



India's Shift from Mitigation to Adaptation in Climate Action

For Prelims: [Adaptation](#), [Mitigation](#), [Conference of the Parties 29](#), [Nationally Determined Contributions](#), [Paris Agreement](#), [Small Modular Nuclear Reactors](#)

For Mains: India's Climate Strategy and NDC Commitments, Adaptation vs. Mitigation, Energy Transition

[Source: IE](#)

Why in News?

India has signaled a shift in its climate stance by prioritizing [adaptation](#) over **emission cuts** ([Mitigation](#)).

- This reflects concerns over global inaction and weak financial commitments at [United Nations Framework Convention on Climate Change \(UNFCCC\) Conference of the Parties 29 \(COP29\)](#), further underscored by its **likely delay in submitting the 2035 [Nationally Determined Contributions \(NDCs\)](#)**.

Why is India Prioritizing Adaptation Over Mitigation?

- **Reevaluation of Global Climate Commitments:** The world is not on track to meet its emissions reduction targets for 2030 or 2035 (nations must cut [greenhouse gas emissions](#) by 42% by 2030 and 57% by 2035).
 - **Developed nations** have failed to meet their climate finance obligations, with COP29 securing only **USD 300 billion per year (starting 2035)** instead of the **USD 1 trillion** demanded by developing nations.
 - The withdrawal of the [US from the Paris Agreement](#) in 2025 has further weakened global climate action momentum.
 - India aims for **low-carbon growth at its own pace**, with energy transition driven by domestic priorities.
- **Immediate and Local Benefits:** India argues that global climate targets overlook **developing nations' immediate needs**.
 - Unlike **mitigation**, which requires global cooperation, adaptation like building climate-resilient infrastructure offers **direct, immediate benefits**, and local benefits.
 - **Economic development** enhances resilience, making prosperity a key factor in tackling climate change.
- **Economic Growth:** The [Economic Survey 2024-25](#) suggests that achieving **"developed country" status by 2047** should take precedence, allowing for a more robust and **sustainable transition to clean energy thereafter**.
 - India argues that **rapid [industrialization](#) and economic growth**, as seen in China, provide the resources necessary for **future decarbonization**.
- **Flexibility:** India is seeking greater autonomy in determining its energy transition pace, rather

than adhering to externally imposed targets.

- While **decarbonization remains a long-term goal**, India is unwilling to compromise economic growth through immediate restrictions on fossil fuel use.
- A **bottom-up approach through ground-level initiatives** is seen as more effective than top-down mandates.

Adaptation, Mitigation and Resilience

Term	Definition	Examples of Actions
Mitigation	Reducing greenhouse gas emissions and limiting climate change impacts.	▪ Transitioning to low-carbon energy sources ▪ Using carbon capture technologies ▪ Protecting forests and oceans as carbon sinks ▪ Promoting sustainable behavior (e.g., reducing travel emissions)
Adaptation	Adjusting to climate change effects to minimize harm or take advantage of benefits .	▪ Building sea-level rise defenses ▪ Protecting infrastructure from extreme weather ▪ Diversifying crops for changing climates ▪ Reducing food waste
Resilience	Enhancing the ability to anticipate, prepare for, and respond to climate-related impacts.	▪ Developing early warning systems ▪ Increasing urban green spaces for flood absorption ▪ Planting trees to mitigate urban heat effects

How is India Balancing Growth and Clean Energy Transition?

- **Low-Carbon Development:** Despite resisting strict **coal phase-down** commitments, India is expanding its **renewable energy sector**.
 - India is on track to meet its **2030 NDC targets**: India targets **50% installed electricity capacity** from **non-fossil sources** by 2030, reaching **46.8%** as of November 2024.
 - India aims to create an additional **2.5-3 billion tonnes of carbon dioxide (CO₂) sink** through forest expansion by 2030, based on 2005 levels.
 - The **Forest Survey of India (2024)** estimates a carbon sink of 30.43 billion tonnes in 2023, up from 28.14 billion tonnes in 2005, an addition of **2.29 billion**

tonnes.

- Projections indicate 31.71 billion tonnes by 2030, surpassing the NDC target.
- **India targets a 45% reduction in [GDP emissions intensity by 2030](#)**. As of 2019, it has already achieved a 33% reduction from 2005 levels.
- **[Solar and wind energy](#) investments remain a priority**, with ambitious targets for hydrogen energy development.
 - The installed renewable electricity generation capacity is as follows: Solar (20.6%), Wind (10.5%), Hydro (10.3%), and Nuclear (1.8%).
- **Domestic Clean Energy:** India aims to reduce its dependence on **foreign supply chains for clean energy** technologies like [solar panels](#), [electric batteries](#), through a new [National Manufacturing Mission](#) (announced in **Union Budget 2025-26**).
 - Policies are being designed to support indigenous production of solar cells, wind turbines, and battery storage solutions.
- **Developing SMRs:** Recognizing its slow progress in nuclear energy, India is now pushing for indigenous [Small Modular Nuclear Reactors \(SMRs\)](#) to enhance energy security.
- **Delay in Submitting 2035 NDCs:** India has postponed its 2035 climate commitments to later in 2025, likely to negotiate better financial terms at COP30 in Brazil.
 - Holding back allows India to adjust its targets based on domestic priorities and global climate finance developments.

