Report and slides from the aWISH Policy Workshop:

**Minimum Standards and Beyond –
Policy Pathways for Animal-Based Indicators under
EU Welfare Reform**

05/09/2025

Workshop Agenda

- 10:00-10:20: Introduction to the aWISH project and workshop objectives

- 10:20-10:35: Presentation: The Role of Indicators in the New Policy Landscape

- 10:35–11:30: Panel: Opportunities and Priorities in the Evolving Policy Landscape, followed by Roundtable Discussion

- 11:30- 11:45: Break

- 11:45 - 12:45: Group discussion: Translating Evidence into Policy Uptake

- 12:45-13:00: Pathways and Next Steps: Reflections and Close

Workshop Objectives

1. Understand the role of AWIs in policy

2. Share perspectives across science, policy and industry

3. Explore how to translate evidence into practice

4. Define next steps for integrating indicators

The aWISH project:

Animal Welfare Indicators at the SlaughterHouse

OVERVIEW PROJECT

Funded by
the European Union

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Introduction

aWISH

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

Rearing / Fattening

Loading

Transport

Slaughter

DATA SELECTION ON **6** PILOT SITES PER YEAR

60,000,000 BROILERS

3,700,000 FATTENING PIGS

Why broilers and pigs?

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

Rearing / Fattening — **Loading** — **Transport** — **Slaughter**

DATA SELECTION ON **6** PILOT SITES PER YEAR

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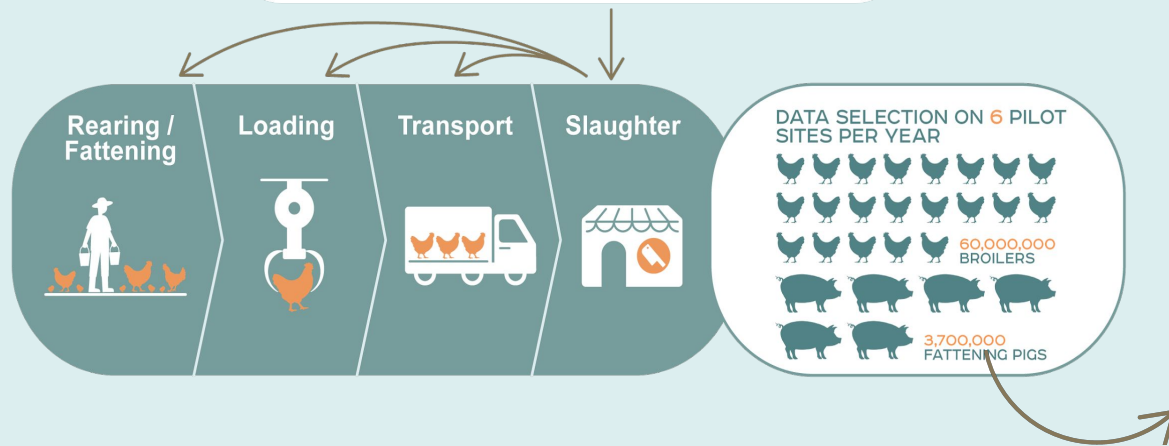
Large scale effect

- Most numerous species in EU
- High welfare problems during all stages

Short rearing period

- Limited monitoring time
- Many same age
- Fast corrective actions

Expansion & adoption to other species

- 2 types of animals that differ in many aspects

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ANIMAL WELFARE INDICATORS AT THE SLAUGHTERHOUSE

Funded by the European Union

Why @ the slaughterhouse?

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

Rearing / Fattening

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DATA SELECTION ON 6 PILOT SITES PER YEAR

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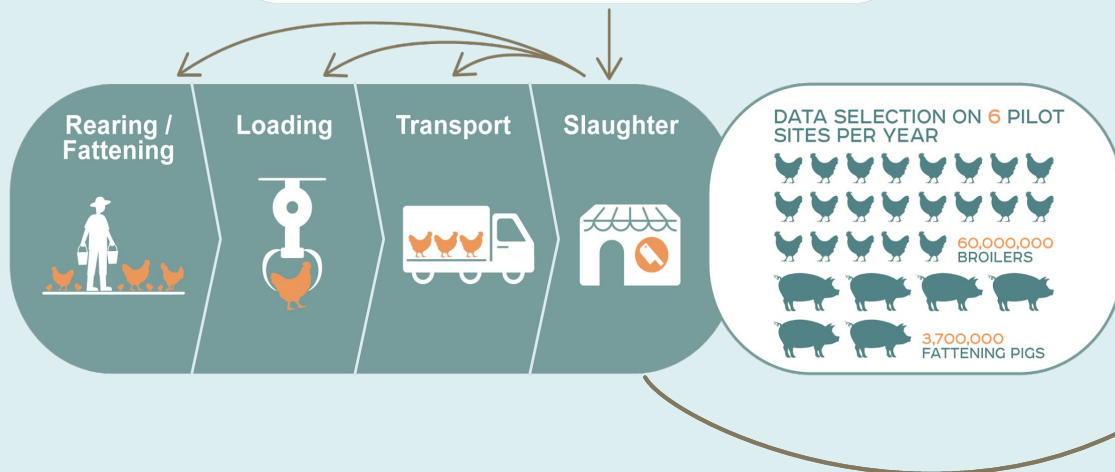
Centralized way

- Large amount of data
- Large number of animals

Completing with

- Routine data
- Measurements on-farm
- Measurements during transport

Specific objectives

STAKEHOLDER ENGAGEMENT 5 OVERALL IMPACT ASSESSMENT

aWISH Data Platform 2
- Feedback
- Benchmarking

AWI Catalogue 1
- Automated AWI
- Routine & existing data source

AW Assessment and Improvement 3
- Intervention study
- Risk and Success factors at farm, chain, regional, national level

Best Practice Guides 4

Impact assessment
- Environment
- Socio-economic

Rearing / Fattening → Loading → Transport → Slaughter

LEAN MULTI-ACTOR APPROACH 5 PILOTING ACTIVITIES
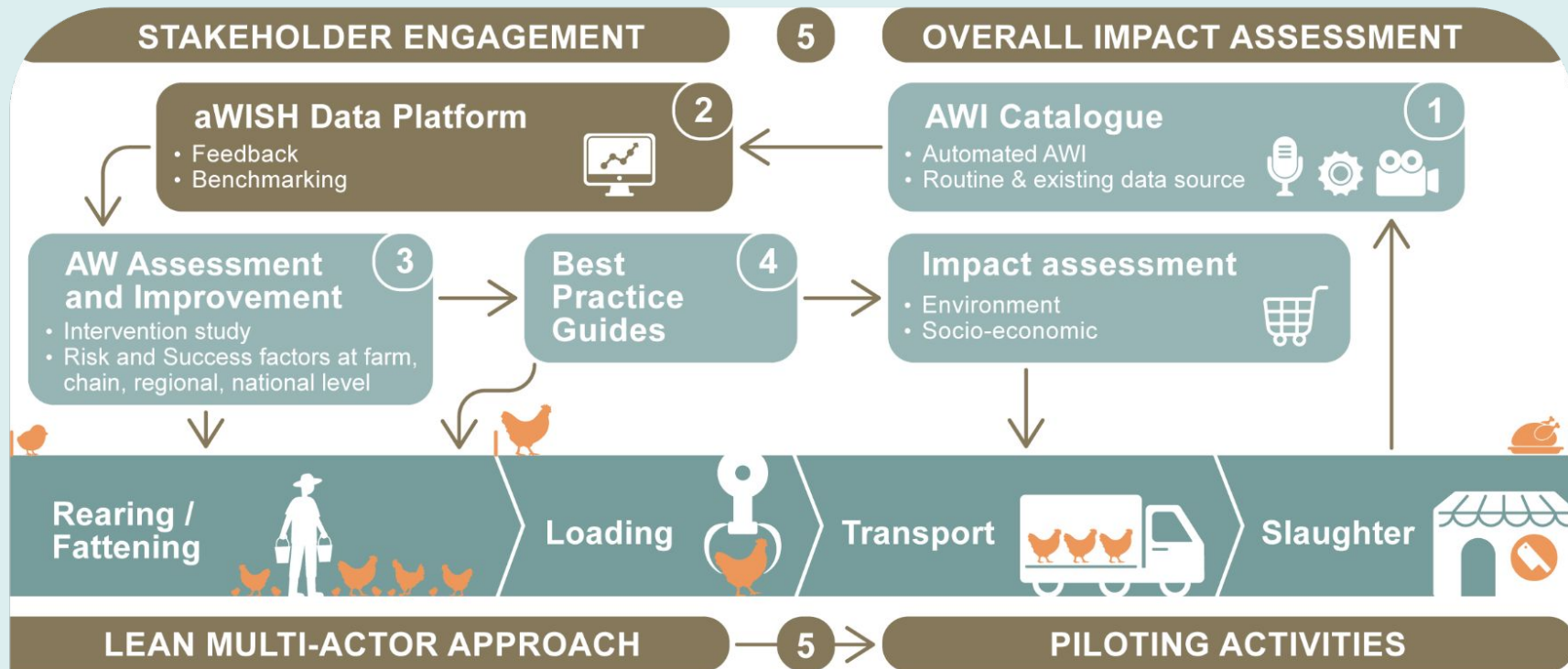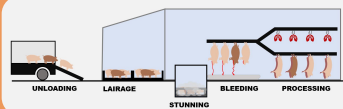
Pilots

