Scaling Precision Livestock Farming (PLF): the global challenge

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Why the world needs Precision Livestock Farming?

+20% - 50%

more animal products needed by 2050

Global population growth and rising incomes — especially across Asia and Africa — are driving demand for meat, milk, and eggs to levels never seen before.

~12%

of global GHG emissions come from livestock

The current model cannot scale. Producing more food the same way means more animals, more land, more water, more emissions — costs the planet cannot absorb.

PLF

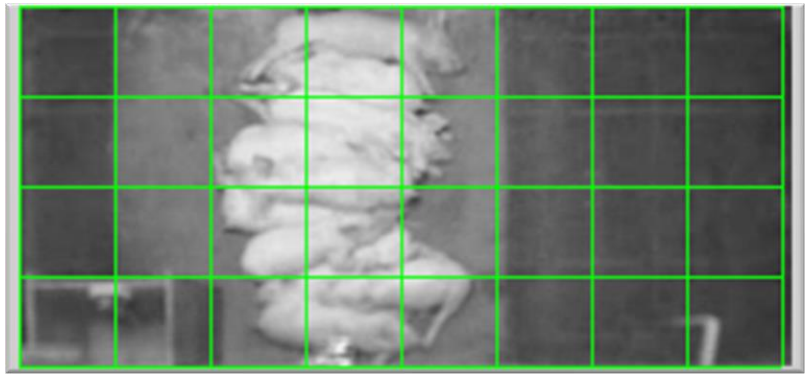
bridges rising demand and a sustainable planet

Real-time monitoring, precision feeding, and data-driven management allow us to produce more from fewer animals — profitably and responsibly.

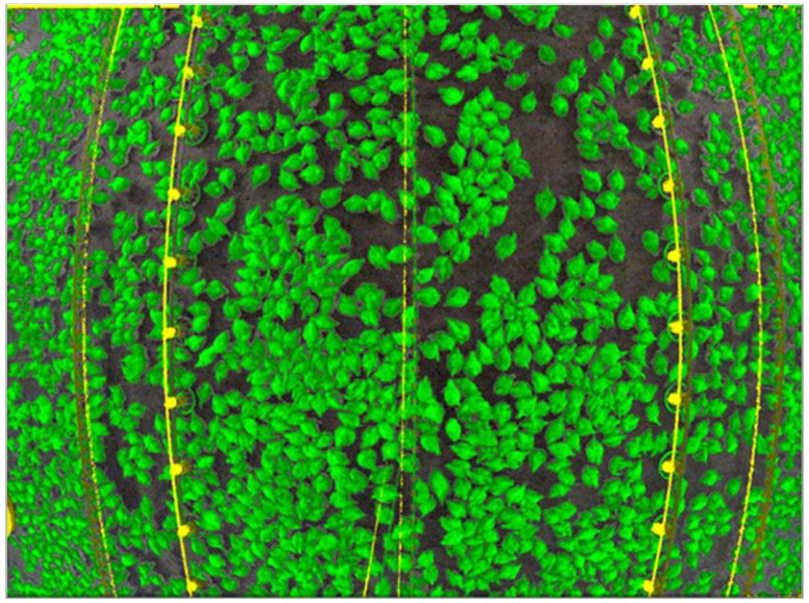
More food. Fewer resources. That tension is why PLF matters.