Note: NDCs are country-specific climate action plans to cut emissions and adapt to climate change under the [Paris Agreement](#), updated **every five years**.

- The existing NDCs, submitted in 2020, pertain to the 2030 period, with 2035 submissions by 10th February 2025. The **2035 NDC must build on the 2030 targets**, but countries set their own progression based on resources.

How has India's Role in Global Climate Governance Evolved?

Click Here to Read: [India's Role in Global Climate Governance](#)

What are India's Key Climate Adaptation Initiatives?

- **National Adaptation Plan (NAP):** Developed by the **Ministry of Environment, Forest and Climate Change (MoEFCC)** to align with [Sustainable Development Goals \(SDGs\)](#)
 - Focuses on **climate resilience across sectors**, including agriculture, water management, and urban planning.
- **Adaptation in Agriculture:** [Heat](#) and [water stress](#) threaten food security, adaptation measures include:
 - [Climate-resilient seeds](#) and improved [soil health practices](#).
 - [Groundwater conservation](#) and **modified cropping techniques**.
- **Urban Climate Resilience:** The [National Mission on Sustainable Habitat \(NMSH\)](#) promotes waste and water management and green buildings.
 - [AMRUT 2.0 \(Atal Mission for Rejuvenation and Urban Transformation\)](#) aims to tackle [urban flooding](#).
- **Coastal Adaptation Measures:** [Mangrove Initiative for Shoreline Habitats & Tangible Incomes \(MISHTI\)](#) aims to **restore 540 sq. km of mangroves** across nine coastal states.
 - Expected to **sequester 4.5 million tons of carbon** and create **22.8 million jobs**.
 - **Seawalls, artificial reefs, and dune planting** to combat coastal erosion and rising sea levels.
- **Water Resource Management:** [Jal Shakti Abhiyan](#) focuses on rainwater harvesting, groundwater recharge, and afforestation.

- **Mission LiFE:** [Mission LiFE \(Lifestyle for Environment\)](#) is an India-led global initiative, it promotes sustainable living and individual responsibility in climate action, shifting from a "use-and-dispose" mindset to a [circular economy](#).

Way Forward

- **Economic Growth with Sustainability:** Prioritize industrial growth and job creation while ensuring low-carbon development. Implement sectoral decarbonization plans in steel, cement, and heavy industries.
 - Encourage **green urban planning for sustainable cities** through [Smart Cities Mission](#) and smart mobility solutions.
 - Develop **climate-resilient infrastructure**, strengthen [disaster preparedness](#), and expand [afforestation](#) for natural carbon sinks.
- **Clean Energy Expansion:** Expand **solar, wind, and green hydrogen** investments, enhance battery storage and **grid infrastructure**, and promote waste-to-energy and **biofuels for a diversified clean energy mix**.
- **Just and Inclusive Transition:** Support [Micro, Small and Medium Enterprises \(MSME\)](#) and fossil fuel workers in transitioning to [green jobs](#) while ensuring affordable clean energy access for rural and underprivileged communities.

Drishti Mains Question:

Critically examine the impact of India's shift towards adaptation and economic growth on its development and global climate commitments.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q.1 In the context of India's preparation for Climate-Smart Agriculture, consider the following statements: (2021)

1. The 'Climate-Smart Village' approach in India is a part of a project led by the Climate Change, Agriculture and Food Security (CCAFS), an international research programme.
2. The project of CCAFS is carried out under Consultative Group on International Agricultural Research (CGIAR) headquartered in France.
3. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India is one of the CGIAR's research centres.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (d)

Q.2 Which of the following best describes/describe the aim of 'Green India Mission' of the Government of India? (2016)

1. Incorporating environmental benefits and costs into the Union and State Budgets thereby implementing the 'green accounting'.
2. Launching the second green revolution to enhance agricultural output so as to ensure food security to one and all in the future.
3. Restoring and enhancing forest cover and responding to climate change by a combination of adaptation and mitigation measures.

Select the correct answer using the code given below.

- (a)** 1 only
- (b)** 2 and 3 only
- (c)** 3 only
- (d)** 1, 2 and 3

Ans: (c)

Q.3 With reference to 'Global Climate Change Alliance', which of the following statements is/are correct? (2017)

1. It is an initiative of the European Union.
2. It provides technical and financial support to targeted developing countries to integrate climate change into their development policies and budgets.
3. It is coordinated by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD).

Select the correct answer using the code given below:

- (a)** 1 and 2 only
- (b)** 3 only
- (c)** 2 and 3 only
- (d)** 1, 2 and 3

Ans: (a)

Mains

Q.1 Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference? **(2021)**

Q.2 'Climate Change' is a global problem. How will India be affected by climate change? How Himalayan and coastal states of India will be affected by climate change? **(2017)**