achievements

- 1. Growth in Renewable Energy:** India has increased its solar power capacity under the National Solar Mission, helping to achieve the goal of 50% cumulative electricity from non-fossil fuel sources. The deployment of wind, biomass, and small hydro power has accelerated through the state-level renewable energy programs under SAPCCs.
- 2. Improvement in Energy Efficiency:** The National Mission for Enhanced Energy Efficiency (NMEEE) has implemented market transformation programs for appliances, industrial energy audits, and energy efficiency financing systems. The GDP's emissions intensity has decreased due to the widespread implementation of energy-efficient measures in urban infrastructure and industry.
- 3. Improvement of Forests and Ecosystems:** The Green India Mission has restored damaged lands and afforested millions of hectares, helping to conserve biodiversity and sequester carbon. The Himalayan Ecosystem Mission protects mountain biodiversity and Himalayan ecosystems.
- 4. Sustainable Agriculture & Water Management:** The National Mission on Sustainable Agriculture (NMSA) has advocated for soil conservation techniques, water-use efficiency, and climate-resilient crop varieties.
 - o Rainwater harvesting, watershed management, and

increased irrigation efficiency have all been made easier by the National Water Mission.

- 5. Improvement of Forests and Himalayan Ecosystems:** The Green India Mission has restored damaged lands and afforested millions of hectares, helping to conserve biodiversity and sequester carbon. The Himalayan Ecosystem Mission protects mountain biodiversity and Himalayan ecosystems.
- 6. Sustainable Agriculture & Water Management of the National Mission on Sustainable Agriculture (NMSA)** has advocated for soil conservation techniques, water-use efficiency, and climate-resilient crop varieties. o Rainwater harvesting, watershed management, and increased irrigation efficiency have all been made easier by the National Water Mission.
- 7. Urban Sustainability:** The **National Mission on Sustainable Habitat** has advanced energy-efficient buildings, public transport initiatives, and solid waste management, reducing urban carbon footprints.
- 8. Strategic Knowledge & Capacity Building:** The **National Mission on Strategic Knowledge for Climate Change** has strengthened climate research, data systems, modelling, and capacity-building programs for policymakers, industry, and civil society.
- 9. Promotion of Sustainable Lifestyles:** Integration of the **LiFE (Lifestyle for Environment) movement** into NAPCC-related programmes has encouraged citizens and communities to adopt low-carbon and sustainable practices.

With quantifiable advancements in renewable energy, energy efficiency, carbon sequestration, climate-resilient agriculture, and sustainable urban development, the NAPCC has played a key role in converting India's international climate obligations into tangible national and sub-national action.

Progress Highlights

As of mid-2025, India has made significant strides under the NAPCC, with several key milestones achieved well ahead of the 2030 deadline. The framework has successfully transitioned India towards a lower-carbon economy, with a major emphasis on solar energy, energy efficiency, and expanding carbon sinks.

1. Energy Transition and Renewable Energy (National Solar Mission)

- **Solar Capacity Milestone:** India's installed solar energy capacity increased over 41 times, growing from 2.82 GW in 2014 to 116.25 GW by June 2025.
- **Non-Fossil Fuel Goal:** In June 2025, India reached a major milestone by achieving 50% of its installed

electric power capacity from non-fossil fuel sources, five years ahead of the 2030 target.

- **Total Renewable Capacity:** India crossed 203.22 GW of renewable energy capacity, ranking 4th globally in wind and solar power installed capacities.

2. Energy Efficiency (NMEEE)

- **Industrial Efficiency:** The Perform, Achieve and Trade (PAT) scheme has led to significant energy savings, reducing emission intensity.
- **Emission Reduction:** Between 2005 and 2020, India reduced the emission intensity of its GDP by 36%.
- **Lighting and Appliances:** The UJALA scheme distributed over 360 million LED bulbs, significantly reducing annual CO₂ emissions.

3. Forest Cover and Carbon Sinks (Green India Mission)

- **Carbon Sink Expansion:** India ranked 5th among the top global carbon sinks, with its forests removing 150 Mt of CO₂ per year during 2021-2025.
- **Afforestation:** Under the Green India Mission and related initiatives, afforestation activities were facilitated on 11.22 million hectares between 2015-16 and 2020-21.
- **Tree Plantation Drive:** By January 2025, 109 crore saplings were planted under the 'Ek Ped Maa Ke Naam' campaign, with a goal of 140 crore by March 2025.
- **Global Forest Rank:** India improved its position to 9th globally in total forest area, as per the 2025 Forest Resources Assessment.

