TECH CARE
Integrating innovative TECHnologies along the value Chain to improve small ruminant welfARE management

TechCare final conference
17 June 2025

Luke
NATURAL RESOURCES INSTITUTE FINLAND

# Experience from Digi4Live project

## Digi4Live - Supporting the potentials of digital, data-driven solutions for livestock tracking

**Jarkko Niemi & Digi4Live consortium**
**Research Professor**
**Natural Resources Institute Finland (Luke)**
jarkko.niemi@luke.fi

Funded by the European Union

Digi4Live

# Digi4Live in a nutshell

- Horizon Europe Coordination and Support Action
- Empowers the European livestock sector to benefit from digital and data-generating technologies
- 11 work packages and 15 partners ➔➔
- Coordinated by Natural Resources Institute Finland (Luke)
- Duration: January 2024 – June 2028


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# Why Digi4Live?

- Inadequate data harmonisation, standardisation & interoperability.
- Limited technology use and indeficiency of solutions for animal tracking, health and policy monitoring
  ➔Evidence about data-driven solutions.
- Digital technologies can benefit administrative & policy processes.
- Boosting collaboration between actors.

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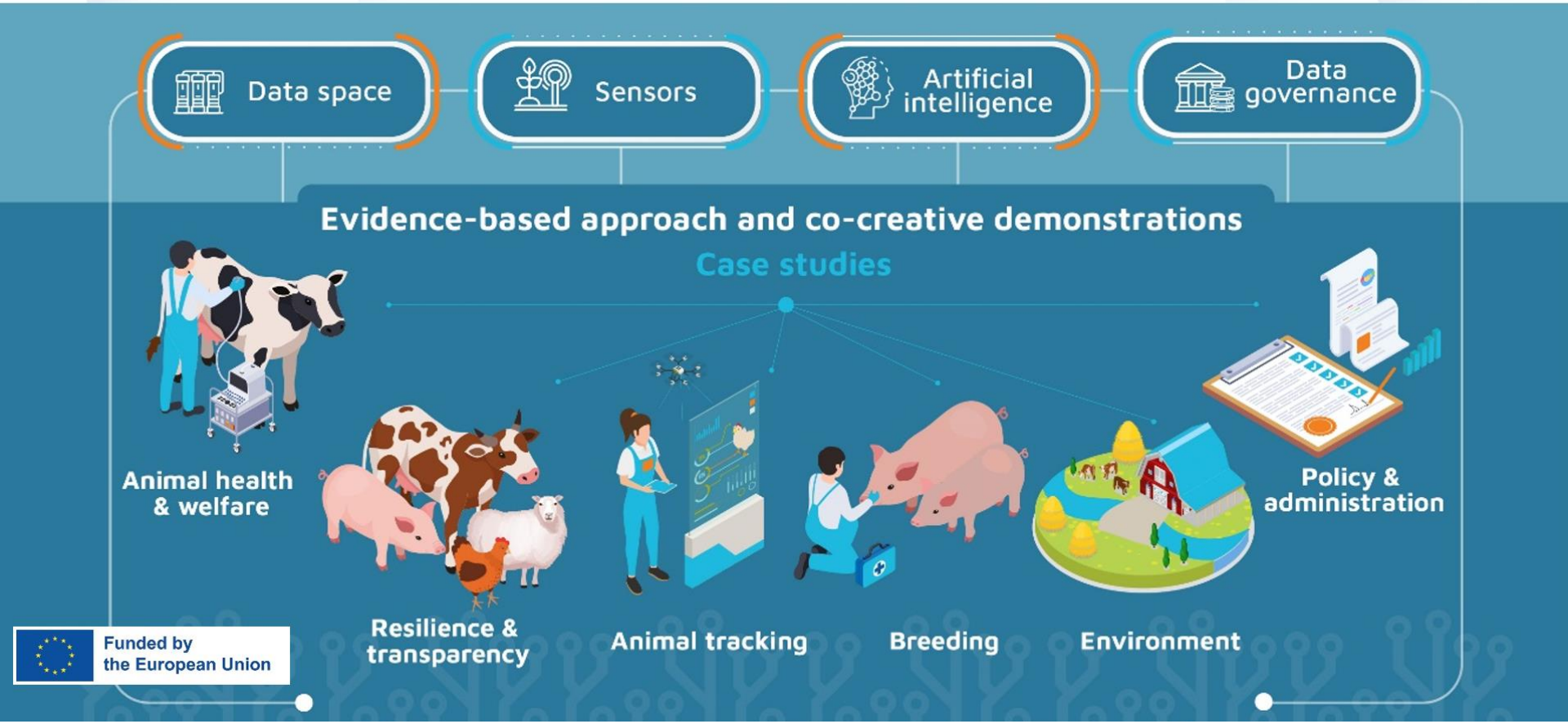
# Six co-created case studies showing the benefits of digitalisation and wider data use



