

Future impact of poplar and willow on the evolving European Forestry-Wood-Chain

Joris VAN ACKER,
&
Lieven DE BOEVER

Ghent University (UGent)
Laboratory of Wood Technology
Coupure Links 653, 9000 Gent, Belgium

Poplars, willows and people's wellbeing

23rd Session of the International Poplar Commission, Beijing, China, 26-30 October 2008



European FWC - poplar

- *Poplar is an important tree / wood species...*
- *Plantations are increasingly important for the world wood production*
- *Now 700.000 ha producing 9 million m³*



European FWC - status

- *New: biomass for energy*
- *New products like WPC (wood polymer composites) could also compete for biomass resource alongside existing wood-based panels like particleboard*
- *Limited increase of hybrid poplar plantations...*



World wood supply ?

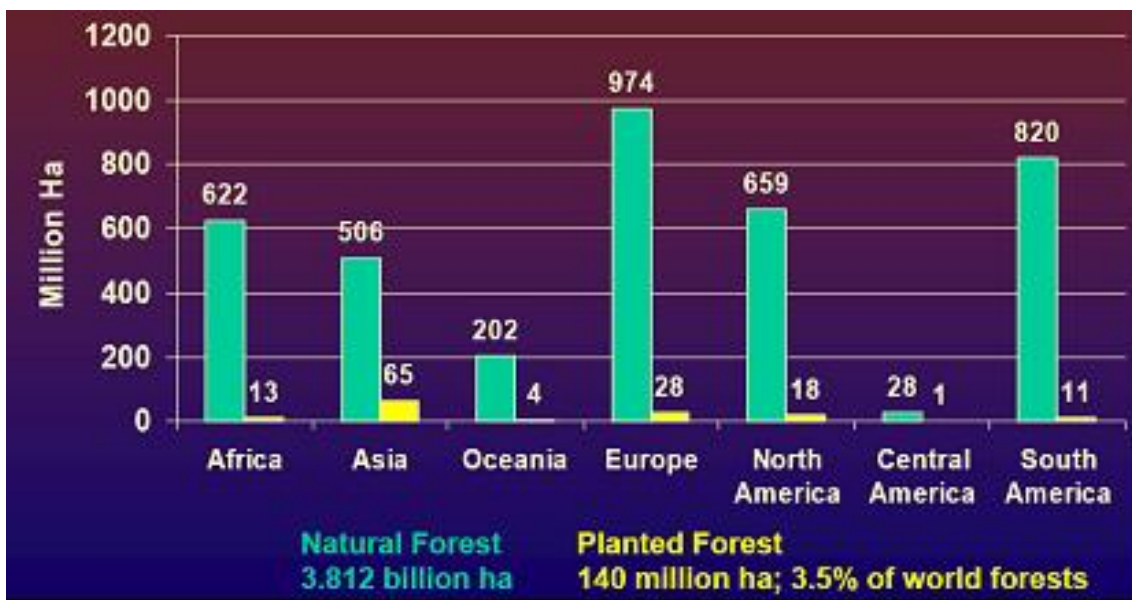
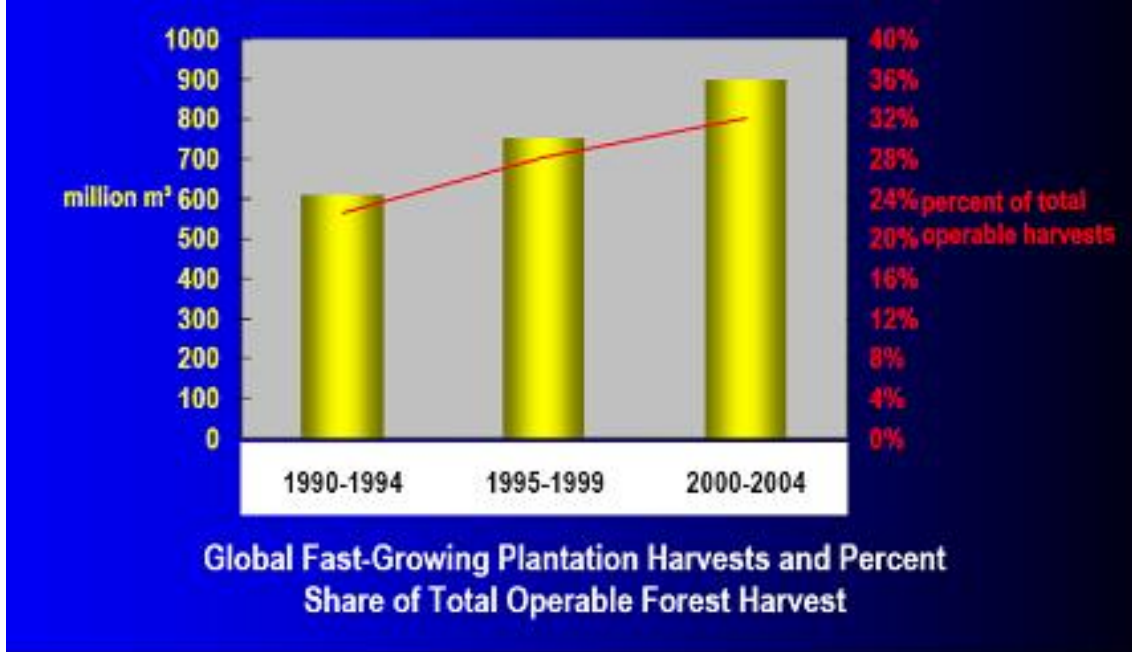
- *Forest cover declines at a rate of 10-16 million ha/y.*
- *Increasing population and rising incomes increase demand for wood.*
- *Solutions:*
Mobilization of wood out of underutilized forests; or
Establishing more plantation grown timber.
- *A significant gap between the wood demand and supply from only “natural” forest will anyhow become apparent.*