4. Sustainable Habitat and Urban Development (NMSH)

- **Water and Sewerage:** Through the AMRUT and Smart Cities missions, 4.14 crore water connections and 2.32 crore sewer connections were provided, with a 6000 MLD sewage treatment capacity developed.
- **Waste Management:** Regulatory frameworks for Extended Producer Responsibility (EPR) were established for plastic, tires, and e-waste to promote a circular economy.

5. Water Conservation and Agriculture (NWM & NMSA)

- **Irrigation Efficiency:** The National Water Mission has pushed for a 20% improvement in water-use efficiency.
- **Soil Health:** The Soil Health Card Scheme (launched in 2015) has provided millions of farmers with nutrient status information to optimize fertilizer use.
- **Coastal Protection:** 22,561 hectares of mangroves were restored by June 2024 through the MISHTI initiative.

6. Institutional and Strategic Knowledge (NMSHE & NMSKCC)

- State Action Plans: 34 States and UTs have prepared their State Action Plans on Climate Change (SAPCC) to align with the national goals.
- Scientific Capacity: Over 250 state-level training programs were organized, training more than 50,000 people, along with the establishment of 11 state climate change cells.

Overall Impact: India is on track to surpass its Nationally Determined Contributions (NDCs) under the Paris Agreement. The country has successfully decoupled economic growth from greenhouse gas emissions, with a 36% reduction in emission intensity between 2005 and 2020.

Recent Initiatives of NABARD Implementation of Climate Change Projects

NABARD prioritises investments that promote sustainable livelihoods across India's diverse rural landscape. The availability of varied funding sources, combined with a collaborative implementation approach, enables NABARD to address a wide range of concerns in climate-vulnerable regions. These initiatives are supported through a blend of international and national climate finance mechanisms, including the Adaptation Fund (AF), the National Adaptation Fund for Climate Change (NAFCC), and the Green Climate Fund (GCF).

Up to 31 March 2025, NABARD has supported 40 climate change projects across India, with a total commitment of ₹1,971.6 crores. While the AF and NAFCC primarily support adaptation, disaster risk reduction, and ecosystem restoration, the GCF focuses on mitigation initiatives such as clean energy and sustainable infrastructure.

Through its role as an NIE, implementing partner, and fund manager, NABARD integrates **international climate finance with national priorities**, catalysing **climate-resilient and low-carbon development in rural India**. Its initiatives strengthen institutional capacities, support adaptation in vulnerable sectors, and enable scalable solutions aligned with India's **NAFCC, SAPCC, and NDC commitments**.

1. Policy landscape

- NABARD contributed to several national-level policy dialogues and provided inputs for framing guidelines, including those on climate-resilient agriculture, the National Adaptation Plan, the climate finance taxonomy, and the implementation

framework for voluntary carbon markets (VCMs) in the agriculture, fisheries, and aquaculture sectors.

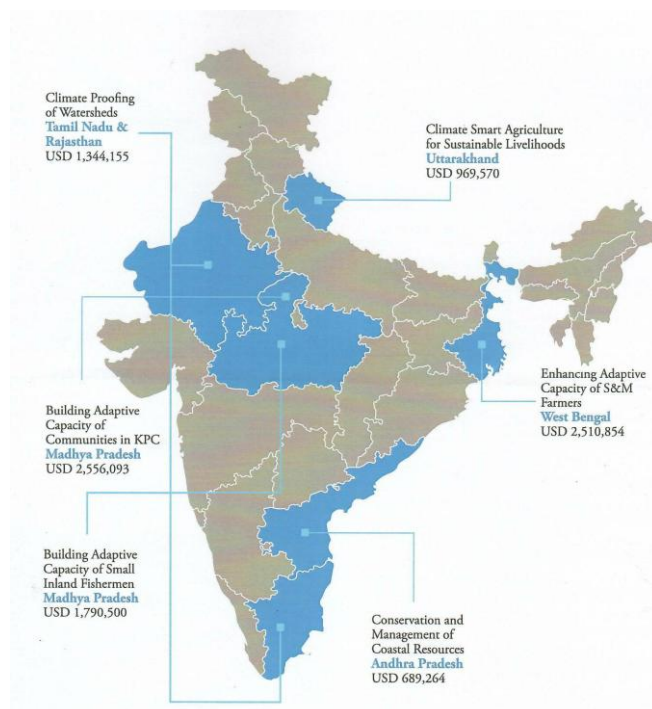


Figure 10: Projects supported under Adaptation Fund (AF)

