Literature Mapping Exercise

# Research Topic:

Carbon Stocks in Indian Forests: Estimation Methods, Trends, and Policy Implications

# 1. Initial Literature Search

Starting keywords:  
- “Carbon stock estimation in Indian forests”  
- “Forest carbon sequestration India”  
- “REDD+ India carbon accounting”  
  
**Foundational papers:**  
- Ravindranath, N.H., & Ostwald, M. (2008). Carbon Inventory Methods: Handbook for Greenhouse Gas Inventory, Carbon Mitigation and Roundwood Production Projects.  
- ISFR Reports (India State of Forest Report), Forest Survey of India (FSI), especially ISFR 2021.  
  
These sources provided a strong base for understanding how India estimates and reports its forest carbon stocks.

# 2. Exploring with ResearchRabbit & Connected Papers

I used Connected Papers starting from Ravindranath's carbon inventory work, and ResearchRabbit to trace more recent and relevant studies.  
  
**New Relevant Papers Discovered:**  
1. Chhabra, A., et al. (2002). Estimation of carbon stock in Indian forests using remote sensing and GIS. Current Science.  
- Introduced remote sensing and GIS techniques for spatially mapping carbon, which helped deepen the technical aspect.  
  
2. Sarkar, S., & Kundu, S. (2017). Carbon sequestration potential of forest types in India: A landscape-level analysis. Environmental Monitoring and Assessment.  
- Added granularity to understanding how forest type and region affect carbon stock levels.  
  
3. Aggarwal, A., et al. (2020). REDD+ in India: Policy framework, challenges, and opportunities. Forest Policy and Economics.  
- Expanded the policy perspective and connected carbon stock data to international mechanisms like REDD+.

# 3. Reflection and Insights

**Expansion of Understanding:**  
- Originally, I considered carbon stock estimates to be mainly about biomass measurement and forest cover data.  
- The new papers emphasized methodological diversity—especially remote sensing, allometric models, and spatial modeling.  
  
**New Considerations:**  
- Forest type variability: Carbon density varies widely between tropical, dry deciduous, and mangrove forests.  
- Policy dimension: Carbon stock assessments are now linked to global funding mechanisms like REDD+ and India’s NDCs.  
- Technological tools: Increasing integration of satellite imagery, LIDAR, and machine learning.  
  
**Next Steps:**  
- Investigate state-level carbon stock assessments, especially in Himachal Pradesh and North-East India.  
- Explore how community forest management practices impact carbon storage.  
- Review the latest ISFR 2023 (if available) for updated data.