

EU AgriResearch
CONFERENCE 2023

Challenges and opportunities for healthy and sustainable livestock systems

Breakout session 3



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European
Commission

Breakout session 3: Challenges and opportunities for healthy and sustainable livestock systems

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Please take a seat to your attributed table

TABLE 1.1
Animal Health & Welfare

TABLE 2.1
Resource use & Environmental Impact

TABLE 3.1
Socio-economics

TABLE 4.1
System approach & circularity

TABLE 1.2
Animal Health & Welfare

TABLE 2.2
Resource use & Environmental Impact

TABLE 3.2
Socio-economics

TABLE 4.2
System approach & circularity

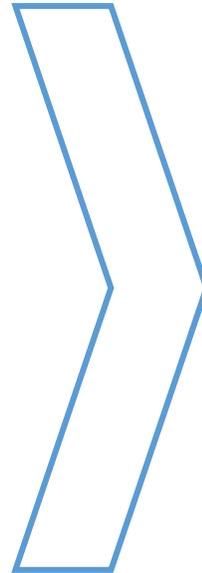
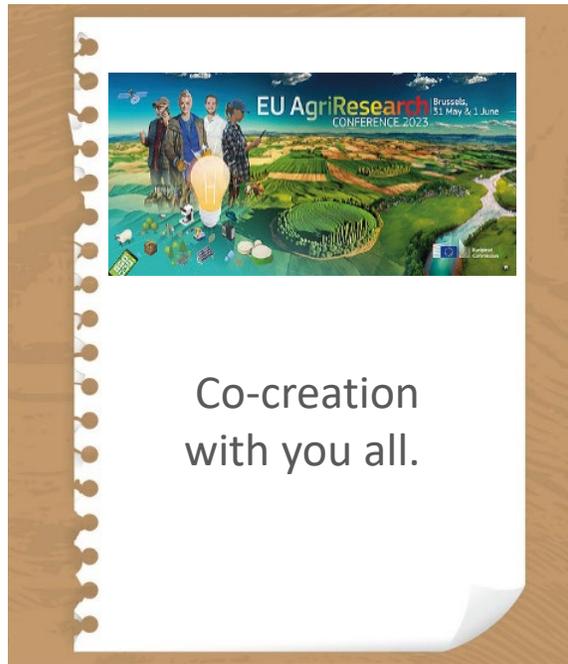


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Your ideas are essential for Horizon Europe and beyond

HE Cluster 6 Food, Bioeconomy, Natural Resources, Agriculture and Environment and the Mission 'Soil Deal for Europe'



Strategic Plan 25-27

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Agenda

- 09:15 – 09:25 Welcome and housekeeping
- 09:25 – 09:35 Keynote speech
- 09:35 – 09:45 Overview of R&I activities
- 09:45 – 10:30 Panel discussion
- 10:30 – 11:40 Co-creation discussion
- 11:40 – 11:45 Wrap-up and closing

Part I

Part II

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Keynote speech



Prof. Dr. ir. Frédéric Leroy
Vrije Universiteit Brussel

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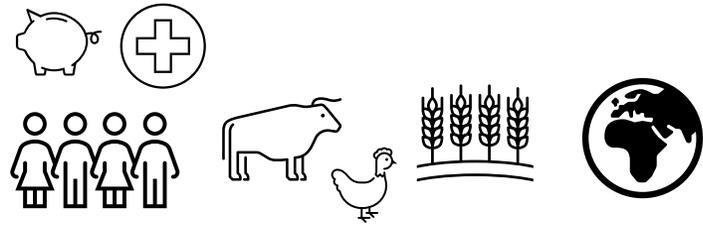


The challenge is urgent, unprecedented, and “double”



