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Conference Abstract

Participatory modelling to promote inter- and transdisciplinarity and knowledge integration in LTSER platforms

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Abstract

Improving sustainability in local socio-ecological systems needs implementation of regionally adapted policies for sustainable development, which are based on place-based knowledge production and engaged stakeholder collaboration. One such approach is the Long-Term Socio-Ecological Research (LTSER) platform. The LTSER network emerged as a bottom-up process where existing local and national initiatives formed a network and were recognised as research infrastructures at European level. Conditions for joining the LTSER network include (usually): support from the local, regional and national authorities of the platform; the existence of long-term data sets (especially biodiversity indicators, but also abiotic variables); and the inclusion and integration of socio-economic data. One of these LTSER platforms is the Eisenwurzen in Austria, which has a long tradition in cooperating in inter- and transdisciplinary social-ecological research. With the proposed presentation we would like to give an insight into participatory modelling projects carried out in the region. The key challenge for transdisciplinary research, which aims to integrate diverse societal and scientific knowledge systems, is to produce both societal and scientific impacts at the same time. Participatory modelling is a method that uses models in three ways: as a means to generate knowledge, to achieve knowledge integration and to enable societal impact. Agent-based modelling is a computer simulation technique that allows the simulation of

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different actors as agents, the socio-economic and natural environment in which they are embedded, and the interactions between agents and between agents and their environment. The models with individual farm households as agents simulate how changes in socio-economic and political conditions affect patterns of land use, agricultural production and the socio-economic situation within that region. We discuss how and why participatory modelling can help to enhance the impact potential of transdisciplinary research, as well as the limitations of different types of models. We show that participatory modelling allows for the integration of relevant societal and environmental knowledge into the models and for the development of scenarios and strategies in collaboration with stakeholders. Participatory modelling shows its strength in structuring communication about future scenarios and recommendations for action to achieve the goals of the different groups involved in transdisciplinary research. Stakeholders can use the model for effective discussion and education processes to find sustainable ways of land use development.

Keywords

transdiyiplinarity, participatory modelling, agent-based models, land use, Eisenwurzen

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Conflicts of interest

The authors have declared that no competing interests exist.