

EXPERT CONSULTATION
CONCLUDING REMARKS

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Cereals Straw Resources for Bioenergy in the European Union CENER/JRC Closing remarks

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Pamplona October 2006



Bioenergy at WAGENINGEN UR

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0. EU straw assessment

- I thought they had taken almost everything into account!
 - They haven't
- How do local straw firing plants compare to making a fuel for export (pellets, pyrolysis oil, torrefaction)?:
 - Larger and more efficient (coal) or
 - Better use the heat (small and specific) matching infrastructure
 - Larger part of potential can be used
 - Less bulky transport?
 - If renewable heat is valuable it may change the whole picture?!
- Infrastructure limits logistic possibilities

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1 General thoughts

- Straw is still generally an underutilised resource (for energy but also for other uses). Information is needed to optimise the use and ascertain the potential. Which chain is the best in mobilising the resource?

- Soil Organic Matter:
 - Reducing SOM is easy - Increasing SOM is hard and slow
 - Organic material needs to be applied for better quality SOM (bacterial activity, labile SOM?); ploughing energy, water retention, water infiltration, seed emergence)
 - Net value of straw as SOM = 8 to 80 €/ha/ton
 - Potential is 25 to 50% of total straw? 1 in 2 or 3 years?
 - Interaction with compost, manure and digestate?

- Farmers:
 - Even if there is a market farmers will only supply part of the straw (why? Infrastructure, time?, perception? price? machinery?) Or is it just bad statistics?
 - It is a buyers market -> Straw is not for free! If there is a market for straw the farmer will want extra money



2 General thoughts

- Uses of straw:
 - The previous use of straw has often been less than current use for energy
 - Does straw amount diminish due to dwarf variety use?
 - Competition is not mapped well
 - We need statistics !!!

- Good statistics of biomass flow are needed:
 - Primary and secondary by-products are more relevant than most people think!!
 - Any ideas about indicators? (Biomass utilisation and biomass utilisation efficiency)

- Energy crops:
 - Biomass is not just energy crops: On the contrary! Most biomass is a by-product!
 - By-products first!

- Size of plants is a challenge
 - Very large plants at seaside or river?
 - Small plants near heat demand?

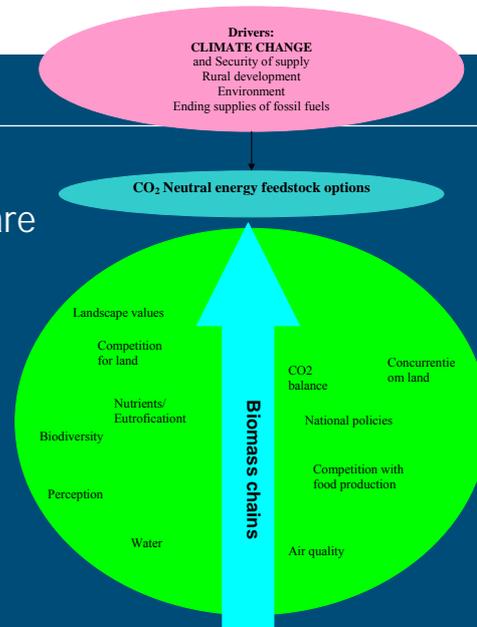


3 General thoughts

- Sustainability:
 - Overall management does not change if straw is used -> negative impact appears limited; even positive effects:
 - No-till methods require straw removal! (synergy)
 - Do soil (EU or national) regulations prevent detrimental effects of too much straw removal or is it too site dependant to regulate?
 - We need a monitoring system
- Ash
 - Regulations prevent return
 - Quality can be a problem for re-use
- Main challenge of the energy plant is biomass supply and logistics not plant operation (93% operation)!
- Quality of biomass can be a manageable problem: Ash behaviour – forest residues or additives help
- Subsidies?

