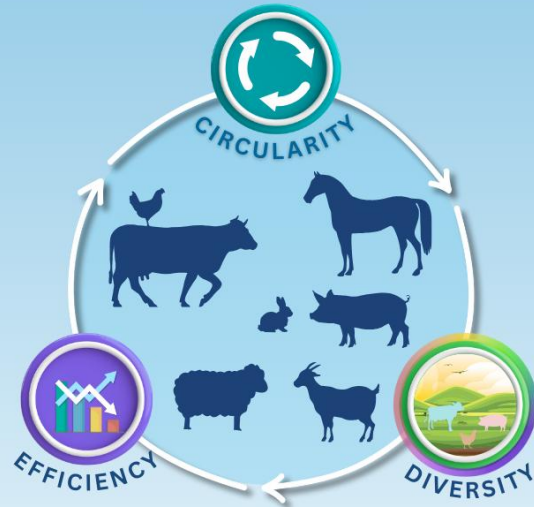


LIVESTOCK FARMING SYSTEMS IN NEXT GENERATIONS



CAN WE IMAGINE
THE FUTURE?

Joint session
of the Animal Task Force & the EAAP
Commission on Livestock Farming Systems:
Livestock farming systems for the next
generation: can we imagine the future?

**“How nutrition can help to shape the
future of Livestock Farming Systems”**

David Yáñez-Ruiz
CSIC, Granada, Spain



Nutrition and the future of livestock farming systems



Re-Livestock

RESILIENT FARMING SYSTEMS

The logo background for the Global Research Alliance features a blue and white grid pattern that forms a semi-circle.

GLOBAL
RESEARCH
ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES



HoloRuminant

Understanding microbiomes of the ruminant holobiont

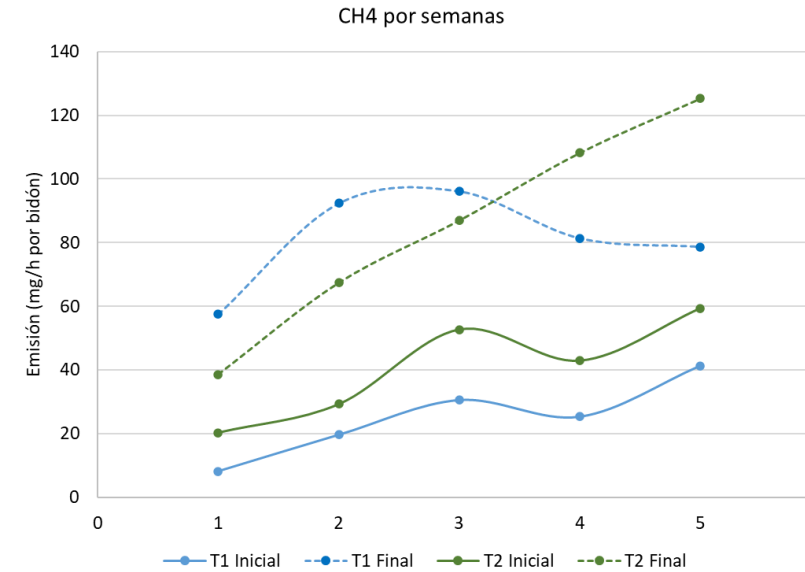


FutureFoodS



1. Efficiency: precision livestock feeding

Gestación



Gestación Materna



1. Efficiency: precision livestock feeding

Challenges

- Technology Investment
- Data Management Complexity
- Multiple Knowledge and Skill
- Variable Results

Future trends

- Genomic Insights
- AI and Machine Learning
- Microbiome Optimization
- Sustainable Feed Sources



EN

Shaping Europe's digital future

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[Home](#) > ... > [European research development and deployment of AI](#) > [GenAI4EU: Funding opportunities to boost Generative AI "made in Europe"](#)

GenAI4EU: Funding opportunities to boost Generative AI "made in Europe"

