Multifunctional agricultural landscapes in Europe – Balancing food production, biodiversity conservation and ecosystem services

Abstract: The pressure on natural resources increases due to multiple competing demands for land. The resulting land use changes come at cost in the form of trade-offs between food or bioenergy production, biodiversity conservation and other ecosystem services (ESS) like clean water, erosion control or soil fertility. One way to solve arising land use conflicts is employing the ecosystem services concept together with methods from the field of multi-criteria decision analysis (MCDA). Especially optimization techniques provide the possibility to include socio-economic and ecological aspects as well as the protection of biodiversity. The talk will give an overview on the project "Towards multifunctional agricultural landscapes in Europe: Assessing and governing synergies between food production, biodiversity, and ecosystem services" (TALE) which targets exactly the conflicts mentioned above. Furthermore, the results of a review on optimization techniques that can be used to solve land use problems and their abilities for the the identification of ecosystem service trade-offs and stakeholder integration will be presented.

About the speaker: Andrea Kaim studied Business Mathematics at Leipzig University in Germany. Already during her studies she was interested in the links between mathematics, economics and environmental sciences. She wrote her diploma thesis about "Conservation Prioritization Problems and their Shadow Prices" at the University of Queensland, Australia. In 2015 she started her PhD at the Helmholtz-Centre for Environmental Research (UFZ) in Leipzig, Germany about „Identifying trade-offs between ecosystem services and biodiversity across multiple landscapes". Andrea is also a member of the Helmholtz Research School ESCALATE which currently runs a synthesis project about the assessment of threats and pressures on biodiversity conservation resulting from the use of ecosystem services in NATURA 2000 sites throughout Europe.