ICP Forests

LRTAP
Long-range Transboundary Air Pollution

PROJECT INFORMATION

Project title:	Management strategies under climate change conditions for overaged coppice forests on steep slopes that have important protective functions
Project ID:	145
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PROJECT DESCRIPTION

Scientific background of the project:
The project aims at exploring management strategies of overaged oak coppice forests on steep slopes in Western-Palatinate, Germany. Recent development suggests that no-management of overaged coppice forests on steep slopes might reduce the protective function of those forests. Therefore costs and benefits of different management strategies (including no-management) shall be evaluated. Evaluation criteria would be the preservation of the protective function, economic revenues and costs as well as other ecosystem services such as carbon sequestration and biodiversity conservation.

Evaluation of economic revenues and costs, as well as carbon sequestration needs an estimation of forest growth (timber volume and diameter, biomass). Since we want these results to be valid for future climate conditions, we want to make these forest growth predictions with a process-based forest growth model (3PG). For the calibration and validation of this model we need forest growth series (e.g. DBH, height, biomass, LAI). Since the model is sensitive to the environment, it requires also information on the respective site conditions (climate/ Meteorological Measurements, soil texture/soil solid phase, site fertility, soil water) and management (stem density, thinning, irrigation, fertilization). One important parameter of the model is the monthly litterfall rate, thus we would also be interested in litterfall data.

Since these German coppice forest are dominated by *Quercus petraea*, we want to calibrate the model for this species. We will start with modelling high forests and later try to adapt the model to coppice conditions. Thus, we would only need data of *Quercus petraea* dominated stands.

The IPC growth and yield data, as well as LAI data and metadata on soil water, climate, etc. would be exclusively used for the model calibration and validation. We have some growth series data from permanent plots of a research institute (FAWF) in Rhineland-Palatinate, but unfortunately it is not enough data for a sound model validation. The IPC data would be thus very valuable for project realization.