

# **Sustainable Growth and Climate Change: Evolution of India's Strategies**

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# **Outline of the Presentation**

**I Climate Change in India – emissions and impacts**

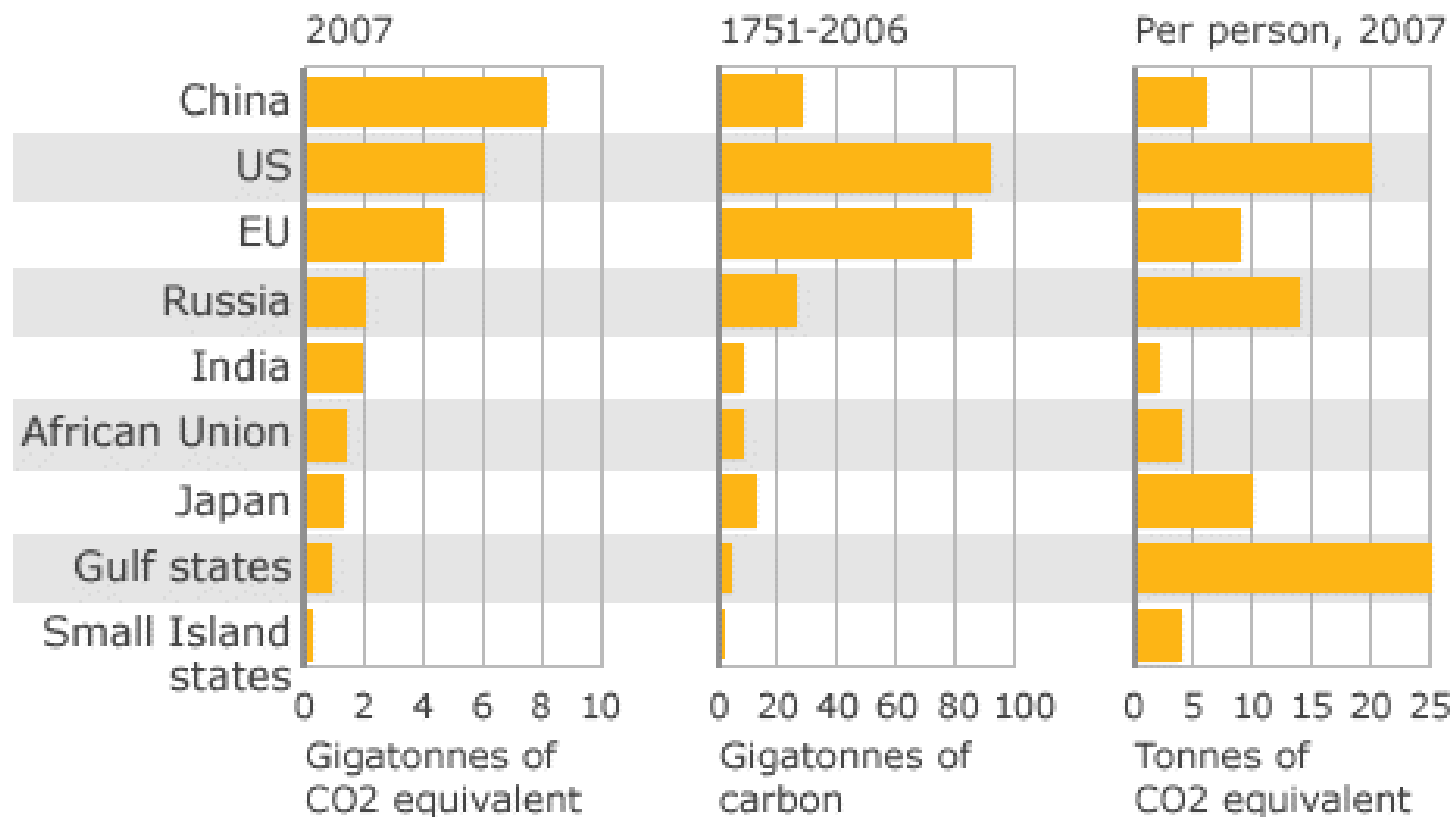
**II Development of climate change policies**

