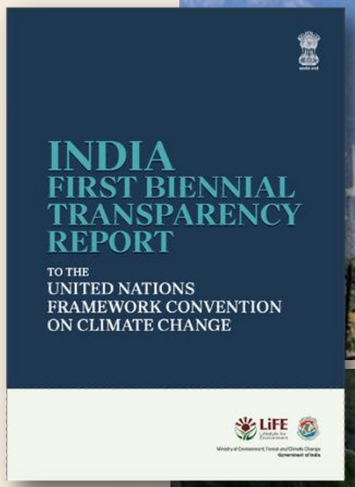
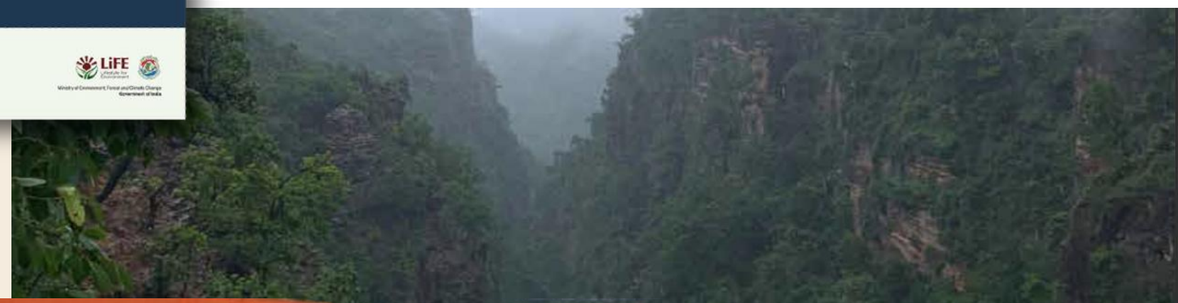
India’s First Biennial Transparency Report

Facilitative, Multilateral Consideration of Progress









Presented by:

Ajay Raghava
Ministry of Environment, Forest and Climate Change
Government of India