# Data collection

- Case studies address various aspects of using **existing data** already collected on farms/by sensors
- We first develop a concept, which is then tested with a dataset, and finally upscaling is examined.
- Approaches to obtain and utilise data vary, as these examples show:
  - Joins forces with private companies and farms to obtain and connect animal welfare data from farms, sensors, slaughterhouse and production monitoring, links with an exiting project.
  - Ues machine vision (i.e. AI) and an existing farm network: The predictive models of these technologies are sensitive to environmental conditions, so various conditions are included
  - Utilises Walk-over-Weighing project for sheep as an illustrative example on how data can be utilised in animal breeding: Focus on data quality and data filtering.
  - For digital product passport, use data from milking systems, feeding devices, various sensors measuring health and welfare, farm management information systems & registries

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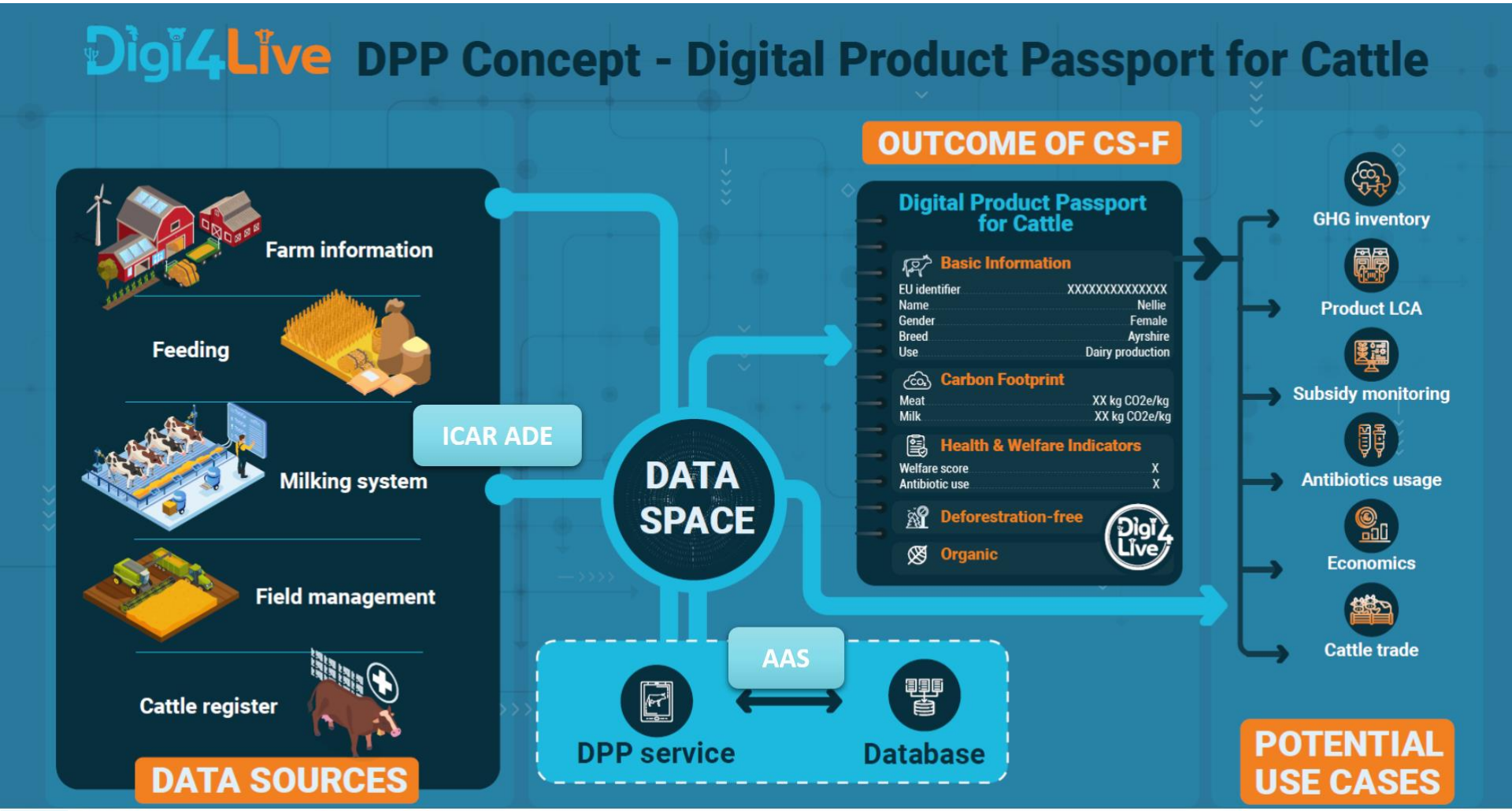


