Forest plantations in central Africa: A powerful tool for natural forest management, conservation and rehabilitation

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IUFRO - International symposium on planted forests
Bilbao – October, 2006
• Managing natural forests: the priority
• An old plantation dynamic
• Plantations & natural forests
• New opportunities
Managing natural forests: the priority

- **Congo Basin forests**: one of the three main tropical forest regions
- Common processes in the region COMIFAC, CBFP,…
- Still relatively small impact from deforestation
- An important socio-economic value
- **Strong policies** are progressively launched for SFM
An already long experience in plantations

- **Fast growing exotic species** for industrial wood or energy wood on savannas
- **Monospecific plantations** with local species after removing natural forests
- **Plantations in degraded forests** with natural or exotic species for high quality timber
- **Enrichment of forests** after logging
An already long experience in plantations

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Plantations and natural forests

1 – New demands for plantation forestry

• International financing strategies and policies
• Privatization of the forest based sector
• Strong environmental pressure
• management plans for all forest concessions
• Strong demand for social benefits (employment,…)
• Evolution in markets and tools (smaller wood)
Plantations and natural forests

2 – a constant evolution for productive forests

- Evolution to be compared with temperate forests
- Increased pressures on productive forests
- Managing economic sustainability

- Centuries of decline (agriculture, industry)
- Rapid increase in area and volume since century 20
- Sustainability does not mean all uses at the same level of management
- Increase in costs induce spatialization of forest priority uses (« wood factories »,...)
Plantations and natural forests

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Plantations and natural forests

2 – a constant evolution for productive forests

- evolution to be compared with temperate forests
- Increased pressures on productive forests
- Managing economic sustainability

- Decrease of production areas
- Increase in mobilization costs
- Decrease in mean size of logs
- Increase in environmental issues
- Heterogeneity in management
Plantations and natural forests

2 – a constant evolution for productive forests

- evolution to be compared with temperate forests
- Increased pressures on productive forests
- Managing economic sustainability

- Increased wood transformation near the forests
- Promote the use of new species
- Renew the productive stock
Plantations and natural forests

3 – new values

• Added value to forest concession management plans
  • Economic enhancement of forest value
  • Better economic value means better social and ecologic values

• Plantation tool is an element of concession management and ecological restoration
• Political impact in term of territorial organization
• Creation of development schemes
Plantations and natural forests

3 – new values

• Added value to forest concession management plans
• Economic enhancement of forest value
• Better economic value means better social and ecologic values
• Logging more trees on smaller areas means lower costs
• Homogeneity in trees means standard products and better markets
• Creation of economic flows and infrastructures
Plantations and natural forests

3 – new values

- Added value to forest concession management plans
- Economic and social enhancement of forest value
- **Better economic value means better ecologic values**

- Rehabilitation of forest diversity with mixed plantations x natural forests
- Plantations are a land mark and the last protection before deforestation
- **Plantation catalytic effect is real**
Plantations and natural forests

4 – new tools
Main uses of plantation tools in forest restoration and agroforestry

Forêts naturelles

forêts naturelles exploitées

restauration forestière

forêts secondaires

parcours sylvopastoraux

jachères naturelles

agroforêts

plantea forêts

jachères enrichies

agroforêts plantées

plantations cultures pérennes

associations arbres + cultures vivrières

blocs fourragers

haies vives

cultures vivrières

cultures pérennes + vivrières

cultures en couloir

anthropic impact increases
tools available for forest restoration
New opportunities in Congo

1 – Plantations are a institutional priority

- Comifac priority
- Forest law
- Management plans
New opportunities in Congo

2 – Preliminary results

• Large number of tests and plantations
• Many species and many sites
New opportunities in Congo

2 – some results

- *Terminalia superba* clonal test, mean 12 m³/ha/year at age 20
- *Terminalia superba* provenances trial, from 1.5 to 13 m³/ha/year age 13
New opportunities in Congo

2 – some results

- large scale logging by private companies for limba (terminalia) plantations aged 30 to 40 years in southern Congo

2000 ha
100 trees per ha
Mean tree volume is 2.3 m³/tree
age 30-40
Logging costs very low
Standard timber is better value for transformation
much more benefits than traditional management (1 to 2 trees per ha each 30 years)
New opportunities in Congo

3 – The CIB example

• What is CIB (1) ?
• Social and ecological approach integrated in management plans
• A refined methodology for plantations
• Implementation
New opportunities in Congo

3 – The CIB example

• What is CIB (2)?
• Social and ecological approach integrated in management plans
• A refined methodology for plantations
• Implementation

1.3 million ha
350 000 m³ round wood
100% export
85% local transformation
FSC certification July 2006
2000 direct jobs (1st in whole Congo)
New opportunities in Congo

3 – The CIB example

- What is CIB?
- Social and ecological approach integrated in management plans
- A refined methodology for plantations
- Implementation

- Adapted management for large areas near Nouabale Ndoki National Park (fauna, communities,...)
- Conservation compartments in productive areas
- Agroforestry program near the villages for food supply and lower impact on forest
- Reforestation and forest restoration issues
New opportunities in Congo

3 – The CIB example

• Define priority spots

• What is CIB?
• Social and ecological approach integrated in management plans
• A refined methodology for plantations
• Implementation
New opportunities in Congo

3 – The CIB example

• What is CIB?
• Social and ecological approach integrated in management plans
• A refined methodology for plantations
• Implementation

• Select tree species
New opportunities in Congo

3 – The CIB example

- What is CIB?
- Social and ecological approach integrated in management plans
- A refined methodology for plantations
- Implementation

• Adopt the best available techniques
New opportunities in Congo

3 – The CIB example

• What is CIB?
• Social and ecological approach integrated in management plans
• A refined methodology for plantations
• Implementation

On going project…..

New nursery
Large scale reforestation planning
Costs and economic validation
Land tenure
traditional rights evaluation
Incentives and taxes reduction
Risks assessment
Conclusion

Towards (2007) a practical tool (guide) for large scale implementation in commercial forest concessions
Happy end for long term research in tropical plantation forestry