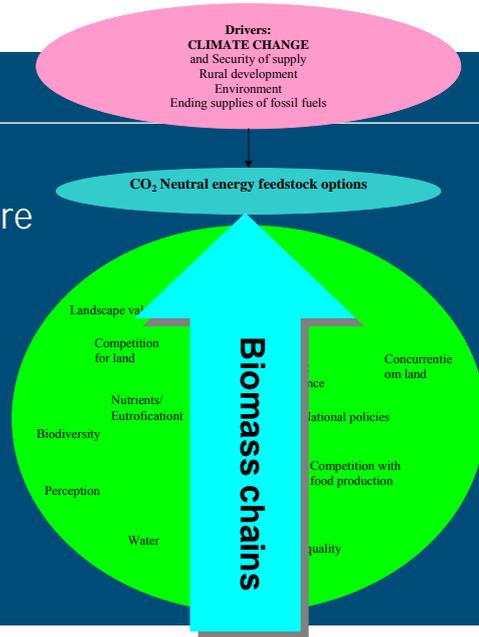


- Biomass chains only develop if interactions are taken into account





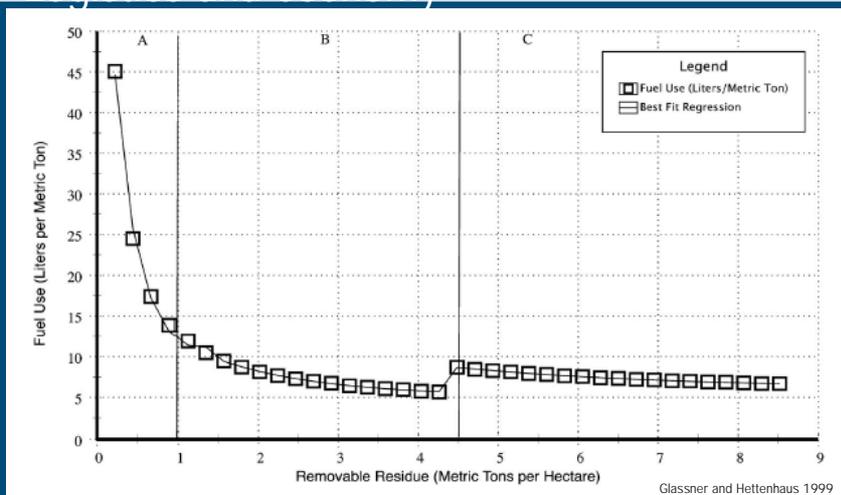
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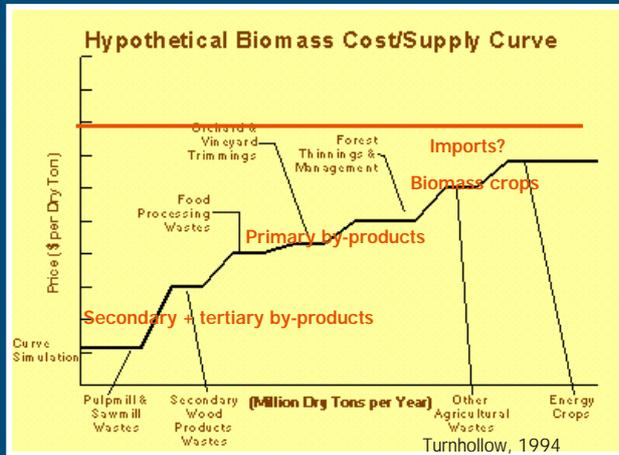
Logistics and economy



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Byproducts and/or dedicated crops?

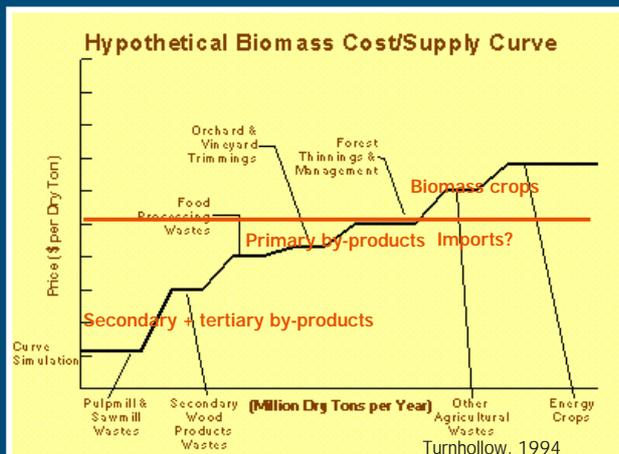


- Tertiary by-products
- Secondary by-products
- Primary by-products
- Dedicated crops
- (Imports)

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Byproducts and/or dedicated crops?

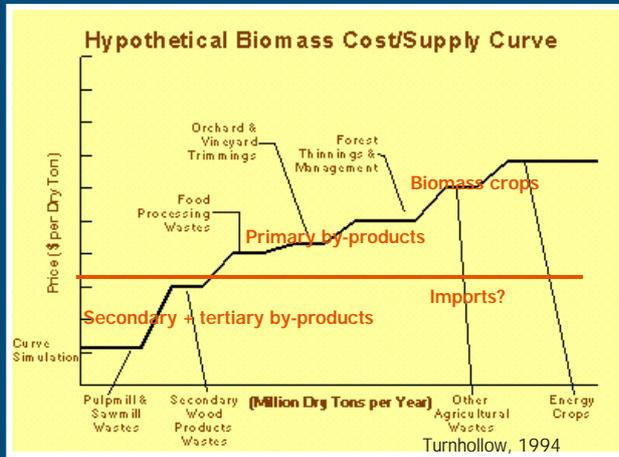


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