

Forest transition, forest rehabilitation and sustainable forest management

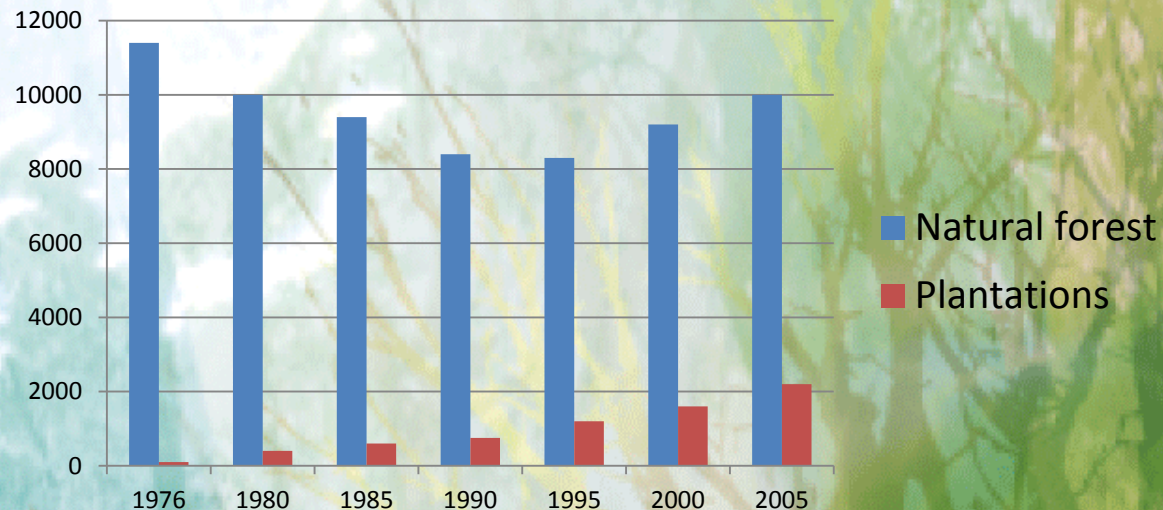
Linkages, complementarities and
overlaps

AREA ENVIRONMENTS AND GLOBAL
SUSTAINABILITY CHALLENGES

- Transition to sustainable forest management and forest rehabilitation
 - Forest transition
 - Sustainable forest management
 - Forest rehabilitation

- Forest transition

- Reversal or turnaround in land-use trends for a given territory from a period of net forest area loss to a period of net forest area gain



- Forest transition pathways
 - Economic development
 - Scotland, France, Denmark, Holland
 - Forestry scarcity
 - Puerto Rico, China, Vietnam
 - State forest policy
 - Butan
 - Globalization
 - Costa Rica, Salvador
 - Smallholder tree land use intensification
 - Java, Guinea
- From (Lambin & Meyfroidt 2010)

- Sustainable forest management
 - Potential to fulfill relevant ecological, economic and social functions, now and in the future
 - Maintain biodiversity, productivity, regeneration capacity
 - At local, national, and global levels and without causing damage to other ecosystems

- SFM can be linked to multiple scales
 - Stand
 - Landscape
 - National
 - Global

Factors that influence Sustainable Forest Management

- A. Policies, institutions and governance**
 - 1. Land tenure and rights to forests and trees
 - 2. Public administration
 - 3. Participation and stakeholder cooperation
 - 4. Power and representation
 - 5. Enforcement of laws and regulations
 - 6. Reconciliation of different land uses
 - 7. Long-term societal commitment to SFM
 - 8. Influences of regional/global processes
- B. Livelihoods, capacities, cultural and socioeconomic aspects**
 - 9. Contribution to livelihoods
 - 10. Commercial opportunities, linkages to markets
 - 11. Technical, managerial, leadership
 - 12. Access to capital
 - 13. Security and conflict
 - 14. The role of industrial forestry
 - 15. Landscape or ecosystem Management
- C. Natural resource base (biophysical conditions)**
 - 16. Extent and condition of forest resources
 - 17. Trees outside forests, including agroforestry
- D. Research and monitoring**
 - 18. Research programs
 - 19. Monitoring programs

- Factors that influence Sustainable Forest Management
 - Policies, institutions and governance
 - Livelihoods, capacities, cultural and socioeconomic aspects
 - Natural resource base (biophysical conditions)
 - Research and monitoring

- Forest rehabilitation
 - Establish trees on formerly forested land
 - To enhance productivity, livelihoods, or environmental services
 - Through deliberate technical, socioeconomic, institutional interventions (Chokkalingam 2005)
- Forest restoration
 - Accelerate recovery of forest structure, ecological functioning and biodiversity levels
 - Through re-instating ecological processes
 - Towards climax forest (Elliot 2013)

Factors that influence forest rehabilitation

A. Policies and legislation

1. Drivers behind policies
2. Credit facilities, payments for planting, payment for environmental services
3. Incentives and disincentives for degradation and rehabilitation
4. Sustainability of policies and political support
5. Tenure and interest in the outcomes of rehabilitation
6. Effectiveness and limitation of land zoning