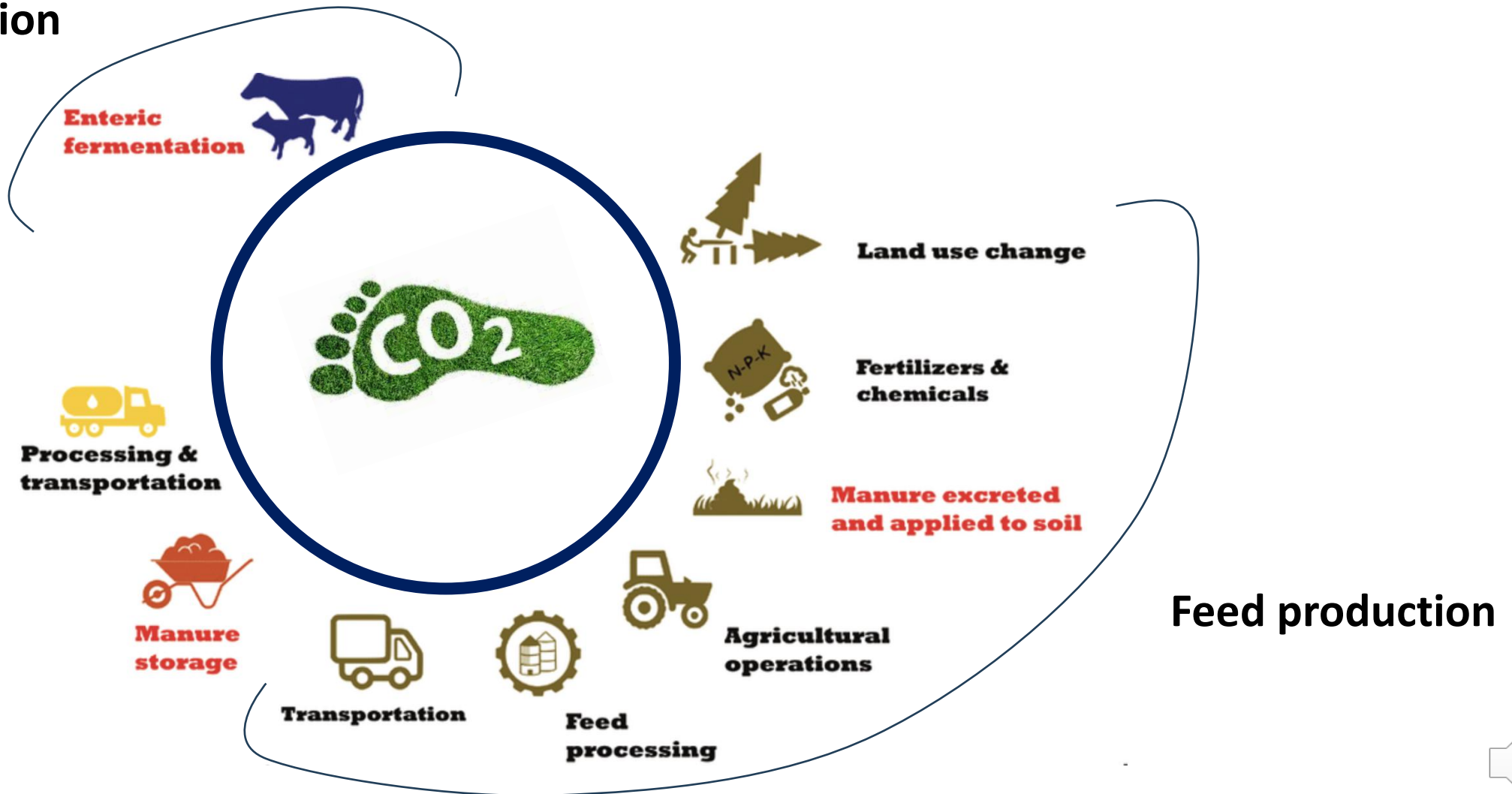


Bioprospecting and optimized production of the terrestrial natural products: new opportunities for bio-based sectors



1. Efficiency: environmental efficiency

Feed digestion



1. Efficiency: environmental efficiency

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Support global improvement of
sustainable feed.