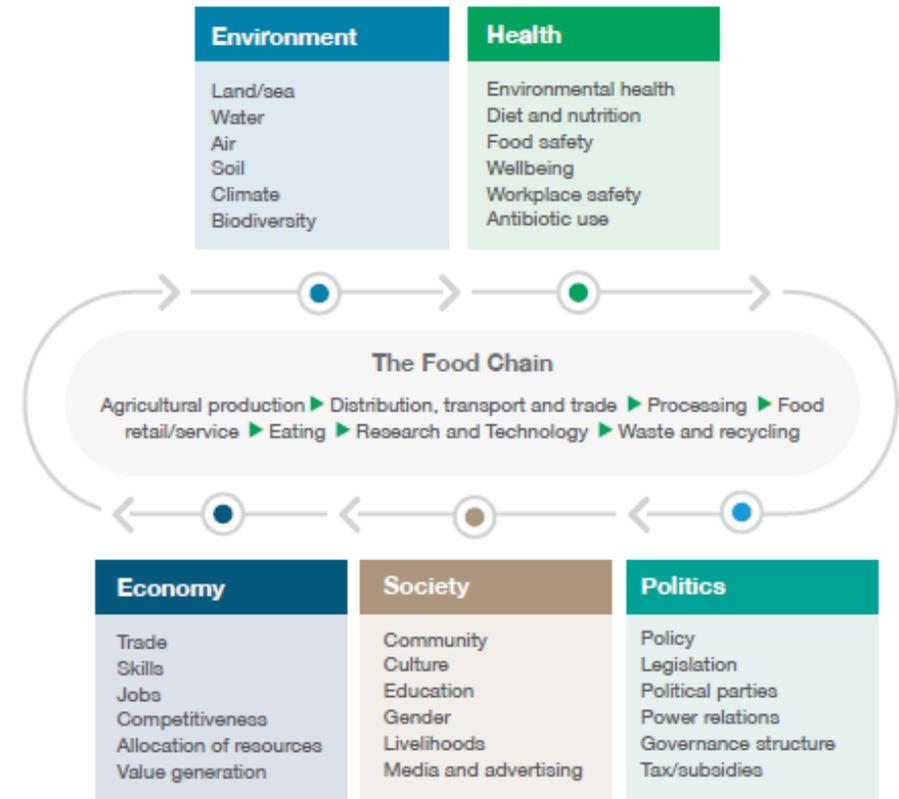
- **Healthy diets** protect against malnutrition and non-communicable diseases (WHO); **sustainable diets** “have low environmental impacts[,] are protective and respectful of biodiversity/ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy while optimising natural and human resources” (FAO)
<https://www.dublin-declaration.org>
- “Today’s food systems face an unprecedented double challenge. There is a call to increase the availability of livestock-derived foods (meat, dairy, eggs) to help **satisfy the unmet nutritional needs** of an estimated three billion people, for whom nutrient deficiencies contribute to stunting, wasting, anaemia, and other forms of malnutrition. At the same time, some **methods and scale of animal production systems** present challenges with regards to biodiversity, climate change and nutrient flows, as well as animal health and welfare within a broad One Health approach.”

Various challenges



- Livelihoods, economy, and (rural) communities
- Human health (nutrients, chronic disease, food safety)
- Animal health (zoonoses, antimicrobial resistance)
- Animal welfare (management, housing, ...)
- Feed-food competition and food waste
- Biodiversity, landscapes, ecosystem services, LULUC
- Pollution (atmosphere, water, soil, ...)
- Impact on natural resources (soil, water, ...)
- Climate change (greenhouse gases, crop yields, ...)
-

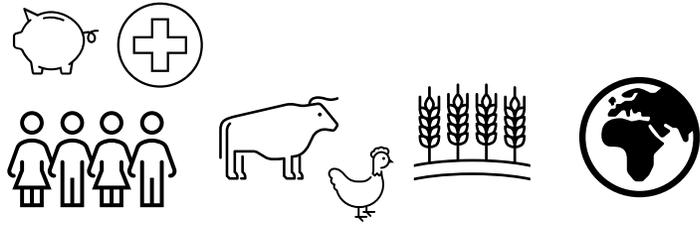
Figure 2: The food system



Source: Adapted from Parsons et al., 2019⁶

Various challenges

...and (research) opportunities!



