



EUROPEAN FOREST INSTITUTE

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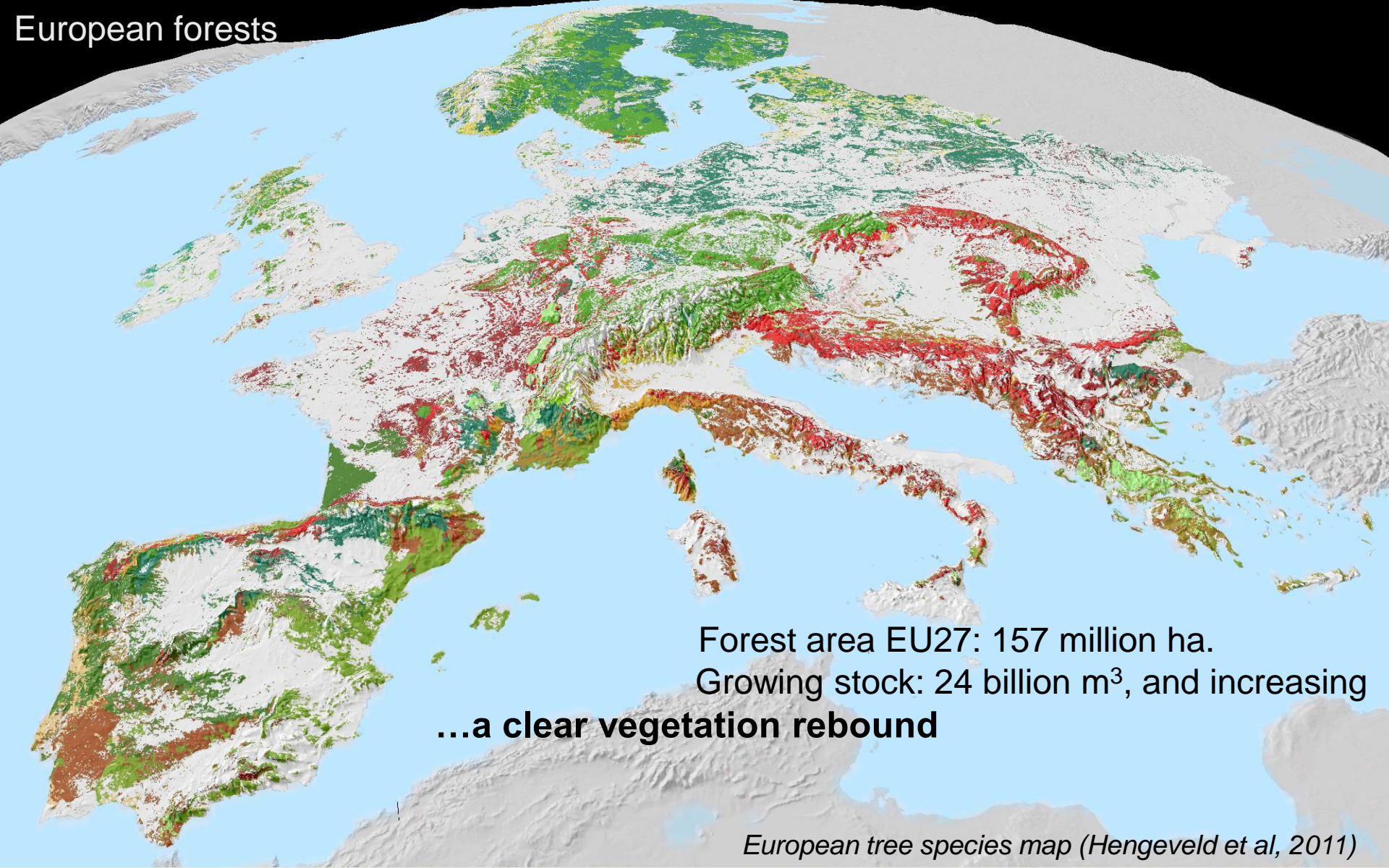
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New perspectives on the role of European forests in carbon sequestration