How important are tree-plantations?

- In 2005 approx. 500 million m³ of the 3 billion m³ harvested is coming from plantations...*
- According to FAO an extrapolation to 2050 shows that out of the 3 billion m³ wood for processing into wood products (now approx. 1.8 billion m³) 1/3 will/should come from plantations?*

Source: FAO Global Forest Resources Assessment, 2005

- Plantations today provide up to 25% of the world industrial fibre and this is still rapidly increasing.*



Poplars, willows and people's wellbeing

23rd Session of the International Poplar Commission, Beijing, China, 26-30 October 2008



LABORATORIUM VOOR
HOUTTECHNOLOGIE

(Poplar) Plantations

Positive elements

- Lower land area is needed for the same output*
- Critical demands and market supplies solved on short term*
- High return on investments*
- They do “conserve” natural forest through substitution*



Tree/wood quality

- *Tree/wood quality is considered critical for many poplar/willow wood products: veneer – plywood; engineered wood products; timber constructions; packaging (food, transport, ...)*
- *To produce high quality wood products based on fast growing (poplar) plantations some technical problems need attention: amount of juvenile wood, tension wood; “lower” or “more variable” density; higher percentage “defects”; altered processing parameters (sawmilling or peeling, drying, gluing, ...but also grading)*



What are the new interactions ?

- *Wood for materials
and/or
Wood for energy*



- *short rotation coppice specific for energy?*
- *different 'new' production systems can provide material for wood processing suitable for wood products like MDF, OSB, as well as PB, WPC but also energy*

What are the new options ?

- *Forestry or agriculture*
Legal frame is difficult, example case Italy?
- *Renewed discussion on carbon sinks could boost poplar plantations....save the environment, use (more) wood ... (CEI-Bois campaign)*
- *Need for more lignocellulosic material in general inititates renewed interest in poplar plantations*

Bio-energy

- *Policies do define the goals for woody biomass needed for energy (realistic goals?)*
- *Competition for the same resources: biomass for energy – particleboard and other WBP – pulp and paper*



Wood price narrowing


- *Since biomass for energy is an issue the low quality resources become more expensive.*
- *The impact of high quality processing is limited and hence prices are not increasing equally fast for quality logs..., some large dimension logs are difficult to process?*
- *This leads to the development of a narrowing price-range, ...*
- *If forest management for high quality logs (e.g. involving pruning,...) no longer has a major impact on prices foresters/growers tend to become less focussed on quality.*

Image building in a modern society

ex. Belgium, ...

- *Hybrid poplar ↔ local indigenous species*
(black poplar, willow, aspen)
- *Monoclonal forestry – agricultural crop*
- *Diseases...leaf disease rust (Melampsora)*