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# An example: CS-C: Robust AI for sensor-based animal tracking

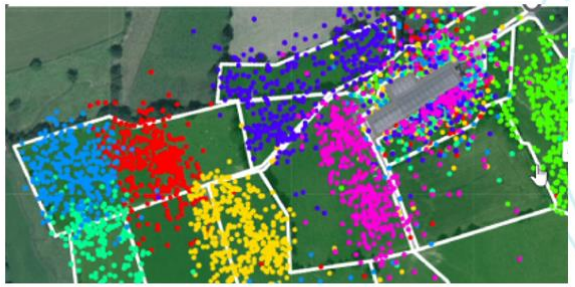
Dong Liu, Cui Gao, Tomas Norton, **KU Leuven** & Clément Allain, Adrien Lebreton, Laurence Depuille, **Idele**

## Computer vision tracking of pigs to generate animal welfare KPIs

- Long-term pig tracking, an existing dataset (30+ farms)
- Behaviorial data (e.g., tail biting, fighting)
- Camera setup in 3 stakeholders
- Smart labelling tool development
- Explore the transferability and scalability of AI algorithm

## Sensor-based grazing traceability of dairy cows

- Track dairy cow with GPS sensors and AI models to ensure grazing traceability
- 6 farms currently involved + historical GPS data from 20+ farms available.
- Various on-farm conditions are considered
- GPS data + reference data



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# Join our thematic expert panels (TEPs)

https://digi4live.eu/tep/

**Data interoperability & standardisation (TEP-I)**

**State-of-the-art digital tools & technologies (TEP-T)**

**Societal, regulatory & legal issues (TEP-R)**

**Data sharing & exploitation (TEP-S)**


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# Thank you!

**digi4live.eu**

Project coordinator: Research professor Jarkko Niemi
Natural Resources Institute Finland (Luke)
jarkko.niemi@luke.fi