Feed Life Cycle Analysis (LCA)
methodology and database



Global Feed Lifecycle Assessment Institute



1. Efficiency: environmental efficiency

Session 2

GLOBAL
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ON AGRICULTURAL GREENHOUSE GASES

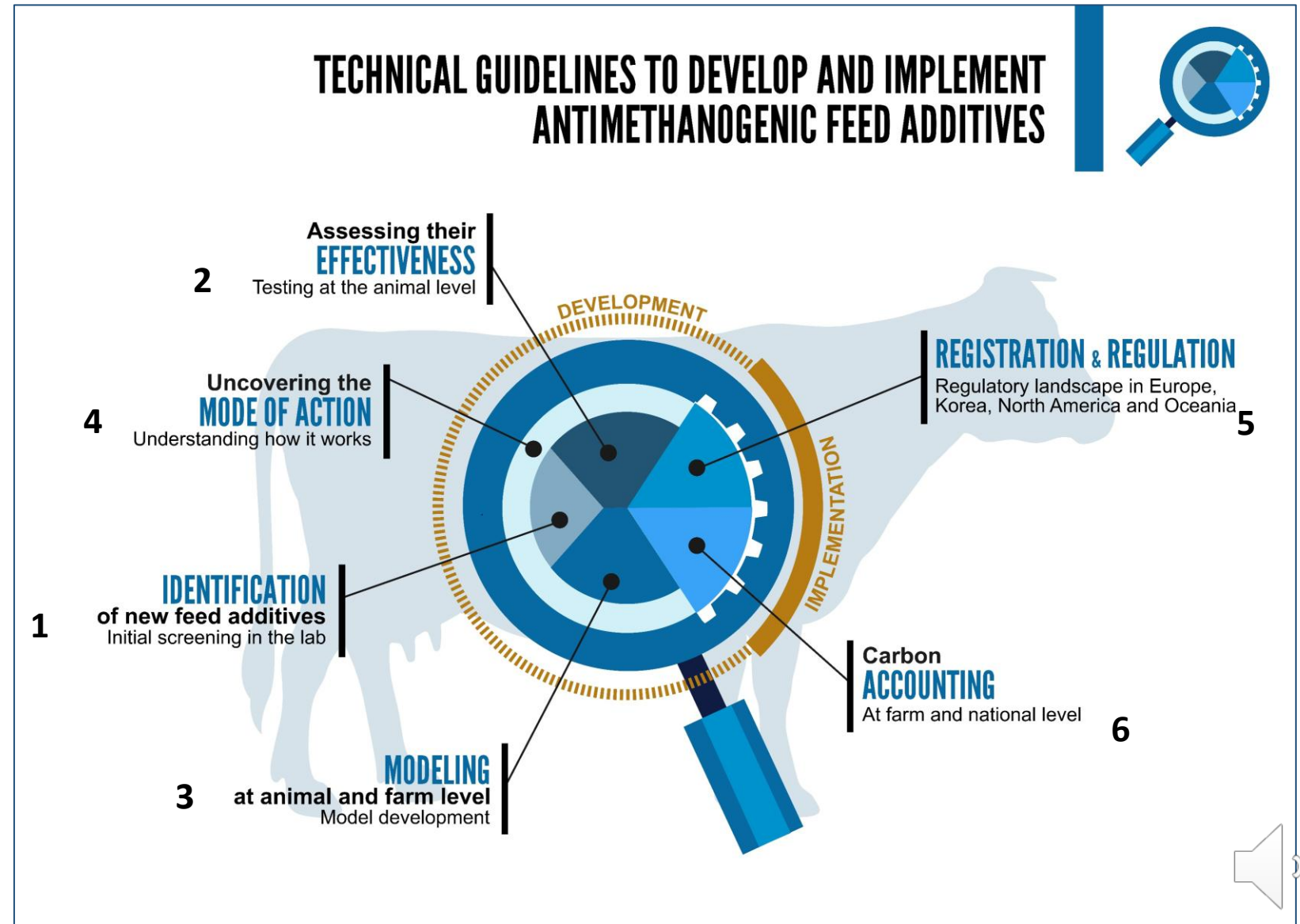
60 RESEARCHERS

23 COUNTRIES

46 INSTITUTIONS



GLOBAL DAIRY PLATFORM



1. Efficiency: environmental efficiency

Session 2

GLOBAL
RESEARCH
ALLIANCE
ON AGRICULTURAL GREENHOUSE GASES

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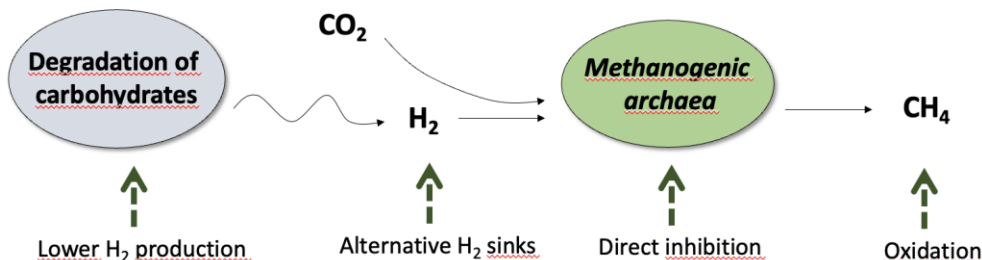
GLOBAL DAIRY PLATFORM