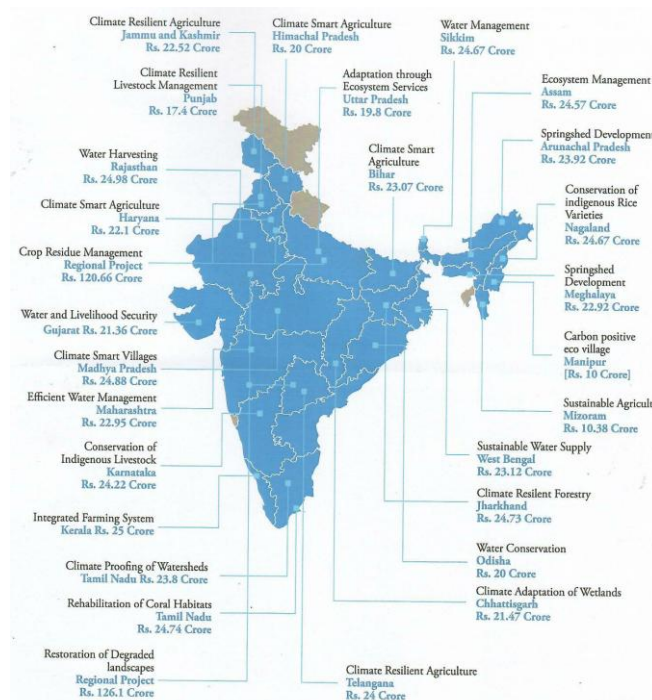


Figure 11: Projects supported under National Adaptation Fund for Climate Change (NAFCC)

- NABARD has signed MOUs with the Ministry of Agriculture & Farmers Welfare (MoA&FW) and the Ministry of Fisheries, Animal Husbandry and Dairying to support the implementation of VCMs. Under this initiative, 11 projects were registered on the Verra Verified Carbon Standard Global Carbon Registry on behalf of MoA&FW.

- c) An MOU was signed with the National Dairy Development Board to promote sustainable and inclusive growth in the dairy sector.
- d) NABARD partnered with the Food and Agriculture Organization (FAO) of the United Nations through an MOU to develop innovative financial mechanisms for delivering broad-based benefits to farmers and stakeholders, supporting sustainable agriculture, agri-food system transformation, and rural development.
- e) NABARD@2030 Climate Strategy was launched, built on four strategic pillars:
 - ✓ Accelerating green lending
 - ✓ Market development
 - ✓ Internal green transformation
 - ✓ Strategic resource mobilisation

2. Climate finance

- a) The NABARD Green Lending Facility (NGLF), a flexible green credit product, was launched on 28 January 2025. The facility is accessible to a wide range of stakeholders, from state governments to startups engaged in rural green initiatives.
- b) A refinance product titled “Rural Home Loans Bundled with Rooftop Solar” was introduced to encourage the adoption of solar energy in rural households. The scheme offers an interest rate rebate on refinance for rural financial institutions.
- c) The Climate Change Fund–Interest Differential was operationalised using interest differential generated in FY2024.
- d) A detailed analysis of the State Action Plans on Climate Change of six states was undertaken to assess green financing potential. Based on these assessments, strategic meetings were held with the Finance Secretary, Government of West Bengal, and the Secretary, Department of Animal Husbandry and Dairying, Government of Bihar, to

understand financing needs and sensitise stakeholders about the NGLF.

- e) New green finance products were developed, targeting areas such as climate-resilient dairy systems, solar-powered agricultural pumps, rural electric mobility, and energy efficiency in agricultural value chains.

3. Other Initiatives

- a) NABARD’s green taxonomy was operationalised, tagging projects worth ₹1,842 crores as “green”. This “green portfolio” forms the basis for resource mobilisation through instruments such as “green bonds.
- b) Preliminary project reports submitted to the Government of India, in partnership with the World Bank: (i) Climate Finance Innovations for Fostering Resilience in India and (ii) Collaboration on a Green-Tagging Framework for the agriculture sector
- c) Partnership agreement with ADB for execution of the Solar Rooftop Implementation Programme in India.
- d) Proposal for financial assistance under GCF for the project “Harnessing Insurance for Climate Resilience in Indian Agriculture.” The proposal seeks \$20 million in GCF assistance as debt (total financing of \$115 million), aimed at expanding insurance coverage in the agriculture sector.
- e) Collaboration with the UNDP for scaling up Data in Climate Resilient Agriculture (DiCRA) portal on a Pan-India basis.
- f) NABARD and the Council on Energy, Environment and Water (CEEW) signed an MoU to advance climate-resilient agriculture and sustainable livelihoods in rural India.
- (g) NABARD in collaboration with the Bill & Melinda Gates Foundation and Dalberg Advisors, has launched the National Climate Stack Innovation Challenge, a national initiative aimed at developing climate intelligence solutions to strengthen resilience in agriculture and rural livelihoods across India.

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CENTER FOR CLIMATE CHANGE
BANKERS INSTITUTE OF RURAL DEVELOPMENT
Sector – H, LDA Colony, Kanpur Road, Lucknow – 226 012
e-mail: bird@nabard.org
website: birdlucknow.nabard.org

