

Poplar as a Climate Mitigation Option under REDD+ -A case from Haryana, India



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Global Climate Change



- Rise in Earth Temperature
 - Target to keep below 2°C over pre-industrial levels
- Increase in CO₂ and other Greenhouse Gases
- Mainly due to human activities
 - Industrial emissions
 - Energy Sector
 - Deforestation

Deforestation and Degradation

- **Deforestation**, conversion of forests for other activities
 - Contributes globally to approximately 20 per cent of annual greenhouse gas emissions (IPCC)
- **Degradation** is reduction in density class and biomass
- Reducing deforestation and degradation (**REDD**) is the mitigation option with immediate results



Cancun Forestry Decision

Decision 1/CP.16 (2009) of UNFCCC

Scope of REDD+ finally agreed by the Parties

- (a) Reducing emissions from deforestation
- (b) Reducing emissions from degradation
- (c) Conservation of forests
- (d) Sustainable management of forests
- (e) Enhancement of forest carbon stocks

REDD+ implementation in India

■ Phase 1 – National Strategy and Action Plan Development

□ MoEF alongwith relevant organisations

■ Phase 2 – Readiness and Initial Action

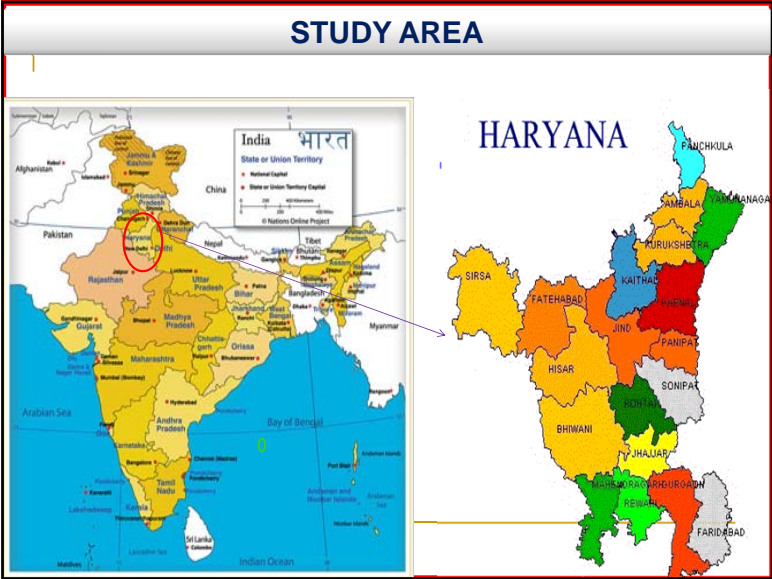
□ ICFRE launching two pilot projects

■ Gujarat and Uttarakhand

■ Phase 3 – Country-wide Implementation

Overlapping

This Study is part of the REDD+ Readiness with focus on potential of Poplar to the Mechanism



Haryana

■ Primarily an agricultural State

■ Small Area 44,354 km²

□ 1.37 % area of the country

■ 2nd in per capita income

■ 1st in per capita expenditure

■ Land under pressure

□ Urbanization

□ Proximity to Delhi

□ Mining

Haryana Forests at a Glance

• Geographical Area	44,35,400 ha
• Forest Area	1,59,400 ha (3.8%)
• Tree Cover (FSI Report 2009)	3,00,300 ha (3.2%)
• Protected Area:	30,362 ha

Agro-forestry in Haryana

- Agro-forestry played a big role in increase of tree cover
 - Progressive farmers
 - Social forestry started in 1980s
 - Many other Projects like CFP, Aravallis
 - Existence of a big timber market in Yamunanagar



Asia's biggest plywood market

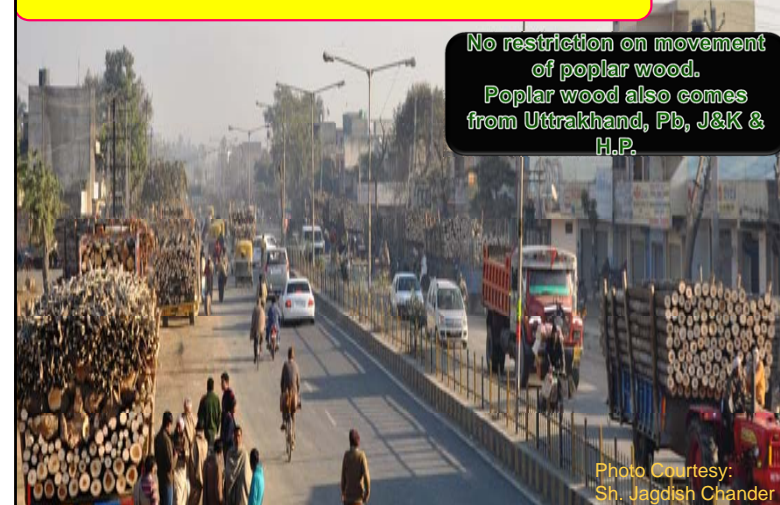


Photo Courtesy:
Sh. Jagdish Chander

Objective of Study



Assess the significance of Poplar Cultivation in Haryana as a climate mitigation option under the upcoming REDD+ Mechanism

