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Quantifying environmental effects of Short Rotation Coppice on biodiversity, soil and water

This report was prepared as a joint effort by the Swedish University of Agricultural Sciences, Johann Heinrich von ThÃ¼nen-Institute, University of Rostock, Chalmers University of Technology, Georg-August University of Goettingen, University of Applied Sciences Eberswalde, Biop Institut and Buro for Applied Landscape Ecology and Scenario Analysis. The report addresses environmental effects of short rotation coppice production. The purpose of the report was to produce an unbiased, authoritative statement on this topic based on a review of relevant scientific literature.

The term Short Rotation Coppice (SRC) refers to cultivation systems using fast-growing tree species with the ability to resprout from the stump after harvest. Harvest occurs in short intervals, 2-6 years, and management practices (soil preparation, weed control, planting, fertilisation, harvest, etc.) are more similar to those of agricultural annual crops than to forestry, despite the fact that the species currently used in commercial SRC plantations in Europe are fast-growing species with good coppice ability that achieve high biomass yields, such as willows (Salix sp.) and poplars (Populus sp.).

In order to achieve maximum positive effects and minimize potential negative effects from large-scale SRC cultivation on agricultural soils to produce biomass for energy, proper site selection and management adjustments should be implemented. Such management "modifications" and the sustainable production, keeping in mind that SRC is a commercial crop for production of biomass for energy, competing with high value agricultural crops. Balancing maximum environmental benefits and maximum attained biomass production from SRC is a large challenge that all stakeholders involved in cultivation (farmers, decision-makers, researchers, and others) must consider.

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