Future challenges:

- Application in grazing systems
- Long-term effects
- Successful combination of feed additives



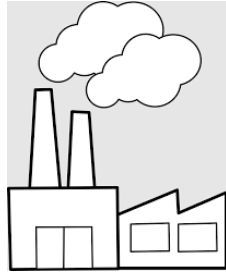
Rivelli et al., 2025 AFST



2. Circularity: agriculture by-products & insects



Crop production & harvesting



Processing & packaging / Bioethanol



- Large volumes
- Seasonal in some cases
- New materials



Challenges

- Economic viability
- Collection / distribution logistics
- Feed safety
- Assessing nutritive value
- Environmental impact



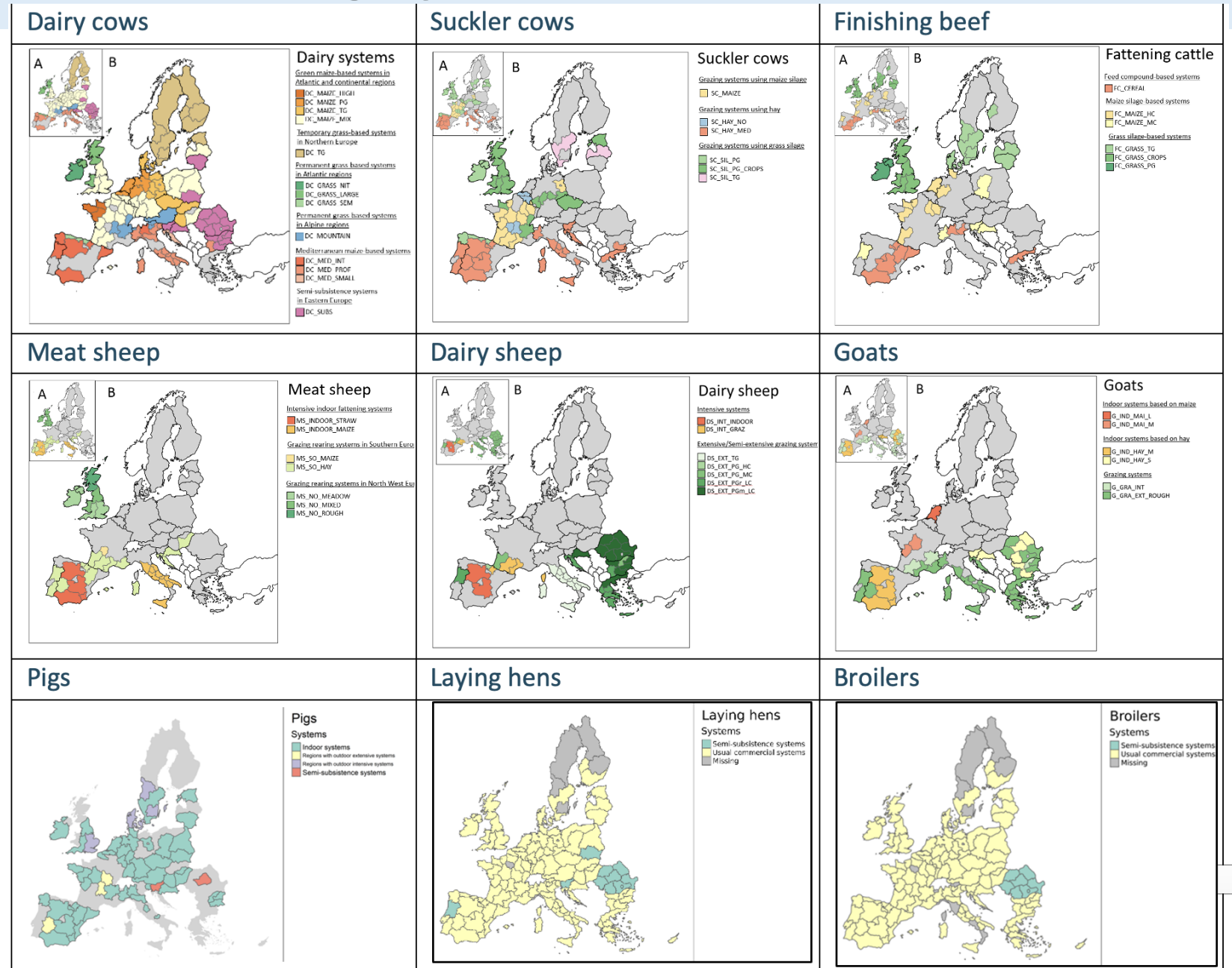
THE GLOBAL FEED LCA INSTITUTE
www.globalfeedlca.org