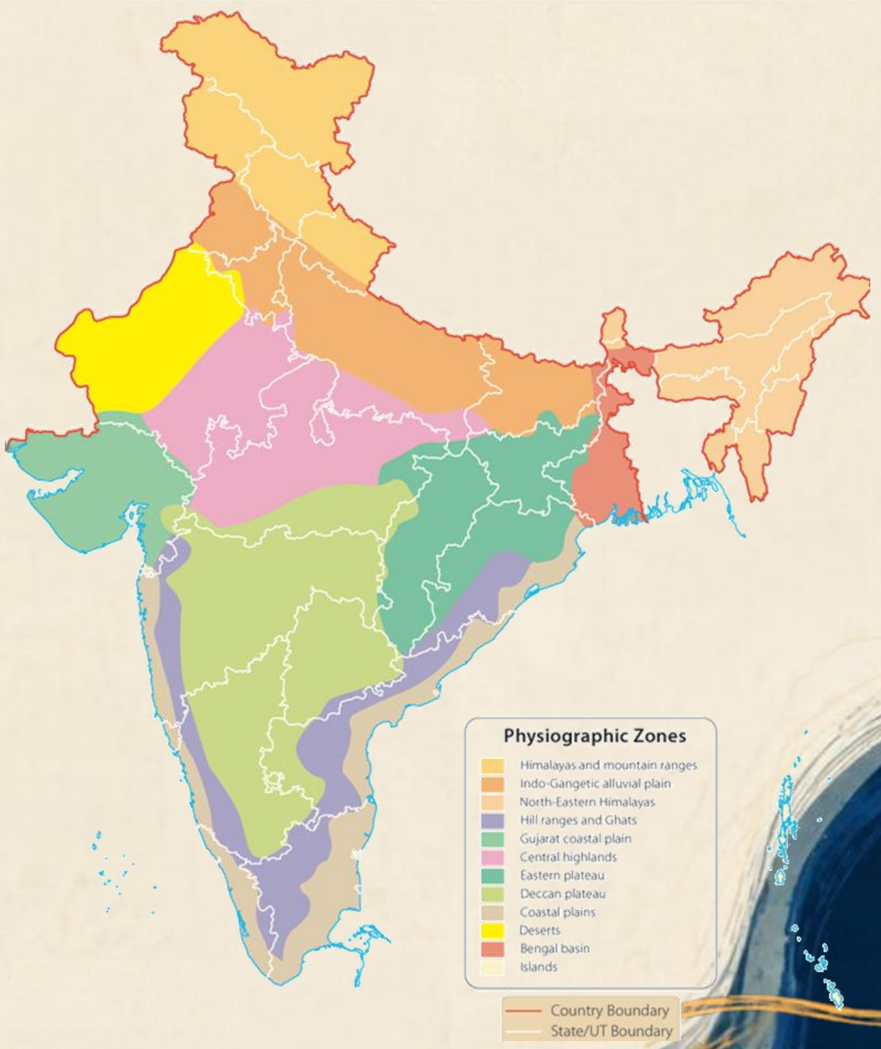
14 November, 2026

सत्यमेव जयते

Nature Protects if She is Protected

LiFE
Lifestyle for Environment

India’s National Circumstances



GEOGRAPHY & CLIMATE

- Area: 3.28 million km² (2.4% of global land)
- Monsoon: 74% of annual rainfall (Jul–Sep)
- 2024: Warmest year on record
- Warming trend: 0.68°C per century

PEOPLE & ECONOMY

- Population: 1.4 billion (18% of global population)
- GDP: ~ USD 3.6 trillion (FY 2025–26)
- Extreme poverty halved (2011–2019)

CLIMATE POLICY STANCE

- Minimal historical contribution to global emissions
- Significant energy requirements needed to sustain economic growth and poverty alleviation
- Commitment to low-carbon development in line with national circumstances
- Urgent need to build climate resilience to safeguard livelihoods, infrastructure, and economic stability.

India at a Glance

< 4%
- Global cumulative CO_2 emissions 1850-2020

~18%
- Global population

27.3 GJ
- Annual per capita primary energy use (2023), vs. 78 GJ global average

Long-term Goals

2047
Viksit Bharat (Developed India))

2070
Net-zero, guided by equity and CBDR-RC

Power
- Annual per capita electricity use: **1,331 kWh (FY22)**
- Evolving energy landscape
- **3rd globally** in RE installations

Industry
- Cornerstone of India's economy
- **48.95%** of final energy consumption
- Energy efficiency through **PAT scheme**

Forestry
- Forest and tree cover: **25.17%** of geographical area
- Consistent increase in forest cover over the past **20 years**
- **3rd globally** in average annual net forest area gain

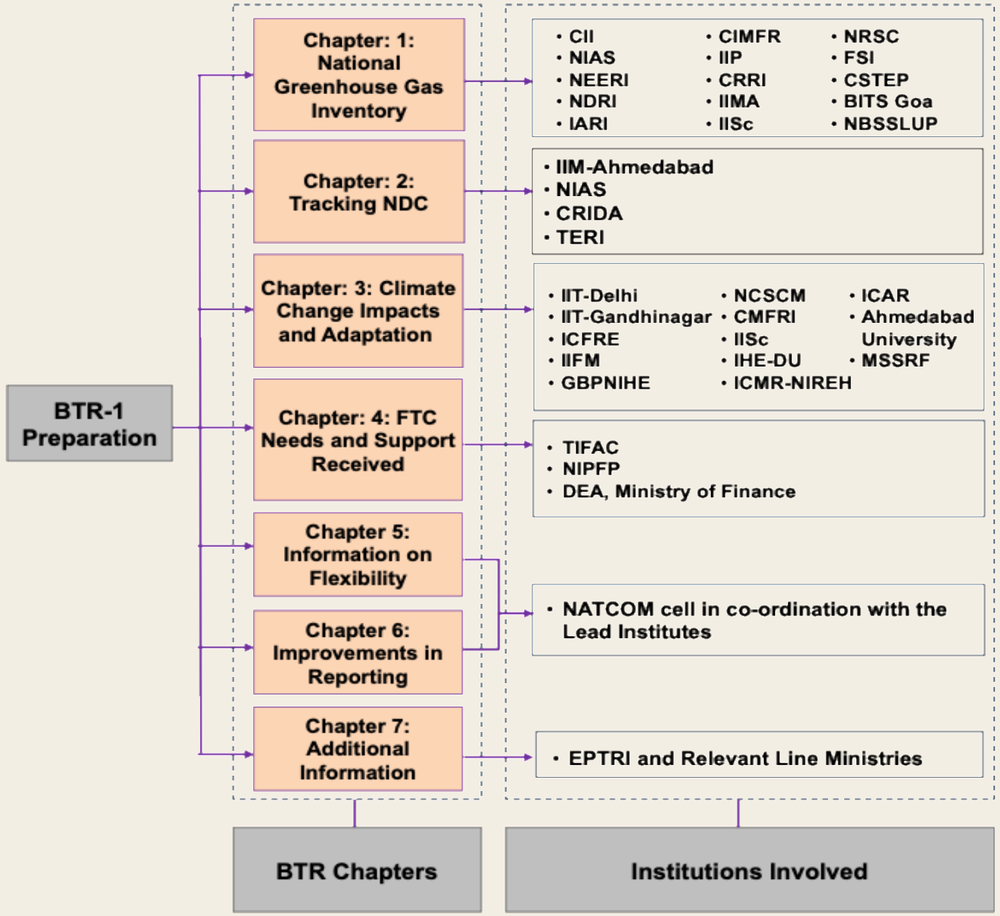
Transport
- **Technological shift** central to sustainable transportation vision
- Railway electricity use: **19.02 → 31.81 TWh (FY18–FY24)**