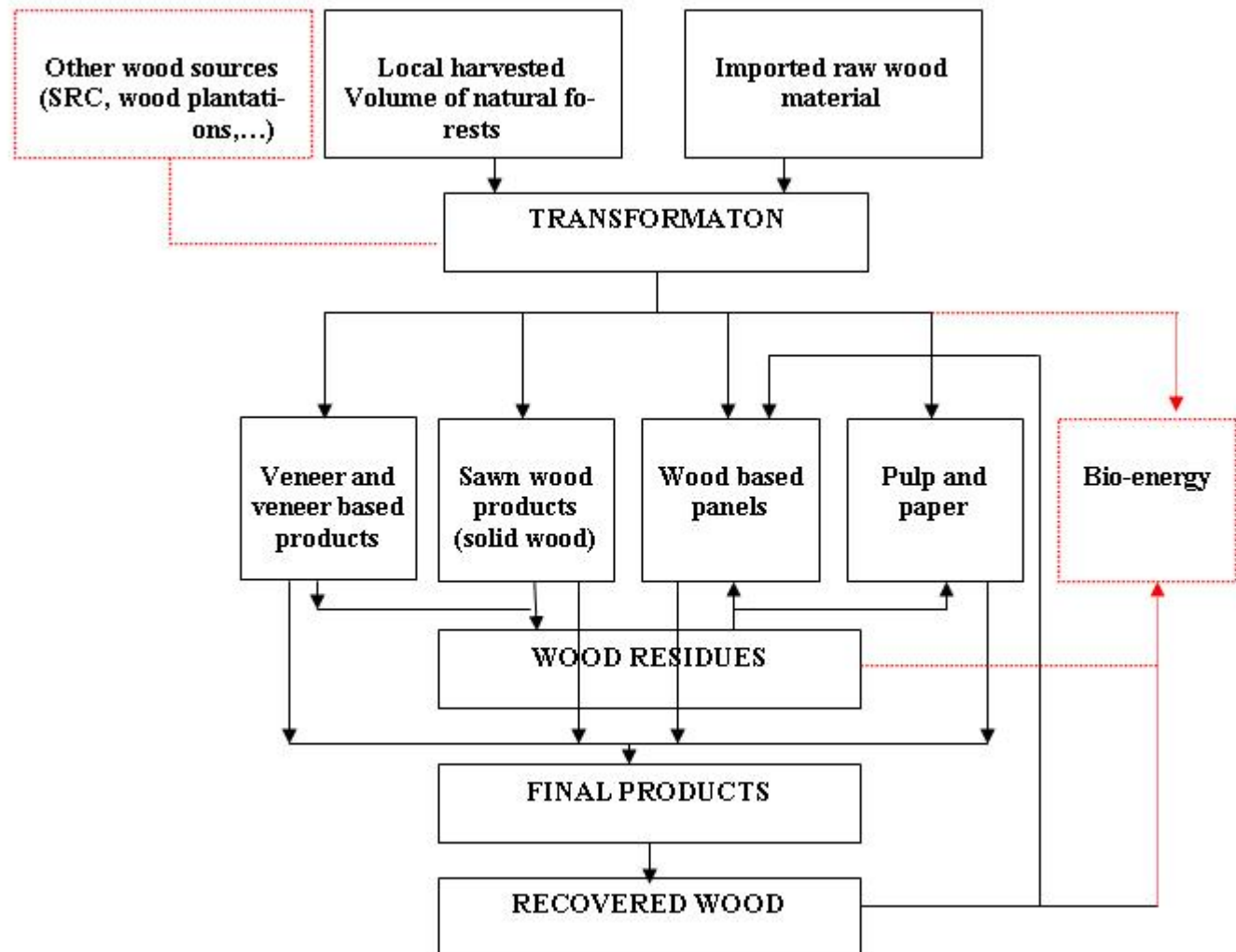
Poplar wood resource

Country based FWC in Europe

Need for a well designed & integrated Poplar Forestry-Wood Industry Chain

- *Some industry seeks for more sustainable poplar resources (ex. Belgium – France – Spain ...)*
- *Some countries seemingly could do with more local industry (ex. Hungary – Romania - ...)*
- *Some countries would need high quality poplar processing to boost plantations (ex. United Kingdom...)*

Current FWC



Poplar Forestry-Wood-Chain Change for a better future?

- *Supply from semi-natural forests or more man-made plantations or ...?*
- *Quantity does not imply poor quality !*
- *Environmental discussion should lead to “Save the environment, use (more) wood!”*
- *New players on the market for the same kind of raw material – strategic decisions needed.*
- *Narrowing of price settings could lead to lower interest in wood/tree quality.*

Recommendations (1)

- *Poplars are both forest trees and agricultural crop*
- *Poplar is ideal for re(a)forestation*
- *Increase or maintain poplar as part of semi-natural stands*
- *Introduce more multiclonal approaches – but this should be linked to the ability to process mixed clone supply*

Recommendations (2)

- *Focus on sustainable production of quality timber/wood products: plywood, sawn goods...*
- *Assess potential to use residues / residuals for engineered wood products, WBP and...*
- *Finally after reuse/recycling convert to energy*
- *Initiate more responsibility from the agricultural sector for producing wood for both material and energy conversion*

Conclusions

- *Filling the gap between demand and supply of wood resources, poplar plantations will play an important role.*
- *Questions must be raised on how Europe will provide the industry with enough wood resources, especially taking into account the new emerging bio-energy producing sector.*
- *Accurate and up to date data on the whole Forestry-Wood-Chain is essential to identify needs for adopted policy. This should lead to proposal on a poplar processing strategy in Europe.*



*THANK YOU FOR
YOUR ATTENTION*

Poplars, willows and people's wellbeing

23rd Session of the International Poplar Commission, Beijing, China, 26-30 October 2008



**LABORATORIUM VOOR
HOUTTECHNOLOGIE**