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

1
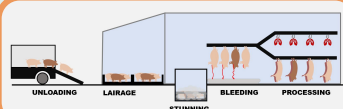
Pilot lead: Batallé
Wet. H.: UAB
1st phase pilot

2

Pilot lead: Plukon – Duc
Sci. lead: ITAVI
1st phase pilot
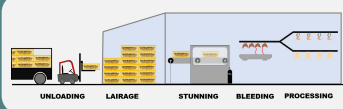
3
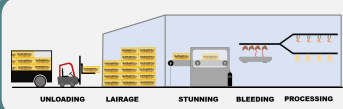
Pilot lead: Plukon – Sieradz
Sci. lead: IGBZ PAN
1st phase pilot

4
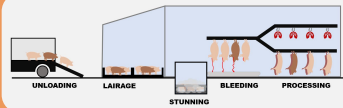
Pilot lead: Großfurtner-Higelsberger
Sci. lead: Vetmeduni
2nd phase pilot

5
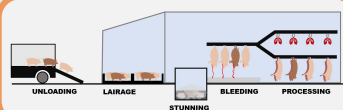
Pilot lead: Carnex
Sci. lead: Biosense
2nd phase pilot

6

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ANIMAL WELFARE INDICATORS AT
THE SLAUGHTERHOUSE

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the European Union

PILOT 1

Gelderland (the Netherlands)
+ extensions to the rest of the Netherlands and Germany

Vion
FOOD GROUP

Universiteit
Utrecht

CLK GmbH
Bildverarbeitung & Robotik

Pilot 1 Vion

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ANIMAL WELFARE INDICATORS AT THE SLAUGHTERHOUSE

OVERVIEW SENSOR TECHNOLOGY

UNLOADING   LAIRAGE   BLEEDING   PROCESSING

STUNNING

Figure based on NVWA figure (Sensortechnology at the slaughterhouse)
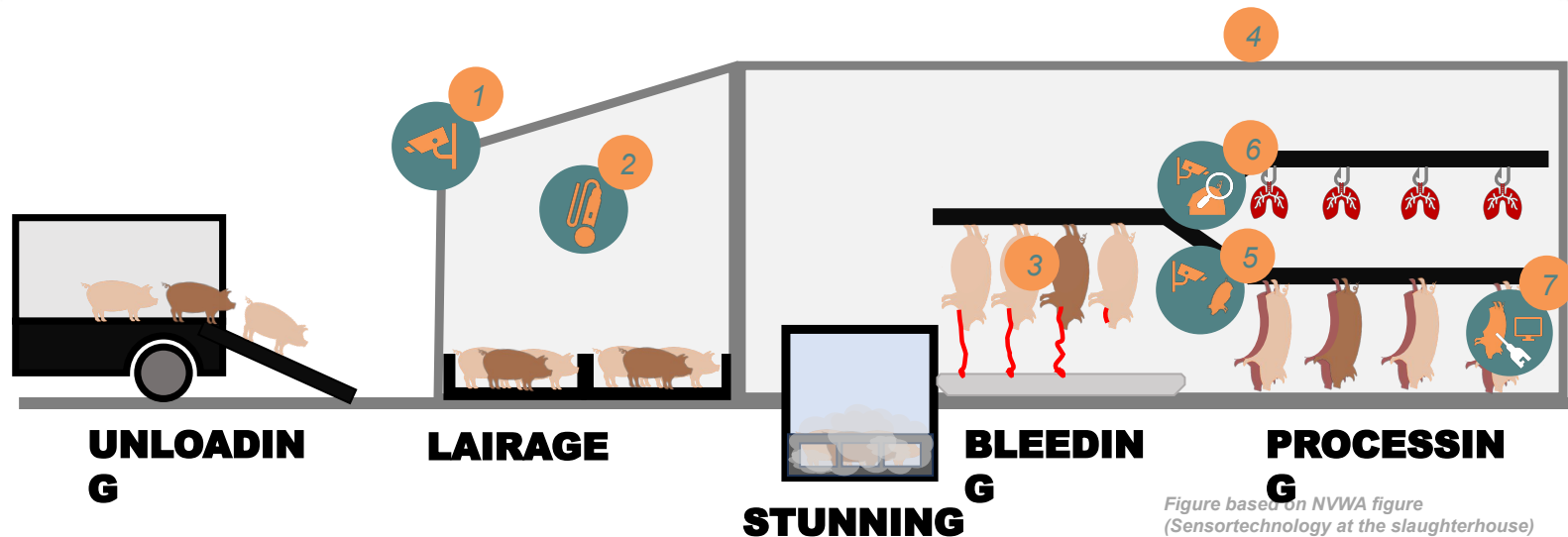
1 AI4Animals (Deloitte) – Animal Treatment

2 **STREMODO (FBN) – Stress Vocalizations**

3 *IGFBPs (FBN) – Stress level in exsanguination blood*

4 AUTOFOM3 (Carometec) – Backfat and Muscle Depth Across Carcass

5 **PigInspector (CLK GmbH) – Ear, Tail and Skin Lesions**

6 Tail Length (VION)

7 CGM Insertion Probe – Backfat and Muscle Depth

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12

Measures the number of stress vocalizations + general activity of the animals.

Sensor hangs above monitored area (unloading and lairage area).
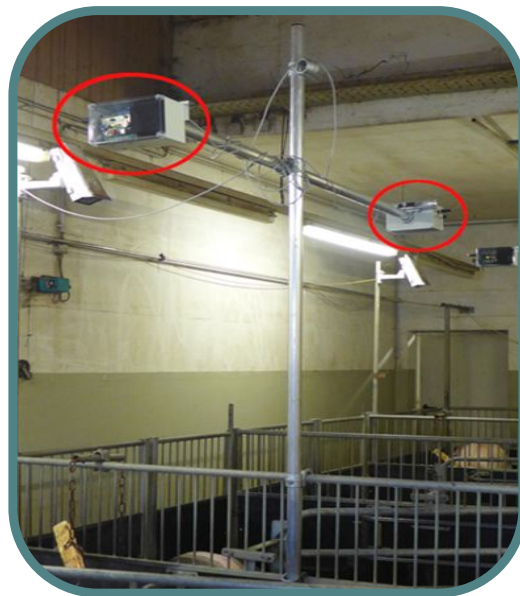
Example set-up for sensors
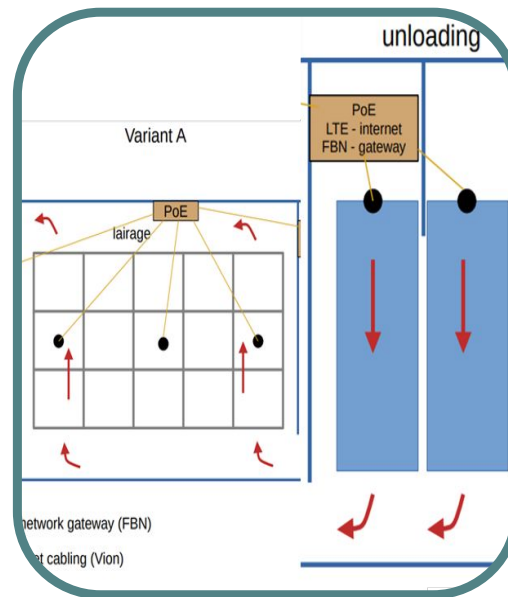
Location of sensors @ slaughterhouse

STREMODO

Measures ear, tail, and skin lesions + tail length.

Images of the pigs are taken via 3 cameras (+ lighting), on which an algorithm performs measurements (still under development).