**III Role of India in global climate change negotiations**

**IV Toward low-carbon inclusive growth**

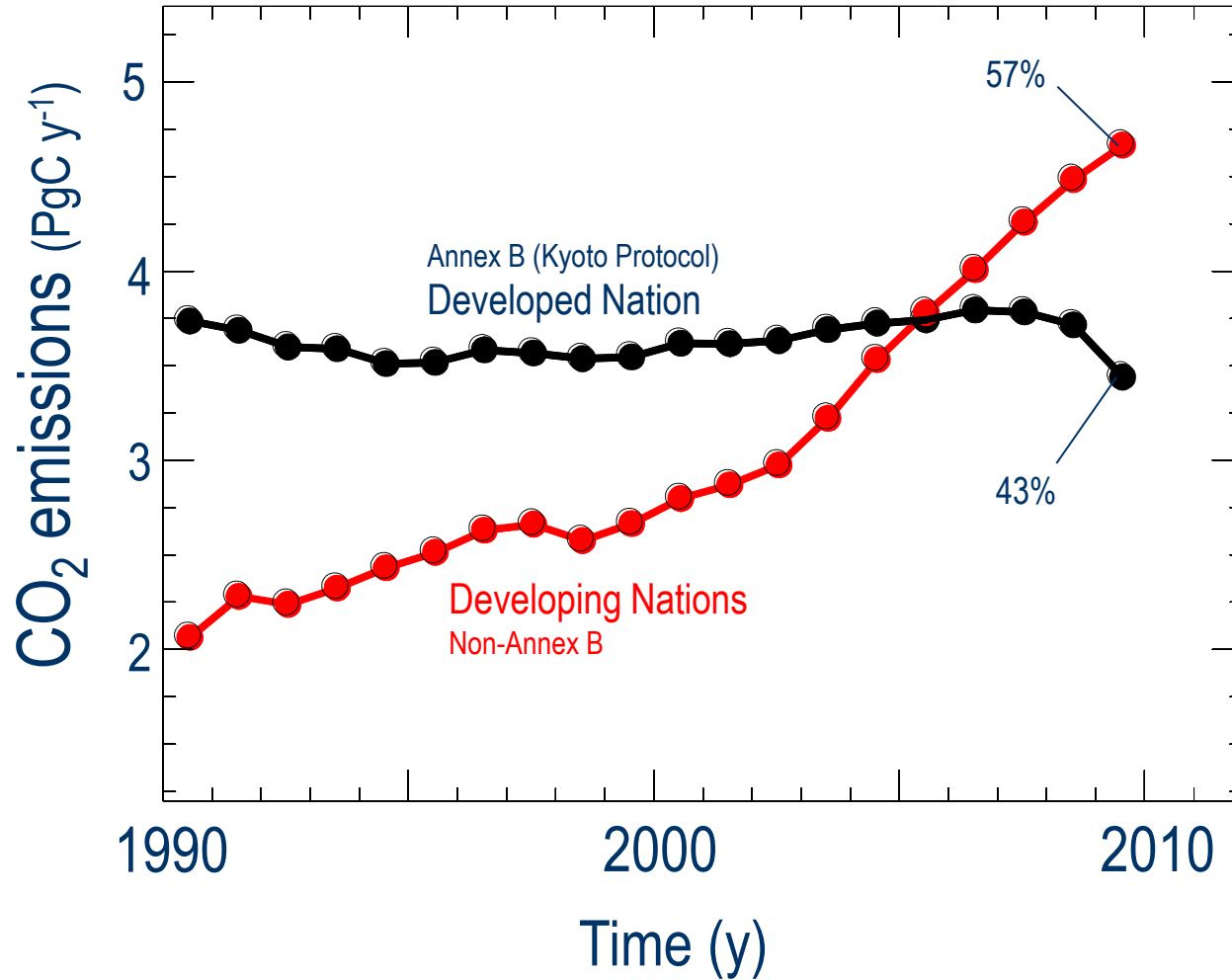
# GHG Emitters

## Three different ways to look at carbon emissions

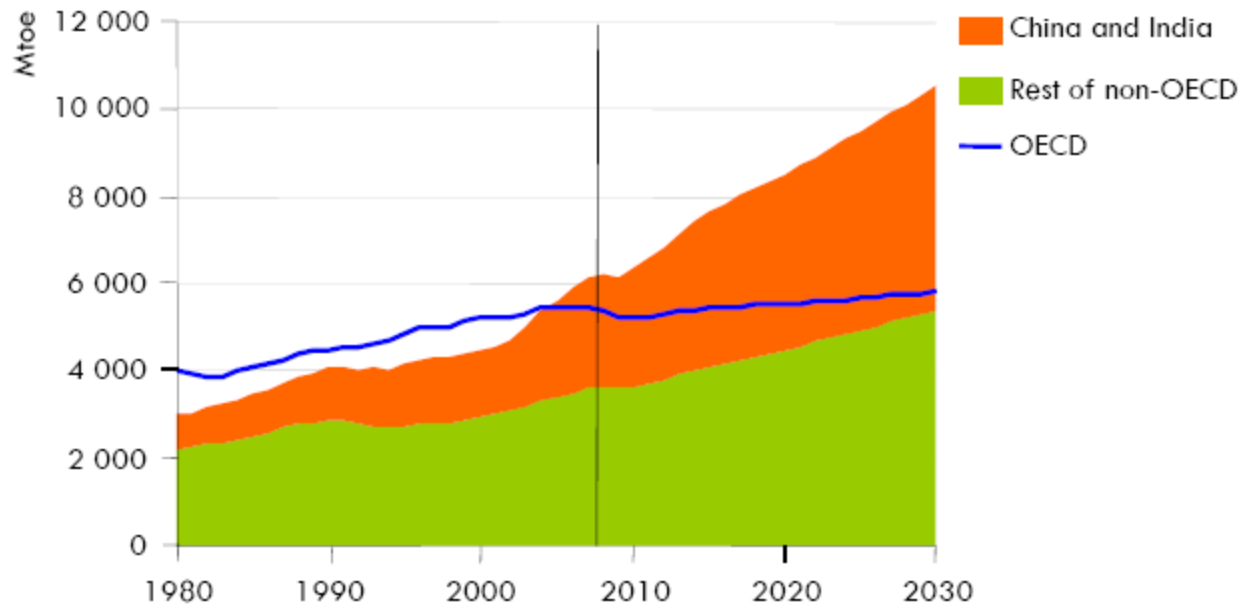


Sources: CDIAC, Potsdam Institute for Climate Impact Research

# Fossil Fuel CO<sub>2</sub> Emissions



# World primary energy demand under reference scenario

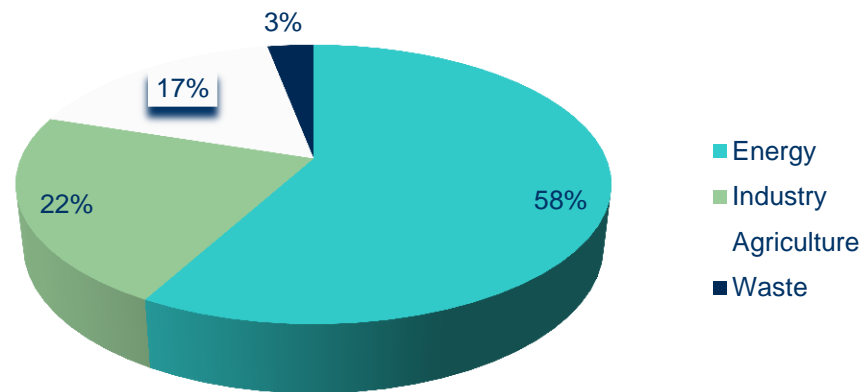


*Non-OECD countries account for 93% of the increase in global demand between 2007 & 2030, driven largely by China & India*

# India's growing emissions

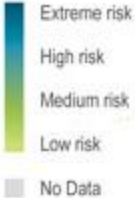
- India's growing GHG emissions - emissions have gone up by nearly 58% between 1994 and 2007
- Energy sector contributing to majority GHG emissions

