

Forest biomass sustainability and carbon neutrality

Comment by Hannes Böttcher

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Report strengths

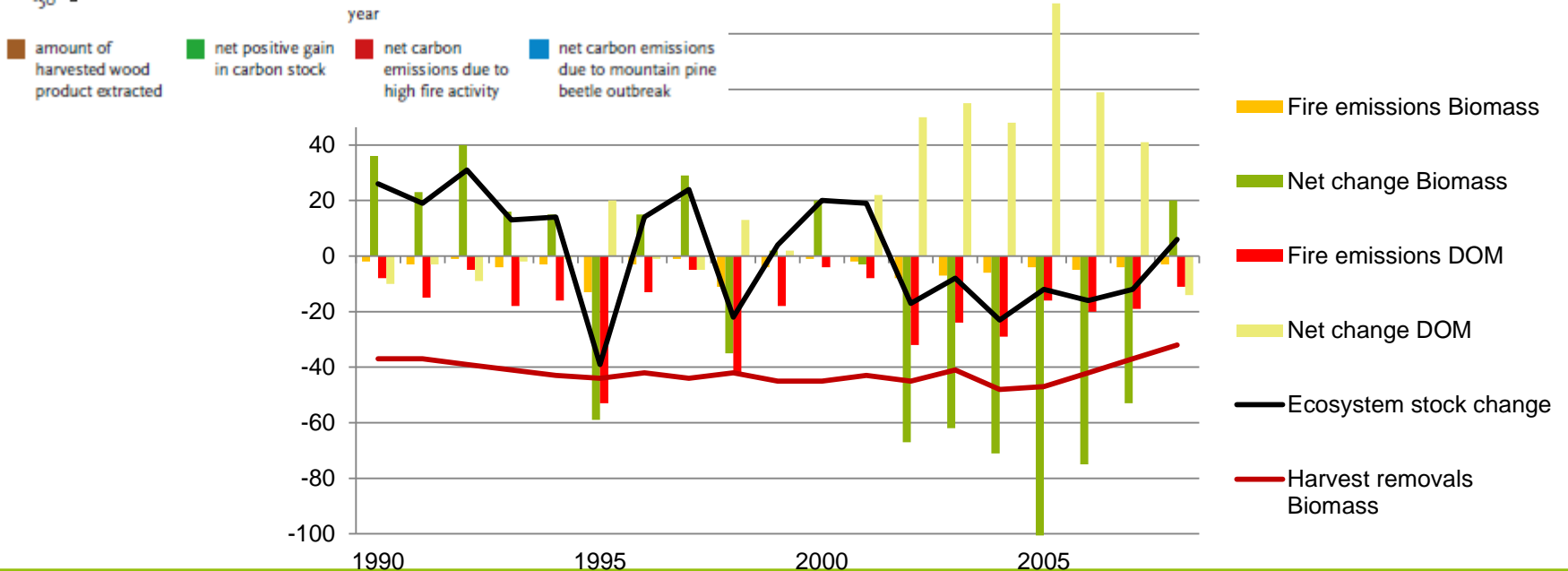
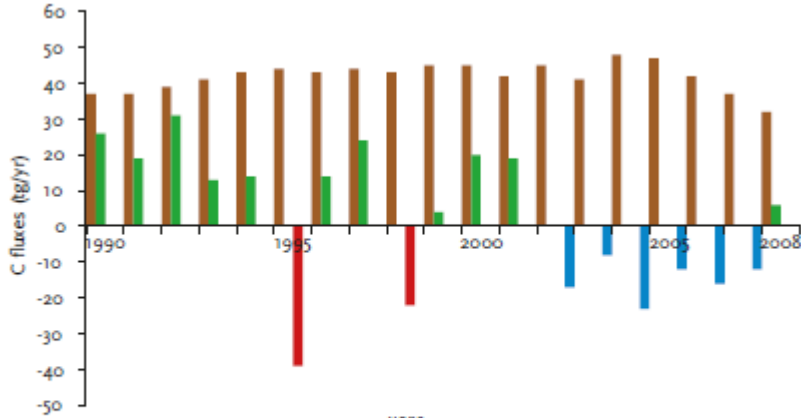
- A good attempt to provide an overview of a wide range of issues regarding forest biomass
- Identifies the need for “basic principles” and guidance for interpreting results and provides answers
- The role of ES/IA models: acknowledges that current tools cited by IPCC do not represent land management very well: no feedbacks of biomass use or forest management implications (but could have been featured more prominently)
- Disentangles the issue of “carbon neutrality” that is a misunderstanding (however, unfortunate that term is prominently in the title)

Report shortcomings

- Lack of references decreases the scientific value of the report. Recommended reading per chapter or section.
- No mentioning that forest biomass is still used unsustainably in many developing countries. Need for efficiency improvements but also substitution of biomass with other renewables there.
- No mentioning of cost issues: compared to other RE bioenergy will stay expensive because of feedstock costs (facing increased competition). Rather **not** “likely to make economically sense”.
- No mentioning of linkages to non-forest systems (short rotation coppice, agroforestry). Think out of the forest where solutions to forest issues might be!
- Despite the fact the report states that system boundaries need to be defined widely (need to include biomass, DOM, products, energy systems etc.) concrete examples fall short on this principle.

Report shortcomings (Example)

- Biomass harvest as a carbon sink? Just a transfer between two pools!
- Dynamics between biomass and DOM



General issues

- “Carbon neutrality”: the equation is still incomplete because EU LULUCF accounting rules of FM against a reference level do not fully capture emissions from biomass use for energy
- Need for a much more critical assessment of bioenergy in the light of the Paris Agreement:
 - Substitution effects (that currently make the difference and are the strongest argument for bioenergy) will be negligible in 2050
 - Remaining emissions (probably from agriculture) need to be compensated by an expected forest sink by 2050
 - Carbon neutral bioenergy options (if true at all) are not enough, BECCS?
- Dawn of the Bioeconomy: Any bioenergy system needs to be highly integrated into other uses by 2050 (e.g. refineries)