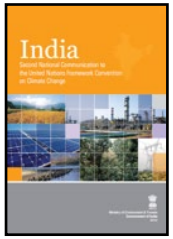
India's Third Biennial Update Report to UNFCCC

11 July 2022

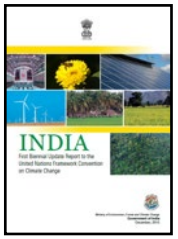
Ministry of Environment, Forest and Climate Change
Government of India

Summary of National Communications and BURs

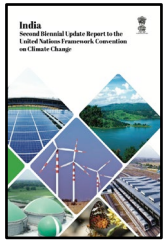
INC



SNC



BUR-1



BUR-2

BUR-3

2002 | 2004 | 2006 | 2008 | 2010 | 2012 | 2014 | 2016 | 2018 | 2021

ICA of BUR-1 in 2017

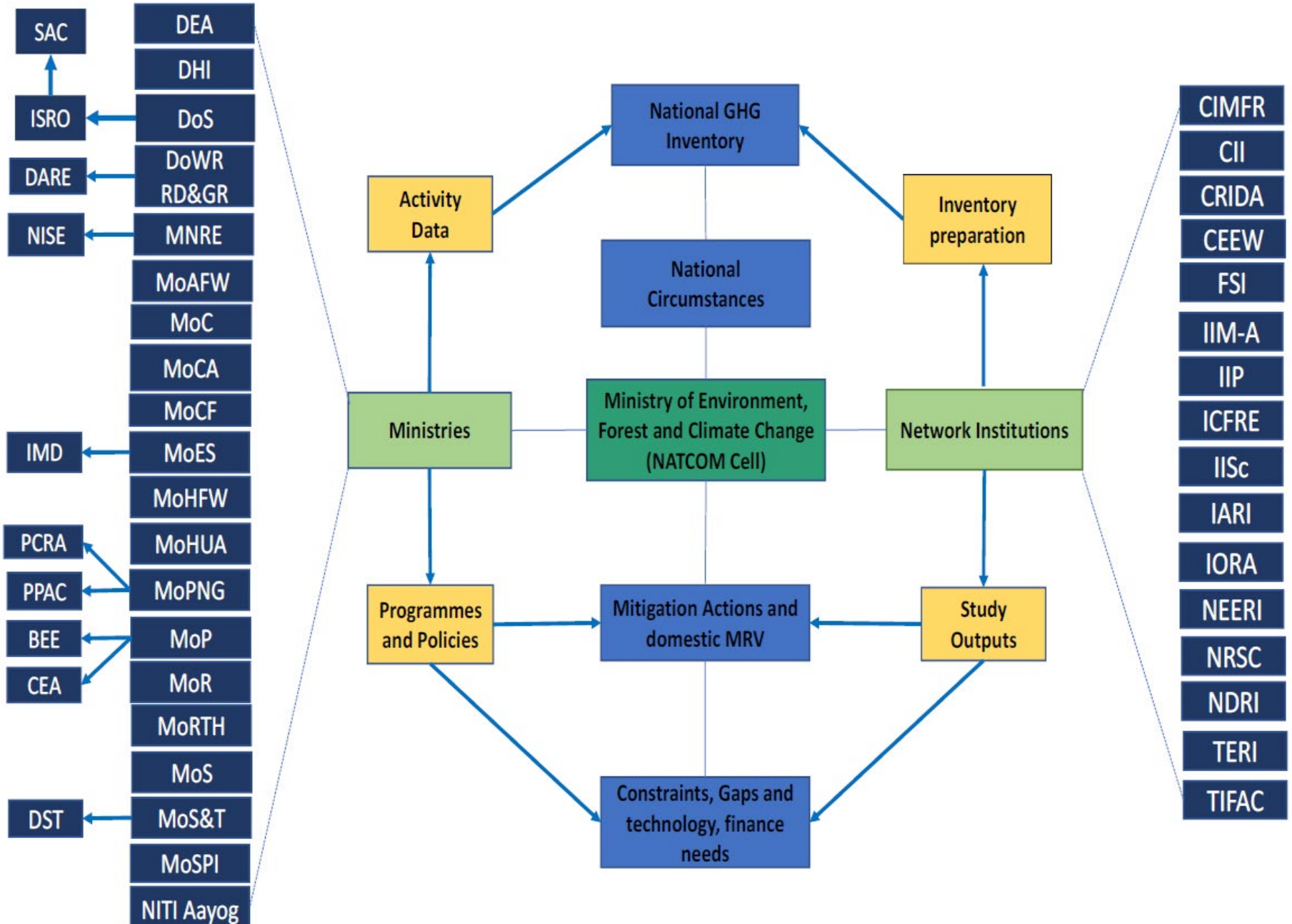
ICA of BUR-2 in 2019

ICA of BUR-3 in 2021

Outline

- National circumstances
- GHG inventory
- Mitigation actions
- MRV
- Finance, capacity and technology needs and support received

Institutional arrangement



NATIONAL CIRCUMSTANCES

- Agriculture, including livestock, is vital for India's economy and the source of livelihood for millions of marginal farmers.
- India's per capita energy consumption is just one-third of world average.
- Marginal, small and medium enterprises (MSME), employing more than 110 million, going through technology modernization and up-gradation.
- Renewable power installed capacity has increased by 3.2 times from 35 GW in 2014 to 113.22 GW in 2022.
- India's SDG index score improved from 57 (2018) to 66 (2020).
- Forest and tree cover increased by 15292 km^2 and mangrove cover by 252 km^2 between 2015 and 2021.
