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Summary

Rural development policy has become an independent and increasingly significant field within the European Union's Common Agricultural Policy. In the current financial period 2007-2013, the EU has made a total of 96.3 million Euros available to member states via the European Agricultural Fund for Rural Development. The states are obliged to supplement these funds with national contributions and allocate them to policy measures within Rural Development Programmes. Budget allocation decisions of this type are highly complex tasks. A multitude of objectives, actors and measures need to be considered, while at the same time national and subnational bodies need to take into account the complex co-financing modalities and other requirements of the EU's regulatory framework.

Within this context, this dissertation asks how multiobjective modelling tools can be usefully applied in order to support these budget allocation decisions effectively. The relevance of this research question derives from the widely discussed discrepancy between the claim that formal models can help in such decision making contexts, and the limited use and usability of such models in practice. Overall there is limited knowledge concerning how decision support processes and models are to be designed so that they can fulfil their intended purpose. While research to date offers a multitude of (theoretically useful) methods for decision support in multiobjective settings, studies that apply and evaluate such methods are strikingly rare.

This dissertation responds to this research gap by presenting the case study of one specific attempt to support budget allocation decisions in the Ministry of Agriculture and the Environment (MLU) in Saxony-Anhalt, Germany. Based upon the analysis of the budget allocation problem in the rural development policy field (objective 1), and a critical examination of the literature on decision support within multiobjective settings (objective 2), a modelling approach is developed and applied in order to support budget allocations in the MLU (objective 3). Based on the evaluation of this intervention, factors critical to the success of future applications of decision support models in the rural development policy field are identified (objective 4).

The modelling approach applied combines three methodological components: a weighted linear optimisation model that represents the entire current development programme for the rural territory of Saxony-Anhalt (1), a model definition that was produced almost exclusively by the ministry employees themselves within workshops and a Delphi-process (2), and an interactive concept of model use in which scenarios were defined and analysed together with decision makers directly on site and in real-time (3). Finally, the study was evaluated by conducting theme-oriented semi-structured interviews with ministry employees.

The results of the case study show both, a limited area of applicability of an interactive optimisation approach and its strong potential to enable more transparent and efficient decision making processes. The particular benefit lay in the ability to quickly calculate different allocations, whilst continually being able to compare how the various alternatives would impact upon the programme objectives. It was confirmed that structuring the decision problem as a linear optimisation model constituted an appropriate approximation of the actual decision problem. The simplicity of the model's structure and solution algorithms helped decision makers to quickly understand the model and the results it generated. The in-house definition of all model parameters not only increased the applicability of the model but also proved to be a prerequisite for generating trust in the model and its results. The investment of time and effort demanded by the parameter definition process, however, was a considerable burden on those involved, and the quality of the impact parameters could have been improved by supplementary external estimations. Further, the joint use concept proved to be unpractical for interventions within ongoing funding periods.

The study's conclusions emphasise that the implementation of a multiobjective optimisation tool can only provide practical support for decision making processes if the given institutional framework is taken into consideration, and if decision makers' trust in the model can be won. In the first place, the applicability of any formal decision model within political-administrative contexts is very limited, with the formal character of these models and their claim to bring rationality into decision processes often being met with scepticism and resistance. In this respect the cooperation with the MLU confirms the importance not only of the practicality but also the transparency and comprehensibility of decision support models, in order for decision makers to actually feel supported by them rather than threatened in their autonomy. A further key factor is to involve decision makers throughout the process as experts of their own problems, although it is necessary to weigh up the costs in time invested by the decision makers against the benefits they stand to gain. With this in mind, it is essential to assert the potential usefulness of the model frequently during the process of its development, as well as to ascertain a pragmatically appropriate level of model detail.