3 camera's

Detail of the head

Detail of the tail

Detail of the back

PIGINSPECTOR

CLK GmbH
Bildverarbeitung & Robotik

Tail Length (VION)

Euclidean length of tail: 1593 | Euclidean length of tail: 2215 | Euclidean length of tail: 1790
Euclidean length of tail: 1120 | Euclidean length of tail: 2113 | Euclidean length of tail: 945
Euclidean length of tail: 1187 | Euclidean length of tail: 2331 | Euclidean length of tail: 1644
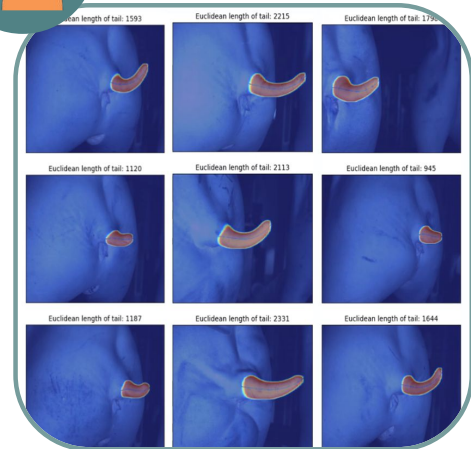
Measures the length of the tail.
Two 3D Camera's after the first flame oven

Registers abnormal human-animal interactions.
Algorithm uses CCTV footage in unloading area.

How it works

1 AI solution - detections

2 AI solution – movement heatmaps
One pig not moving — Stunner not moving
Humans moving
Pigs moving

The AI4A algorithm detects animals, people, and objects and how they interact

Images are translated into movement heatmaps to detect potential handling issues

4 Dashboard - trend reports

3 Dashboard - deviations list review
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AI4A includes trends reports outlining deviations over time and per slaughterhouse

AI4A selects and aggregates all video recordings containing potential deviations to be reviewed

AI4ANIMALS (DELOITTE, VION)

OTHER TECHNOLOGIES

Results

1) A catalogue of technologies to measure animal welfare indicators

NUTRITION

Body weight

Description

The body condition reflects an animal's body reserves or fat accumulation examining the nutritional status of an individual pig. Poor welfare status, including stress or poor health, may be associated with variation in body condition. However, issues other than welfare (e.g. nutrition) might still affect body condition of pigs.

Methodology

- Computer vision

- Scale

- FarmSee
- WUGGL One
- Growth sensor
- iDOL 65 camera
- OptiScan
- WeightCheck
- PigBrother

- PigVision
- PIGI
- Qscan
- Pigxcel™ ID (*prototype*)
- Weight-Detect TM (*prototype*)

See:
www.awish-project.eu

Results

2) New sensors and algorithms:

FARM

- Barn climate (Enviro Detect – Innotech)
- Weight prediction (Weight Detect – Innotech)

SLAUGHTERHOUSE

- Stress vocalisations (Stremodo – FBN)
- Stunning effectiveness (Nuna solutions)
- Tear staining (ILVO)
- Ear, tail & skin lesions + tail length (Piginspector – CLK)
- Lung & liver lesions (Lesion Detect –Innotech)

FARM/TRANSPORT

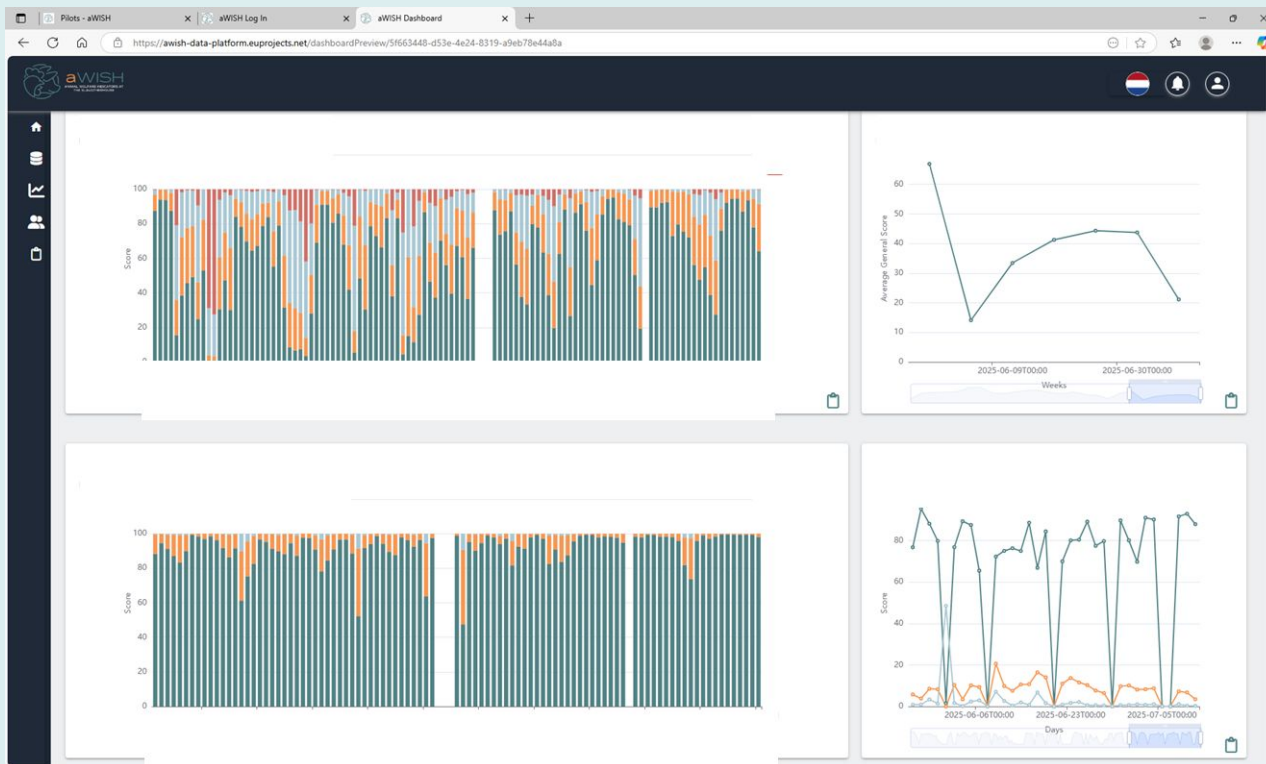- Broiler activity (EbroilerTrack Image – ITAVI)
- Heat stress model (Transport monitoring – ITAVI)

SLAUGHTERHOUSE

- Stress vocalisations (EbroilerTrack Sound – ITAVI)
- Hock burns (ChickenCheck Hockburn – CLK)
- Footpad dermatitis (ChickenCheck Footpad – CLK)
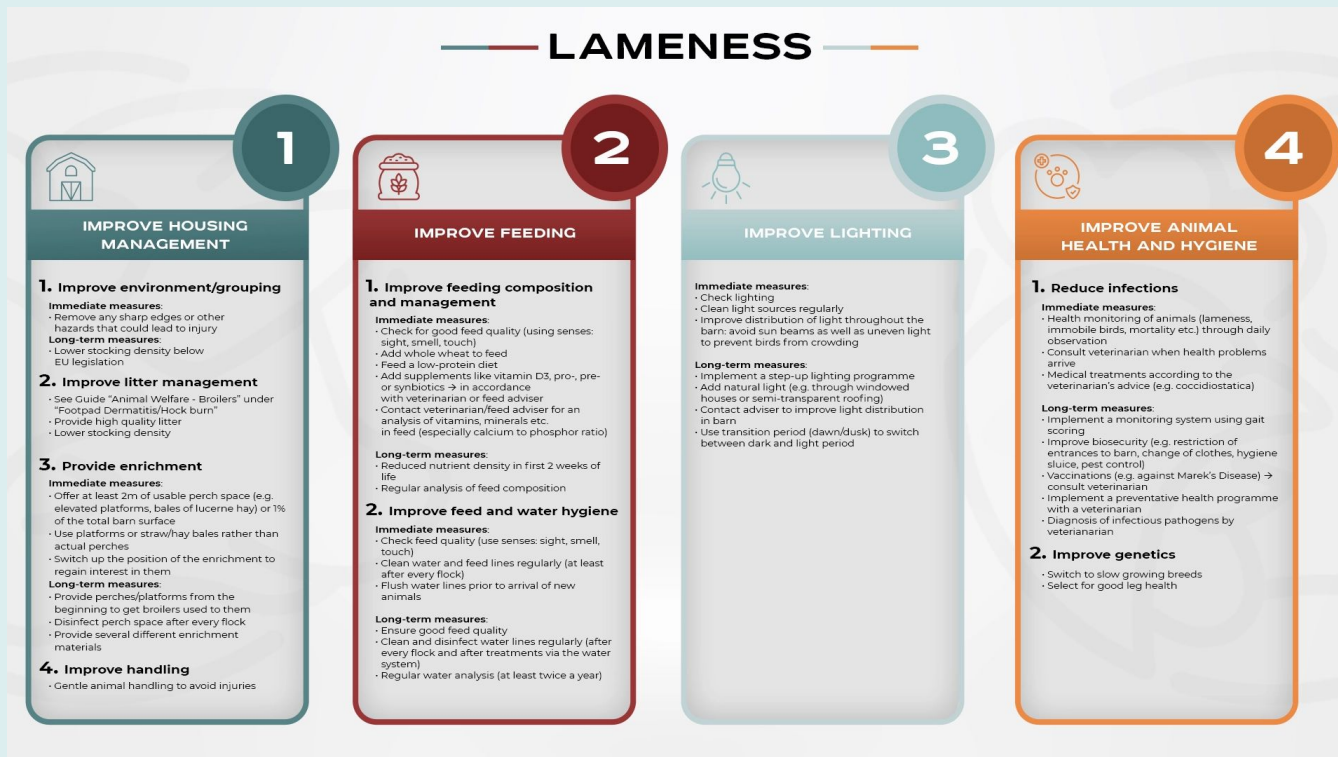- Bruises, fractures, scratches (ChickenCheck Catch Damage – CLK)