**% of Net CO2 Emissions (2007)**

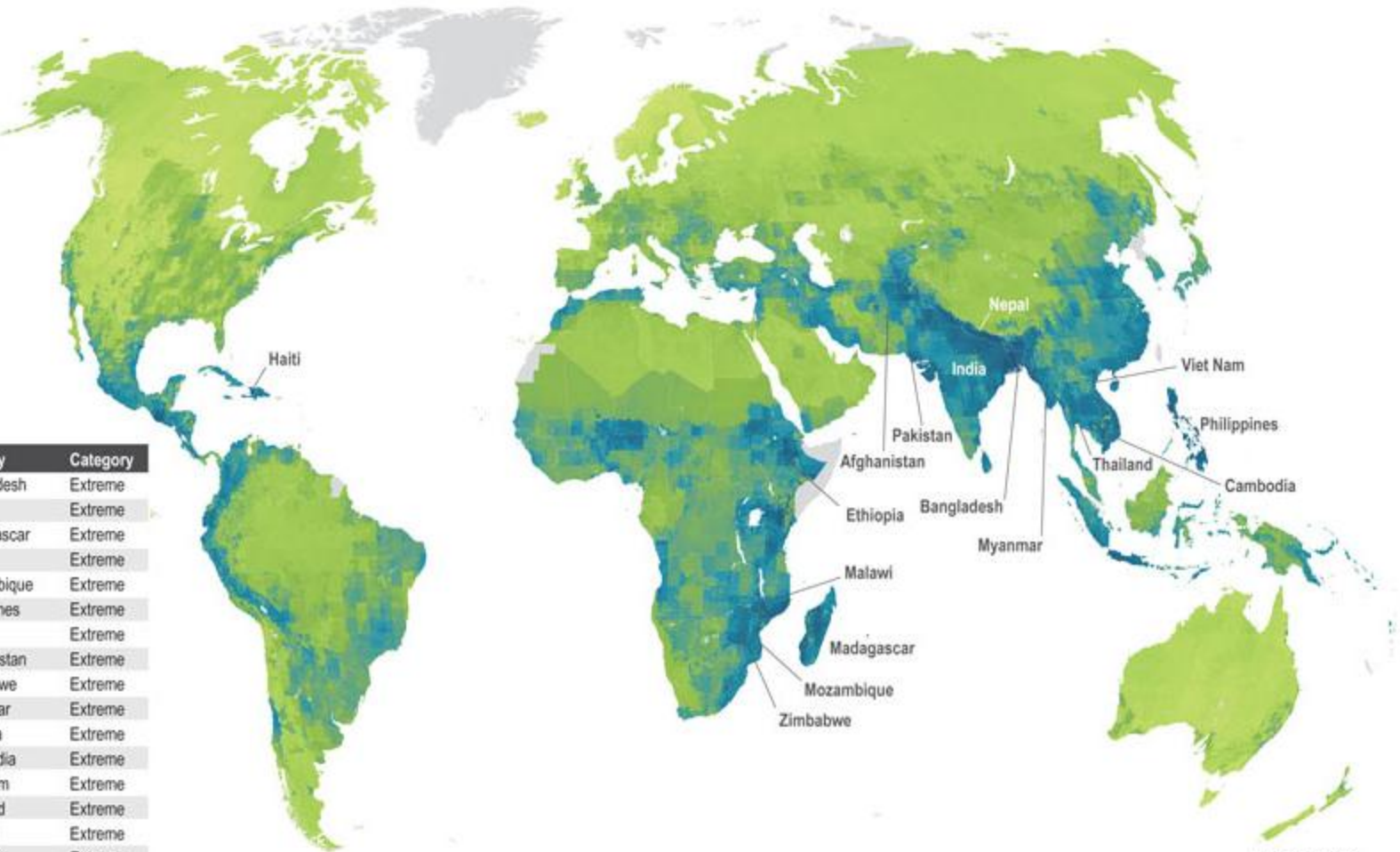


Source: INCCA (2007)

# Climate Change Vulnerability Index 2011



Rank	Country	Category
1	Bangladesh	Extreme
2	India	Extreme
3	Madagascar	Extreme
4	Nepal	Extreme
5	Mozambique	Extreme
6	Philippines	Extreme
7	Haiti	Extreme
8	Afghanistan	Extreme
9	Zimbabwe	Extreme
10	Myanmar	Extreme
11	Ethiopia	Extreme
12	Cambodia	Extreme
13	Viet Nam	Extreme
14	Thailand	Extreme
14	Malawi	Extreme
16	Pakistan	Extreme