Agriculture
- Supports **45%** of population
- Predominantly smallholder farming
- Focus on adaptation and resilience

Waste
- *Swachh Bharat Mission*
- Focus on waste recycling, waste to energy, composting and proper disposal

Institutional Arrangements

Data Providers	BTR Preparation (incl. Inventory)	Finalization	Expert feedback	Inter-Ministerial Consultations	Approval	Submission
Ministries / Departments / Institutions	Network of Scientific and Research Institutions	NATCOM Cell, MoEFCC	Technical Advisory Committee	National Steering Committee	Government of India	UNFCCC



Institutions involved				Ministries/ Dept.
GHG Inventory	NDC tracking	FTC	Adaptation	Data Providers
15	4	3	13	46

GHG Inventory

2022 Gross Emissions

3,396

Mt CO_2e.

LULUCF Net Removals

572

Mt CO_2e.

2022 Net Emissions

2,825

Mt CO_2e.

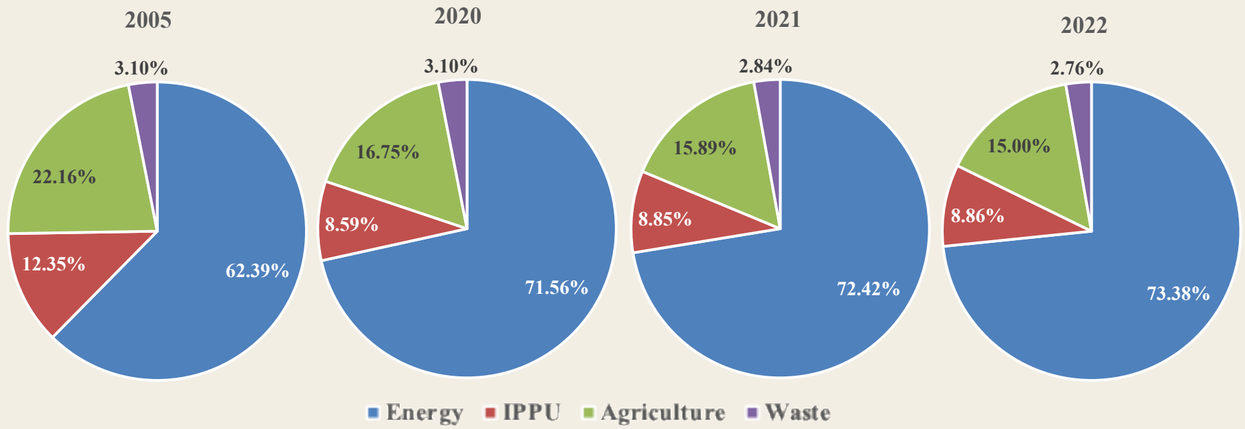
Sector	2005	2020	2021	2022	% Change (2005-2022)
	Million tonnes (Mt) CO_2 Equivalent				
Energy	1248.69	2128.20	2290.17	2492.07	99.57
Industrial Processes and Product Use (IPPU)	247.09	255.51	279.87	301.02	21.83
Agriculture	443.44	498.26	502.58	509.4	14.88
Waste	62.06	92.12	89.85	93.84	51.21
Land Use, Land-Use Change and Forestry (LULUCF)	-206.02	-562.24	-563.57	-571.82	177.56
Total Emission (excluding LULUCF)	2001.29	2974.09	3162.47	3396.37	69.71
Net Emission (including LULUCF)	1795.27	2411.85	2598.90	2824.55	57.33