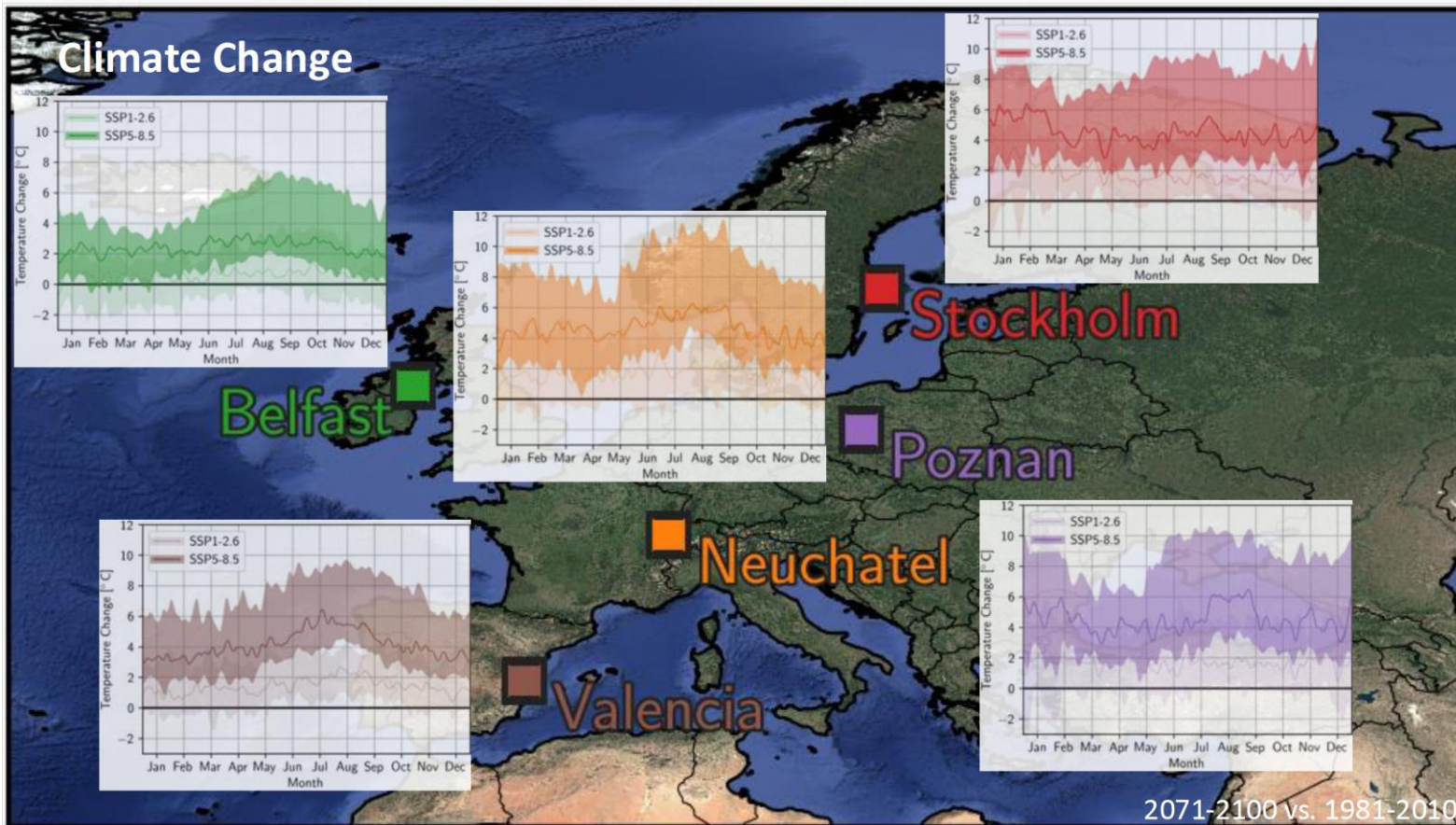
3. Diversity: Livestock Feeding Systems

- Full characterization of systems (including nutritional management)
- Evolution under different scenarios

Available soon on line !!!

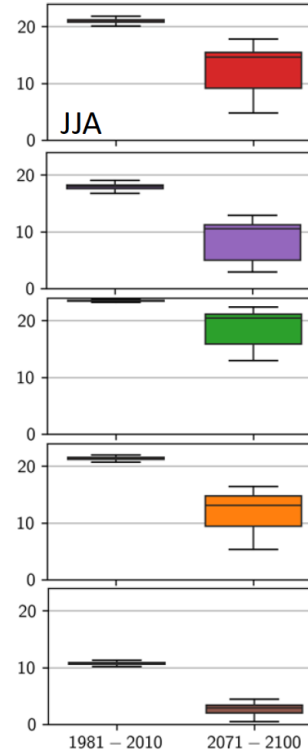


3. Diversity: climate change impacts

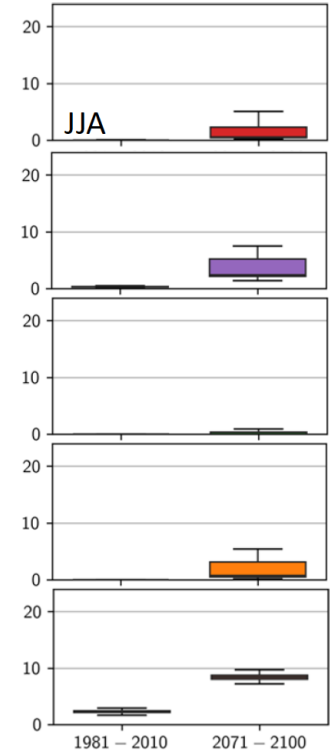


Animal welfare

No heat stress
hours per day [h/d]



Heavy heat stress
hours per day [h/d]



- Nutritional (overall) management will change
- Inputs for models (CIFOs and climate models)



- Precision livestock nutrition – technology driven + nutrition/physiology
- Environmental efficiency
- Agricultural by-products
- Diversity of feeding systems and environmental impacts



The logo for the Animal Task Force (atf) features the lowercase letters 'atf' in a white, bold, sans-serif font on a dark blue rectangular background.

animal
task
force

A European Public-Private Partnership



EAAP

European Federation of Animal Science



Thank you!

david.yanez@eez.csic.es



Re-Livestock
RESILIENT FARMING SYSTEMS



Pathways
FOR SUSTAINABLE FOOD



HoloRuminant
Understanding microbiomes of the ruminant holobiont



STEPUP



FutureFoods