Data platform

3) Feedback mechanism for all actors in the chain:

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4) Practical guides for producers to tackle certain animal welfare problems

LAMENESS

1 IMPROVE HOUSING MANAGEMENT

1. Improve environment/grouping

Immediate measures:
· Remove any sharp edges or other hazards that could lead to injury
Long-term measures:
· Lower stocking density below EU legislation

2. Improve litter management

· See Guide "Animal Welfare - Broilers" under "Footpad Dermatitis/Hock burn"
· Provide high quality litter
· Lower stocking density

3. Provide enrichment

Immediate measures:
· Offer at least 2m of usable perch space (e.g. elevated platforms, bales of lucerne hay) or 1% of the total barn surface
· Use platforms or straw/hay bales rather than actual perches
· Switch up the position of the enrichment to regain interest in them
Long-term measures:
· Provide perches/platforms from the beginning to get broilers used to them
· Disinfect perch space after every flock
· Provide several different enrichment materials

4. Improve handling

· Gentle animal handling to avoid injuries

2 IMPROVE FEEDING

1. Improve feeding composition and management

Immediate measures:
· Check for good feed quality (using senses: sight, smell, touch)
· Add whole wheat to feed
· Feed a low-protein diet
· Add supplements like vitamin D3, pro-, pre- or synbiotics → in accordance with veterinarian or feed adviser
· Contact veterinarian/feed adviser for an analysis of vitamins, minerals etc. in feed (especially calcium to phosphor ratio)

Long-term measures:
· Reduced nutrient density in first 2 weeks of life
· Regular analysis of feed composition

2. Improve feed and water hygiene

Immediate measures:
· Check feed quality (use senses: sight, smell, touch)
· Clean water and feed lines regularly (at least after every flock)
· Flush water lines prior to arrival of new animals

Long-term measures:
· Ensure good feed quality
· Clean and disinfect water lines regularly (after every flock and after treatments via the water system)
· Regular water analysis (at least twice a year)

3 IMPROVE LIGHTING

Immediate measures:
· Check lighting
· Clean light sources regularly
· Improve distribution of light throughout the barn: avoid sun beams as well as uneven light to prevent birds from crowding

Long-term measures:
· Implement a step-up lighting programme
· Add natural light (e.g. through windowed houses or semi-transparent roofing)
· Contact adviser to improve light distribution in barn
· Use transition period (dawn/dusk) to switch between dark and light period

4 IMPROVE ANIMAL HEALTH AND HYGIENE

1. Reduce infections

Immediate measures:
· Health monitoring of animals (lameness, immobile birds, mortality etc.) through daily observation
· Consult veterinarian when health problems arrive
· Medical treatments according to the veterinarian's advice (e.g. coccidiostatica)

Long-term measures:
· Implement a monitoring system using gait scoring
· Improve biosecurity (e.g. restriction of entrances to barn, change of clothes, hygiene sluice, pest control)
· Vaccinations (e.g. against Marek's Disease) → consult veterinarian
· Implement a preventative health programme with a veterinarian
· Diagnosis of infectious pathogens by veterinarian

2. Improve genetics

· Switch to slow growing breeds
· Select for good leg health

To be continued:

1) Webinars & workshops

2) Trainings and testing by 20 focus companies / pilot

3) Assessments:

- Animal welfare – risk & success factors

- Socio-economic + Environmental impact

Partners

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Animal Welfare Indicators in EU Policy

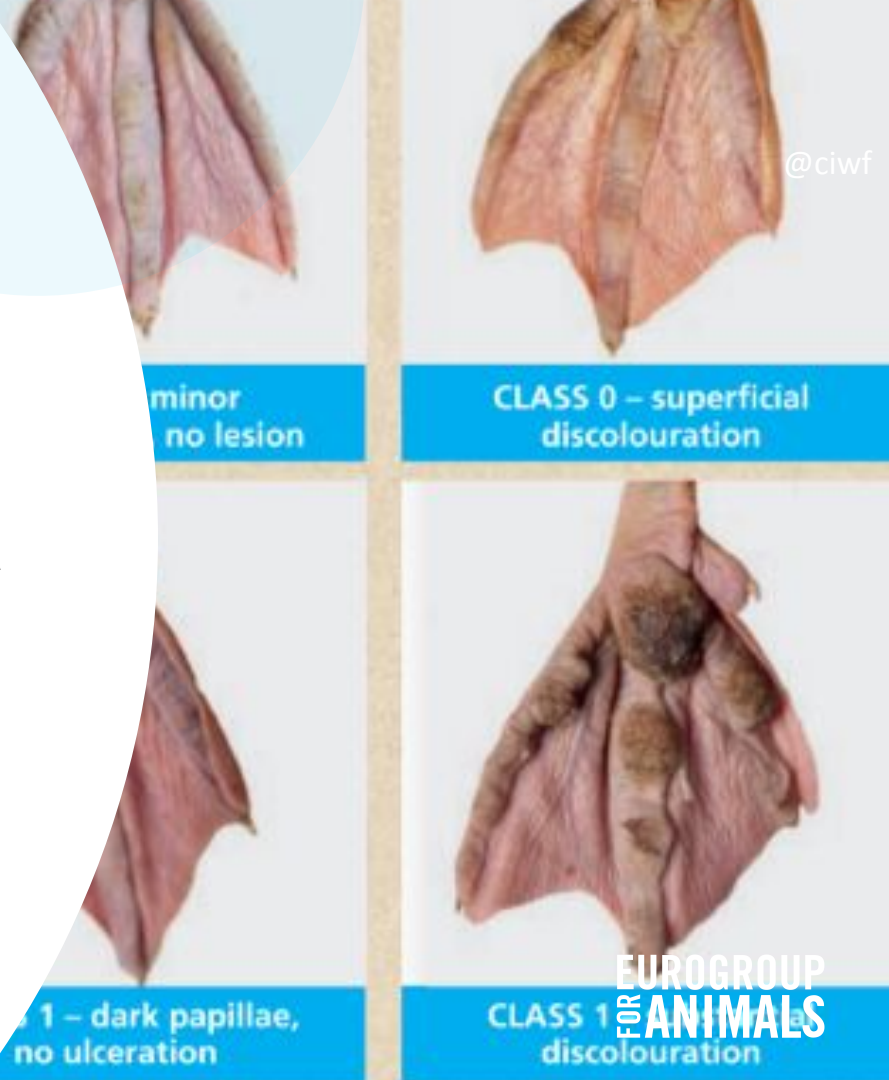Ines Ajuda- Programme Leader - Farm Animals

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SECTIONS

1. Types of Animal Welfare indicators
2. Why are indicators useful
3. Indicators as a tool
4. Existent examples
5. Opportunities to apply indicators in EU files

Type of Animal Welfare Indicators

- **Animal-based (ABIs):** direct animal outcomes (lameness, lesions, stress)

- **Resource-based (RBIs):** housing, environment (space, lighting, ventilation)

- **Management-based (MBIs):** feeding, staff training, biosecurity

minor
no lesion

CLASS 0 – superficial
discolouration

1 – dark papillae,
no ulceration

CLASS 1
discolouration

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Why Are Indicators Useful?