Base Year: 2005

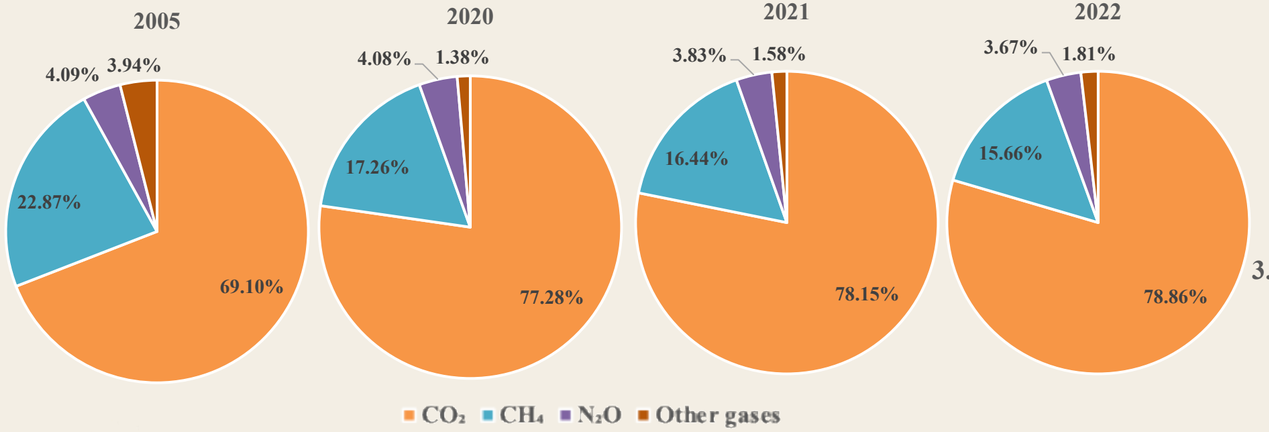
Recent reporting Years: 2020, 2021 and 2022

Overview of the GHG Inventory

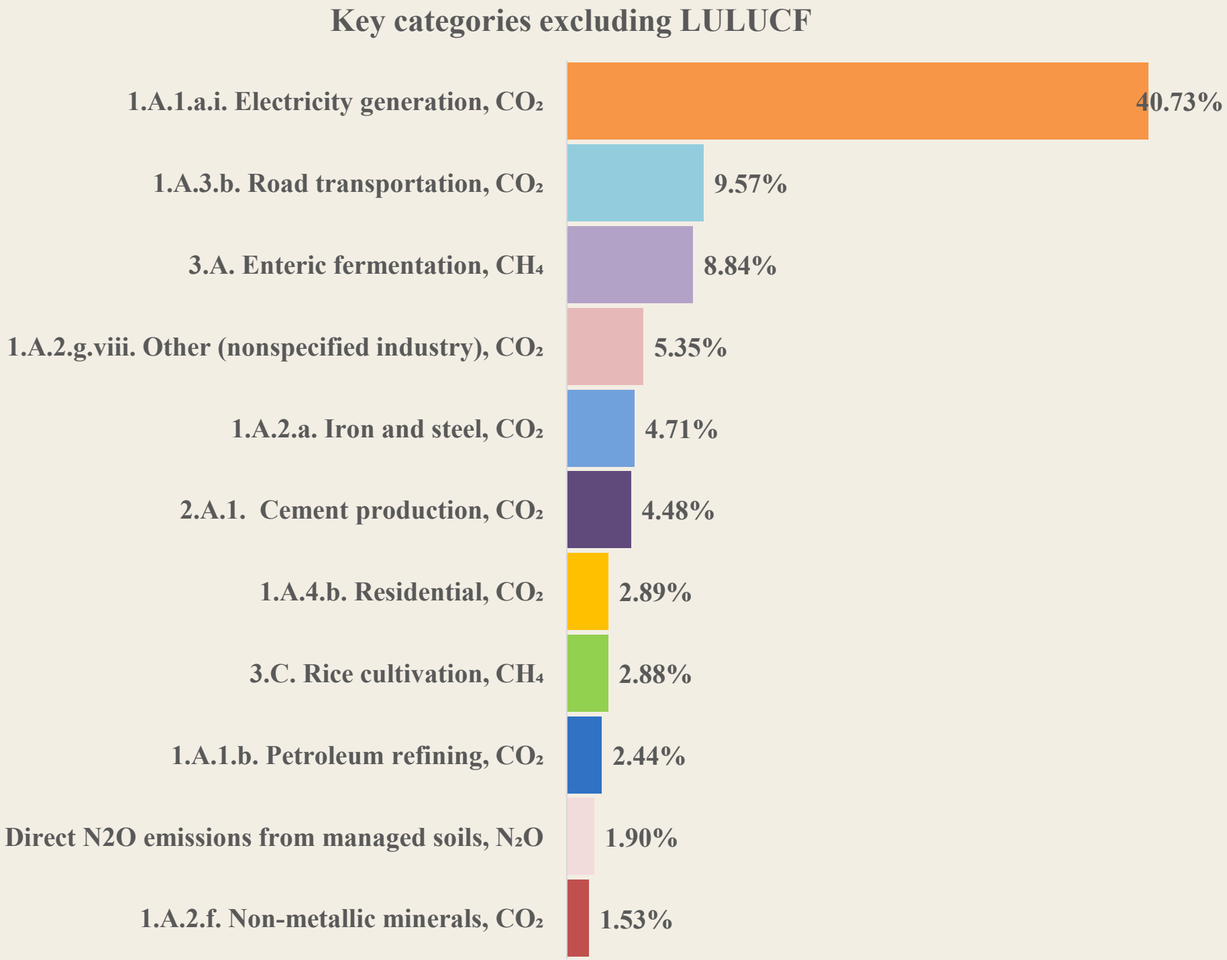
GHG Inventory - Sector wise distribution



