

EFFECTIVENESS, COSTS AND ACCEPTANCE OF BEST MANAGEMENT PRACTICES TO CONTROL SOIL EROSION AT WATERSHED SCALE

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To encourage farmers in implementing appropriate farm practices for the reduction of environmental damage to soil and water, there is a need for information on the costs as well as the environmental effectiveness of different best management practices (BMP's). This information should be available at the local level (farm) as well as at the level of watersheds. Moreover, the success of implementing a given BMP will not only depend on these factors but on the willingness of farmers to participate. Although the willingness of participation depends to a great extent on the level of the financial support, other factors which control the implementation of BMP's might also exist.

With the example of two small watersheds, located in the alpine foreland of Austria, and the environmental problem of soil erosion, we tried to compare these three piles of decision (technical effectiveness, costs and acceptance) to give an answer to the question of what would be limiting factors of a successful adoption of best management practices to reduce soil erosion.

We used the erosion model EUROSEM to evaluate the hydrological effects of implementation of the BMP's (a) minimum tillage, (b) winter crops instead of maize and (c) conversion to grassland. Linear programming was used as an economical tool to calculate the costs which were associated with the different BMP's and the different areas of implementation within the watersheds. To obtain information on farmers' thoughts on implementation of the studied BMP's, we carried out a questionnaire.

Aim of the proposed presentation is therefore to describe the specific work that had to be done in order to evaluate the (a) technical situation (model calibration, validation, application) the (b) economical situation (data gathering, extension of farm data to watershed scale) and the (c) social situation (what are main reasons for not implementing erosion control measures) and discuss problems that arise with integration of the different scientific approaches at the watershed scale.

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Abstracts

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