

MA thesis topic: Pitfalls and protocols in IACS data use

Through the Integrated Administration and Control System (IACS, German: InVeKoS), CAP subsidy applicants must provide georeferenced data on cultivars for each farmed land parcel (Jänicke et al., 2025; Burchfield et al., 2024). This detailed annual spatially explicit information on agricultural land use at plot, field and farm level has been used in a wide variety of research (Leonhardt et al. 2024). However, use-cases are scattered among disciplines and applications show low replicability of work flows (Leonhardt et al. 2024). Additionally, largely heterogeneous data availability, data formats and data contents result in heterogeneous potentials and challenges. To increase the applicability of and the coherence in the use of IACS data, a synthesis of the knowledge in the IACS data use is required.

The goal of this Master's thesis is to contribute to closing this gap by synthesizing known pitfalls and potentials protocols in the use of IACS data through a structured survey of users of IACS data. A potential workflow for the thesis may include the following steps:

- 1) Literature Search: Replicating and extending the systematic literature search of Leonhardt et al. (2024) to identify (novel) papers using IACS data from all EU member states. Scraping contact information of academic data users (e.g., e-mail addresses of paper authors).
- 2) Literature analysis and/or stakeholder interviews: Developing a definition of objectives, scopes and criteria relevant in IACS data use (e.g., data availability, harmonization, reproducibility, technical barriers in data use).
- 3) Survey design: Design of a structured online survey with closed and open questions aiming to uncover IACS data users' knowledge and suggestions with respect to the identified objectives, scopes, and criteria.
- 4) Survey implementation: Programming an online survey (e.g. through GWDG LimeSurvey), pretesting, and distribution to data users identified in 1).
- 5) Analysis: Qualitative analysis of survey responses e.g., through qualitative coding; quantitative analysis if applicable. A defined subset of respondents may be selected for feasibility.

The work will be supervised and supported by Dr. Stefan Seifert (University of Göttingen) and Dr. Heidi Leonhardt (BOKU University). Results of this Master's thesis will enter a research project offering a potential (co-)authored publication in a scientific outlet.

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Literature

Jänicke, C., Petersen, K.A., Schmidts, P., Müller, D., Rudbeck Jepsen, M. (2025) Field and farm-level data on agricultural land use for the European Union. *Scientific Data* 12, 1050.

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