# Countries most vulnerable to extreme weather

Country	Vulnerability: Probability of Extreme Weather Impact (Per 100,000 Population)					
	Rank 2008	Rank 2015	2008	2015- Climate only	2015-Climate+ Income	2015-Climate+ Income+ Urbanization+ Regulation
China	3	1	6,772	25,072	19,933	17,720
Djibouti	1	2	13,709	14,281	14,167	14,331
India	7	3	2,599	11,704	9,531	9,153
Kenya	2	4	6,807	7,752	7,620	7,617
Somalia	8	5	2,382	4,011	3,807	5,482
Mozambique	4	6	4,576	5,133	5,028	5,269
Philippines	10	7	2,134	5,161	4,607	5,102
Bangladesh	19	8	823	5,487	4,611	4,844
Sri Lanka	6	9	3,458	4,304	4,072	4,558
Ethiopia	5	10	3,791	4,892	4,747	4,540



# India and Bangladesh most vulnerable to the impacts of climate change over the next 30 yrs



# India's vulnerability to climate change

- Climate change projections for India indicate:
  - net increase in temperature;
  - increase in precipitation;
  - extreme events – droughts, drop in ground water tables;
  - increase in floods;
  - rising sea levels;
  - environmental health risks
- Climate change is projected to adversely affect crucial sectors in India:
  - Water resources;
  - Agricultural systems;
  - Forests and biodiversity;
  - Infrastructure systems

# Development of Policies I

- Prime Minister Indira Gandhi was the only head of state to attend Stockholm United Nations Conference on the Human Environment in 1972. She spoke of the link between poverty and environmental degradation when she attributed pollution primarily to poverty and underdevelopment.
- Some efforts were made to address environmental issues in 1972 - Ministry of Environment set up, which was instrumental in enactment of the Wildlife Protection Act and the Forest Conservation Act; project Tiger was initiated; awareness campaigns.
- 5<sup>th</sup> Five-Year Plan (FYP) (1974 – 1979) strategized growth with sustainable development in various sectors - agriculture, forestry, water, energy and non-renewable resources.

# Development of Policies II

- Early policies in India revolved around the problem of energy scarcity and energy conservation.
- **8<sup>th</sup> FYP (1992 – 1997):** one of the stated six main objectives was “Strengthening the infrastructure (energy, transport, communication, irrigation) in order to support the- growth process on a sustainable basis”.
- **9<sup>th</sup> FYP (1997 – 2002):** “ensuring environmental sustainability of the development process through social mobilization and participation of people at all levels” was among the key priorities;
- **The 11<sup>th</sup> Five-Year Plan (2007 – 2012):** climate policy matured from concerns about energy conservation to energy efficiency. The plan also recognised the need to incorporate adaptation programmes relating to watershed management, coastal zone planning and regulation, forestry management, agricultural technologies and practices, and health.
  - India benefits from investment thorough CDM

# National Action Plan on Climate Change (NAPCC) (June 2008)

- NAPCC identified 8 missions to address climate change mitigation, adaptation and knowledge management.
- Focus of these missions is “*promoting understanding of climate change, adaptation and mitigation, energy efficiency and natural resource conservation*”
- NAPCC provides a starting point for the various stakeholders and States to engage with the respective missions to build on, develop, expand, enable and implement the required programmes and strategies
- Requires tremendous effort from all concerned to consolidate and collaborate to enable the implementation of the 8 Missions.

# State Action Plan on Climate Change (SAPCC)

- Indian states and union territories working on preparing SAPCCs, detailing sector specific plans to adapt and mitigate climate change at the state level
- 16 out of 28 have prepared or in the process of working out their SAPCC
- Plans are developed through a broad participatory planning process
- Still work in progress - most of the initial documents and drafts have been prepared without targets, timelines, financial implications and allocations that do not prescribe the period of operation.
- States require stronger capacity and skills for the development and implementation for climate change action plans.