GHG Inventory - Gas wise distribution



GHG Inventory - Key Emission Categories in 2022



India's 2030 NDC goals and progress

QUALITATIVE GOAL	HEADLINE FIGURE	PROGRESS
GOAL 1 **Sustainable lifestyle**	39.3 million participants	Mission LiFE targets 1 billion people by 2028; over 1 billion trees planted; Energy efficient improvements; Waste reduction, etc.
GOAL 2 **Cleaner development path**	1.8 t CO_2e per capita, 2019	About a quarter of the 6.8 tCO_2e global average; all 34 States and UTs have climate action plans (SAPCCs)
GOAL 6 **Adaptation**	3.7% → 5.6% of GDP, 2015-16 to 2021-22	Adaptation relevant expenditure rose from INR 5.06 trillion to INR 13.35 trillion; six of nine NAPCC missions focus on adaptation
GOAL 7 **Finance**	$4.5 tn infrastructure need till 2040	Domestic push: green bonds, PLI schemes, carbon credit trading. International finance still insufficient and mostly non-concessional loans
GOAL 8 **Technology and capacity**	39th of 133 Innovation Index, 2024	Co-leads Mission Innovation R&D challenges; Green Hydrogen Mission, Skill India and ISA leadership

As presented in India's BTR-1

India's 2030 NDC goals and progress

QUANTITATIVE GOAL	NDC 1.0 (2015)	NDC 2.0 (2022)	ACHIEVED	REMARKS	NDC 3.0*
GOAL 3 **Emissions intensity of GDP** Cut vs 2005 levels, by 2030	33–35%	→ 45% Enhanced	37.38% 2005–2022	Original: 11 years early Revised: on track	47% by 2035.
GOAL 4 **Non-fossil power capacity** Share of installed capacity, by 2030	40%	→ 50% Enhanced	>55% Sep 2026 (42.5% in Dec 2022)	Original: 9 years early Revised: 5 years early	60% by 2035.
GOAL 5 **Additional carbon sink** via forest and tree cover, by 2030	2.5–3.0 billion t CO_2e	→ No change	2.44 billion t CO_2e by 2022	On track	3.5-4.0 by 2035.