- Forest fires contribute only 1.0-1.5% of all global emissions from wildfires, though India has 2% of global forest cover.
- A large population depends on coastal and marine resources, and most urban and economic centers are located along the coast.
- Various forestry and sustainable fisheries initiatives support dependent livelihoods and reduce vulnerability.
- COVID-19 pandemic had serious impact on the economy.

Observed climatic changes

- One of the **most affected** countries due to climate change, incurring losses of USD 37 billion and 2081 deaths (Global climate risk index 2020).
- **Increase in average temperature** by 0.61^{o}C per 100 years over 1901-2019.
- **Rise in extreme events,** both in frequency and intensity. e.g: cyclones, heat waves, erratic rainfall, floods, and landslides.
- **Rise in average sea level** by 1.7 mm/year.
- **Glacial retreat** in Himalaya. e.g. GLOFs, erratic snowfall and precipitation.

India's cooperative regime

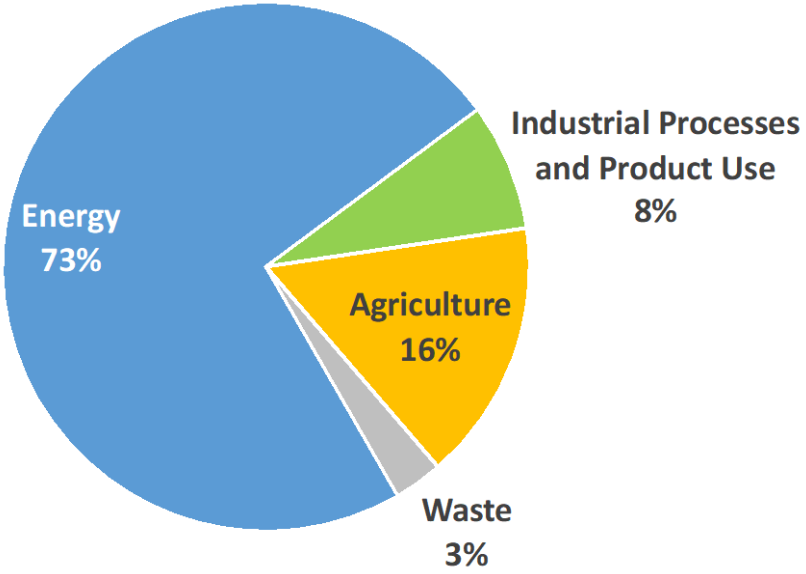
- Launched **Coalition for Disaster Resilient Infrastructure** (CDRI) in 2019.
- Co-leads with Sweden for **Industry Transition** in hard-to-abate sectors initiated in 2019.
- Called upon more countries to join the International solar alliance (ISA) to reduce dependence on fossil fuels to meet the growing energy needs.