# India' 12<sup>th</sup> Five-Year Plan (2012-2017)

- Expert Group to develop a *Low-C Economy strategy* for the 12th Five Year Plan (FYP) report indicates India may be able to reduce emission intensity of GDP by around 25% over 2005-2020.
- Ahluwalia (2011) identifies four critical challenges for 12<sup>th</sup> FYP, all of which relate to climate change - managing energy requirements, managing water resources, addressing likely problems from rapid urbanization, and ensuring protection of the environment.
- Integrating the objectives of NAPCC and SAPCC in addition to domestic mitigation goals.
- Specific policy initiatives across a wide variety of sectors - agriculture, water, health, coastal management, forests, energy and infrastructure

# Role of Private Sector and Multilateral Development Banks (MDBs)

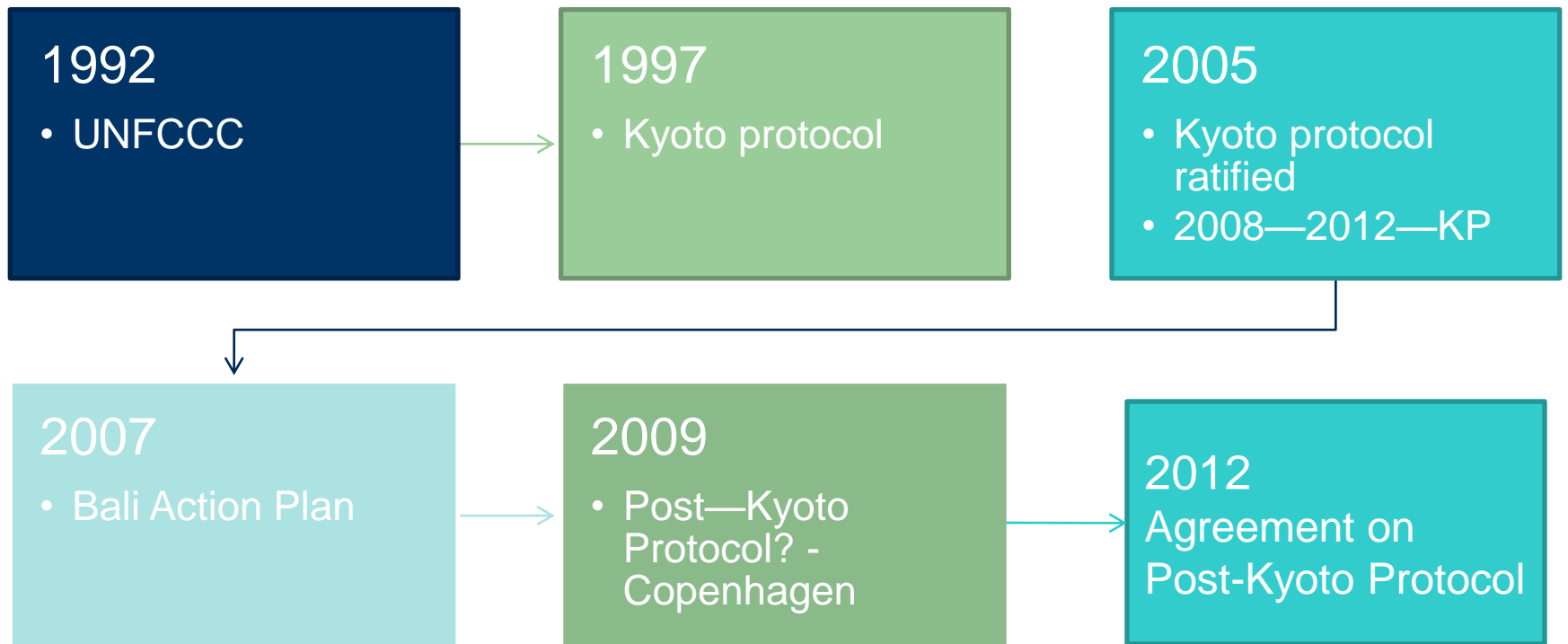
- Private sector leading on mitigation and adaptation.
- 21 Indian companies have voluntarily pledged to reduce their GHG emissions.
- Bombay stock exchange launched India's first carbon efficient Index (BSE-Greenex), it comprises of 20 companies including - Tata Motors, Tata Steel, ICICI Bank, L&T, HDFC, Reliance Infra, Dr. Reddy's lab and DLF.
- Growing public-private partnerships in climate change mitigation activities.
- MDBs are involved in India in fostering investments combined with technical assistance and advice on policy reforms. The following are currently supporting mitigation and adaptation programmes including research:  
DFID, GTZ (kfw), SDC, UNDP and World Bank