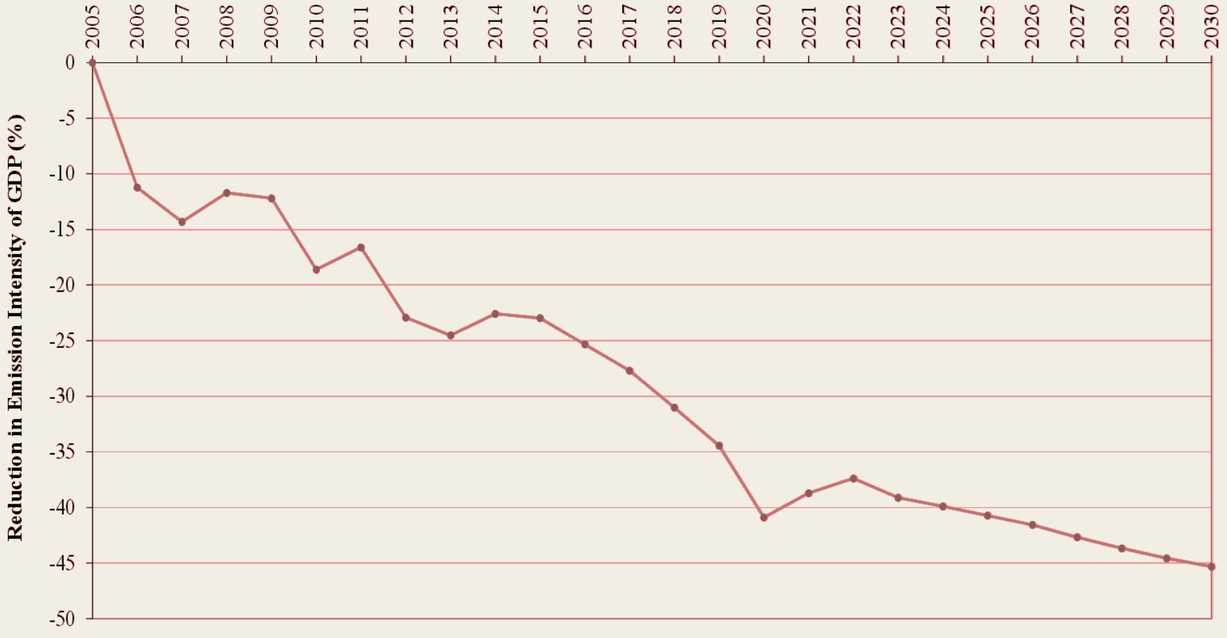
**NDC 3.0 aligned with VIKSIT BHARAT (Developed India)*

Emission Projection

	Baseline Year	Most recent year in the NID	Projections of GHG emissions and removals (Mt CO_2 eq)	
Year	2005	2022	2025	2030
Sector				
Energy	1248.69	2492.07	2873.36	3642.83
IPPU	247.09	301.02	354.92	467.04
Agriculture	443.44	509.44	522.48	544.96
LULUCF	-206.02	-571.82	-586.01	-610.43
Waste	62.06	93.84	96.26	100.42
Total with LULUCF	1795.27	2824.55	3261.01	4144.81
Total without LULUCF	2001.29	3396.37	3847.01	4755.24

Note: Projections were made considering the CAGR of emissions in each sector

Projection of reduction in GHG Emissions Intensity of GDP by 2030 from 2005 level for WEM scenario



National Action Plan on Climate Change (NAPCC)

- National Mission for Sustainable Agriculture
- National Mission on Sustainable Habitat
- National Mission for a Green India
- National Mission for Enhanced Energy Efficiency
- National Mission for Sustaining the Himalayan Eco-system
- National Solar Mission
- National Water Mission
- National Mission on Strategic Knowledge for Climate Change
- National Mission on Climate Change and Human Health

- Launched: 30th June 2008
- 9 National Missions guiding climate actions
- 34 States/ UTs prepared State Action Plans (SAPCC)

Key mitigation measures across Sectors (1/2)



Power

- Scaling up non-fossil capacity
- Building green hydrogen as a clean fuel and feedstock
- Reducing electricity demand and T&D losses through efficient lighting, smart meters and smart grids
- Making power supply reliable and clean



Industry

- Cutting energy use and CO_2 emissions in energy-intensive industries (PAT)
- Unlocking finance and risk-sharing for low-carbon technologies
- Helping MSMEs adopt energy-efficient processes and equipment
- Technological shift to facilitate industrial decarbonization



Transport

- Improving vehicle fuel efficiency and reducing tailpipe emissions
- Shifting to electric and hybrid vehicles
- Lowering oil dependence through ethanol blending
- Moving people and freight to low-carbon modes: metro and rail etc.



