

Land use and climate neutrality by 2050 – An economic perspective

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Problems

- We need a carbon sink – the sooner the better
- The EU LULUCF regulation does not give the right incentives for our government
- The government does not give the right incentives for farmers
- The government gives wrong incentives for the producers and users of wood-based biomass
- The government does not have a coherent approach to the evaluation of alternative land-use policies

Solutions

- A climate-oriented forest policy
- A national LULUCF target
- Getting prices right for individual farmers
- Getting prices right for producers and consumers of biomass
- An environmental economics approach to the evaluation of land use

Problem 1: The need for carbon sinks

We want to be climate neutral by 2050 (or earlier), but

- We cannot realistically reduce all GHG emissions (including those from agriculture) to zero
- Hence we need carbon sinks
- The potential for (BE)CCS and direct capture of carbon from the air is highly uncertain
- A safe bet is afforestation which also has other environmental benefits
- But afforestation works with a long time lag and is hampered by various disincentives

Problem 2: The LULUCF regulations

- *The EU “no debit rule”* gives no incentive for governments to increase carbon storage in land and forests above the baseline level
- *The EU limit on LULUCF credits* (such as that for Denmark) gives no incentive for the Danish government to exploit the full potential for carbon storage in land and forests

Problem 3: Wrong incentives for farmers

No direct regulation of greenhouse gas emissions from agriculture:

- Individual farmers do not face the full (climate) cost of production

Problem 4: Wrong incentives for producers and consumers of biomass

The use of biomass for energy production involves *two externalities* which are not internalized by current policies:

- **Externality 1:** *Cutting trees* terminates the ability of the wood to serve as a future carbon sink
- **Externality 2:** *Burning the wood* (as opposed to using it in buildings, furniture, boats etc.) releases the carbon stored in the felled trees

Problem 5: No coherent land-use policy

Current land-use policies

- do not account for environmental effects in a systematic and coherent manner
- do not account for effects on carbon sequestration and carbon emissions

Tackling Problem 1: The need for carbon sinks

Given the *long time lag* in the climate effect of afforestation and the uncertainties regarding the potential of other carbon sinks,

- the *precautionary principle* in environmental policy calls for including afforestation as an important component of climate policy

Tackling Problem 2: Imperfect LULUCF regulations

- Denmark should press for more stringent and symmetric LULUCF accounting rules in the EU
- Denmark (Danish experts) should continue the work to refine the existing methods of estimating net emissions from the LULUCF sector
- For the purpose of meeting its national target for climate policy, the Danish government should take *full credit* for any reductions in LULUCF emissions stemming from *new active policy initiatives*

Tackling Problem 3: Missing incentives for individual farmers

- Introduce a “climate account” (an emission inventory) for individual farm units (the authorities already have most of the information needed)
- Introduce a tax on emissions above a baseline level and a corresponding subsidy for emissions cuts below the baseline (the baseline could be zero)

Caveats:

- Need for further refinement of accounting principles
- Need to account for other environmental effects

Tackling Problem 4: Wrong incentives for production and consumption of biomass

- Ideally, forest owners should be rewarded for increases in the biomass stock above a baseline level and penalized for reductions of the biomass below that level
- Ideally, all business and household consumers of biomass for energy use should pay a carbon tax (unless the biomass can be proved to stem from residues)

Tackling Problem 5: Lack of coherent approach to evaluation of land use policy

- Introduce systematic cost-benefit analysis of alternative land uses.

Example: Conversion of land use from agriculture to forestry

- Main social benefits: Lower GHG emissions, less water pollution, less air pollution, more biodiversity, value of harvested wood products
- Main social costs: Value of agricultural output lost, cost of forest management
- Compare net benefit to the net benefit in the best alternative land use