**India playing constructive role in international negotiations**

# Global climate negotiations – From Rio (1992) to Rio (2012) via Durban



# India's commitments

- **Post-liberalisation**-India signed the UNFCCC in Rio on 10 June 1992
  - the principle was of “common but differentiated responsibility”
- **Kyoto Protocol** – India agreed on August 2002
  - Set binding targets for 37 developed countries for reducing GHG emissions
- **June 2007** - pledge by Prime Minister Manmohan Singh that India's per capita emissions would never exceed that of the developed world (G8+5 Summit, Heiligendamm, Germany)
- **June 2008** - *National Action Plan on Climate Change (NAPCC)* launched
- **July 2009** - Singh signed *MEF Leaders Declaration* that recognised that global temperature rise ‘ought not to exceed 2 degrees C’ and the need for a ‘global goal’ to reduce ‘global emissions by 2050’ (MEF and G8 Summit, L'Aquila, Italy)

# India's commitments in Cancun

- At Cancun (COP16), Indian negotiators managed to gain the backing of the EU and G-77 for the proposal to set up a mechanism for technology transfer to deal with climate change
- The policy on technology transfer is important for India, since the vulnerable and less developed, do not have the financial or technical wherewithal to develop technologies that can deal with the adverse impacts of climate change
- Ramesh suggested that ‘all countries must take binding commitments under an appropriate legal form’ (UNFCCC CoP-16, Cancun, Mexico).

# India's perspectives of Durban

- India enthusiastic participant and supporter of the global negotiations and agreements. The idea to stick with tangible targets and commitments to be developed by countries was hailed by India.
- **Establishment of a second commitment period under the Kyoto Protocol**
  - Extend for another 5 years the Kyoto Protocol that is due to end 2012. Supporters of the outcome point to the resuscitated KP, establishing a second commitment period till most likely 2020.
- **Decision on long-term cooperative action under the Convention**
  - India's demand for equitable access to sustainable development for developing countries without being hindered by emission cuts was accepted in text
- **Operationalisation of Green Climate Fund**
  - Rich countries agreed to provide \$100 billion to help poor countries
  - Fund will be controlled by the CoP to the climate convention.
  - It will have 24 members, equally from developed and developing countries.

# The road ahead... toward low-carbon and inclusive growth

- Greening the economy - will generate growth and produce higher growth in GDP sustainably; values and invests in natural capital and can alleviate poverty; and can generate new jobs exceeding the brown economy jobs.
- Investing 2% of global GDP (US\$ 1.3 trillion) into ten key sectors can kick start transition towards a low carbon resource efficient economy, namely energy, buildings, agriculture, fisheries, forests, transport, manufacturing, water, waste management and tourism.
- Operationalising global and national agreements
- Implementation of National, State and city level strategy plans
- Assessing and addressing vulnerability
- Capacity building and strengthening institutions

# Opportunities

- Actively enforcing sustainable development procedures with the help of existing technologies
- Increasing energy efficiency in major carbon intensive industries
- Encouraging greater expansion in its natural and renewable resources through NAPCC missions
- Promotion of R&D through its skilled human capital and increased international collaboration
- Increasing opportunities for private sector investments
- Managing its natural forests and vibrant animal life (tigers, elephants, dolphins, etc.) and restoration of degraded land and low-till agriculture

# Challenges

- Managing the developmental needs of the largest democracy with 1.2 billion people. The economic, social and ecological cost due to climate change is likely to be enormous for the country projected to be the most populous by 2045.
- Vast and complex geographical, social and economic systems; high regional and sector variability in climatic patterns.
- Financing & access to technology. India spent about 1.7% of its GDP on climate change adaptation and related measures in the financial year 2006-07 and 2.6% in 2009-2010.
- Inefficiencies in implementation, accountability and shortage of capacity in the public sector.
- Needs to exercise stronger commitments and actions for emissions reduction across all sectors.
- Information, education and communication (IEC) efforts need to be intensified to enable greater understanding and choices for sustainable behaviours.



# In Summary

- India is on the right track with its 12<sup>th</sup> FYP objectives for faster, sustainable and more inclusive growth.
- The country's objectives are achievable but will require faster and stronger action; efficient implementation strategies; coordination between states and sectors; public-private partnerships; and international collaborations