

**Sub -regional Capacity Building Workshop on  
Forest Biodiversity & Climate Change  
Singapore, 2-5 September, 2009**

**Presentation**

**by**

**Ministry of Environment and Forests**

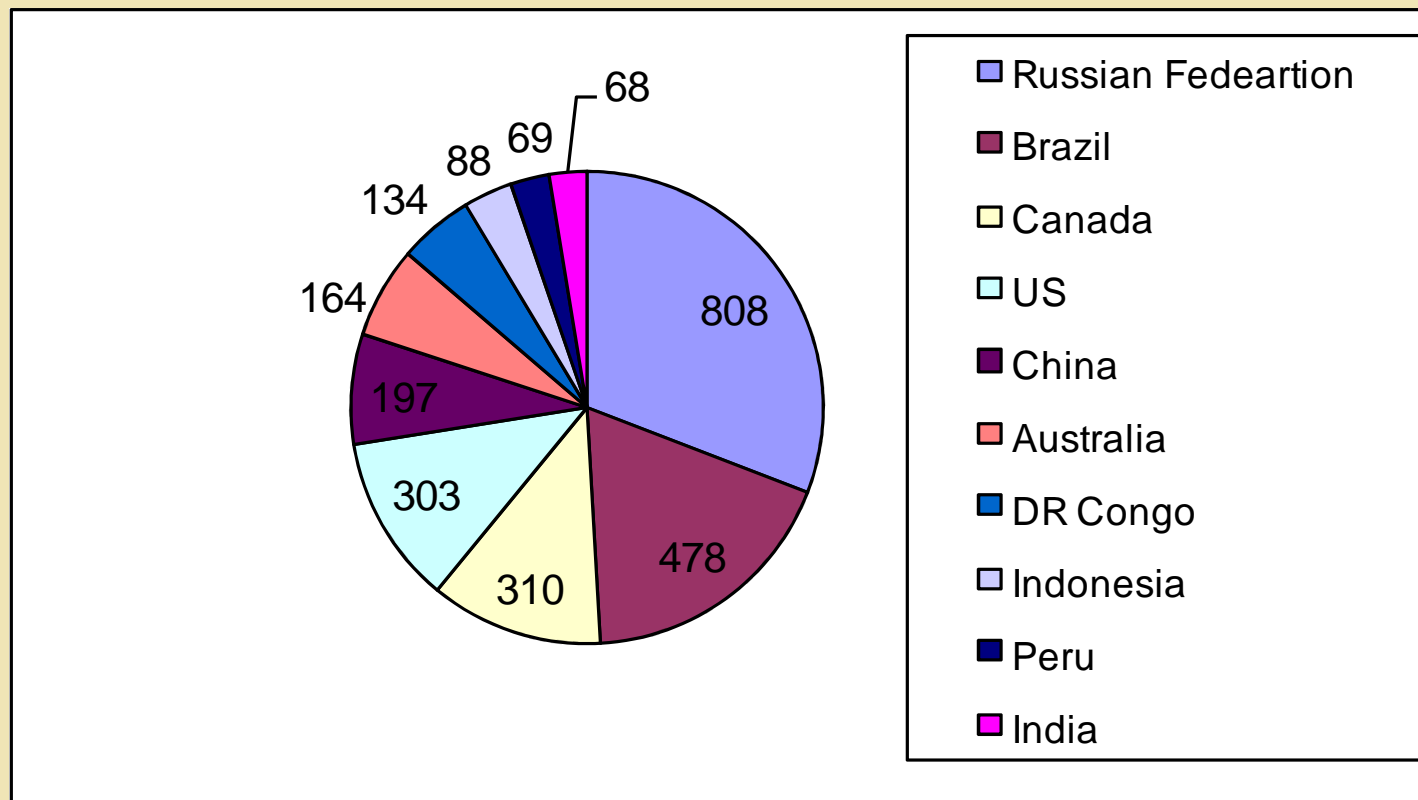
**Government of India**

**September 02, 2009**

# INDIA -7th largest country in the world



# 10 Countries with largest forest cover (mha)



## Geographical Area

3,29 mha

## Recorded Forest Area

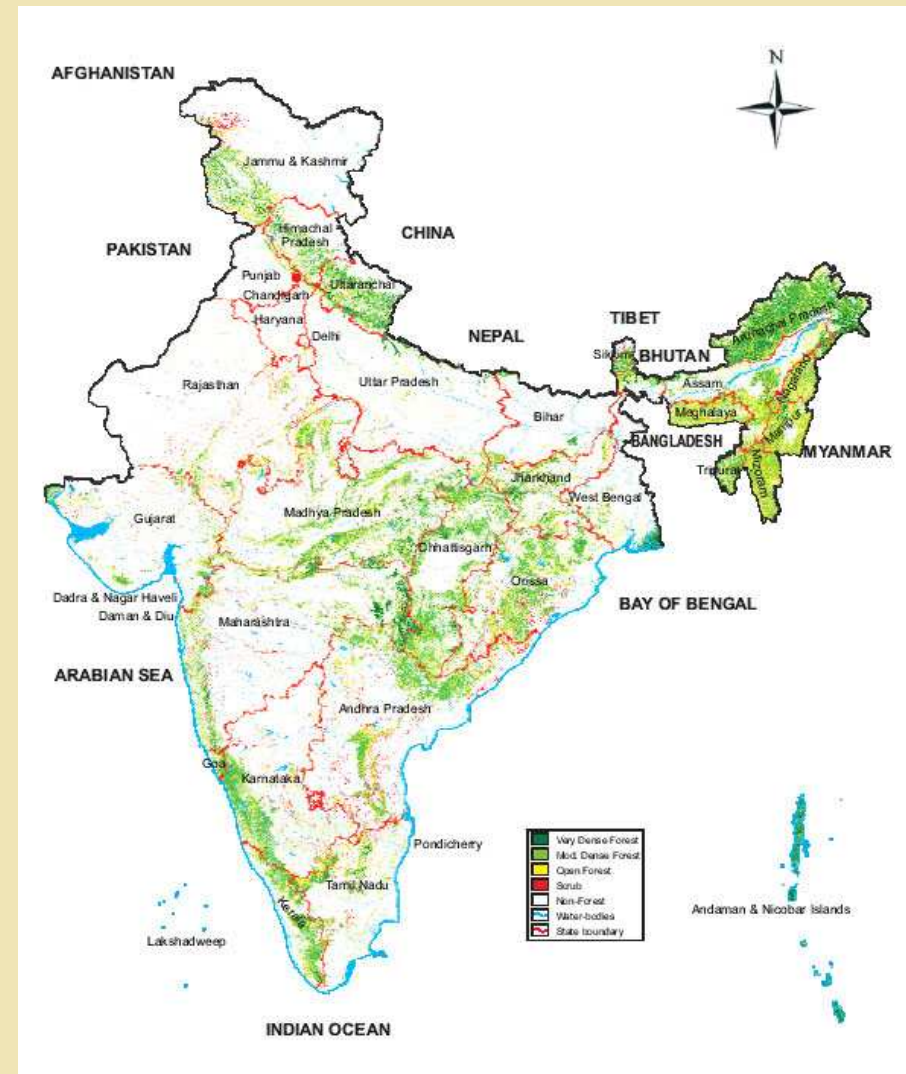
77 mha (23.41 %)

## Forest Cover

66 mha (20.6%)

## Forest & Tree Cover

23.4% of land area



# India

- ☀ One of the 18 “megadiverse” countries (*ranked between 10<sup>th</sup> to 12<sup>th</sup>*) with four global biodiversity hot spots (*Eastern Himalayas, Indo-Burma, Western Ghats & Sundalland*)
- ☀ With only 2.5 % of the world’s land area, supports
  - ☀ 16% of world’s population
  - ☀ 18 % of domestic cattle population
  - ☀ accounts for 7.8% of recorded species
  - ☀ 45,968 recorded species of plants &
  - ☀ 91,364 species of animals

*(comprises 11.18 % of worlds flora & 7.44 % of worlds fauna)*

# Protected Area Network

☀ India's PA network covers around 4.8 % of country's land area.

☀ Presently we have

- 99 National Parks
- 515 Wildlife Sanctuaries
- 43 Conservation Reserves, and
- 04 Community Reserves

*(as defined under Wildlife (Protection) Act, 1972)*

## Protected Area Network (contd.)

- ☀ Besides, launched a number of species specific rehabilitation/restoration programmes which include
  - ☀ Tiger (37 Tiger Reserves)
  - ☀ Elephant (26 Elephant Reserves)
  - ☀ Vultures
  - ☀ Snow leopard
  - ☀ Kashmir stag
- 15 Biosphere Reserves (under MAB) designated  
Cold Desert BR last week

# Political Commitment for Sustainable Development (contd.)

- ☀ Adequacy of policy, legal and institutional framework in India
- ☀ A number of forest, wildlife and environment development programmes by the Government of India and provincial governments
- ☀ Various Ministries in the Central Government (Agriculture, Science and Technology, Rural Development, Health, Tribal Welfare, etc.) have institutions and programmes for biodiversity conservation and sustainable development



# Political Commitment for Sustainable Development

(contd.)