Methodology

- Assessment of Trees Outside Forests (ToF)
 - Species-wise and District-wise
 - Selection of the Sample
 - Stratified Random Sampling
- Contribution and Potential of Poplar to ToF
- Significance for REDD+ Mechanism

Stratified Random Sampling

- Districts as Strata
- Ranges within District as Sub-strata
- Six villages in each Range selected randomly
- 100% enumeration of trees in the selected villages

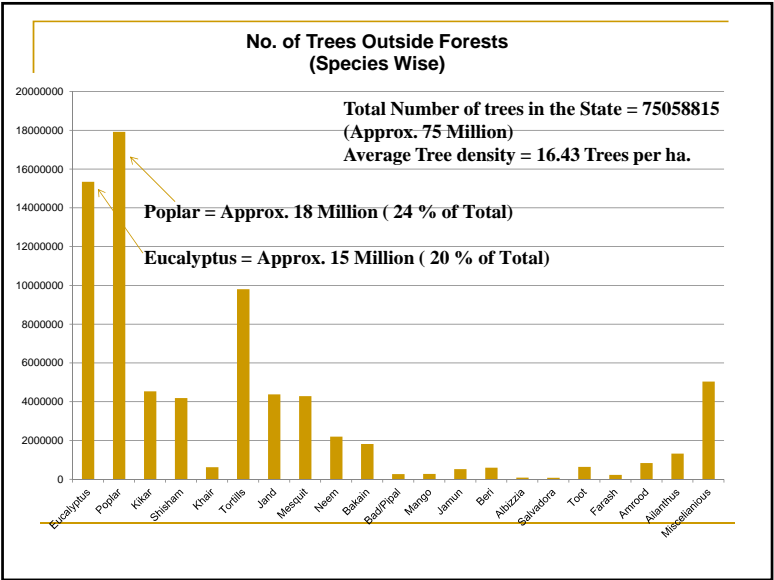
Total Ranges in State = 68 (In 20 Districts)
Therefore, Total Villages Selected = 408
(~6% sample spread uniformly throughout the State)

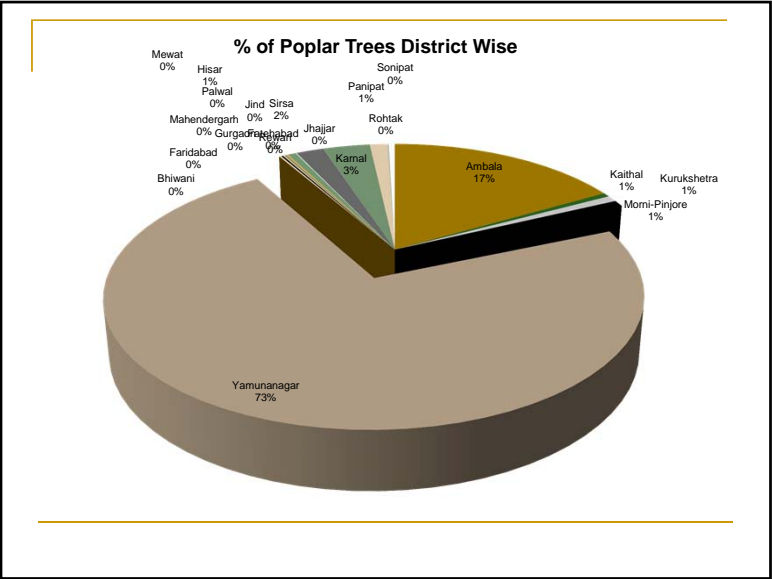
Enumeration



All trees outside block forest areas were enumerated

- Trees on Private lands
- Panchayat lands
- Community lands
- Institutional lands and
- Strips (Roads and Canals).





Significance for REDD+

1. Reducing Deforestation

- Maximum occurrence of Poplar in districts with high forest cover (Shiwaliks)
 - Yamunanagar
 - Ambala

2. Reducing Degradation

- Reduction of Pressure on Natural Forests
 - For timber
 - Fuelwood



Significance for REDD+ contd..

3. Conservation of Forests

- Protected Areas in vicinity
 - Kalesar National Park (Yamunanagar)
 - Mandhana Wildlife Sanctuary (Panchkula)
 - Other Protected Forests in vicinity

4. Sustainable Management of Forests

- Ecological Security
- Economic Feasibility
- Social Acceptance

Significance for REDD+ Contd..

5. Enhancement of Forest Carbon Stocks

- Through Carbon Sequestration in 18 Million Poplar trees
- Roughly 9.7 Million Tons of CO₂ in Haryana alone
 - Assuming 27 t CO₂ per ha and 500 trees per ha.





Role of ICFRE



- Providing policy inputs for REDD+ for communication to UNFCCC
- Starting REDD+ Pilot Projects in the States of Uttarakhand and Gujarat
- Providing technical support to all States on agro-forestry and Poplar cultivation
- Now plans to synergize the research efforts with the new climate mechanism

Conclusions

- REDD+ is an innovative way to mitigate climate change through sustainable development
- Poplar cultivation has got tremendous potential in all components of REDD+
 - Especially for agricultural States like Haryana
- Must start piloting REDD+
- Some of the Challenges
 - REDD+ Finance
 - MRV Protocols for Poplar
 - Safeguard issues

