

# SOMPA WP4: Economic analyses and optimal management practices on agriculture and peatland forests

OBJECTIVE: Produce detailed analyses of costs, benefits and profitability of selected key measures for GHG emission reductions applicable on organic soils

WP 4 motivation, methods, approach and expected results  
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# Economy - the challenge of GHG abatement on peat soils

- Landowners decide on land use management
  - ... affected by markets and policies (subsidies, bans, restrictions, taxes...)
  - Policies usually have some impact, but limited – cannot change severely unprofitable activities
- Low profitability of the abatement measures for land owners:
  - lost revenues, increased costs, or both
- Increasing water table (WT) of the soil may imply significant additional costs and/or lost revenues
  - Farmers are paid significant subsidy payments (480-600 €/ha) if land is kept in good agricultural condition – permanently high WT conflicts this rule
  - Continuous-cover forestry (CCF) on peat soils: significant impacts on C sequestration but also changes in costs and revenues for a landowner
    - Harvesting / planting costs, wood prices...
- Effective mitigation may require initial investments
  - increased WT, controlled drainage, CCF – technical, physical, knowledge

## Phases in WP 4

- Develop / update existing profitability calculations / models, from landowner / farmer private economy point of view:
  - Forest stand management level
  - Field parcel and whole farm level
- Overall, aggregate effects on production, incomes, GHGs
- Specify GHG mitigation measures in the models
  - Advanced models DEMCROP, DREMFA (agric.), EFIMOD (for.)
  - Costs, foregone revenues, other revenues and benefits
  - Implement policy measures (first most obvious, others tbd)
- Calculate management models under different prices, policy options, collect and compare **key results**
  - **NPV, incomes, pay-back times, production effects, GHG emissions, NPV-GHG ratios, public expenses: BIG picture**
  - Implement relevant bio-physical parameters from other WPs
  - Discuss results with key stakeholders, update if needed
- Utilise the results in WP 5, and synthesis

## WP 4 mission

- Develop **applicable and cost-effective** emission reduction actions together with the stakeholders and provide **generic guidance** for an economically optimal set of actions that may be widely implemented by land owners
  - Repeat analysis for different types of farms and landowners to account for different socio-economic conditions affecting costs, benefits, and objectives, priorities of decision making
- Optimization of the mitigation measures will cover all potential GHG sources and removals from the agriculture, soils, tree C stock changes, C sink of wood products, substitution and GHG emissions of the manufacturing of the wood products
- Identify and evaluate **barriers and bottlenecks**
- Policy recommendations: **What is the most valuable use of public money, considering likely socio-economic responses, when promoting reduced GHG emissions?**