## Policy instruments

- ☀ National Forest Policy 1988
- ☀ Joint Forest management resolution 1990, 2002
- ☀ National Forestry Action plan 1999
- ☀ National Wildlife Action Plan 2002-16

**(Give policy directions for sustainable management of forestry and wildlife resources)**

- ☀ National Environment Policy 2006

(overarching policy which supplements other sectoral policies with basic objective of sustainable development )

# Political commitment for SFM (contd.)

## Legal Instruments

- ☀ The Indian Forest Act 1927
- ☀ The Wildlife (Protection) Act 1972
- ☀ The Forest (Conservation) Act 1980
- ☀ Biological Diversity Act 2002
- ☀ The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006

**These legislations regulate use of forest and wildlife resources and diversion of forest land for non-forestry purposes, and also provides rights to the tribals and other forest dwelling communities and calls upon them to conserve forests**

# **Political commitment for SFM (contd.)**

## **Legal Instruments**

☀ The Water (Prevention and Control of Pollution) Act, 1974

☀ The Air (Prevention and Control of Pollution) Act, 1981

**These legislations ensure prevention and control of air and water pollution**

The Environment (Protection) Act, 1986

**An overarching legislation for ensuring clean environment for the people**

## Political commitment for SFM (contd.)

- ☀ Management of forest and wildlife resources is the mandate of the provincial governments
- ☀ GOI supplements their efforts through various centrally sponsored and central sector programmes/schemes

## ☀ **Political Commitment for Sustainable Development (contd.)** Special programmes / schemes

- ☀ Intensification of Forest management
- ☀ National Afforestation Programme
- ☀ Project Tiger
- ☀ Project Elephant
- ☀ Project Snow Leopard
- ☀ Conservation & Management of Mangroves, Coral Reefs & Wetlands
- ☀ Conservation of Medicinal Plants

## ☀ **Political Commitment for Sustainable Development (contd.)** **Special programmes /schemes**

- ☀ Integrated Development of Wildlife Habitats
- ☀ Biodiversity Conservation
- ☀ Biosphere Reserves
- ☀ National Lake Conservation Plan
- ☀ Industrial Pollution Abatement
- ☀ National Natural Resources Management
- ☀ Capacity Building in Forestry Sector

# Stakeholder participation: Indigenous and local communities

☀ **NAP a flagship programme launched in 2002, being implemented through**

- ☀ a twin institutional setup of Forest Development Agencies, and
- ☀ Joint Forest Management Committees

☀ **Envisages universalisation of JFM in all the 0.173 m forest fringe villages**

- ☀ 0.106 m JFMCs constituted, of which about 30560 JFMCs involved in implementation of NAP
- ☀ Programme will build capacity of the FDAs and JFMCs as institutions and help move forward in direction of SFM

# Institutions

- ☀ Central Zoo Authority
- ☀ National Tiger Conservation Authority
- ☀ National Biodiversity Authority (*implementation of Biological Diversity Act*)
- ☀ Wildlife Crime Control Bureau
- ☀ Wildlife Institute of India
- ☀ Indian Council of Forestry Research and Education
- ☀ Forest Survey of India
- ☀ Indian Institute of Forest Management



- ☀ Botanical survey of India
- ☀ Zoological Survey of India
- ☀ Indira Gandhi National Forest Academy
- ☀ Directorate of Forest Education
- ☀ Indian Plywood industries and Training Institute
- ☀ GB Pant Institute of Himalayan Environment and Development
- ☀ Centres of Excellence ( theme based, env edu, ornithology, ecosystems magt)

These policy and legal instruments and various centrally sponsored and central sector programmes, and the related institutions help in achieving the three main objectives of the CBD, NBAP and 2010 targets

## Enhanced International Cooperation

☀ India Party to a number of Multilateral Environmental Agreements related to environment and biodiversity

