



Enhancing environmental sustainability of livestock farms by removing barriers for adopting ICT technologies



A/Prof. Thomas Banhazi, PhD AgHiTech Kft.

Kick-off co-funded Projects Seminar 17-18th March 2021





Goal and context

Background

- Utilisation of ICT based tools in agriculture is crucial for the EU to become (1) more competitive, (2) socially inclusive and (3) climate neutral
- Promoting and adoption of ICT tools is still a major challenge in animal production
- Sustainable animal husbandry requires the removal of socio-economic and cultural barriers preventing the wider adoption of ICT tools

Goals

- Improve the economic and environmental viability of livestock farms through application of advanced information and communication technologies
- Identify/remove social barriers for technology adoption to achieve a wider use of ICT on farms

Main project activities/challenges/ambitions





Overcome selected socio cultural and economic constraints that prevent a more sustainable livestock production to foster green growth and digitization in the EU.





Objective and Hypothesis

Hypothesis 1 (Topic 1)	Application of advanced ICT solutions improve the economic and environmental viability of farms, health and welfare of livestock and quantity and quality of production.
Hypothesis 2 (Topic 1)	Air quality and thermal environment in livestock buildings have an impact on the biological and economic efficiency of farm production and environmental viability.
Hypothesis 3 (Topic 2)	A greater level of technology adoption can be achieved, if social barriers for technology adoption are identified and eliminated.



Potential impacts



Economic aspects		
Increased competitiveness of EU farming		
Better monitoring of livestock production		
Environmental aspects		
Improved sustainability and reduced emissions		
Build an EU environmental monitoring system and fine-tune regulatory policy to reduce emissions		
Societal aspects		
Opportunities for increased environmental and social responsibility		
LivestockSense will positive impact to the following UN Development Goals: Zero hunger, Good Health and		
Well-being, Responsible Consumption/Production, Climate Action, Life on Land		



Research approach & main activities



Identification and establishment of trial farms

Farms identified and supplied with PLF tools. Emphasis will be on improved animal welfare and reduced the environmental impact of livestock production

Social research on attitude and adoption

<u>Quantitative interviews:</u> to assess farmers' <u>perception of PLF tools</u> and <u>qualitative interviews:</u> to understand and evaluate farmers' <u>experiences with the deployed PLF tools</u>.

Focus group discussions: to evaluate farmers' attitudes towards ICT and adoption barriers.

Workshops: to measure value chain stakeholders' and policy makers' attitudes toward using PLF.

Development of a learning database; quantifying the economic and environmental benefits of PLF systems

The likely economic and environmental benefits associated with technology adoption will be incorporated in a learning database and analysed with AI.

Agile development of a data-driven, web-based ICT tool

A web-based application will be created as an extension/dissemination tool. It will give farmers an estimation of the benefits of applying PLF tools on their farms. Dissemination tools will be incorporated.



Cooperation with Stakeholders 1



International

- European Livestock and Meat Trades Union
- COPA COGECA

Hungary

- Producers: Bonafarm Group (Hungary), UBM Ltd., Galldorf Ltd., Agrofeed Ltd., NAGISZ Ltd., Agrifirm
- University of Kaposvár; Georgikon University
- NGOs: Association of Hungarian Pig Breeders and Pig Producers (MSTSZ), Hungarian Grain and Feed Association
- Hungarian Ministry of Agriculture, Hungarian Chamber of Agriculture, Hungary.

Denmark

- Ministry of Environment and Food of Denmark
- Danish Advisory Service
- Danish Agriculture and Food Council

Austria

Maschinenring Austria

Estonia

• Estonian Pig Breeding Association

Sweden

- Swedish farmers' federation (nationally and regionally)
- Advisory Services in Sweden e.g Farm and animal health
- Swedish pig producers association
- Swedish board of agriculture

Israel

- (Operators (farmers) of poultry houses in the Galilee's Kibbutzim
- Loolay Of-HaGalil Integration of poultry-houses in Galilee
- Of HaGalil slaughterhouse
- Veterinarians in the Galilee region
- Israeli Ministry of Agriculture and Rural Development
- Israeli organization of poultry breeders

Poland

• Ministry of Agriculture and Rural Development



Dissemination and outreach



- (1) demonstrate the relevance of results to agribusiness and thus enhance their investments in new digital technologies
- (2) promote a general awareness of the value of digitalization and novel technologies in livestock production
- (3) Highlight the importance of appropriate EU policies to facilitate digitalization in livestock production

Planned international conferences for LivestockSense:

- AgEng 2021, 4-8 July 2021, Evora, Portugal
- CIGR Conference, 10-14 May 2021, Québec, Canada
- CIOSTA Conference, June 2021, Kraków, Poland;
- CIGR World Congress, 5-9 December 2022, Kyoto, Japan
- ECPLF 23-26 August 2021, Vienna, Austria;
- ISAH Congress of, August 2022, Pattaya, Thailand.

Planned peer-reviewed publications

- Systems Research and Behavioural Science
- Sustainability
- Computers and Electronics in Agriculture
- Agronomy Research
- Animals
- Biosystems Engineering



Partners



Partner name	Country
AgHiTech Kft.	Hungary
Estonian University of Life Science	Estonia
SBA Research	Austria
Institute of Agricultural Economics	Hungary
MIGAL Galilee Research Institute	Israel
Wroclaw University of Environmental and Life Sciences	Poland
Innvite ApS	Denmark
Swedish University of Agricultural Sciences	Sweden
Aarhus University	Denmark







LET'S KEEP IN TOUCH!

Please feel always free to reach out to us.

Dr Thomas Banhazi

Director, AgHiTech Ltd. (Hungary) Associate Professor, USQ, (Australia) <u>thomas.banhazi@plfag.com</u>

Thank you for your attention!