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aWISH
ANIMAL WELFARE INDICATORS AT THE SLAUGHTERHOUSE

# The aWISH project: Animal Welfare Indicators at the SlaughterHouse

## OVERVIEW PROJECT

Prof. Bas Rodenburg

Funded by the European Union

www.awish-project.eu
awish@ilvo.vlaanderen.be

# General

aWISH
ANIMAL WELFARE INDICATORS AT THE SLAUGHTERHOUSE

aWISH

Horizon Europe project
Research and Innovation Action

**8 000 000 €** budget

**28** partners | **11** countries | **6** pilots

**01 Nov 2022 - 31 Oct 2026**



# Partners

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Utrecht University
fbn
ILVO
consulai
THÜNEN
UBITECH
Innotech
BioSense
BATALLÉ
ITAVI
WHITE RESEARCH
CLK GmbH
Bildverarbeitung & Robotik
UNIVERSITY OF COPENHAGEN
Vion FOOD GROUP
STIFTUNG TIERÄRZTLICHE HOCHSCHULE HANNOVER
INSTITUTE OF GENETICS AND ANIMAL BIOTECHNOLOGY of the Polish Academy of Sciences
UAB Universitat Autònoma de Barcelona
vetmeduni
EUROGROUP FOR ANIMALS
GROSSFURTNER
PLUKON food group
carnex
INNOVACC
nunasolutions

# General aim

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ANIMAL WELFARE INDICATORS AT THE SLAUGHTERHOUSE

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Large-scale automated **welfare monitoring** of **animal-based indicators** at the **slaughterhouse**

# Objectives

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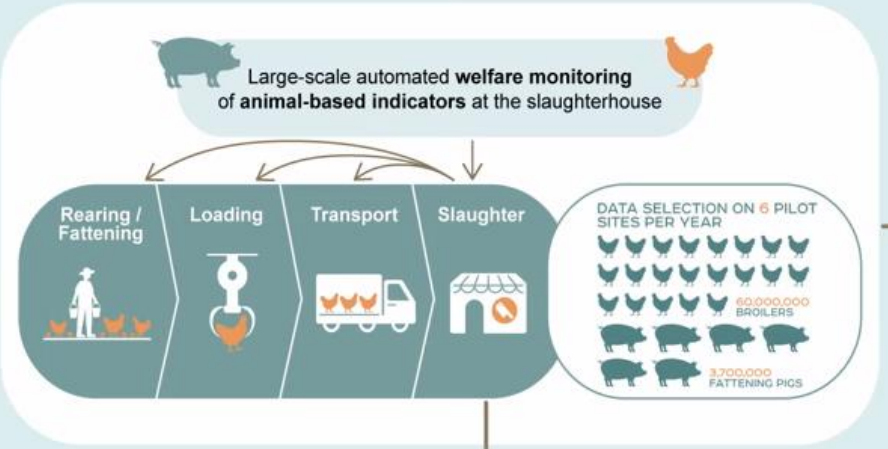


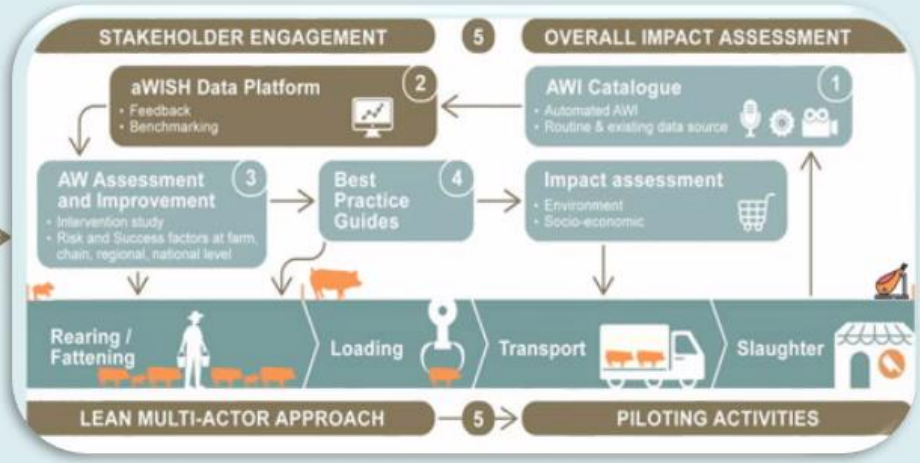


**70 novel animal welfare indicators, mainly at slaughter, inclusive routine data**

*stress vocalization / pain; bruises / skin lesions; liver / lungs; wing fractures; foodpad dermatitis; tail biting; DOA / condemnations*

