Development of a practical data management system with embedded sensors for improved environmental management and transparency of dairy farming

Coordination:
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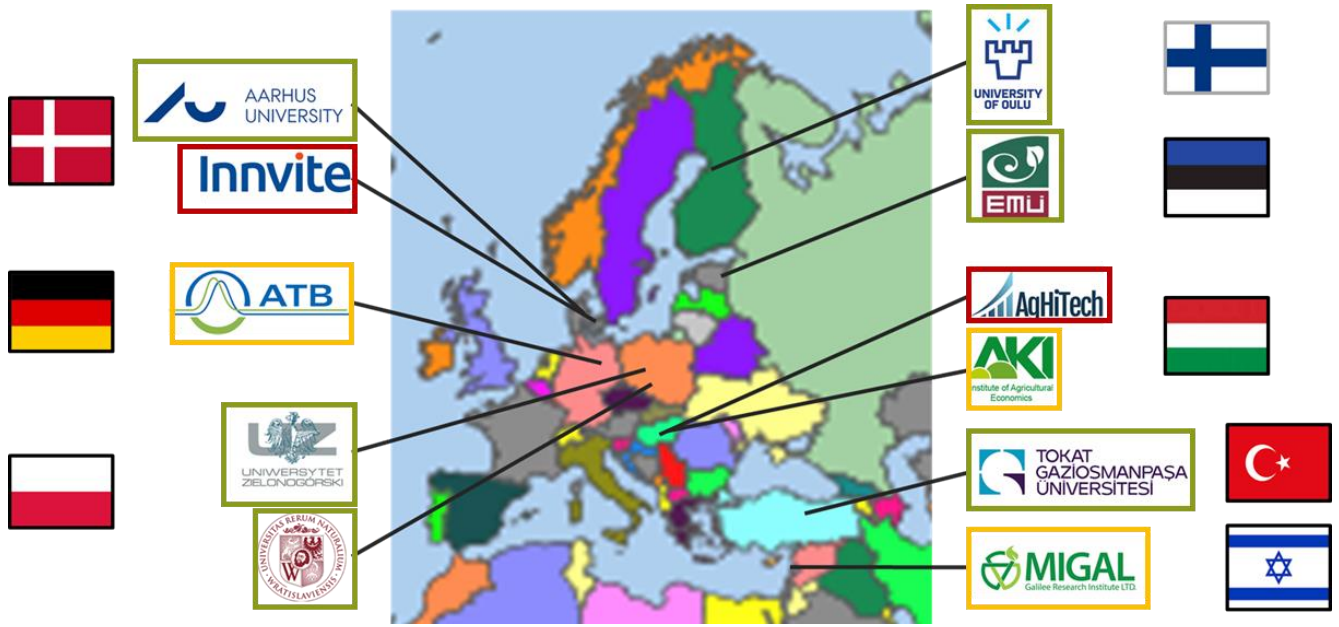
ATB Germany)

2022 Joint Call
Kick-off Projects Seminar
31st January 2024

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grand agreement no 862665 ICT-AGRI-FOOD.