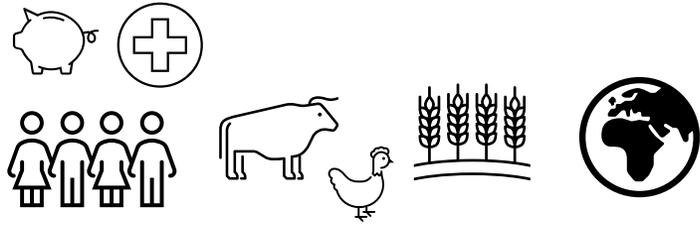
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- **Mitigate! Mitigate! Mitigate!**
There is a role for high-tech interventions (big data, precision agriculture, genetics, etc), but *also* for silvopastoralism, agroforestry, adaptive multi-paddock grazing, diversification strategies, de-concentration, principles of circularity, ...

But: still lots of uncertainties and remaining knowledge gaps; methodologically so, and related to the socio-economic aspects of transformation

Various challenges

...and (research) opportunities!

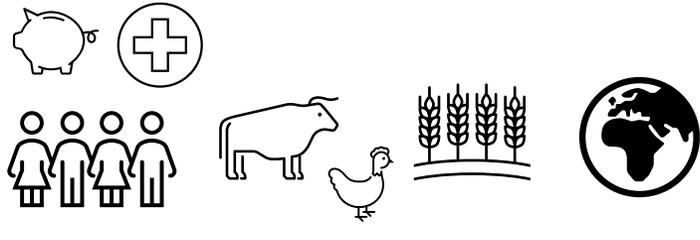


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- **Be specific**
Avoid all-too generic denominations and demonstrate tangible benefits of specific interventions (benchmarking)
- **Establish clear (research/policy) frameworks**
With uncertainty comes hesitancy and abuse: there is a need for workable science-informed regulatory mechanisms, transparent and robust accounting systems, certification, and fair compensation, ... (e.g. carbon markets)

Various challenges

...and (research) opportunities!



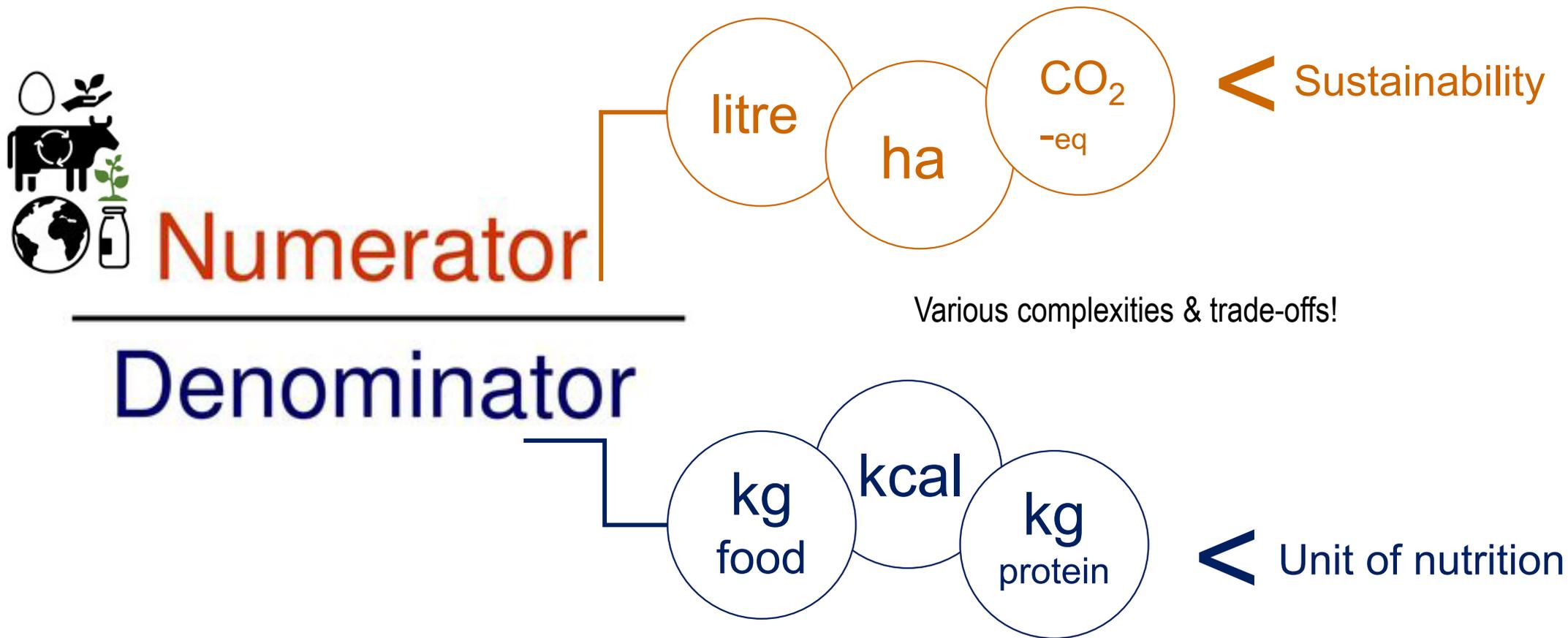
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-

