

Ecosystem Based Climate Solutions supporting Negative Emissions in Sweden – Potentials, Trade-offs and Opportunities

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Sweden has a leading role historically in path-breaking climate policies since the carbon tax was initiated in 1991. Climate leadership in the 2020's will require a more complete set of policies, as the IPCC 1.5 degree special report indicates that all safest future paths recommend phasing out fossil fuels in the immediate and short term while at the same time conserving and enhancing carbon sinks and stocks.

This dual challenge raises immediate questions of transition management and trade-offs, as competing land use and overconsumption of several key resources continues and is expected to increase, not the least in the Nordics because of increased demand on bio-based resources for substitution of fossil and non-renewable resources seemingly necessary for the climate transition.

Globally protection and restoration of ecosystems and strengthening of sustainable land and resource management practices is gathering renewed and strengthened interest, with particular interest for climate mitigation benefits¹. While some stress the priority of so-called Nature-based solutions or Natural Climate Solutions (NCS) in tropical and subtropical ecosystems other stress co-benefits and large potentials across most biomes, including boreal forests, wetlands, agricultural lands and seas – thus presenting a global challenge ahead that is highly relevant in the Nordic countries with abundant forests and wetlands².

The role of land use and ecosystem sinks and stocks has thus far had a fairly limited role in the Swedish public climate debate. This will likely change somewhat as broader recognition of the need of negative emissions, acknowledged by IPCC, is further established. The presentation will aim to review and summarize potentials and knowledge gaps of ecosystem-, land- and nature-oriented climate solutions in Sweden based on available recent research literature on Nordic and boreal ecosystems. Where are we? What do we know about the potentials and importance of natural climate solutions for the climate transition, and what do we need to know to set the bench-mark for such solutions in the EU and globally?

The presentation will then discuss potential policy approaches in the Nordic countries and the EU to conserve and enhance ecosystem sinks and stocks while at the same time acknowledging the need for a rapid and sustainable climate transition. The place for ecosystem sinks and stocks in climate policy is currently open for debate, and it seems that preferable paths demand identifying and avoiding risky trade-offs and embracing new and arising opportunities for a vibrant bioeconomy, that seriously aim to address the twin crises of climate and biodiversity.

¹ Bronson W. Griscom m.fl., "Natural climate solutions", *Proceedings of the National Academy of Sciences* 114, nr 44 (2017): 11645–50, <https://www.pnas.org/content/pnas/114/44/11645.full.pdf>.

² Dooley, K et al. "Missing Pathways to 1.5°C: The role of the land sector in ambitious climate action." *Report*. Climate Land Ambition and Rights Alliance. (2018) Available from: climatelandambitionrightsalliance.org/report