✔️ **Track & Improve Welfare**

- Evidence-based
- Can highlight problems

✔️ **Support Better Policy**

- Inform decisions (future, current and past ones)
- Track progress across Member States
- Guide inspections and audits (including third countries)

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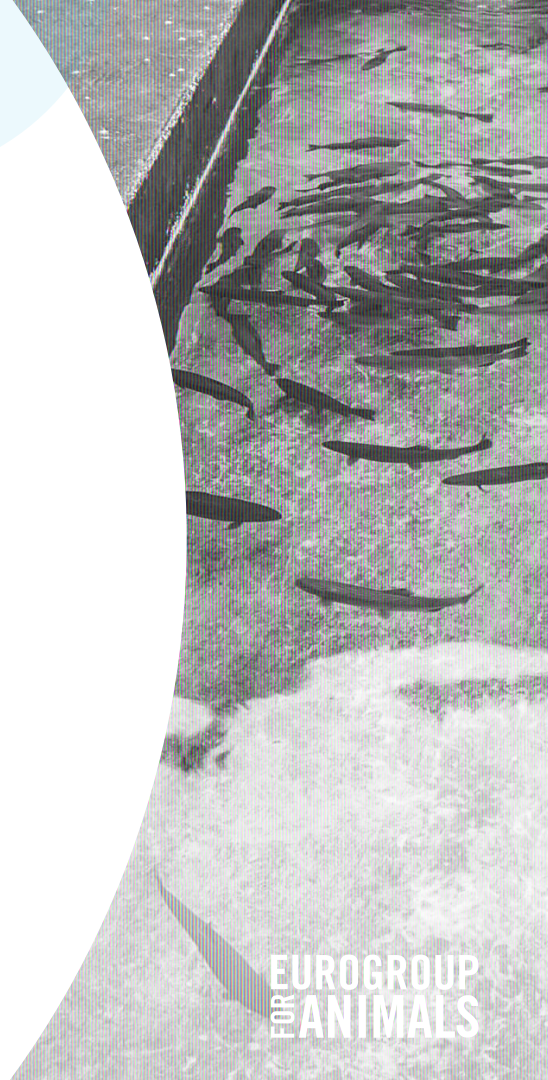
Indicators - not the entire solution

✔️ **Systems and practices that are incompatible with a good level of animal welfare need to be banned**

- Cages

- Fast-growing broilers breeds

- Mutilations

🔒 **Solution: Stronger Legal Standards monitored with AWI**

- Ban inherently cruel systems

- Set minimum standards (e.g. space, enrichment, breed types)

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Opportunities to integrate indicators in EU legislation

- ○ EU official controls Regulation and Animal Welfare Legislation

- ○ CAP conditionality & subsidies

- ○ Import regulations (WTO-compatible)

- ○ Digitalisation

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Examples of Integration in EU Policy

Indicators exist but lack the legal backbone and consistent use

📌 Broiler Directive (2007/43/EC):

- Requirements for recording several AWIs

- Harmonisation is a challenge:

  a. AWI use is uneven across MS

  b. System indicators like breed type not consistently used

- Ownership of data
- Alignment with other legislations (Official Controls Regulation)

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Making indicators work

- ○ Species-specific
- ○ Validated indicators, measurable at a bigger scale

- ○ Transparent, harmonised data reporting (e.g. EU dashboard)

Measuring welfare outcomes

Analysing data

Identifying risk factors

Taking corrective action

Assessing performance
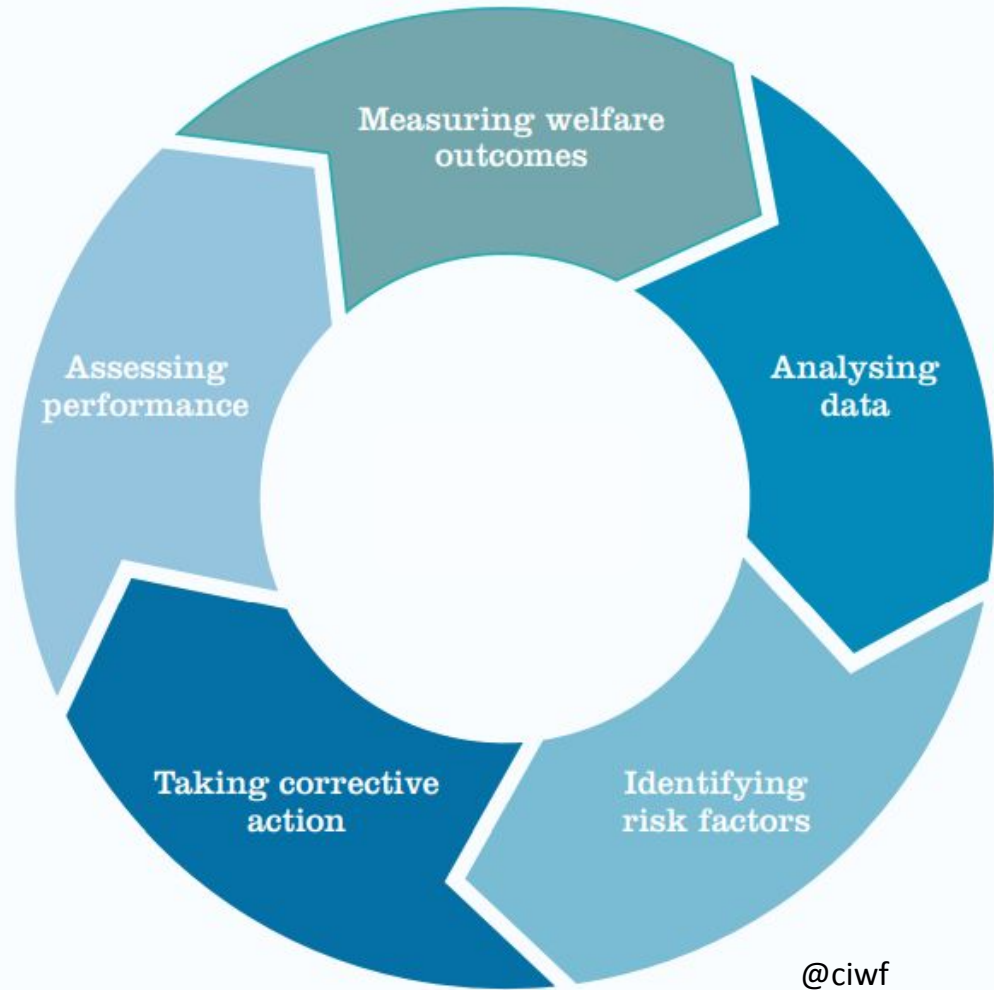
@ciwf

Common Agricultural Policy (CAP)

Four Paws Report (2025):

- Proposes an animal welfare benchmark in CAP-opportunity to align CAP goals with animal welfare progress at EU level

- Includes:

    - Expert panels
    - Gradual financial support
    - **Robust monitoring using indicators**
    - Long-term transition plans for farmers

in the CAP

e in EU agricultural policy

Import Controls & Digitalisation

Import Relevance

- Indicator-based legislation can be WTO-compliant

- Allows a fairer way to verify compliance

Digital Tools Improve Monitoring

- Automate data collection, analises and harmonisation

- Easier for farmers & inspectors

- Enables more efficient enforcement

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Each panellist was asked…

Where can AWIs realistically contribute to both minimum standards and future implementation under EU policy reform?

Panellists:
- Andrea Gavinelli, European Commission;
- Prof. Frank Tuyttens, ILVO, aWISH;
- Dr Carolina Cardoso, Four Paws;
- Dr Anna Zuliani, Veterinarians Without Borders- Italy
- Dr Francesca Fusi, IZSLER

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Andrea Gavinelli, Head of Unit for Animal Welfare at the European Commission

Context:

- Speaking from the perspective of the European Commission, with responsibility for animal welfare policy.
- Acknowledged the growing importance and urgency of integrating animal welfare indicators (AWIs) into policymaking.

Minimum standards & current challenges:

- A major barrier is the lack of standardisation and harmonisation of AWIs across Member States.
    - Without common definitions, benchmarks, and data collection methods, it is difficult to compare results or assess progress at EU level.
    - Example: footpad dermatitis monitoring varies between countries, limiting the ability to create an EU-wide picture.
- Current monitoring and enforcement under EU law are inefficient, with discrepancies between how data are collected and how they can be used.

Future implementation:

- Standardisation and benchmarking of AWIs are essential to make them operational at EU level.
- The urgency is heightened by international competitiveness and trade pressures, including reciprocity demands from external markets.
- AWIs are therefore critical both for internal EU policy implementation and for external trade credibility.

Key message: AWIs must be standardised and benchmarked across the EU to enable effective monitoring, enforcement, and international competitiveness—addressing current inefficiencies and making animal welfare policy fit for future demands.

Prof. Frank Tuyttens, Senior Researcher at ILVO, and Project Supervisor for aWISH

Minimum standards:

- Current EU (and national) animal welfare legislation largely relies on resource- and management-based measures (e.g. housing and husbandry requirements).
- These approaches often fail to directly measure animals' actual welfare and allow the possibility of poor welfare outcomes in compliant systems.
- They also create no incentive for continuous improvement once baseline criteria are met.
- Therefore, there is a strong case for complementing resource-based rules with animal-based welfare indicators (AWIs). "Iceberg indicators" (those that reveal multiple underlying welfare issues) are especially valuable.
  - Example: systematic monitoring of footpad dermatitis in broilers at slaughterhouses has proven highly effective in reducing prevalence when combined with penalties and encouragement schemes.