- **Fix the socio-economic paradigm**
Turn sustainable livestock farming into a rewarding, viable, and prestigious career choice; without highly motivated, educated young farmers we will be going nowhere
- **Fix “thoughtscapes” to fix landscapes**
- **Go for the obvious** (food waste, C-seq, etc)
...but don’t fear the “less known”
Research needed!

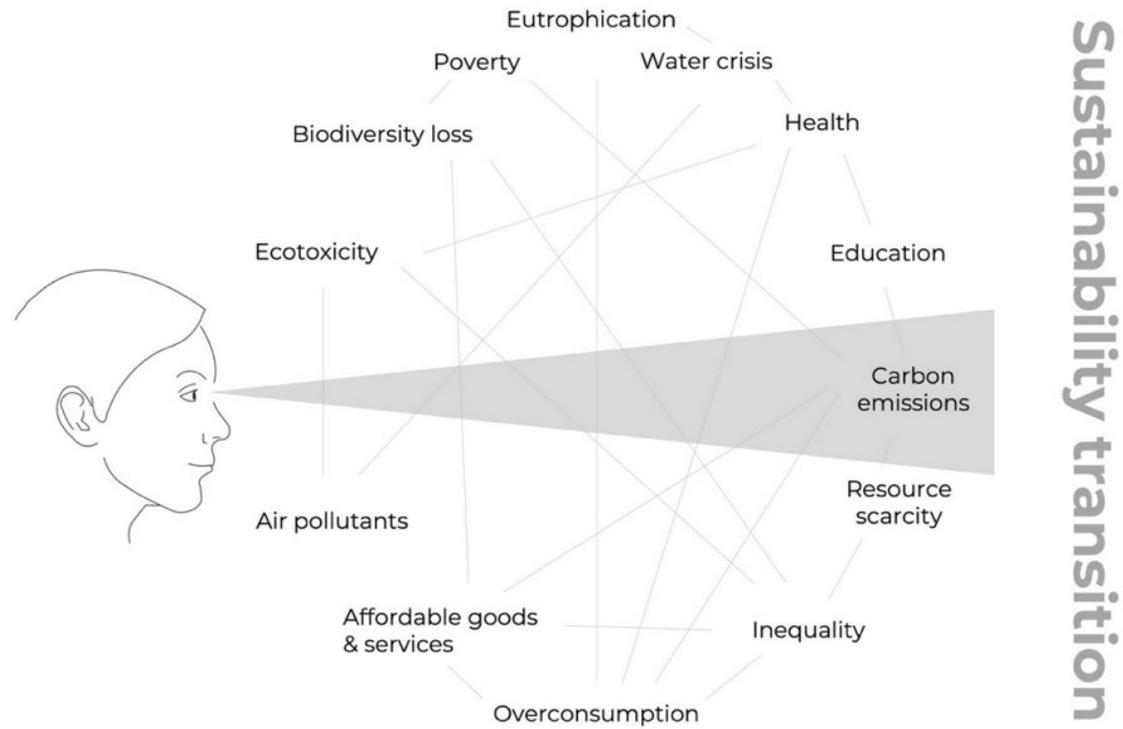


e.g., no “One Health” without **soil health**

Keep a systems approach: metrics matter (a lot!)