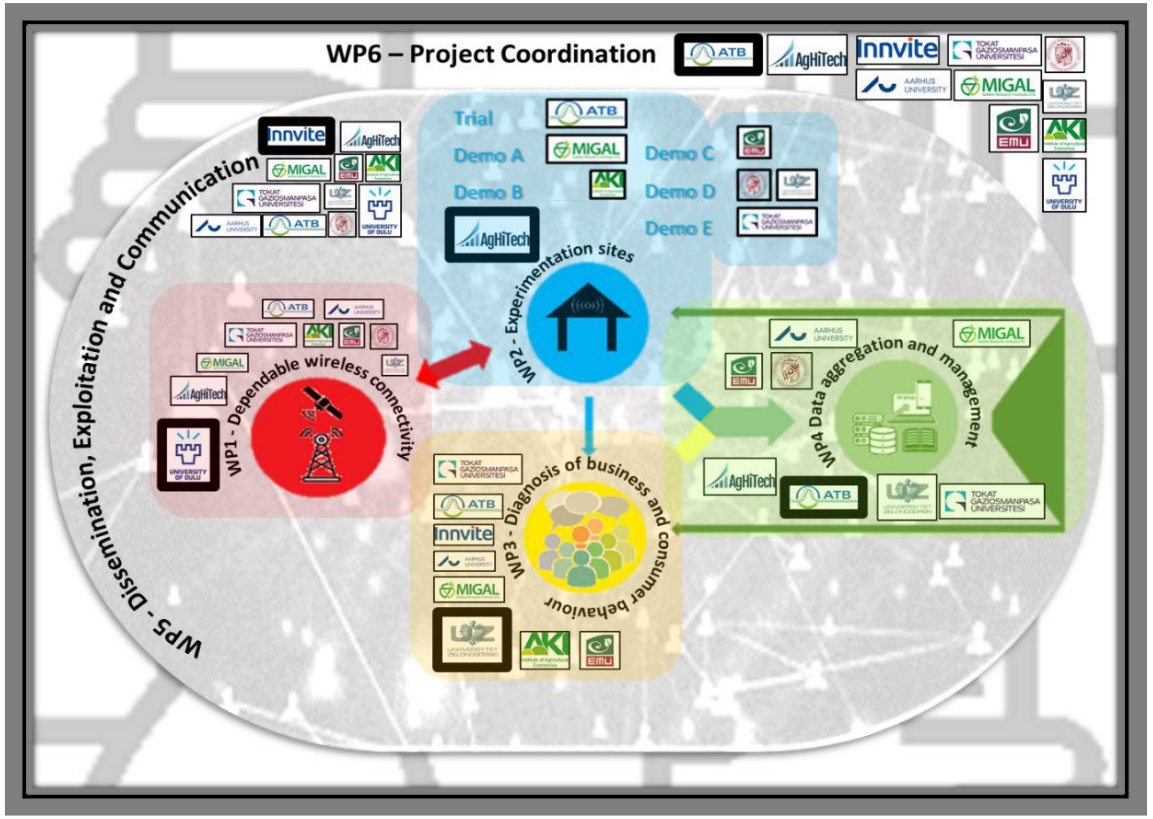
Involved countries and partners

- 11 partner institutions from 8 countries
  → universities, research institutes and companies
- Total budget ≈ 1.6 Mio. €
- Duration: 3 years



project start: 2023-10-01
despite some pending national funding approvals

Objective



- **Validate** on-farm **DMS** with embedded sensors (including optimized **data transfer**)
- **Demonstrate applicability** in commercial farms **under different** climatological and socio-economic **conditions**
- **Identify information requirements** of different interest groups **to refine & extend reporting framework**

Main project activities and challenges

- **Assessment of on-farm communication ecosystem** for case study sites in 6 countries to derive optimization options for data transfer [→ **general conclusions despite large diversity** & farm specific solutions]

- Review of **key scores for sustainability** in the context of multicriterial assessment and design of surveys to evaluate **related attitudes / information needs of different stakeholders** [→ define sets of scores relevant for certain groups; **data space & app design**]

- **Sensor data collection and empirical modeling** to link environmental data to key scores [→ validate sensors & models; evaluate potential linking to external sensors]

Expected results and potential impact

- Recommendations for optimization of on-farm communication ecosystems
- Easy-to-use data space for environmental data from farms & target group specific multicriterial assessments in online application
- Demonstrate added value for farmers and create incentives for data and information sharing

Next steps

- In-depth interviews with processors, retailers and regulating bodies

- Design of app prototype

	Carbon Dioxide (ppm)	Ammonia (ppm)	Temperature (°C)	Humidity (%)	Dust (µg/m3)	Ventilation (m3/h/kw)
Minimum	413	0.4	16.3	41.2	7	775.2
Maximum	648	0.9	31.3	94.7	10.1	4347.8
Average	481.9	0.7	23.7	73.2	7.8	2311.4
Median	476	0.6	23.2	76.7	7.6	2272.7
Outside limits	0 %	0 %	57.5 %	41.9 %	0 %	7.9 %

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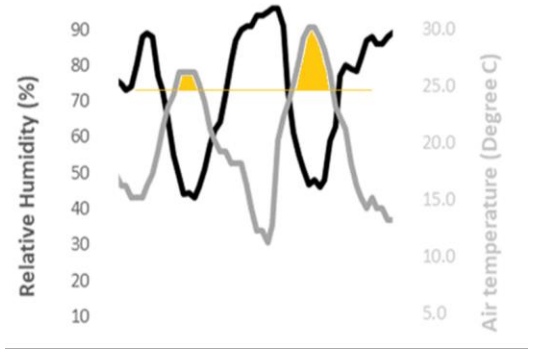

- Sensor installation in case study farms and optimization of local data transfer

LET'S KEEP IN TOUCH!

Please feel always free to reach out to us.

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Thank you for your attention!