Future implementation:

- AWIs should not be used solely for penalisation but also to reward higher welfare performers, e.g. through an EU-wide animal welfare label that enables farmers to secure premium prices.
- AWIs can support evidence-based governance and monitoring, as well as play a role in international trade agreements (e.g. within WTO frameworks).

Key message: AWIs are crucial to move beyond compliance with minimum standards, driving both accountability and positive incentives for improved welfare, while also strengthening the EU's policy credibility at global level.

Dr Carolina Cardoso Nagib Nascimento, Sentient Beings Senior Specialist, Four Paws

Minimum standards:

- Animal-based indicators are particularly valuable because they reveal how animals are actually doing, regardless of housing system differences across Europe.
- Traditional resource-based indicators (e.g. space allowance, lighting, flooring type) remain relevant but do not always guarantee good welfare outcomes.
- Animal-based indicators, such as body condition scoring, lameness prevalence, or feather condition, allow inspectors to identify chronic welfare problems that environmental specifications alone cannot detect.

Implementation and enforcement:

- Indicators provide authorities with a science-based tool that is applicable across diverse systems and countries.
- This supports harmonised enforcement and reduces the risk of inconsistent interpretation of welfare requirements across Member States.

Future implementation:

- Indicators can underpin welfare schemes and labelling initiatives by bridging minimum compliance with incentivised improvement.
- They allow progressive farmers to demonstrate higher welfare outcomes without mandating specific production systems.
- This creates a framework for continuous improvement, recognising animals as living beings whose welfare should be enhanced on an ongoing basis.

Key message: Animal-based indicators are essential for meaningful compliance checks, harmonised enforcement, and creating pathways for continuous welfare improvement beyond minimum standards.

Dr Anna Zuliani, Veterinarian with Veterinarians Without Borders- Italy

Minimum standards:

- Spoke on behalf of Veterinarians Without Borders, with a focus on small-scale and family farms, which make up the majority of farms in Europe.
- These farms are highly diverse in structures, inputs, practices, and breeds. This diversity is an important resilience tool for the livestock sector and the European community, particularly in the face of environmental challenges.
- Current reliance on resource-based indicators in welfare assessment tends to favour uniform systems and fails to reveal how animals are actually feeling or the quality of their lives.

Future implementation:

- Incorporating a set of animal-based indicators (not just one or two) into legislation would ensure meaningful monitoring and improvement of welfare across all farm types, environments, and management practices.
- This approach would also help preserve the diversity of farming systems in Europe, maintaining an important source of resilience for the sector.

Key message: A broad set of animal-based indicators is essential to capture welfare outcomes across diverse farming systems, ensuring both improved animal welfare and the preservation of farming diversity as a resilience strategy.

Dr Francesca Fusi, Veterinary Manager at IZSLER, and Expert at the Italian National Reference Centre for Animal Welfare

Minimum standards:

- Shared the Italian experience, drawing on work at a public institute under the Ministry of Health that manages a national platform for collecting farm-level animal welfare information.
- For around ten years, this system has gathered management-based, resource-based, and animal-based indicators through private veterinarians.
- The data are used to categorise farm-level risk and to inform national plans for official controls.

Implementation and enforcement:

- Since 2020, Italy has developed new tools to support official veterinarians in checking compliance with animal welfare legislation.
- For many species, EU legislation provides only vague requirements (e.g. "enough food" or "enough space") without quantitative thresholds.
- Italy's tools offer guidance on minimum standards for management practices and equipment, but as these are not legally binding, official vets rely on animal-based indicators to assess compliance.
- Compliance decisions are therefore based on observable adverse effects in animals, which represents a significant and innovative shift in enforcement.

Key message: Italy's approach demonstrates how animal-based indicators can make compliance checks more robust and meaningful, especially where legislation lacks clear quantitative standards—representing a pioneering model for enforcement.

Panel Discussion

1. How could robust animal welfare indicators (AWI's) support the definition of meaningful minimum welfare standards in future legislation or schemes?
Carolina and Anna

2. Where can AWI's be used in current or upcoming frameworks (e.g. the revision of the animal welfare legislation, CAP)?
Andrea and Francesca

3. What are the enablers and constraints for uptake? Are there any gaps that need to be filled?
Frank

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How could robust animal welfare indicators (AWI's) support the definition of meaningful minimum welfare standards in future legislation or schemes?

Dr Carolina Cardoso Nagib Nascimento

Defining meaningful standards:

- Minimum standards should focus on animal outcomes, not just inputs like space or equipment.
- Robust, validated animal-based indicators are essential because they are readable, feasible, and relevant to animals, allowing standards to reflect actual welfare.
  - Examples include thresholds for lameness, injuries, tail biting, which indicate housing quality, enrichment, and general care.

Implementation and practicality:

- Indicators can be collected at slaughterhouses for multiple species and categories, including pigs and dairy cattle.
- Technologies and automated systems already exist to monitor issues such as footpad dermatitis, bursitis, and tail injuries, making implementation feasible with limited training.

Dynamic standards and flexibility:

- Outcome-based indicators allow standards to be progressively intensified over time (e.g., reducing acceptable prevalence of tail biting).
- Farmers retain flexibility in management practices but must meet measurable welfare outcomes, balancing diversity with accountability.

How could robust animal welfare indicators (AWI's) support the definition of meaningful minimum welfare standards in future legislation or schemes?

Dr Carolina Cardoso Nagib Nascimento

Public trust and legitimacy:

- Citizens increasingly expect welfare standards to reflect real animal experiences.
- Surveys show strong public support: ~67% want more information about farm animal conditions, and ~60% are willing to pay more for higher welfare products.
  AWIs provide visible evidence of animal welfare, supporting transparency and legitimacy of EU reforms.

Key message: Robust animal-based indicators transform minimum standards from static, input-focused rules into dynamic, outcome-based safeguards that protect animals, allow progressive improvement, and enhance public trust. Without them, minimum standards risk being ineffective "paper" standards.

How could robust animal welfare indicators (AWI's) support the definition of meaningful minimum welfare standards in future legislation or schemes?

Dr Anna Zuliani

Defining meaningful standards:

- Resource-based measures, although objective and reliable, do not provide insight into the animals' actual quality of life.
- A set of animal-based indicators, including negative (e.g., footpad dermatitis) and positive welfare measures, is needed to capture physiological, behavioural, and emotional needs.
- Meaningful welfare goes beyond absence of pain or disease, ensuring animals can experience positive conditions and maintain overall quality of life.
- Integrating such indicators allows minimum standards to guarantee outcomes for animals, rather than only describing structures or management inputs.

Implementation and practicality:

- Technology is valuable in large-scale farms and slaughterhouses but should remain optional, as not all systems are standardised.
- Well-trained human observers remain crucial, particularly in diverse or small-scale systems.
- EU reference centres provide training to maintain consistency, objectivity, and reliability across different farm types and settings.

How could robust animal welfare indicators (AWI's) support the definition of meaningful minimum welfare standards in future legislation or schemes?

Dr Anna Zuliani

Balancing innovation and accessibility:

- Combining technology and skilled observers ensures robust welfare measurement is practical and scalable.
- This allows legislation to be flexible, accommodating both small-scale and large commercial farms without compromising reliability.

Key message: Robust animal-based indicators, covering both positive and negative measures, are essential for defining meaningful minimum welfare standards. Using a combination of technology and trained observers enables effective outcomes-based protection across diverse systems, rather than merely compliance with input-focused rules.

Where can AWI's be used in current or upcoming frameworks (e.g. the revision of the animal welfare legislation, Common Agricultural Policy)?

Andrea Gavinelli

Context and strategic position:

- The European Commission is actively studying how to modernise animal welfare legislation, building on a historically influential framework in a major food-producing region.
- Existing policies, including the Common Agricultural Policy, have positioned the EU as a leader in animal welfare research, technical development, and implementation capacity.
- Modernisation must balance scientific knowledge, competitiveness, environmental challenges, and farm system intensification, including larger farm sizes and fewer farmers.

Challenges for implementation:

- Stakeholders, including producers and public officials, have varying levels of knowledge and capacity, making unified implementation difficult.
- Current use of animal welfare indicators is highly differentiated across Member States, complicating consolidation of a consistent EU-wide approach.
- Modernising legislation alone will not solve these challenges quickly; integration of scientific knowledge and policy requires time and careful coordination.

Where can AWI's be used in current or upcoming frameworks (e.g. the revision of the animal welfare legislation, Common Agricultural Policy)?

Andrea Gavinelli

Operationalisation and practical steps:

- Indicators must be made streamlined, understandable, and achievable across all levels of production.
- Technology should be accessible and adaptable to farms of different scales, ensuring fairness.
- Strategic clarity is needed to define what the EU intends to achieve with implementation, beyond general goals like improving welfare quality.