Keep a systems approach: avoid tunnel vision



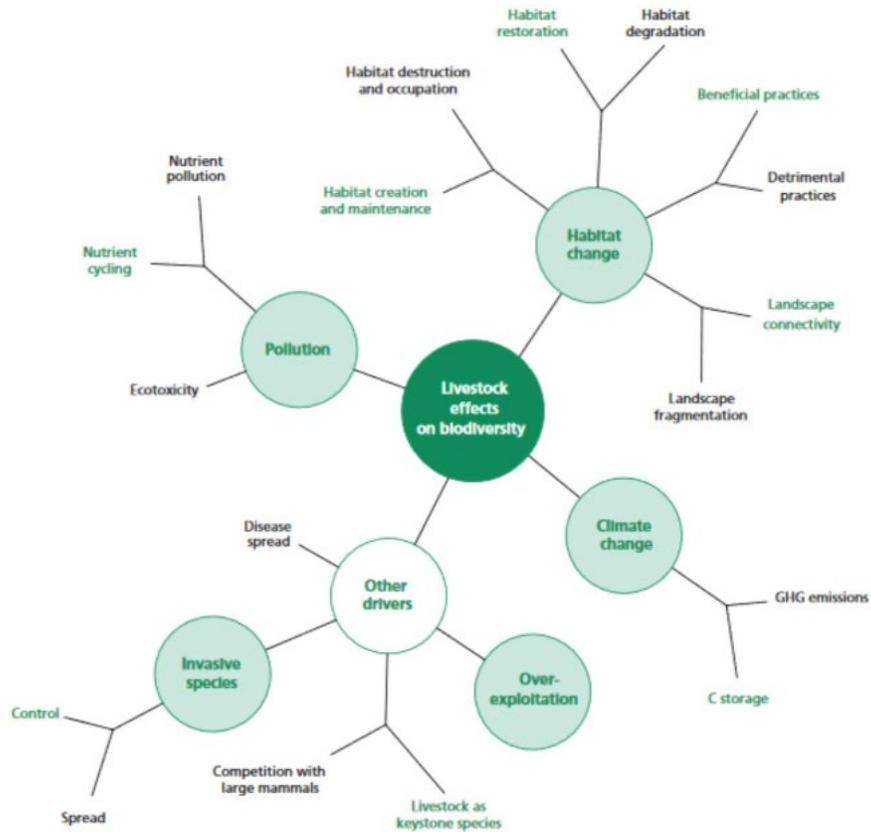
Credit: Jan Konietzko - Maastricht Sustainability Institute



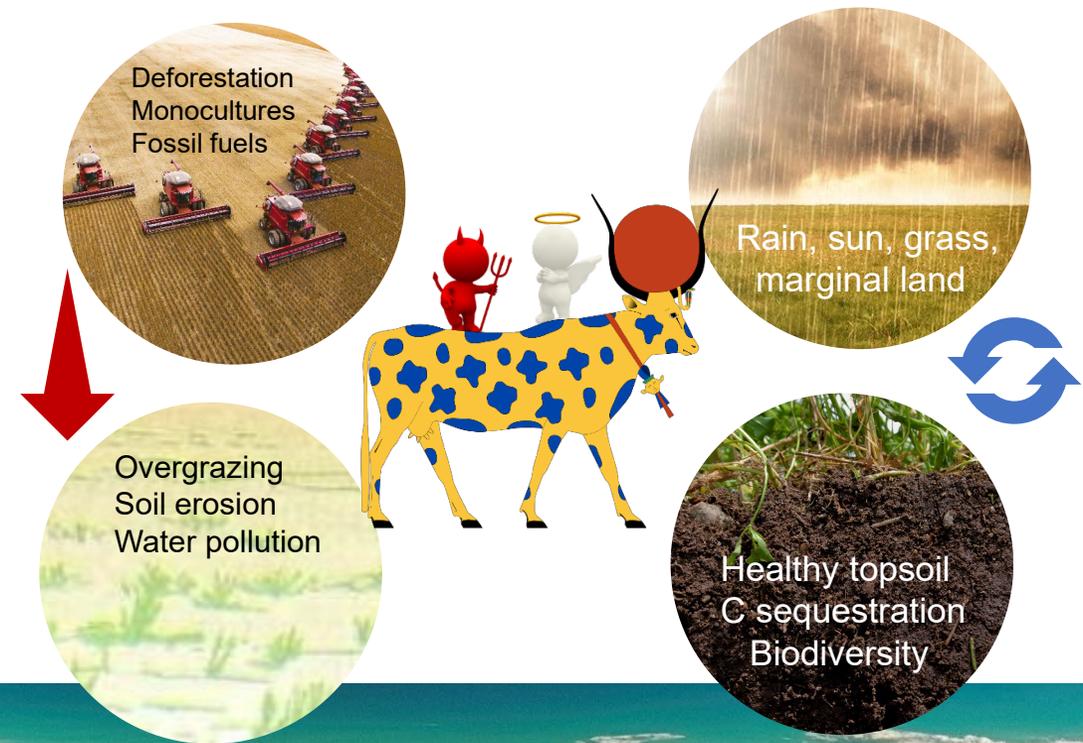
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Keep a systems approach



