Forest Solutions: Climate and Water Crises in India

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India’s Unique Dilemmas

• 2.5% land area - only 24% forest and tree cover
• 17% human population - per capita forest one-tenth of world average
• 18% cattle population
• Very high dependence of communities on forests for subsistence and livelihood
• Community participation
• Definition of forests
• Biodiversity
  • Floral (16 broad forest types)
  • Faunal (Wildlife conservation)
Forest Governance in India

• 1864-1980: Sustained Yield Management
• 1980: Sustainable forest management
  • Conservation Forestry
  • Social Forestry
  • Joint Forest Management
• Current scenario
  • Ecosystem services
  • Stakeholders’ participation
  • Carbon sequestration
  • Hydrology
Hydrological crisis in India

• Deeply water stressed
• Groundwater depletion
• Higher catchments- mostly legal forests- often degraded
• Floods and drought cycle- intensifying with changing climate

54% of India Faces High to Extremely High Water Stress

www.indiawatertool.in
India’s INDC Commitments: Meeting the Target

➢ Country’s INDC commitment: Additional 2.5 to 3.0 BT of CO₂ by 2030

➢ Addition of CO₂ at present rate: 1.92 BT of CO₂ by 2030

➢ Short fall in target: 0.6 to 1.1 BT of CO₂
➢ **Landscape based Catchment Treatment and Restoration**

*Addressing the water crisis while increasing carbon stocks in legal forests, and improving ecosystem services*

➢ **Extending Tree Cover outside Forests**

*Quantitative increase in tree cover for direct sequestration of Carbon and forestry production*
Landscape based Catchment Treatment

➢ Degraded river catchments leading to very high peak flows and silt loads - floods interspersed by dried up rivers

➢ Major water crisis across the country

➢ Retain precipitation in the catchment
  ➢ Vegetative measures
  ➢ Mechanical measures

➢ Augmentation of Natural Regeneration- restoring catchment area forests

➢ Recharging of Ground water

➢ Increase in carbon sequestration in soil and trees

➢ Addressing Forest Fires

➢ Man- Animal conflict Resolution
Forest Research Institute (FRI) Dehradun has prepared comprehensive CATP for River Ganga:

- **Covers Catchment in Uttarakhand**
- **River-scape** in UP, Bihar, Jharkhand and West Bengal
- **Project Cost:** Rs.2300 crore ($350 million)
- **Implementation period:** 5 years
- **Treatment Proposed:** Landscape based
- **Work is in Progress**
CATP FOR ALL MAJOR RIVER SYSTEMS

CATP for all the Catchments:

- Anticipated Project Cost: Rs.30 to 50 thousand crore ($5-$7 Billion)
- Coverage area: 20-30 million ha.
- Period of implementation: 10 years
- Possible source of funding: National budgetary provisions, External funding agencies
- Mobilise communities using legislations like Forest Rights Act to restore catchments
CARBON SEQUESTRATION: TREE OUTSIDE FORESTS

National Forest Policy Envisages 33% of area under Forest Cover

Currently about 24% area has green cover

May not be possible to extend area of conventional forests

Most feasible option: Trees outside Forests
WHY TREES OUTSIDE FORESTS?

➢ Large tracts of government and private low productivity lands
➢ Net annual import of wood & wood-product is Rs.42,000cr ($6.5 Billion)
➢ 70% of wood requirement met from farm forestry and agroforestry
➢ Estimated production 2011 from TOF: 42.77 million m3
➢ An additional 10 mha. of non-forest tree plantations/agroforestry by farmers by 2030 - incomes and CO2 sequestration of over 1 billion tonnes
➢ Enhanced incomes for farmers- development strategy
THANK YOU

Questions and Suggestions: dgfindia@nic.in