Data aggregation and knowledge sharing:

- Experiences from different Member States should be collected and integrated to accelerate the process.
- Comprehensive data collection is planned to evaluate current approaches, progress, and future plans across the EU.
- Stakeholders in business and production are beginning to recognise the value of animal welfare indicators.

Where can AWI's be used in current or upcoming frameworks (e.g. the revision of the animal welfare legislation, Common Agricultural Policy)?

Andrea Gavinelli

Global leadership and ethical considerations:

- The EU has played a leading international role in promoting animal-based indicators and sharing technical and scientific expertise globally.
- Animal welfare is increasingly linked to trade and competitiveness, and EU citizens demand that welfare standards apply even outside the EU.
- Ethical responsibility and public expectation reinforce the need for high-quality welfare standards both domestically and internationally.

Key message: The EU is advancing a strategic, evidence-based, and globally influential approach to animal welfare legislation, integrating scientific knowledge, operational indicators, and ethical considerations. While challenges remain, progress is ongoing, with a planned legislative proposal by the end of 2026 representing a critical milestone.

Where can AWI's be used in current or upcoming frameworks (e.g. the revision of the animal welfare legislation, Common Agricultural Policy)?

Dr Francesca Fusi

Use of Animal Welfare Indicators in Current and Upcoming Frameworks

- Animal welfare indicators can be applied when they are measurable, collectable, analyzable, and monitorable over time.
- Experience shows that collecting field data and storing it on a national platform allows:
  - Analysis of welfare results.
  - Monitoring of changes over time.

Policy Implementation via Incentives

- Based on farm-level outputs, some Italian regions have introduced new CAP funding rules tied to animal welfare results.
- Incentive policies enable welfare improvements while awaiting new legislation.
- Farmers can be refunded according to measurable welfare outcomes.

Where can AWI's be used in current or upcoming frameworks (e.g. the revision of the animal welfare legislation, Common Agricultural Policy)?

Dr Francesca Fusi

Animal Welfare Labelling System

- Italy recently launched a labelling scheme based on multiple welfare indicators:
    - Management-based, resource-based, and animal-based measures.
- Farms seeking labelling must comply with the law and meet minimum welfare standards.
- Platform data allows farms to understand welfare status and guide compliance.

Practical Impact of Monitoring and Analysis

- Collecting and analysing welfare indicators has tangible field impacts.
- Incentive-based policies give farmers options to improve welfare without frustration.
- Approach balances stakeholder pressure and practical farm-level implementation.

Where can AWI's be used in current or upcoming frameworks (e.g. the revision of the animal welfare legislation, Common Agricultural Policy)?

Dr Francesca Fusi

Integrated Observation of Environment and Animals

- Welfare assessment tools consider both:
  - Environmental conditions.
  - Animal observations.
- Combining these provides a comprehensive view of how animals cope with their environment.
- Clinical observations detect adverse effects on animals.
- Environmental monitoring identifies potential hazards before they impact animals.

Implementation and Improvement Plans

- Animal welfare is multifactorial; environmental improvements can preempt observable animal consequences.
  Data can inform improvement plans at national and local levels, proactively enhancing farming systems.

Key Message

- Collecting and analysing animal welfare indicators enables practical improvements, supports incentive policies, and guides both labelling compliance and proactive management to enhance welfare at farm and national levels.

What are the enablers and constraints for uptake? Are there any gaps that need to be filled?

Prof. Frank Tuyttens

Enablers for Uptake of Animal Welfare Indicators

- Centralized slaughter of livestock presents a major opportunity to measure animal-based indicators:
    - Cumulative welfare effects over the animal's entire lifespan can be assessed.
    - Slaughterhouse assessments are cost-efficient and minimise biosecurity risks.
- Advances in automation, sensor technology, and AI support scalable welfare monitoring.
- Automation could standardise observations and reduce human error in welfare scoring.

Constraints and Challenges in Implementation

- Automated systems may score indicators differently, raising questions about:
    - Standardisation and harmonisation.
    - Determination of a "gold standard" system.
- End-of-life assessments make it difficult to determine when welfare problems occurred, complicating corrective actions and accountability:
    - Identifying responsibility (breeder, farmer, transport, slaughterhouse) can be uncertain.
    - Some animals (e.g., dairy cattle, goats, sheep) do not go to slaughter in batches, requiring on-site inspections with high logistics, cost, and biosecurity challenges.

What are the enablers and constraints for uptake? Are there any gaps that need to be filled?

Prof. Frank Tuyttens

- On-farm inspections often:
    - Need to be announced, introducing observer effects.
    - May be limited in frequency, reducing representativeness.
    - Can involve differences between inspectors.

Gaps in Welfare Measurement

- Current indicators often focus on physical integrity (lesions, lameness, hooves), not the animal's subjective experience.
- Risk of focusing on what is easily measurable rather than meaningful welfare outcomes.
- Communication challenges with consumers and market uptake:
    - Welfare labelling must be transparent and resonate with consumers.
    - Conflict may arise between honesty, marketability, and consumer willingness to pay.
- Trade-offs with other sustainability goals, e.g., environmental footprint vs welfare footprint.
- The free-market system prioritises efficiency and low cost, often at the expense of animal welfare.

Key Message

- While end-of-life assessment and technology offer opportunities for cost-efficient monitoring, major challenges remain in capturing meaningful welfare, ensuring accountability, and balancing welfare with market and sustainability pressures. Addressing these gaps is crucial to improve welfare assessment and ethical livestock production.

Insights from panel discussions

Animal-based indicators = more meaningful
There was strong agreement that animal-based indicators provide more meaningful insight into welfare than purely resource-based measures.

Labels must be transparent and fair
Panelists highlighted tensions: labels should be clear for consumers, yet many consumers do not want the full story behind their meat, and the livestock sector is often reluctant to reveal it.

Technology: measurable vs meaningful
While technology offers advances, especially automation, it tends to focus on what is measurable rather than meaningful, potentially overlooking the animals' emotional experiences.

Automated systems: advantages
Automation provides significant benefits, particularly at slaughterhouses, enabling welfare assessment for large numbers of animals and earlier detection of issues in the production chain.

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Insights from panel discussions

Challenges: alignment and enforcement
A major challenge is harmonising indicators across diverse EU production systems and enforcement mechanisms. Streamlined, understandable indicators are needed at all levels to support monitoring and policy compliance.

Policy clarity and ongoing work
There is broad recognition that more clarity in EU policy is needed. Projects like this one contribute to developing practical, evidence-based frameworks that can underpin fair and enforceable animal welfare standards.

Key message: Streamlined, credible, and actionable animal-based indicators, supported by transparent labels, appropriate technology, and harmonised implementation, are essential for meaningful, enforceable, and future-proof EU animal welfare policy.

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Breakout Groups

Group 1:

- In which species or systems do we already have *robust animal-welfare indicators* that could be used reliably in legislation or schemes now?
- Where are the biggest *gaps*, and what should be the priority areas for developing new indicators?

Group 2:

- What *motivations or incentives* would help industry and policymakers adopt indicators?
- How can science and policy better communicate the *added value* of indicators?

Group 3:

- How can indicators be designed or used in ways that are *credible and trusted* across science, policy, and industry?
- What partnerships or mechanisms could strengthen *shared ownership* of indicators?

Group 4:

- What are the most important *next steps* to embed indicators in EU policy and practice?
- Which *stakeholders and collaborations* will be most critical to make progress?

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Group 1:
Q1. In which species or systems do we already have robust animal-welfare indicators that could be used reliably in legislation or schemes now?

The group discussed which indicators are already robust enough for legislation or assurance schemes and came up with the following:

Broilers: Footpad dermatitis is widely agreed to be a reliable welfare indicator; scoring systems vary across Member States, but refinement is possible through better scales or technology.

Pigs: Tail length and lesions are informative, though interpreting cause and effect is complex, especially when comparing docked versus undocked systems.

Veal calves: Abomasal lesions act as "iceberg" indicators of poor feeding practices, reflecting past rather than current welfare.

Slaughter measures: Lung conditions are established and already used by competent authorities, with links to air quality and potential for sensor-based monitoring.

Laying hens: Keelbone fractures are highly relevant, but scoring reliability and uncertainty about pain levels pose challenges.

Emerging indicators: Vocalisation monitoring, mental state assessment, and positive welfare indicators show promise, but require further validation.

Key message: *The key message: some animal-based indicators are ready for immediate policy use, while others represent important frontiers for EU welfare reform.*

Group 1:
Q2. Where are the biggest gaps, and what should be the priority areas for developing new indicators?