- Need to factor in trade-offs and reference points
- Importance of scale (animal, farm, region, global)
- Complexities of land sharing/sparing debate
- Contextuality and search for net benefit



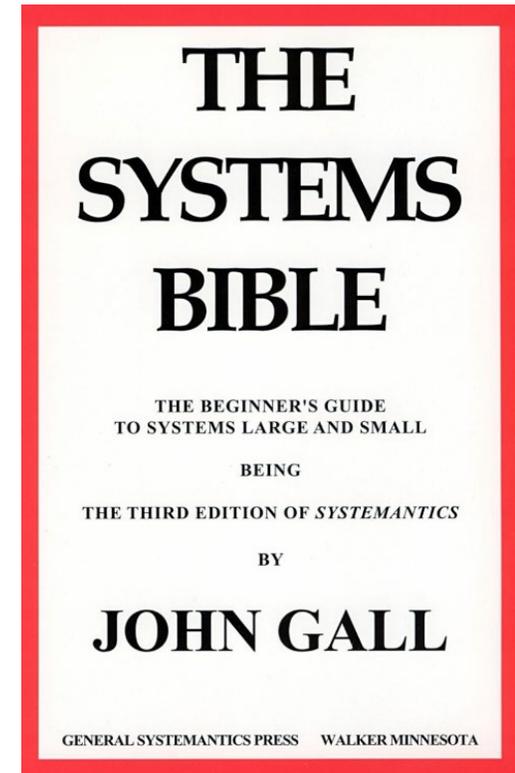
Teillard et al 2016 <https://www.fao.org/3/av151e/av151e.pdf#page=34>

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Keep a systems approach – but be cautious!

- IN SETTING UP A NEW SYSTEM, TREAD SOFTLY. YOU MAY BE DISTURBING ANOTHER SYSTEM THAT IS ACTUALLY WORKING
- “Getting Rid Of” sets off self-corrective mechanisms that cause the entire System to oscillate, reverberate, and readjust as it compensates for the sudden loss of components whose unsuspected vital functioning suddenly becomes obvious
- Before one can estimate “Efficiency”, one must first decide the function of the System; since most large Systems have multiple functions, many of which are not apparent on casual inspection, estimating “Efficiency” is tricky, to say the least.
- **ALWAYS ACT SO AS TO INCREASE YOUR OPTIONS**
→ KNOWLEDGE GAPS and INTERDISCIPLINARY RESEARCH





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Overview of R&I activities supporting healthy and sustainable livestock systems



**Valerio Abbadessa &
Jean-Charles Cavitte**

European Commission, DG AGRI

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Horizon Europe Strategic Plan 2021-2024

Key strategic orientations: **B. RESTORING EUROPE'S ECOSYSTEMS AND BIODIVERSITY, AND MANAGING SUSTAINABLY NATURAL RESOURCES**