# Specific objectives

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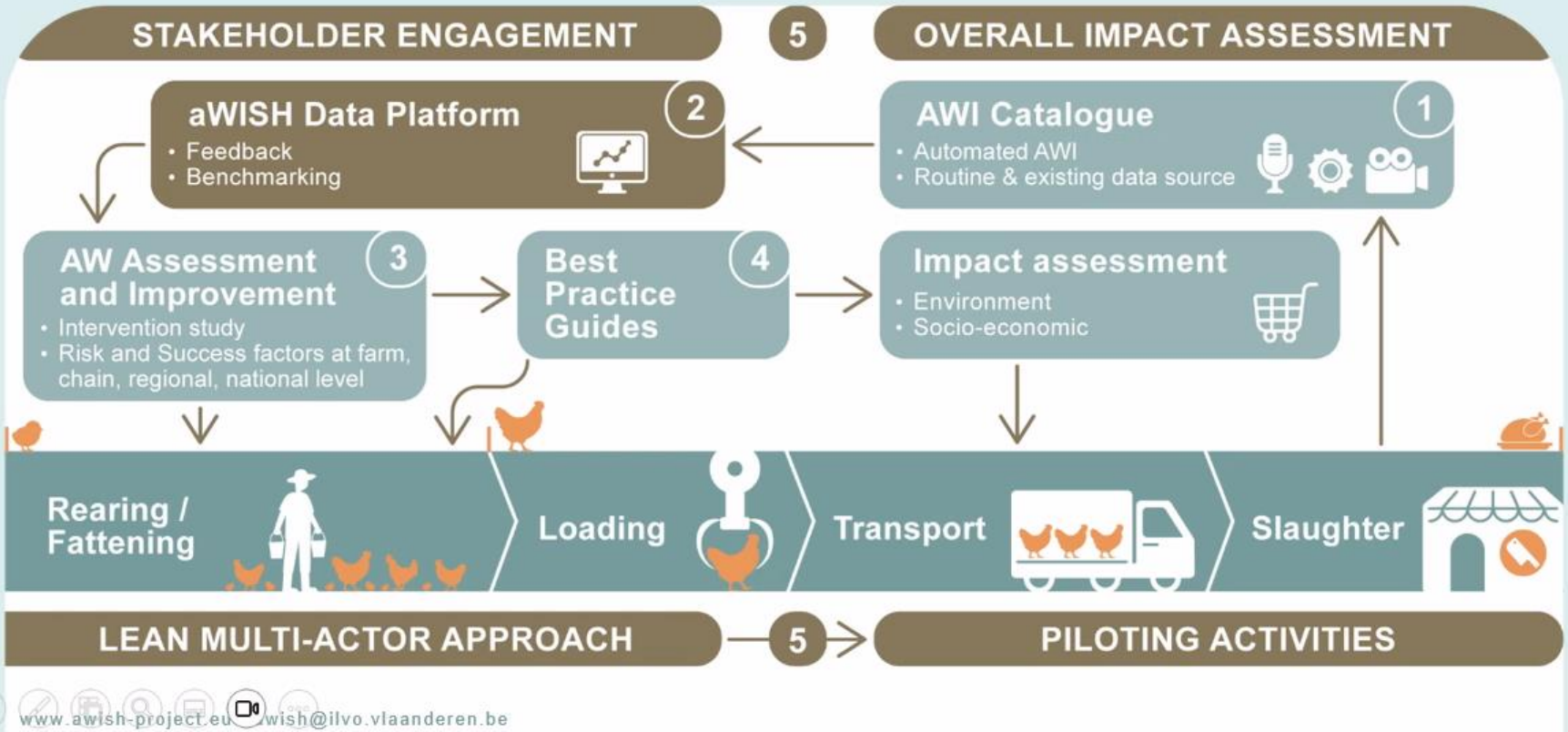