- ☀ Convention on International Trade in Endangered Species of Wild Fauna and Flora
- ☀ UNESCO -World Heritage Convention
- ☀ Convention on the Conservation of Migratory Species
- ☀ International Whaling Commission
- ☀ IUCN : World Conservation Union
- ☀ Convention on Biodiversity
- ☀ ITTA International Tropical Timber Agreement

# Enhanced International Cooperation (Contd.)

☀ UNFCCC

☀ UNCCD

☀ Montreal Protocol

☀ Basal Convention

## India's Forests as Carbon Sinks (contd.)

- ☀ Over the last two decades, progressive national legislations and policies aimed at conservation and sustainable management of forests have reversed deforestation and transformed India's forests into significant net carbon sinks of CO<sub>2</sub>
- ☀ From 1995-2005, the carbon stocks increased from 6,245 million tonnes (mt) to 6,662 mt registering annual increment of 38 mt or 138 mt of CO<sub>2</sub> equivalent

# India's Forests as Carbon Sinks

- ☀ As per our estimates, annual CO<sub>2</sub> removals by India's forest and tree cover are enough to neutralize 11.25% of India's total GHG emissions (CO<sub>2</sub> equivalent at 1994 levels)
- ☀ India has launched a series of progressive policy initiatives on SMF and A&R which involve significant additional resources for sustaining and growing India's forest cover. We hope by 2015, carbon stored in India's forests will be 7,283 mt



# Methodology for assessing Carbon stocks-India

- ☀ **National Level Accounting Mechanism**
- ☀ **Assessment of Forest Carbon Stocks**
  - ☀ **Biomass Carbon**
  - ☀ **Soil Organic Carbon (SOC)**
- ☀ **Assessment at regular intervals (5 year National Level Forest Carbon Accounts)**

## India Supports

**development of a common methodology for all policy approaches,  
based on remote sensing and minimum ground verification to  
achieve defined confidence level**

# REDD

## ☀ Reduction in deforestation through

- ☀ Forest (Conservation) Act, 1980 (regulates use of forest land for non-forestry purposes, compensatory afforestation, charging of Net Present Value )

## ☀ Reduction in degradation through

- ☀ National Afforestation Programme through JFM
- ☀ Intensification of Forest Management
- ☀ Integrated Forest Protection Scheme
- ☀ Integrated Development of Wildlife Habitats
- ☀ Use of CAMPA Fund and various other schemes



# India's approach of REDD Plus

## Sustainable management of forests plus A&R

- ☀ Afforestation & Reforestation facilitated by
  - ☀ Convergence of NREGS and NAP
  - ☀ National Mission for a “Green India”
  - ☀ CAMPA Funds
  - ☀ Gram/ Panchayat Van Yojana
  - ☀ Additional Central Assistance for accelerated programme of restoration and regeneration of forest cover

## Current Actions for Adaptation & Mitigation

- ☀ Adaptation measures taken to minimise adverse impacts of climate change
  - ☀ Relocating communities living close to sea shore
  - ☀ Switching to crops that can withstand higher temperature
- ☀ Mitigation comprise measures to reduce the emissions of greenhouse gases that cause climate change in the first place e.g.
  - ☀ Switching to renewable sources of energy

## Some existing adaptation related programmes

- ☀ Crop improvement (Development of arid land crops, pest management)
- ☀ Drought Proofing (minimise adverse effects of drought on crop production & livestock, improvement in socio economic condition)
- ☀ Forestry (strong afforestation programmes, regulating diversion of forest land, compensatory afforestation, currently 1.1 mha annually)
- ☀ Water (rain water harvesting)
- ☀ Coastal Regions ( construction of coastal protection structures, plantations )

## **Some existing adaptation related programmes**

- ☀ **Health** (surveillance & control of vector borne diseases, medical relief in natural calamities)
- ☀ **Risk financing** (crop insurance scheme, credit support)
- ☀ **Disaster management** (grants-in-aid to victims, proactive disaster prevention programme)

## **Actions for GHG Mitigation**

### ☀ Policy Structure relevant to GHG Mitigation

☀ Integrated Energy Policy (provides for promotion of energy efficiency, emphasis on renewables, focused R & D on clean energy technology)

☀ Rural electrification policy (promotes renewable energy technologies)

# Actions for GHG Mitigation

- ☼ Introduction of labeling for Appliances (provide information about energy consumption for informed decisions)
- ☼ Energy Conservation Building Code to optimise buildings energy demand
- ☼ Energy Audits of large Industrial Consumers
- ☼ Mass transport- expansion of Metro rail
- ☼ Clean air initiatives like CNG, condemnation of old vehicles
- ☼ Promotion of energy saving devices like solar heaters
- ☼ Promotion of biofuels