CLUSTER 6 will contribute to **restoring degraded ecosystems, reversing the loss of biodiversity** and associated ecosystem functions, [...] and **enhancing climate change mitigation and adaptation**, as well as the **sustainable and circular management** of natural resources on land and at sea [...]. The transition to **sustainable, low ecological footprint, healthy and inclusive food systems** – from primary production to consumption – that provide safe, nutritious and affordable food to all will accelerate by enhancing governance, reducing food losses and waste, **improving animal, plant and soil health**,

IMPACTS - Cluster 6 FOOD, BIOECONOMY, NATURAL RESOURCES, AGRICULTURE & ENVIRONMENT

- **Climate neutrality and adaptation** to climate change
- Preservation and restoration of **biodiversity** and **ecosystems**
- Food and nutrition security for all from **sustainable food systems** from farm to fork
- **Sustainable and circular management of natural resources**; tackling pollution; bioeconomy

Healthy and sustainable livestock systems: Horizon 2020



Animal husbandry, animal welfare, feeding, grazing, sustainability, resilience, ecosystems

27 projects € 130 million*



Host-pathogen interaction, emerging and endemic diseases, surveillance, diagnostics, vaccines, anti-microbial resistance, biosecurity

25 projects € 200 million*

[CORDIS Results Pack on Healthy animals for healthy people](#)



Plant breeding, animal breeding, genebank management, diversifying agriculture and forestry, genetic resources

40 projects € 233 million*



Agroecology, organic farming

35 projects € 198 million*

• *EU contribution*

Healthy and sustainable livestock systems: Horizon Europe (2021-2024)



Animal husbandry, animal welfare, feeding, grazing, sustainability, resilience, ecosystems

13 projects € 66 million*



Host-pathogen interaction, emerging and endemic diseases, surveillance, diagnostics, vaccines, anti-microbial resistance, biosecurity

12 projects € 112 million*[@]



Plant breeding, animal breeding, genebank management, diversifying agriculture and forestry, genetic resources

40 projects € 233 million*



Agroecology, organic farming

49 projects € 375 million*[@]

* EU contribution

[@] includes part of the EU contributions to the co-funded partnerships Animal Health & Welfare and Agroecology

Instruments to boost healthy and sustainable livestock systems

Research & Innovation



EU (co-funded) Partnerships



Animal Health & Welfare
 Agroecology Living Labs
 Safe and Sustainable Food Systems
 Agriculture of Data

Innovation & Knowledge exchange



EU Missions



'A Soil Deal for Europe'



'Adaptation to climate change'



Focus Groups

- [Robust and resilient dairy production systems](#)
- [Grazing for Carbon](#)
- [Reducing emissions from cattle farming](#)
- [Mixed Farming Systems: Livestock/Cash crops](#)
- [New feed for pigs and poultry](#)
- [Profitability of permanent grassland](#)
- [Sustainable beef production systems](#)
- [Animal husbandry - Reduction of antibiotic use in the pig sector](#)
- [Reducing antimicrobial use in poultry farming](#)
- [Bee health and sustainable beekeeping](#)

Animal Health and Welfare Partnership

What: generate innovative methodologies and products to support preparedness, prevention and response against animal infectious diseases, promote and strengthen animal welfare, support evidenced based policy making

Who: Co-funded by EU, with Member States and Associated Countries, involving funding organizations, research organisations and key stakeholders (farmers, veterinary sector, policy makers, agencies & reference bodies, industry, etc.)

How: internal research activities, external calls for projects, integrative activities, etc.

Where: Europe-wide

When: (tentatively) from end 2023/early 2024; 7-10 years duration

Type of actions to boost healthy and sustainable livestock systems

Collaborative research

Bilateral R&I cooperation
with non-EU countries

Multilateral R&I cooperation
with WOAH, FAO and others

International activities



- **Innovations**
(technological, social, business model, product/process, services)

- **Networking**
(knowledge exchange, standardization, alignment...)

