## Project short name and title

MIXEd livestock farming for improved sustainABiLity and robustnEss of organic animal production (MIX-ENABLE)

## Project summary

Integrating two or more animal species with crop production or agroforestry on a farm potentially provides many benefits including more efficient pasture use and parasite management. However, organic mixed livestock farms (OMLF) tend to specialize or display limited integration between farm components. This limited integration may reduce the practical benefits of OMLF. Therefore, we aim to (i) characterize OMLF in Europe, especially their level of integration between farm components, (ii) assess their sustainability and robustness to adverse events, (iii) compare their performances with those of specialized farms, (iv) integrate the knowledge developed on OMLF into models that can simulate their performances against climatic and economic variability, (v) conduct farm-level experiments to generate knowledge about OMLF (to feed into the models) and (vi) co-design with farmers more sustainable and robust OMLF. We will survey OMLF to collect technical and socio economic data. Then we will enlarge existing concepts and methods to assess the level of integration between farm components and apply these methods to surveyed OMLF. We will also develop an indicator system for integrated assessment of OMLF and apply it to connect the sustainability and robustness of surveyed OMLF with their level of integration among farm components. In parallel we will conduct farm-level experimentation of organic specialized and mixed livestock situations for the comparison of specific aspects of animal husbandry (e.g. pasture use, animal health). We will extend farm simulation models to OMLF and analyze the benefits and drawbacks of livestock diversity. Using these models, we will develop and implement participatory methods to co-design with farmers sustainable and robust OMLF. To inform practice and policy-making, we will communicate our results to shed light on the potentialities of OMLF and the way to manage it sustainably or the way to reach it starting from a specialized farm.

## Aim, objectives and hypotheses

We hypothesize that limited integration among farm components prevents organic mixed livestock farms from most of the above-mentioned multiple potential benefits. Accordingly, the main aim of MIX-ENABLE is to produce new knowledge on how to manage organic mixed livestock farms in Europe towards sustainability and robustness in response to climatic and economic variability. More specific objectives are the following:

- Characterize organic mixed livestock farms in Europe, in particular their level of integration between farm components.
- Assess the sustainability of organic mixed livestock farms and their robustness to adverse events, and relate it to their level of integration between farm components.
- Compare the sustainability and robustness of specialized and mixed livestock farms.
- Integrate the knowledge developed on organic mixed livestock farms in models that can simulate their sustainability and robustness in response to climatic and economic variability.
- Co-design with farmers more integrated, sustainable and robust organic mixed livestock farms or pathways from specialized towards organic mixed livestock farms.

Expected results and their impact/application

Across Europe, farms converting to organic agriculture tend to be specialized in production of one animal species. Thus, the proportion of organic mixed livestock farms is decreasing. Yet, in the context of organic agriculture, animal diversity within farms offers several theoretical advantages (enhanced animal health, improved use of pastures, etc.). The project will provide the organic sector with key insights about the conditions for the sustainability and robustness of mixed livestock farms, innovative layouts of such farms and pathways from specialized towards mixed livestock farms. These results will also be of benefit to the conventional sector as most theoretical advantages of animal diversity in organic mixed livestock farming apply to conventional farming. These results will inform practice and policy-making to orientate support (extension, training, etc.) to farmers towards these farm types. As many participants to MIX-ENABLE have teaching duties, these results will also be presented to students during lectures given at college/university level to influence their concept and understanding of organic mixed livestock farming.

To increase our chances of impact and application of project results by targeted end-users, we will implement a participatory approach through several tasks e.g. co-design workshops to identify innovative forms of organic mixed livestock farms and dissemination actions e.g. farmer field days. This participatory component will increase the relevance, credibility, legitimacy and subsequent use of research outputs (Cash et al., 2003). We expect farmer participation will contribute to spread the project key findings throughout networks of organic farmers.

Coordinator, partners and countries involved

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WP 6 Stakeholder engagement, compilation and dissemination of results (head: ITAB, partner: BOKU, CRAW, FIBL, Forschungsring, IDELE, INRA, SLU, Thünen Inst., Tuscia Uni)

D 6.1.: Map of agricultural consultants active in organic mixed livestock farming.

A map of consultants in all partner countries shall be prepared to support stakeholder engagement and knowledge dissemination in the project. Agricultural consultants are the most important actors that mediate the interaction and knowledge flows between the scientific and practice sector. The task is lead by Forschungsring.

The data base (Deliverable D6.1) should be finalized until 2018-06-01.

Method

All MIX-ENABLE consortium members were asked to identify consultants or comparable actors in their countries and put their public contact data into a data base structure provided by Forschungsring. In a second step, all consultants in the data base should be contacted by Forschungsring for their agreement to engage in the MIX-ENABLE project as multiplicators.

The data base is only for internal use in the project, if no other agreements are made. All data in the data base will be handled according to actual European data protection requirements. This includes the approvalment of all consultants to be listed in the data base.

Results

The data base structure (table 1) has been prepared by Forschungsring. Therefore Excel was used. Collected data include basic contact data, as well as information on the institutional background of the consultant, and on expertise with different animal species and production types. Further, consultants can choose between three different options of data use (no use/reject cooperation; internal use of data in the project only; external use/publication allowed). For consultants that reject cooperation, we will be keep only the name in the data base to avoid redundant invitations.

<table>
<thead>
<tr>
<th>Country</th>
<th>contact person</th>
<th>institution</th>
<th>kind of institution / group</th>
<th>data protection</th>
<th>animal species</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR/AT/BE/CH/DE/SE/IT</td>
<td>title name phone email</td>
<td>name address phone email</td>
<td>A/B/C/D/E</td>
<td>no use/external use</td>
<td>A/B/C/D/E/F/G</td>
</tr>
</tbody>
</table>

Table 1: register for consultants

All project partners did send back data until end of May 2018. In total, 107 contacts of consultants are available for the participating countries currently (Between 11 and 25 per country). Concerning the institutional background, 18 consultants are working in the area of research and education, 24 are with NGOs (especially in organic farmers associations), 18 are private consultants, 20 are official
consultants, 8 are private farmers, and 20 are working for professional media (multiple responses were allowed).

Referring to animal species, there have been a lot of multiple responses. Most consultants are experts in organic livestock/organic farming in general (44), 18 are experts in cattle farming, 7 in poultry, 6 in pig farming, and 11 in small ruminants/sheep & goats. Media contacts in the data base are not focusing on single species.

Consultants in the data base are being invited to participate in the MIX-ENABLE project by Forschungsring, and being asked to approve to be registered in the data base. Until now, only 14 consultants responded to the query.

Still the register is not completed. During the time there will be made more contacts especially with the practice. So the register will be open for new contacts during the project runtime.

The results of the mapping will be documented and prepared (with the agreement of the consultants & in compliance with data protection regulations) for internal project issues mainly for compiling & disseminating the project outputs and communicating the outcomes. Mapped consultants will be involved in participatory actions (e.g. farm surveys, participatory workshops, e.g. workshops planned in the project.

For compliance with data protection regulations only the report about the mapping can be submitted currently because still many approvals of the consultants are lacking. Of course the register will be submitted to CORE organic soon.