# Pilots

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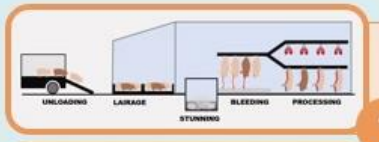
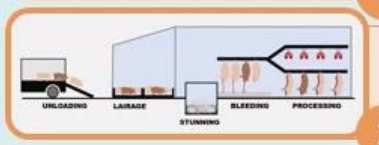


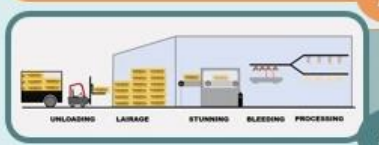

1

**Pilot lead**: Vion
**Sci. lead**: UU
*1st phase pilot*



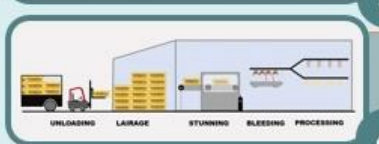

2

**Pilot lead**: Batallé
**Sci. lead**: UAB
*1st phase pilot*



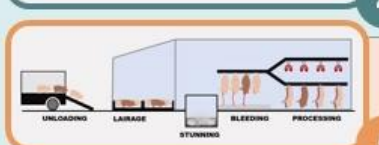

3

**Pilot lead**: Plukon – Duc
**Sci. lead**: ITAVI
*1st phase pilot*



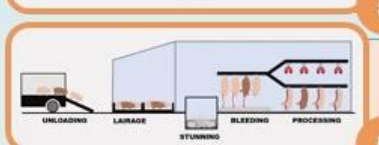

4

**Pilot lead**: Plukon – Sieradz
**Sci. lead**: IGBZ PAN
*1st phase pilot*




5

**Pilot lead**: Großfurtner-Higelsberger
**Sci. lead**: Vetmeduni
*2nd phase pilot*

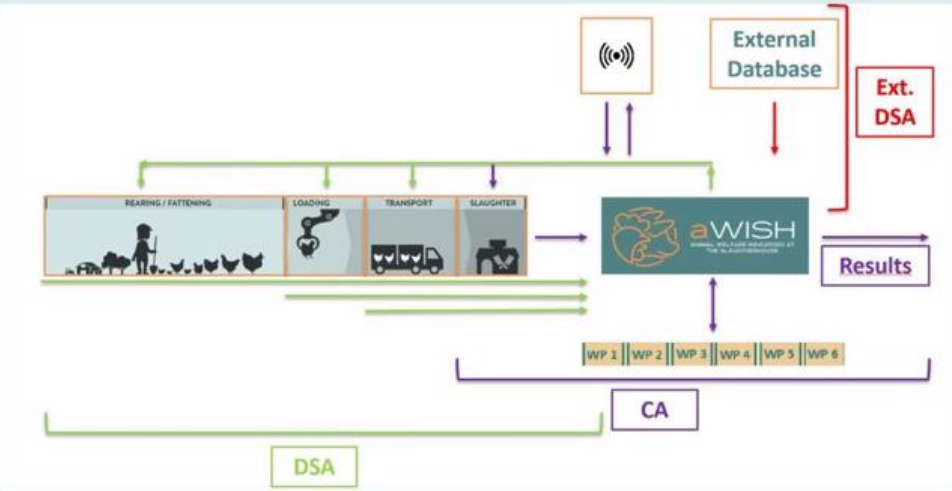



6

**Pilot lead**: Carnex
**Sci. lead**: Biosense
*2nd phase pilot*

# Welfare data & alerts

- Central aWISH data platform to share and visualize welfare data
  - Farmers
  - Catchers (broilers)
  - Transporters
  - Slaughterhouses
  - Researchers




- Access to own data
- Researchers / pilot managers: access to aggregated anonimized data