NATIONAL GREENHOUSE GAS INVENTORY

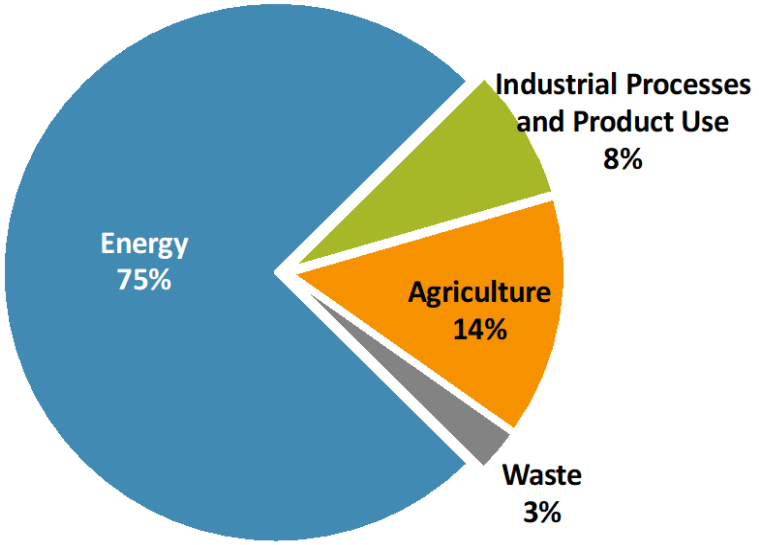
Year	2014	2016
Total GHG Emissions (excluding LULUCF)	2.6 $BtCO_2e$	2.8 $BtCO_2e$
Total GHG Emissions (including LULUCF)	2.3 $BtCO_2e$	2.5 $BtCO_2e$

India's per capita emissions are only 1.96 tCO_2e, less than one-third of world average.

Sectoral share of emissions, 2014



Sectoral share of emissions, 2016



*LULUCF = Land Use, Land Use Change and Forestry

**$BtCO_2e$ = Billion tonne of Carbon dioxide equivalent

MITIGATION ACTIONS

A reduction of 24% in emission intensity of India's GDP was achieved between 2005 and 2016

- On track to meet its voluntary declaration to reduce the emission intensity of GDP by 20-25% from 2005 levels by 2020.
- India is decoupling economic growth from emissions.
- Mitigation efforts leave no sector of economy untouched, no section of society left out.

Energy sector

- **Renewables:** Target of achieving 500 GW of renewable energy capacity by 2030, enhanced from 175 GW by 2022.
  - Solar: 60 $MtCO_2e$ emissions reduction from grid connected solar power from 2014-15 to July 2018.
  - Wind: 188.08 $MtCO_2$ emissions reduction from wind power during 2014-15 to July 2018.
- **Energy efficiency:** Energy efficiency schemes/ programmes contributed combined energy savings of 23.728 Mtoe in 2018-19.
  - Unnat Jyoti by Affordable LEDs (UJALA) led to emission reduction of 180.08 $MtCO_2$ from 2014-15 to 2020.
  - Street Lighting National Programme (SLNP) led to emissions reduction of 14.82 $MtCO_2$ from 2015-16 and 2019-20.
  - Perform, Achieve, and Trade (PAT) scheme for energy efficiency in industry saved 31 $MtCO_2$ of emissions in PAT-I (2012-15), and 61.34 $MtCO_2$ of emissions in PAT-II (2016-19).
- **Responsible use of coal:** Approx. 53.708 $MtCO_2$ avoided by September 2020 due to commissioning of super-critical coal power plants.

Transport

- India leapfrogged from BS-IV to BS-VI (equivalent to Euro-6) emission norms.
- Faster Adoption and Manufacturing of (Hybrid) Electric Vehicles in India (FAME India) Scheme supported deployment of 0.28 million hybrid and electric vehicles.
- Ethanol Blended Petrol Programme already led to emission reduction of 3.39 $MtCO_2$ in 2018-19.

