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Managing a sustainable ecosystem service provision in a regional context

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A highly important challenge of land management and land use planning is sustaining ecosystem processes to ensure the provision of goods and services, nowadays often called “ecosystem services” to society. However, approaches which bridge the gap between land management, to be understood as the cultivation of land with a concrete impact on ecosystem processes at a defined piece of land, and land use planning, to be understood as spatial optimization of all feasible land uses with impact on ecosystem processes in a larger context, do rather exist. First, data on the concrete land management are often not available and second, land use planning refers therefore more to land cover classes, which are often not suitable to assess the real potentials to change or optimize the land use in a regional context. In this contribution, we present therefore (i) a case study based approach how to combine land cover and land management classes for (ii) assessing opportunities to modify the land use pattern with regard to improve the provision of a bundle of ecosystem services. In the assessment of the land use pattern, changes in the share of the land use types and the additional impact of the landscape structure expressed by a set of landscape metrics are taken into account. We can demonstrate that a combination of a more intensive consideration of land management opportunities and the assessment of the additional impact of a modified land use structure helps us to give spatially explicit recommendations to regional planning and to forest and agricultural land management.