EXAMPLES OF CURRENT AVAILABLE PLF TECHNOLOGIES

Pig behavior monitoring using image analysis



Cattle collar sensors: activity, rumination & estrus



Automated bird behavior monitoring alerts problems

Pig acoustic health monitoring

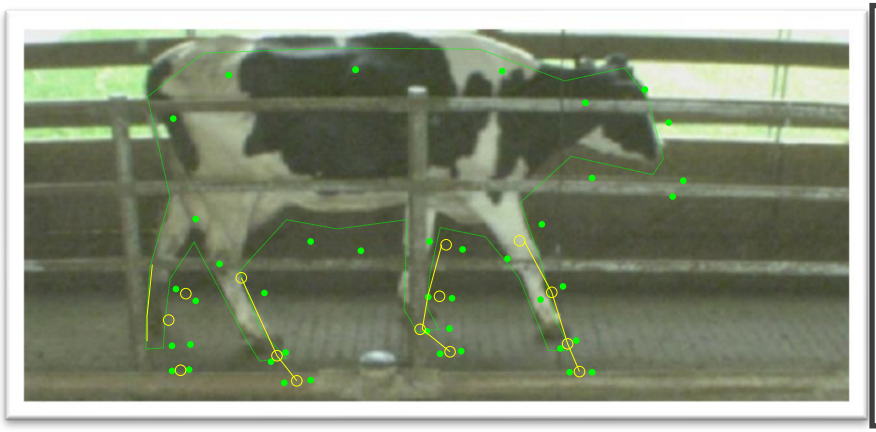


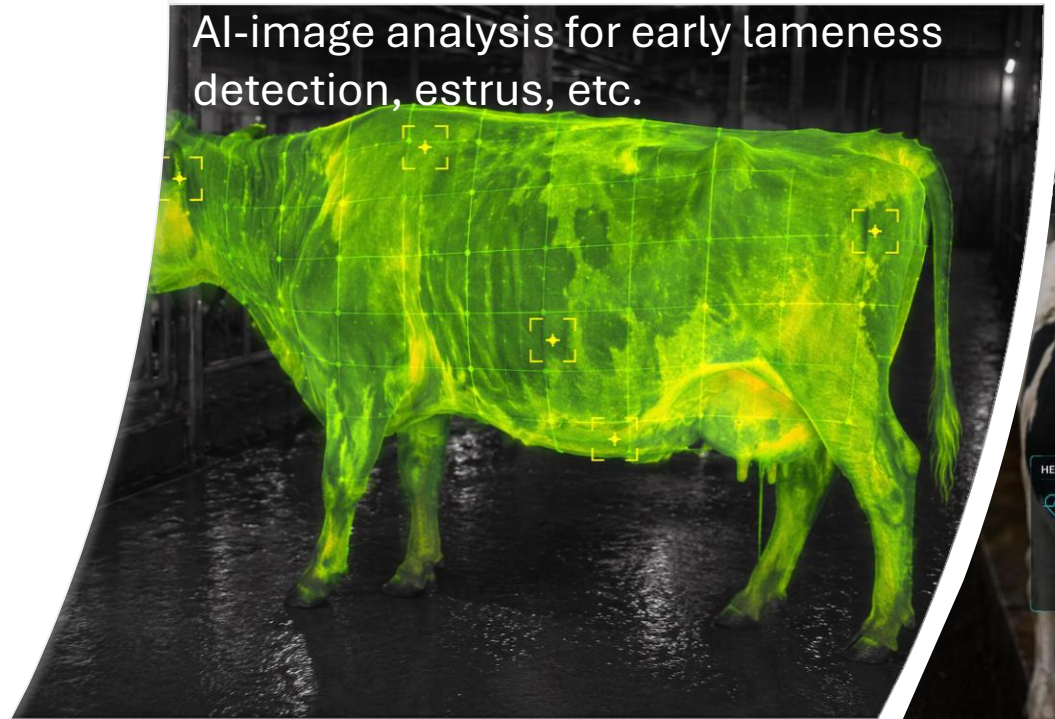
Image analysis, lameness detection

PLF = an ecosystem of tools for 24/7 automated real-time monitoring of individual animals to improve productivity, health, welfare, and environmental impact

Emerging PLF technologies

- AI-powered robotics, computer vision & multi-sensor fusion are now moving PLF from research labs into commercial farms at scale.

- New sensing and sensors like e.g., heart rate sensor for animals



Where does feed energy actually go?

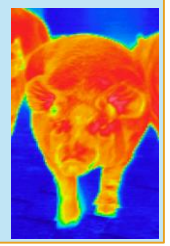
Feed energy is distributed across competing body functions-PLF shifts it toward what matters

Feed Energy in

100%

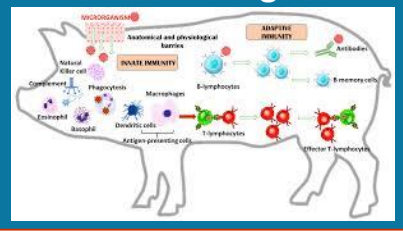
Feed intake distributed across maintenance, immunity, thermal control, activity, welfare and production





PLF Optimizes

- Real-time health and welfare monitoring
- Precision feeding and nutrition
- Early detection of diseases and stress
- Data driven management



More product out

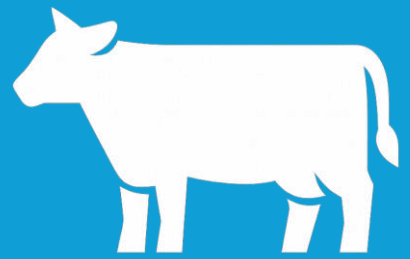
Less waste

Energy stays in mean, milk and eggs-not lost to disease, stress or poor welfare

PLF does not produce more feed- it ensures more feed become food

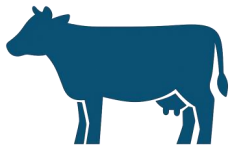
Precision Livestock Farming for Emissions Reduction (dairy and beef cattle)

PLF Technology	How it Reduces Emissions	Evidence
Fertility sensors	Shorter calving interval, higher yield	−1.42% total emissions; −2.31% emissions intensity
Health sensors	Early disease detection, fewer losses	4.4–6.1% reduction in similar systems
Automatic weight platforms	Improved growth/BCS management	6.8% reduction in beef systems; efficiency gains apply to dairy
Decision-support systems	Integrated optimization of herd performance	Efficiency-driven emission reductions



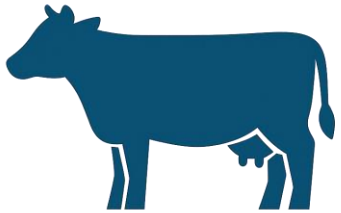
Today: No clear ROI in field situations, no adoption of technology

PLF-Technology	Per-Cow ROI	Key Benefits
AI precision feeding	**$31/cow/year**	Lower feed costs, better conversion, lower N excretion
Automated milking systems	**$460–$820/cow/year** (labor savings only)	Major labor reduction, +3–15% milk yield
Predictive health monitoring	**€40–€120/cow/year** (estimated)	Early disease detection, lower treatment costs
Estrus/fertility sensors	**€20–€80/cow/year** (estimated)	Higher pregnancy rates, fewer open days



Why hasn’t PLF scaled up?

The feedback loop



Scale drives cost
Cost blocks scale

It is a new tech	but deployment is slow due to high costs, regulation, infrastructure, farming systems reality, service availability
Research often reproduces known results at lab scale	but does not translate them into scalable products in collaboration with industry
Because tools are not widely deployed	ROI is not shown on a large scale
Low scale production	means that tech remains expensive> smaller farms cannot afford it

THANK YOU!

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