Agriculture (survival emissions)

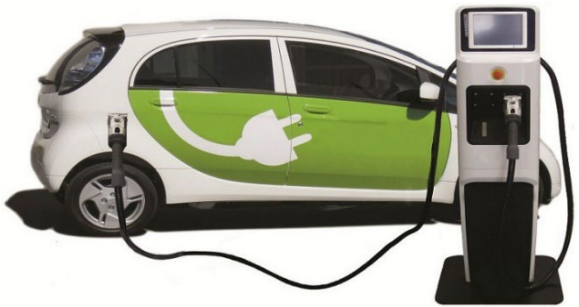
- The Pradhan Mantri Krishi Sinchayee Yojana, a scheme for water use efficiency, resulted in emissions reduction of 11.979 $MtCO_2$ during the period 2017-18 to 2018-19.
- Integrated Development of Horticulture led to emission removal of 108.96 $MtCO_2$ in 2017-18.
- Crop diversification from paddy, direct seeding of rice, system of rice intensification, and other agricultural initiatives are all contributing to greater efficiency of input use and sustainability.

Forest and tree cover

- LULUCF sequestered 330.76 Mt of CO_2, 15% of India's total CO_2 emissions in 2016.
- Carbon stock increase of 79.4 million tonne between the assessments of 2019 and 2021.
- Forests support thousands of endemic species, hosting four biodiversity hotspots of the world.

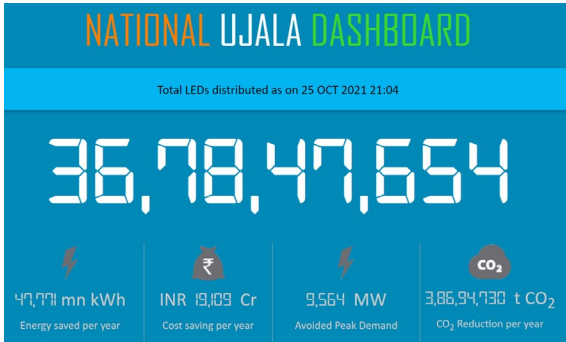
Waste

- Modernization of sanitation facilities and waste management system.



DOMESTIC MEASUREMENT, REPORTING AND VERIFICATION ARRANGEMENTS

- Operational design of measurement, reporting and verification in India is implemented in a decentralized manner.
- Efforts distributed at multiple levels of governance – appropriate strategy for a large and diverse nation.
- Effective tracking of schemes through enhancing transparency and accountability by making information accessible through online web-portals/ digital dashboards.
- India is evolving a robust and dynamic framework for MRV that can deliver, as is evident from the progressive character of its reporting to the UNFCCC.
- Important lessons for the new upcoming Enhanced Transparency regime:
  - MRV is not the aim – it complements the main aim of climate action
  - Over emphasis on MRV and excessive detail can distract attention from development and climate action.
  - Large, dispersed systems in developing countries are more expensive and challenging to measure than large, integrated systems based on advanced technologies. Hence support to developing countries is essential.



FINANCE, TECHNOLOGY AND CAPACITY BUILDING NEEDS, AND SUPPORT RECEIVED

FINANCE

- For NDCs, India needs at least USD 206 billion (2014-15 prices) from 2015 to 2030 for implementing adaptation actions in key areas.
- Internationally available “climate finance” to India is meagre. Dominated by loans. Huge co-financing.
- India’s actions and achievements thus far are largely from its own resources.
- Funds for GEF-7 replenishment are lower than GEF-6.
- India has consistently contributed to the GEF Trust Fund.

TECHNOLOGY

- India did not receive technology transfer in line with current provisions under UNFCCC.
- India’s identified major technology needs are in areas such as solar photovoltaic, offshore wind, advanced ultra-supercritical coal technology, biofuels, and cost-effective energy storage.

CAPACITY BUILDING

- Major areas for capacity building include weather and climate forecasting and other services, and establishment of robust energy management systems.
- India nevertheless assists others when it can, in solidarity:
  - Contributing increasingly to South-South co-operation in climate change.
  - Development partnerships leading to more than 307 Lines of Credit, aggregating to value of USD 31.61 billion.