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European forests



Forest area EU27: 157 million ha.
Growing stock: 24 billion m³, and increasing
...a clear vegetation rebound

European tree species map (Hengeveld et al, 2011)



1. Principles of carbon sequestration
2. From optimism to realism
3. To the green economy

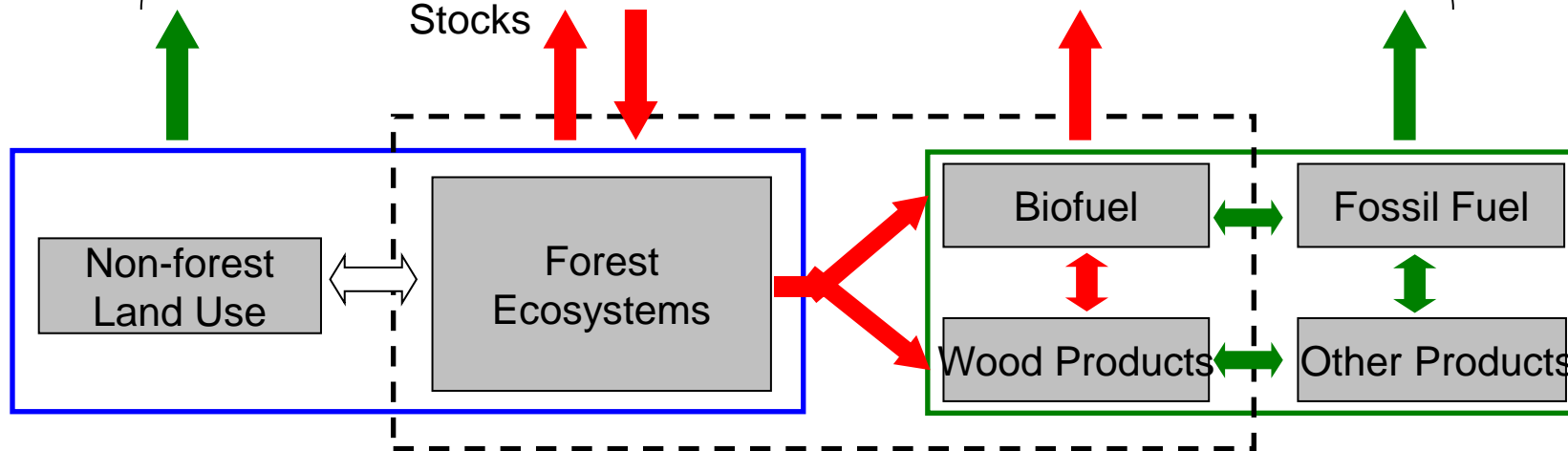
1. Principles of carbon sequestration





Minimise net Emissions to the Atmosphere

Maximise Carbon Stocks



Land-use Sector

Forest Sector

Services used by Society

IPCC 2007



A photograph of a forest clearing. In the foreground, a large stack of cut logs is piled up. The logs are stacked in a way that shows their circular ends. The forest floor is covered in green grass and small white flowers. In the background, several cows are grazing in a field. The trees are tall and thin, with green foliage. The sky is bright and clear.

2. From optimism to realism



From Kyoto to Qatar

At first huge optimism in the potential role of
global biosphere

- 300 – 400 million ha would be available for afforestation globally (Nilsson and Schopfhauser, early nineties)
- IPCC SR LULUCF (2000): global potential of 2 Gt C



