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NORSK INSTITUTT FOR BIOØKONOMI

FUTURE RESEARCH

Hanna Silvennoinen, researcher
Gunnhild Søgaard, researcher and Head of Climate Center

Seminar on peatland management in the context of GHG emission inventory

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MANAGING FORESTS ON DRAINED PEATLANDS

Norway has a (relatively) large area of forest on drained peatlands, which will be mature the coming years.

What will the best management of this forest be?

IMPROVED EMISSIONS FACTORS

We now use default Tier 1 emission factors for most emissions from drained organic soils in the GHG-inventory.

We would like to improve these.

Maybe in a Nordic-Baltic cooperation?

IMPROVED UNDERSTANDING ON ECOSYSTEM FLUXES AND RESPONSES

- N_2O flux estimates lacking → INTERNATIONAL NEED FOR RESEARCH!
- Response of peatland ecosystems under climate change →INTERNATIONAL NEED FOR RESEARCH!
- Flux estimates of all gases from restored peatlands are lacking.
- Flux and process responses from end uses of cutaway peatlands
- Innovative solutions for diminishing GHG fluxes from managed peat?
- Promising results from e.g. diminishing N_2O emissions with biochar application (See:http://www.bioforsk.no/ikbViewer/page/forside/nyhet?p_document_id=102186)

BURNING ISSUES AND RESEARCH NEEDS

Internationally – Need for basic science

- What C is preferentially decomposed and how fast, at each stage of the peatland restoration gradient at the selected site? – more general question
- How resilient are microbial communities in peatlands to disturbance (from cultivation to rewetting) – what are the tipping points in which C accumulation rates change (affecting decomposition/GHG fluxes, DOC export…)?
- How do the changes in vegetation with peatland restoration affect soil microbial ecology and thereby decomposition? How are vegetation shifts reflected in decomposition rates (e.g. Ward et al., 2009; Andersen et al., 2010)?.
- Linking soil microbial diversity and abundance to function, in order to understand the controls of the processes.
- The temporal dynamics of peatlands after disturbance, restoration, etc.: short-mid-and long-term carbon dynamics!

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THANK YOU FOR YOUR ATTENTION!