# Example: tail length

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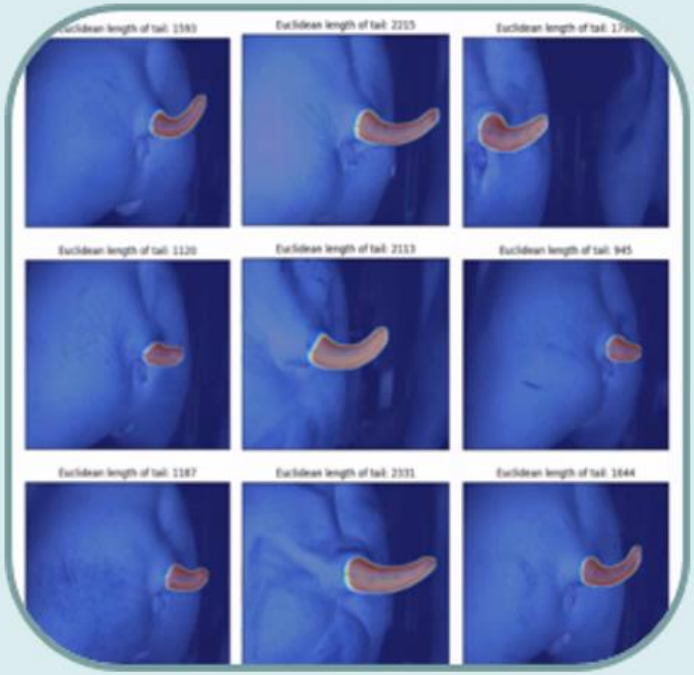
- Tail length data pilot 1(NL)
  - 3.261 records
- Two 3D Camera's after the first flame oven
- Data uploaded to the aWISH data platform



# Example: tail length

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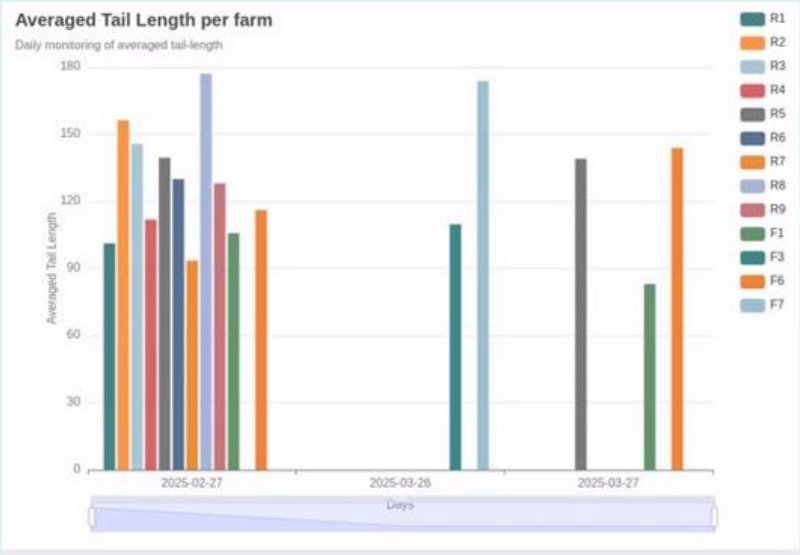
- Tail length data pilot 1(NL)
  - 3.261 records
- At farm and batch level
- Monitor development towards pigs with intact tails: measure tail damage as well



# Feedback loop: improve

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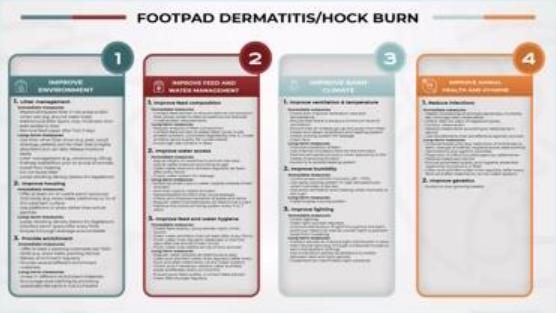
- Pilots and stakeholders can monitor progress over time and set goals (could also create alerts)

- Best Practice Guides available to improve performance

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# Stay up to date?
# Join the expert panel?

www.awish-project.eu

awish@ilvo.vlaanderen.be

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