Negotiations became veeeery lengthy



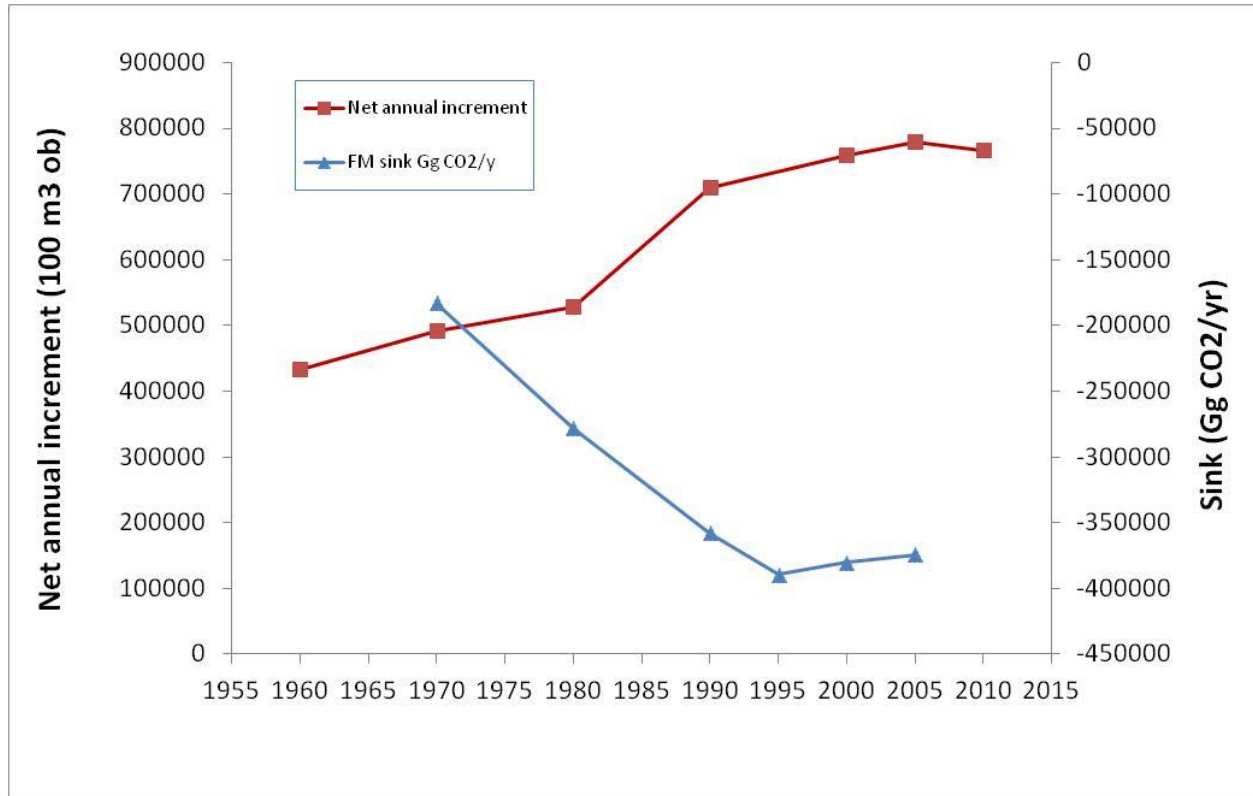
- Overall emission reduction targets were set in Kyoto, but share of LULUCF not defined
- Lengthy processes to define Caps, and to define rules
- Some parties deliberately slow down process: risks, uncertainties, leakage, etc. Although Durban did make progress on accounting
- Also, LULUCF is used to direct attention away from fossil fuel
- ..and negotiators jump on REDD+