- **Co-funds:**

ERA-NETs

EU Joint Programme

Co-funded European Partnerships



Multi-actor approach



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Panel discussion

Ms. Sophie Helaine

EC-AGRI A.3 Policy performance



Dr. Elke Saggau

Federal Office for Agriculture and
Food (BLE)



Prof. Dr. Carlos Gonçalo Das Neves

European Food Safety Authority



Prof. Dr. Wim H. M. van der Poel

Wageningen Bioveterinary Research



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Co-creative discussion



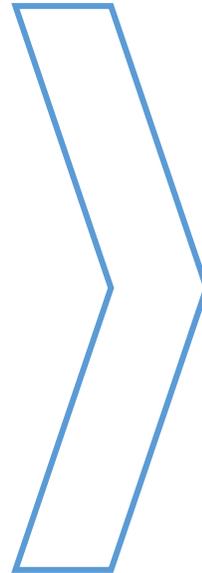
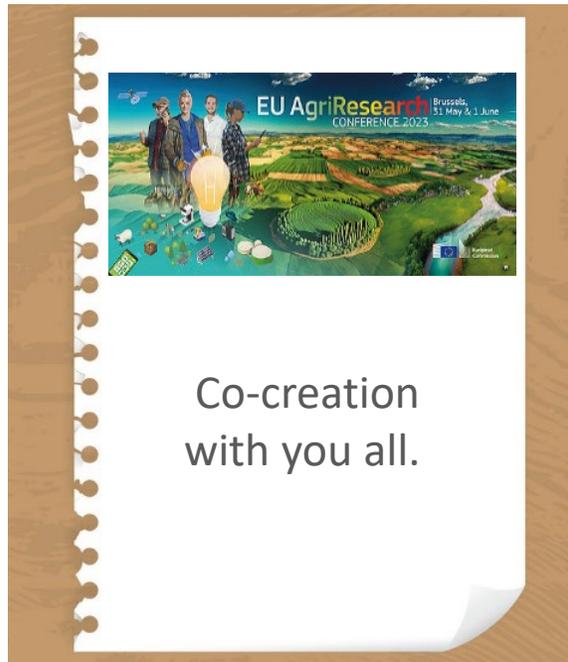
Participants, have your say!

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Round-tables and facilitators

TABLE 1.1

Animal Health & Welfare



Carlos Gonçalo Das Neves

TABLE 2.1

Resource use & Environmental Impact



Valerio Abbadessa

TABLE 3.1

Socio-economics



Natalia Brzezina

TABLE 4.1

System approach & circularity



Sophie Helaine

TABLE 1.2

Animal Health & Welfare



Wim H. M. van der Poel

TABLE 2.2

Resource use & Environmental Impact



Elke Saggau

TABLE 3.2

Socio-economics



Davide Nicodemo

TABLE 4.2

System approach & circularity



Benjamin Van Doorslaer



Co-creation



Two questions in each of the four focus areas

Question 1: What are the research needs in this area?

1 idea / sticky note
CAPITAL LETTERS
e-mail on the back



1 idea per 1 sticky note
CAPITAL LETTERS



Present 1 key idea
& discuss together with the group



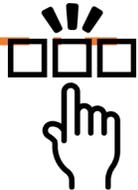
Each person 3 dots



Vote with a dot on
the priority idea

No vote on your own ideas

Question 2: How should those needs be delivered through research and innovation?



Choose 1 need from the previous question



(Individually develop at least 1 idea)



Group discussion with the ideas with most votes

Meaning of 'how'

Consider in your reply the following elements, *for example*:

- Basic research, innovation?
- Standardisation, communication and networking, align research agendas?
- If technological developments expected, what level of maturity? Experimental proof of concept, validation/testing in the lab or related real environment, prototyping...
- Involve other actors beyond researchers/innovators? Which ones?
- International collaboration is key and if so with which regions?
- Other major initiatives to be aware of for consideration and/or collaboration?
- New ideas?

Debrief R&I priorities from the co-creation

Facilitators to present two-three priorities with the most votes harvested from each table (2')

1.1 & 1.2
Animal Health &
Welfare

3.1 & 3.3
Socio-economics

2.1 & 2.2
Resource use &
Environmental
Impact

4.1 & 4.2
System approach &
circularity



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THANK YOU