RESULTS-BASED CONTRACTING FOR BIODIVERSITY CONSERVATION

Grassland conservation in Bavaria involves the shift to results-based agri-environment schemes, paying farmers for the provision of biodiversity while giving them flexibility in management

Collecting farm-level biodiversity data as part of the farm survey in Bavaria

Photo credit: Carolin Canessa

Collecting farm-level biodiversity data as part of the farm survey in Bavaria

Photo credit: Carolin Canessa

Grasslands in the German Federal State of Bavaria represent an important share of all agricultural land. Extensively managed, they are a crucial and diverse habitat for flora and fauna, sequester carbon and contribute to water and soil protection. Agricultural intensification, however, threatens them and consequently endangers certain plant and animal species as well as the grasslands' ecosystem services.
In order to maintain extensive grasslands, several agri-environment schemes, developed by the Bavarian State Ministry of Food, Agriculture and Forestry as part of its rural development programme, are in place in Bavaria, most of which are action-based. Action-oriented schemes offer payments to farmers if they follow specific management practices. Some action-based grassland schemes, for example, put a ban on mineral fertilizer use. Since 2015, Bavarian farmers can not only opt for action-based schemes, but also for a result-based one. This innovative grassland scheme, which became an eco-scheme in Germany in 2023, offered new opportunities for conserving grasslands rich in biodiversity. Farmers participating in the scheme were free to choose how to manage their grassland under contract, however, they only received a payment (€250/ha) if they were able to prove the existence of at least four indicator plant species in the field(s) under contract. Despite the risks of external factors and insufficient knowledge on management practices that foster plant species richness, many farmers participated in the scheme. Its main (theoretical) advantages are linked to flexibility and self-responsibility, efficiency gains, the strengthening of environmental awareness and integrating the preservation of natural resources into farm philosophy.

Starting with an in-depth literature review on the adoption of action-based agri-environment schemes and an evaluation of action-based measures in Bavaria, the case study had a specific look at farmer preferences concerning the design of grassland schemes and at the effectiveness of the result-based measure.

Main outputs

[1] Canessa, C.; Ait-Sidhoum, A.; Wunder, S.; Sauer, J. (2022): Understanding farmers' participation in European agri-environmental measures. A systematic review. 96th Annual Conference, April 4-6, 2022, KU Leuven, Belgium, Agricultural Economics Society - AES.

[2] Ait-Sidhoum, A.; Mennig, P.; Sauer, J. (2023): Do agri-environment measures help improve environmental and economic efficiency? Evidence from Bavarian dairy farmers, European Review of Agricultural Economics, (50) 3. 10.1093/erae/jbad007

[3] Ait-Sidhoum, A.; Mennig, P.; Frick, F. (2023): Payments for agri-environmental schemes and green productivity in Germany: An impact assessment analysis. 97th Annual Conference, March 27-29, 2023, Warwick University, Coventry, UK, Agricultural Economics Society - AES.

[4] Tzemi, D.; Mennig, P. (2022): Effect of agri-environment schemes (2007–2014) on groundwater quality; spatial analysis in Bavaria, Germany. In Journal of Rural Studies 91, pp. 136–147. DOI: 10.1016/j.jrurstud.2022.03.006.

[5] Canessa, C.; Venus, T. E.; Wiesmeier, M.; Mennig, P.; Sauer, J. (2023): Incentives, rewards or both in payments for ecosystem services: Drawing a link between farmers' preferences and biodiversity levels. In Ecological Economics, 213, 107954. DOI: 10.1016/j.ecolecon.2023.107954

Outcomes

With regard to factors affecting the adoption of action-based schemes, variables explaining the relevance of agri-environment schemes to farmers, the role of social contexts and satisfaction with contract design were found to be most relevant. Conversely, variables explaining the opportunity of participation are mostly ineffective in explaining uptake. Ineffectiveness was also found concerning both economic and environmental outcomes of action-based approaches, calling for improved targeting and monitoring of the environmental status of farmland. Finally, the results of an in-person farm survey conducted in Bavaria in 2022, including a choice experiment and constructing a farm-level biodiversity index, suggest that neither the payment mechanism (action-based, result-based or hybrid) nor its amount is a primary driver of farmer decision-making. Instead, the applicability of the prescribed management practice to the farming system and the achievability of the outcome are key for uptake. In order to encourage farmers to participate and allocate more land in result-based schemes, policy-makers should tailor the payment-mechanism to different farmers and provide on-site technical advice. A last study, which is about to be finished and based on the farm survey data, deals with a comparison of the effectiveness of result-based and action-based grassland schemes.

Neringa Sidlauskaite - Unsplash

This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement N°817903.

For more information on the findings, please contact:
Philipp Mennig - philipp.mennig@tum.de
Carolin Canessa - carolin.canessa@tum.de