..and insights change



Growth reaching its limits? Carbon sink strength is curbing in Europe

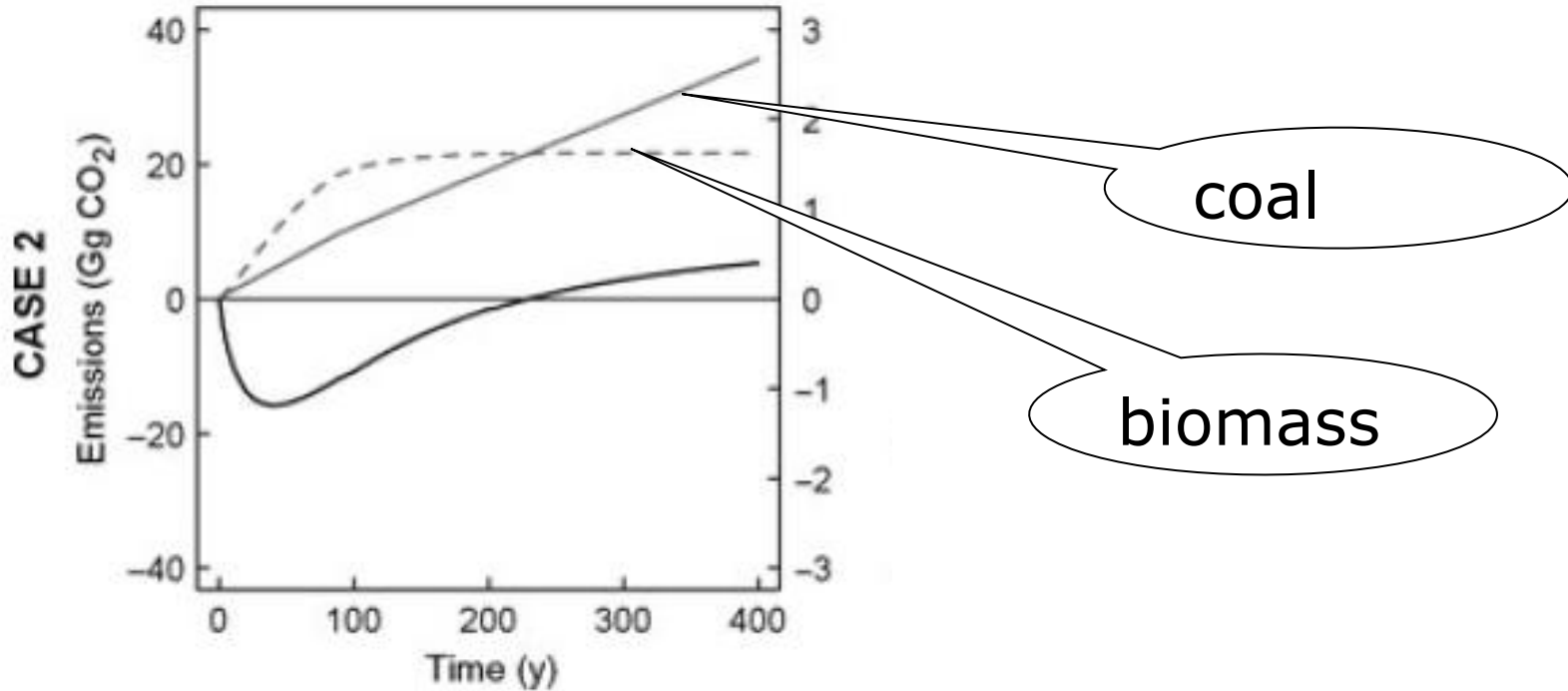


UNECE/FAO 2011,
Nabuurs et al. subm.