B. Players, actors and arrangements

7. Organization, capacity, competition aspects
8. Social cohesion and conflicts
9. Adoption of forest rehabilitation by relevant players
10. Institutional arrangements and how they are influenced by conditions and objectives
11. Sustainability of arrangements
12. Intra-project communication; documentation of projects; communication of results

C. Funding

13. Amounts of funds invested
14. Main sources of funding. Effects of different types of funding on nature, outcomes, and cost effectiveness
15. Link between funding, funding types and continuity of forest rehabilitation

D. Objectives of rehabilitation

16. Link between objectives and causes of degradation
17. Process of determining objectives
18. Compatibility and competition between objectives
19. Communication to relevant players
20. Flexibility or inflexibility of objectives

E. Economics, markets, demands

21. Dynamics of markets, evolving wood industries
22. Use of marketing strategies in forest rehabilitation efforts

F. Technology

23. Availability and dissemination of available technologies
24. Appropriateness of technologies for the causes of degradation, objectives, site conditions, local arrangements, local needs and markets
25. Factors that define choice of technologies
26. Conditions that influence adoption

G. Extension, technical assistance and training

27. The contribution of extension and training on forest rehabilitation outcomes

- Factors that influence forest rehabilitation
 - Policies and legislation
 - Players, actors and arrangements
 - Funding
 - Objectives of rehabilitation
 - Economics, markets, demands
 - Technology
 - Extension, technical assistance and training

Sustainable forest management forest transition matrix

	Pre transition	Post transition
Unsustainable forestry	<ul style="list-style-type: none">- Deforestation through land conversion and logging- Forest degradation	<ul style="list-style-type: none">- Forest area expands- Forest degradation- Natural forests being replaced by degraded forest and plantations
Sustainable forestry	<ul style="list-style-type: none">- Sustainable supply of goods and services- Forest conversion continues	<ul style="list-style-type: none">- Sustainable supply of goods and services- Forest area continues to expand.

Sustainable forest management - forest rehabilitation – forest transition matrix

	Pre transition	Post transition
No SFM No FR	Deforestation and degradation, forest cover decline	
No SFM Yes FR	Deforestation or degradation through land conversion and logging Rehabilitation either not successful or does not keep up with deforestation and degradation	Forest area expands Conversion and degradation of natural forest Natural forests being replaced by forest plantations
Yes SFM Yes FR		Natural forest estate preserved or expanding Plantation forest expanding

Forest transition = F (SFM, Rehabilitation)

Forest transition pathways

- Economic Development
- Forestry scarcity
- Policies
- Globalization
- Smallholder land use intensification

Factors that influence Sustainable Forest Management

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 1. Land tenure and rights to forests and trees
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- D. Research and monitoring
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Factors that influence forest rehabilitation

- A. Policies and legislation
 1. Drivers behind policies
 2. Credit facilities, payments for planting, payment for environmental services
 3. Incentives and disincentives for degradation and rehabilitation
 4. Sustainability of policies and political support
 5. Timeliness and intensity of the outcomes of rehabilitation
 6. Effectiveness and facilitation of land zoning
- B. Players, actors and arrangements
 7. Organization, capacity, cooperation aspects
 8. Social cohesion and conflicts
 9. Adoption of forest rehabilitation by relevant players
 10. Institutional arrangements and how they are influenced by conditions and objectives
 11. Sustainability of arrangements
 12. Intra-project communication, documentation of projects, communication of results
- C. Funding
 13. Amounts of funds invested
 14. Main sources of funding, effects of different types of funding on nature, outcomes, and cost effectiveness
 15. Link between funding, funding types and continuity of forest rehabilitation
- D. Objectives of rehabilitation
 16. Link between objectives and causes of degradation
 17. Process of determining objectives
 18. Compatibility and competition between objectives
 19. Communication to relevant players
 20. Feasibility or intensity of objectives
- E. Economics, markets, demands
 21. Dynamics of markets, evolving wood industries
 22. Use of marketing strategies in forest rehabilitation efforts
- F. Technology
 23. Availability and dissemination of available technologies
 24. Appropriateness of technologies for the causes of degradation, objectives, site conditions, local arrangements, local needs and markets
 25. Factors that define choice of technologies
 26. Conditions that influence adoption
- G. Extension, technical assistance and training
 27. The contribution of extension and training on forest rehabilitation outcomes

FOREST TRANSITION	SFM	REHABILITATION
State forest policy	Policies, institutions and governance	Policies and legislation
Economic development Forestry scarcity		Economics, markets, demands
Globalization		Funding
Smallholder tree land use intensification	Livelihoods, cultural and socioeconomic aspects	Players, actors and arrangements
	Research and monitoring Capacities,	Extension, technical assistance and training Technology
	Natural resource base	
		Objectives of rehabilitation

- Questions that we hope to answer in this meeting
 - Forest and tree cover dynamics in Asian countries?
 - Key factors and their underlying causes that explain declining deforestation, expansion of the forest estate, progress to SFM, improved policies and governance?
 - Implications for forest policies, poverty alleviation, climate mitigation and green economy?

Thank you