The group also reflected on where the biggest gaps lie and what should be prioritised:

Mental state assessment: The group agreed that reliable measures of pain, stress, and positive experiences are still lacking and represent the most pressing challenge.

Life-stage coverage: Participants emphasised that indicators should capture early development and all phases of production, as some welfare risks may be missed at slaughter.

System-level measures: The group discussed the importance of considering broader production realities, such as the fate of male calves and chicks, or welfare of sows and boars, as these affect consumer trust in labelling.

Standardisation and harmonisation: Improving and standardising existing indicators across Member States and schemes was highlighted as a priority to build confidence in their use.

Key Message: *The group concluded that some animal-based indicators are ready for immediate policy use, while others represent important frontiers for EU welfare reform, with priority on mental state measures, life-stage coverage, and system-level transparency to maintain credible and effective welfare outcomes.*

Group 2:
Q3. What motivations or incentives would help industry and policymakers adopt indicators?

The group discussed what incentives could encourage wider uptake:

Whole supply chain: Incentives should involve not only farmers but also processors, retailers, and policymakers.

Benchmarking and recognition: Systems rewarding high-performing farms, as seen in Germany and Italy, can motivate uptake.

Financial support: CAP funding or external resources help offset costs.

Market and reputation: Indicators allow industry to demonstrate animal welfare and add value to products.

Clear communication: Consumers need simple, credible signals, while trade-offs (e.g. welfare vs. environment) must be openly addressed.

Policy perspective: High-quality data and careful framing of public opinion are essential for legitimacy.

Key Message: *Adoption will depend on aligning economic incentives, credible communication, and robust evidence across the supply chain.*

Group 2:
Q4. How can science and policy better communicate the added value of indicators?

The group discussed the importance of tailoring communication to different audiences.

For the public: Clarity and trust are key. While labelling works well for eggs, it remains confusing for many other species and systems. Consumers need simplified, credible signals that animals had a good life, supported by transparent labelling and outreach.

For producers and policymakers: Communication can be more detailed. Indicators must show scientific robustness, cost-effectiveness, and practical scalability across Member States. Input from diverse stakeholders and clear political decisions are needed to embed indicators in legislation.

Role of technology: Validated, sensor-based systems could boost trust by providing objective, standardised scoring and reducing observer bias. However, strong validation, training, and inter-observer checks are still essential to maintain credibility.

Key message: *Effective communication requires simplicity and trust for consumers, alongside technical robustness and policy relevance for decision-makers.*

Group 3:
Q5. How can indicators be designed or used in ways that are credible and trusted across science, policy, and industry?

The group discussed the importance of clarity, robustness, and practicality in indicator design.

Design and process: Indicators should be clearly defined, measurable, reproducible, and reported with transparent scales and uncertainty. They need to cover key life stages, drawing on both slaughterhouse monitoring and farm-level observations, to reflect cumulative welfare outcomes.

Stakeholder collaboration: Agreement across policymakers, industry, NGOs, and scientists is essential to establish what "animal welfare" means — balancing the absence of pain and disease with broader needs, including positive welfare. Well-established measures such as footpad lesions in broilers, tail lesions in pigs, and stunning effectiveness can serve as a baseline for further refinement.

Actionability and alignment: Indicators should offer farmers clear routes for improvement and align with international standards, such as those from the World Organisation for Animal Health, to ensure consistency and comparability.

Role of automation: Digital tools can reduce observer bias and streamline data collection, but require manual input, rigorous validation, and careful integration with existing systems.

Trust and perspectives: Stakeholders' views on reliability differ, with NGOs and farmers sometimes diverging. Building trust along the supply chain is itself a central challenge for indicator uptake.

Key message: *Credible indicators must combine scientific rigour and practicality with stakeholder trust, offering clear value across the supply chain.*

Group 3:
Q6. What partnerships or mechanisms could strengthen shared ownership of indicators?

The group discussed how trust, collaboration, and harmonisation are essential to ensure that indicators are credible and widely adopted.

Transparency and oversight: NGOs stressed that independent organisations and EU-level governance are needed to ensure credible data management, rather than relying solely on industry willingness to share information.

Harmonisation: Policymakers emphasised that comparable indicators across Member States are essential, though legal and business sensitivities around data sharing present challenges.

Industry perspectives: Participants highlighted the need for practical solutions that respect data ownership, with trust placed in local authorities and technology providers. Automation and digital tools can support this but must be validated and embedded in policy and legal frameworks.

Multi-stakeholder platforms: Farmers, vets, policymakers, NGOs, and consumers should collaborate to co-create indicators, define welfare priorities, and balance different values.

Financial and systemic support: Both public and private funding were identified as key enablers of harmonisation and implementation, alongside combining resource-based and animal-based measures, integrating positive welfare, and aligning with EU and international standards without undermining competitiveness.

Key message: Shared ownership and credible use of indicators depend on harmonised standards, collaborative governance, and transparent, actionable data across the EU livestock sector.

Group 4:
Q7. What are the most important next steps to embed indicators in EU policy and practice?

The group discussed the importance of standardisation, validation, and stakeholder engagement to ensure indicators are effectively integrated into EU frameworks.

Standardisation and validation: Consistent thresholds and harmonised protocols are essential to guarantee comparability across Member States. The aWISH project was highlighted as a strong foundation, demonstrating validated slaughterhouse indicators and their practical application.

Linking to legislation and incentives: National examples, such as Germany's Tierwohl programme, show how monitoring combined with financial incentives can drive uptake. Participants stressed that EU-level guidance should set direction while allowing Member States flexibility in implementation.

Stakeholder engagement: Farmers, retailers, policymakers, and NGOs all need to be involved to balance feasibility, welfare priorities, and economic considerations.

Technology and communication gaps: Research findings must be clearly conveyed to the European Commission and national legislators. Embedding indicators should address both data collection and their practical application in decision-making, including potential effects on prices and consumer trust.

Key message: Embedding animal-based indicators in EU policy requires harmonised and validated measures, cross-stakeholder collaboration, and strategic use of national examples to guide EU-wide implementation.

Group 4:
Q8. Which stakeholders and collaborations will be most critical to make progress?

The group discussed the importance of engaging multiple actors across the entire supply chain to ensure shared ownership and practical uptake of animal-based indicators.

Farmers' organisations: Essential for connecting directly with the production base and influencing adoption of welfare practices.

Retailers and commercial actors: Highlighted for their ability to move faster than legislation, using market incentives to promote welfare improvements.

Associations and sector bodies: Organisations such as UNAITALIA provide sector-wide expertise and links to government and EU groups, helping to align priorities.

Researchers and national authorities: Collaboration ensures validation of indicators, robust data collection, and translation of science into actionable policy. National initiatives, like Germany's Tierwohl monitoring project, show the value of bringing actors together, though practical implementation may require simplification.

Shared ownership and legal frameworks: No single actor should dominate decision-making. Strong legal frameworks are needed to clarify how indicators are defined and applied, reducing ambiguity over issues like enrichment or housing standards.

Key message: Progress depends on coordinated, multi-actor collaboration across the supply chain — from farmers to retailers to policymakers — supported by clear legal definitions to ensure consistency and trust.

Final Thoughts & Policy Ask

📢 **Takeaway:**

- Indicators give us a way to measure animal welfare outcomes consistently and objectively.
- They help bridge science and policy, turning evidence into something concrete that can guide action.

…But they do not replace the need for legal reform

- Indicators can only be powerful if they sit on top of strong legal requirements.
- Without higher minimum standards, indicators risk monitoring poor practices rather than driving improvement.

🧭 **Policy Priority: Raise minimum legal standards**

- The foundation must be a new baseline that reflects current science and societal expectations.
- Indicators then become the mechanism to check whether those standards are really being met in practice.

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…Use indicators to monitor, enforce, and improve

- They can support more effective enforcement, create transparency, and identify areas where welfare can improve over time.
- This makes them useful not just for compliance but also for continuous progress.

📌 **Embed in:**

Legislation (together with better standards)

- Indicators should be integrated directly into future welfare laws alongside updated minimum standards.

CAP
- Indicators could be tied to conditionality or incentives, linking public money to measurable welfare outcomes.

Import requirements
- Using indicators here ensures that imports respect the same welfare expectations as EU producers, creating a level playing field.

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Closing Conclusion: Turning Evidence into Action

Animal-based indicators are essential tools for improving animal welfare, providing **objective, consistent measures** that link science to policy and practice.

Their impact depends on **strong legal standards**—indicators can only drive improvement if there is a clear baseline for welfare.

Once integrated into **legislation and import requirements**, indicators support **monitoring, enforcement, and continuous progress**, helping identify where welfare can be enhanced over time.

Key message: When combined with robust standards and clear policy frameworks, indicators become a **practical mechanism for ensuring meaningful improvements in animal welfare across the EU**.

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