MS submissions
to UNFCCC

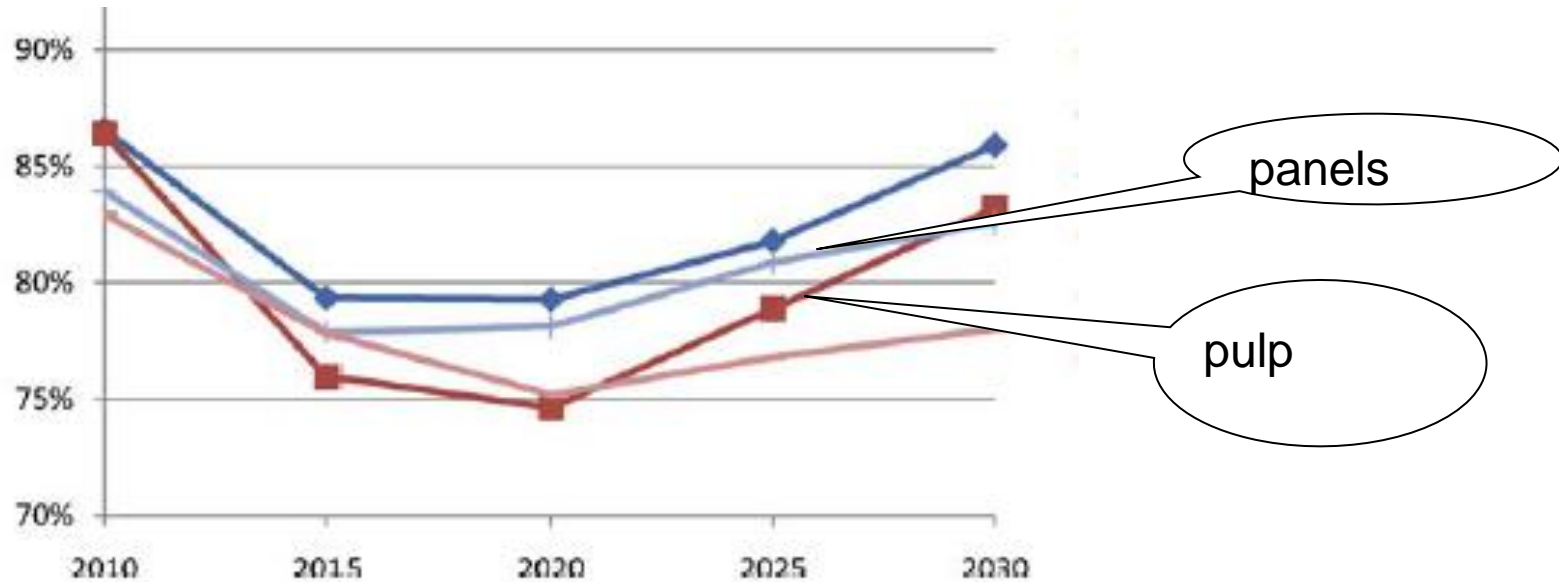


Upfront carbon debt when substituting coal with biomass (Zanchi et al. 2011)





Side impacts of bioenergy targets on production of pulp and panels



Contribution of EU forests to Bioenergy target will be small (3% of total energy use) (Moiseev et al. 2011)