Building

- Lowering energy use in new buildings through codes and green-building standards
- Efficient appliances and labelling
- Replacing polluting cooking fuels with clean LPG

Key mitigation measures across Sectors (2/2)

Agriculture

- Reducing methane and nitrous oxide from rice, livestock and fertiliser use
- Turning crop residue into energy or soil input
- Replacing diesel pumps with solar and cutting agricultural electricity demand
- Agroforestry and horticulture
- Saving water and energy through micro-irrigation

Waste

- Improving collection, segregation and treatment
- Converting urban, industrial and agricultural waste into energy
- Cutting plastic and e-waste through recycling and a circular economy
- Better sewerage and wastewater treatment

Forest

- National Mission for Green India
- National Afforestation Programme
- National Green Highways Mission
- Protecting mangroves and coastal ecosystems that store carbon
- Setting up of Compensatory Afforestation Fund Management and Planning Authority

Climate Change Impacts, Vulnerabilities and Adaptation Framework

Building climate resilience through integrated national and sub-national action.

Climate vulnerabilities	Policy framework	Priority sectors	Adaptation planning
Heat & Cold waves Extreme rainfall Floods Droughts Cyclones Glacial changes Coastal impacts.	National Action Plan on Climate Change (NAPCC) State Action Plans (SAPCCs) Sectoral programmes.	Agriculture Forests Biodiversity & Wildlife Water Himalayan ecosystem Coastal ecosystems & Fisheries Cities Health Gender (Inter-disciplinary)	Initial Adaptation Communication (2023) National Adaptation Plan (NAP) under preparation

Mainstreaming Climate Resilience into National Development Planning

India’s Adaptation Actions

Interconnected Resilience

Agriculture

Climate-resilient crops, sustainable farming and weather-based agro-advisories.

Water

Water conservation, irrigation efficiency, watershed management and groundwater recharge.

Ecosystems

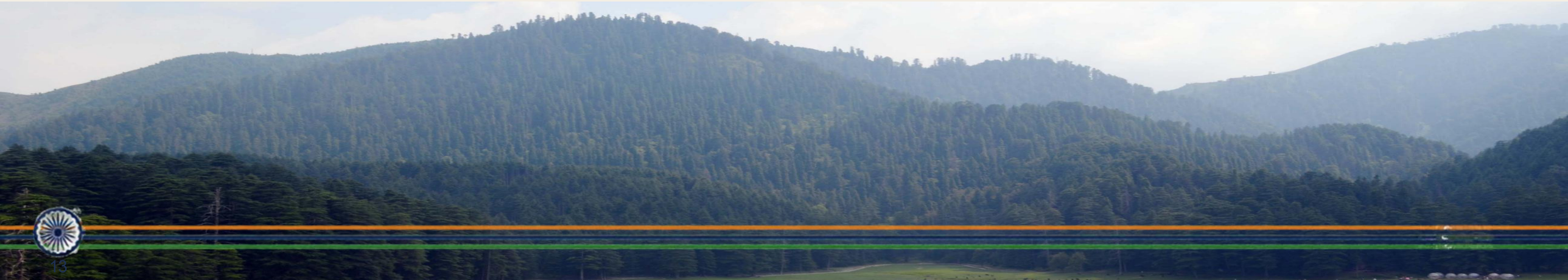
Afforestation, biodiversity conservation, ecosystem restoration and mangrove protection.

Health

Climate-sensitive disease surveillance, heat-health preparedness and resilient health systems.

Disaster Risk Reduction

Early warning, meteorological services, preparedness and resilient infrastructure.



Finance, Technology, and Capacity Building (FTC) Support

Financial support received

Total Support Received (2021 and 2022)

USD 789.11 million

- Grants: USD 5.39 million
- Loans: USD 783.72 million
  - (Concessional loan: USD 321.23 million)

Data includes support from

- Multilateral Channel (GEF, ADB, IBRD, IFAD) – USD 464.61 million
- Bilateral – USD 324.5 million

Financial support needed

Category	Needs
Estimates for climate action till 2030*	USD 2.5 trillion (2014-15 prices)
Estimates for climate adaptation (2023-2030)**	USD 0.74 trillion (2023-24 prices)

**India's INDC (2015)*
***India's Initial Adaptation Communication (2023)*

No Technology and Capacity building support under Article 10 and Article 11 mechanism

Thank you