# National Action Plan on Climate Change

## Eight National Missions

- 1) National Solar Mission
- 2) National Mission for Enhanced Energy Efficiency
- 3) National Mission on Sustainable Habitat
- 4) National Water Mission
- 5) National Mission for Sustaining the Himalayan Ecosystems
- 6) National Mission for a “Green India”
- 7) National Mission for Sustainable Agriculture
- 8) National Mission on Strategic Knowledge for Climate Change

## **Green India Mission**

- ☀ This mission to be launched to enhance ecosystem services including carbon sinks
- ☀ 6 mha of degraded forests to be reforested/improved through JFM



# Challenges

- ☀ Pressure of economic development due to increasing population on limited and natural resources
- ☀ Conservation versus economic development to improve living standards
- ☀ Loss of forests (diversion, encroachment and degradation )
- ☀ Declining forest productivity (overuse beyond sustainable limits)
- ☀ Inadequate investment (on afforestation, protection, and development)
- ☀ Inadequate viable alternative energy available to rural communities

- ⊗ Heavy tourist pressure
- ⊗ Biosafety issues concerning use of transgenic crops
- ⊗ Habitat loss & fragmentation
- ⊗ Poaching & illegal trade
- ⊗ Lack of capacity of people living in and around forests to implement SFM
- ⊗ Forest fires and shifting cultivation
- ⊗ Ever-increasing biotic pressures, unsustainable land use practices, excessive subsistence dependence on forests

## Challenges.....contd

- ☼ Inadequate appropriate and clean technology
- ☼ Inadequate and non prioritised forest research
- ☼ Inadequate extension in bringing knowledge and technology to field
- ☼ Inadequate infrastructure and institutional support for marketing and distribution of wood and NTFPs
- ☼ Inadequate database and information systems for resource utilisation and management planning

# Opportunities

- ☀ Despite these challenges, we see good future in opportunities
- ☀ Inter–sectoral linkages are strong and economic is growing
- ☀ Very young and educated workforce
- ☀ Improvement in overall development
- ☀ Wood Energy Use (reduction in wood fuel consumption in urban areas, implementation of strict environmental norms, discourage energy deficient systems)

## ☀ Technological changes

- ☀ with emphasis on alternative fuels (biofuels)

- ☀ IT emerging as an important tool for assessment and decision making in management of resources

## ☀ Impact of Globalization

- ☀ India is working towards sustained supply of forest raw material for industry

## Opportunities.....contd

- ☀ Country's policies of increasing forest and tree cover are helping in increasing the carbon sink- important climate change mitigation strategy
- ☀ Conservative consumption habits of people putting less pressure on natural resources ( 3Rs- reduce, recycle and reuse)

# Opportunities.....contd

- ☀ Environmental Issues and their Impact on the Forest Sector
  - ☀ Adverse impact of climate change is becoming more and more visible.
  - ☀ Carbon sequestration and storage forestry are being considered as viable and acceptable climate change mitigation strategies.
- ☀ Forestry Research
  - ☀ Catalyst in poverty alleviation
- ☀ Forestry Education
  - ☀ Forestry both as a scientific discipline as well as a profession is fast emerging as multidisciplinary vocation with multi – sectoral dimensions and applicability.

## **Lessons learnt from implementation of international commitments**

There is a need to create complementarities among

- ☀ environment-related conventions

- ☀ relevant forest and environment organizations having overlapping mandates

for better use of resources, expertise and exchange of information/knowledge



# Conclusion

(contd.)

- ☀ Consultative Groups on all three areas are represented by experts/planners in the fields of Biodiversity, UNFCCC and UNFF for finalisation and submission of country reports
- ☀ Activities being undertaken to achieve objectives of UNFF, CBD & UNFCCC are complementary to each other
- ☀ India supports interaction and exchange of knowledge at national, regional and international level between CBD, UNFF and UNFCCC to address the gaps and facilitate actions
  - ☀ Need to identify priority areas and focus attention on issues that would facilitate actions at national level to achieve the set goals

# Conclusion

- ☀ This workshop is a positive step in this direction
- ☀ India is making positive contribution towards
  - ☀ Checking global climate change
  - ☀ Promoting biodiversity conservation
  - ☀ promoting Sustainable development

***Thanks !***