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New perspectives on the role of European forests and forest management in the global carbon cycle

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Forest area EU27: 157 million ha.
Growing stock: 24 billion m³, and increasing
...a clear vegetation rebound
1. Principles of carbon sequestration
2. From optimism to realism
3. To the green economy
1. Principles of carbon sequestration
Forest Ecosystems Services used by Society

- Biofuel
- Wood Products
- Other Products

Non-forest Land Use

Maximise Carbon Stocks

Minimise net Emissions to the Atmosphere

Land-use Sector

Forest Sector

Services used by Society

IPCC 2007
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 very 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

France made large correction on its NFI data recently.
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)
Depending on circumstances; measures need to differ!

UN negotiations can never grasp that.

Within Europe and at MS level it is certainly possible
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
Concluding (research)

- despite a lot of carbon balance research, our understanding is still very limited
- understanding full system, and all GHG’s in relation to management is needed
- impacts of climate change, and adaptation options
- specific management options for local circumstances i.r.t. other services
- management options for an ageing forest
Thank you!

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