

## PROJECT INFORMATION

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**Project title:** Holisoils + (Soil and Health) Benchmarks + C-cut

**Project ID:** 304

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## PROJECT DESCRIPTION

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### Holisoils project (modeling phase)

The project (<https://holisoils.eu/project/>) aims to harmonize all the available monitoring information at the EU level concerning soil management practices. The project comprises multiple working packages, of which one is specifically about modeling where all the data will be integrated together.

The ICP data will be used for model testing and scenario analysis. We will test multiple models and then rely on the models to extrapolate alternative management scenarios for modern forestry.

The project will rely heavily on Bayesian statistics for data fusion, integrating all the available datasets (ICP data and data produced in the Holisoils monitoring sites) into available models. The project would then be extended to testing coupled soil-biomass models, improving the reliability of both GHG balances and biomass growth predictions. The project will be carried out in phases:

- 1) Testing of SOC models
- 2) Possible SOC model development (both current generation, first-order, and future generations, higher order interaction models)
- 3) Extrapolate modeling results to different management scenarios and upscale them
- 4) Extend model testing to coupled biomass+SOC models

One of the main focuses in terms of model improvement is directed towards the climate interactions with decomposition. Based on ICP data, we plan to develop new functions with low data requirements (the target is to limit them to air temperature and precipitation plus edaphic parameters, if possible) to rescale decomposition kinetics at high temporal resolution (days). This would extend the range of applicability of the current generation of SOC models.



## Benchmark project

The main aim of the project is testing and developing soil health indicators that serve soil monitoring laws in Europe (<https://soilhealthbenchmarks.eu>). Results from the Hoilisoils modeling phases will be extended to this project. SOC models developed above will be used for upscaling scenario-based projections.

## C-cut project

The aim of the project is to estimate the impact of clear cuts on the GHG balance of upland soils in Finland, with the use of SOC models (Yasso in this case) to extrapolate the consequences of different management scenarios. The project will rely on the results from the above projects.