3. To the green economy



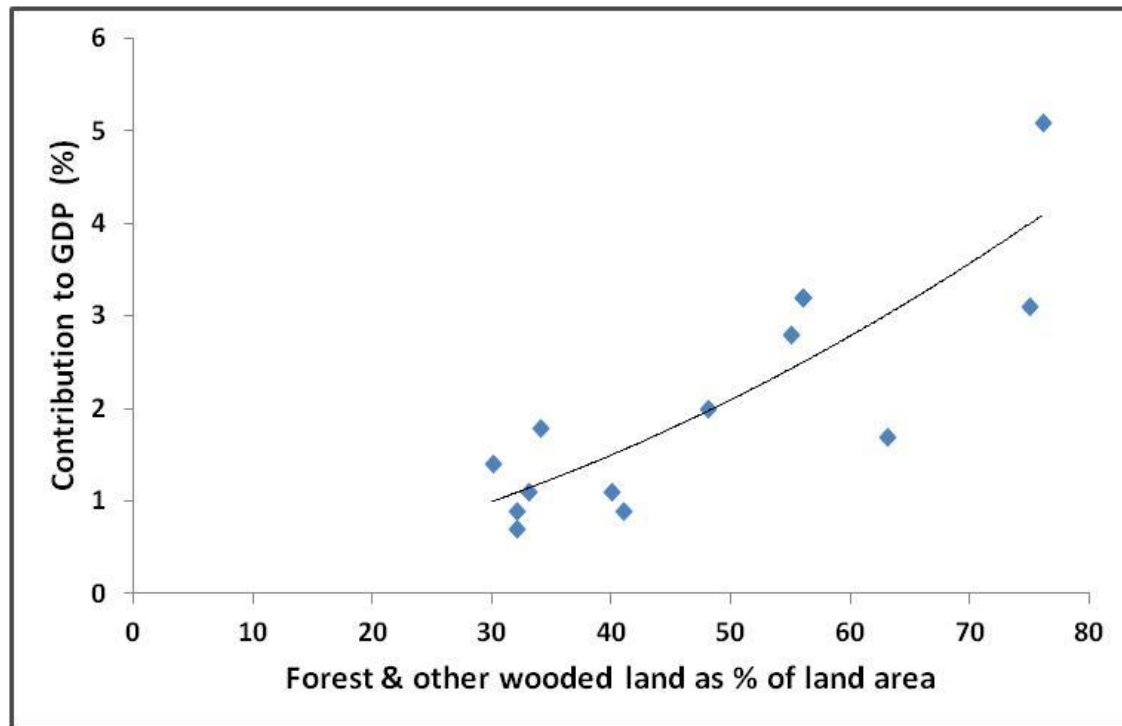


Green economy

- a change in thinking
- it regards the full value chain
- it is more than sequestration in forest biomass or burning up the forest
- it encompasses low carbon processing, new products, environmental services and new jobs
- also highly variable from location to location (ROKFOR project)

UN ECE/ FAO

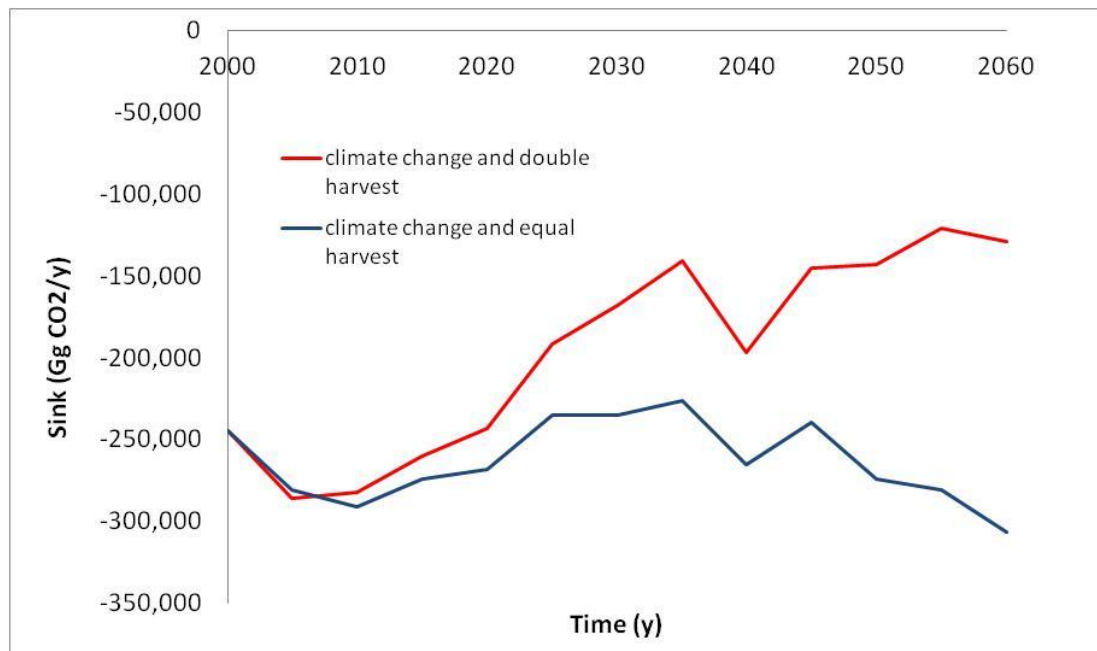
Weak financial basis of forest sector may prevent playing a large role in green economy



And a highly scattered ownership structure

UNECE/FAO
State of Europe's forests 2011

Outlook: strong harvest increase may turn forest sink to a source



(Eggers, Lindner et al. 2008)
Projection for 15 EU country
forests with EFISCEN

A very delicate balance
between a source and sink
(Nabuurs et al in IPCC 2007)



Concluding

- Contribution of EU forests to Bioenergy target will be small (3% of total energy use); the forest biomass sink compensates some 8-10% of EU total emissions
- Countries should not be obsessed by sink in the forest
- Change in thinking is needed: regard the forest sector as a complete chain. This also regards services, and new types of products, and a wide variety of possibilities, depending on location, and issues at stake.
- Ageing forests of Europe, may have to be taken through a phase of acting as a source



Thank you !

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