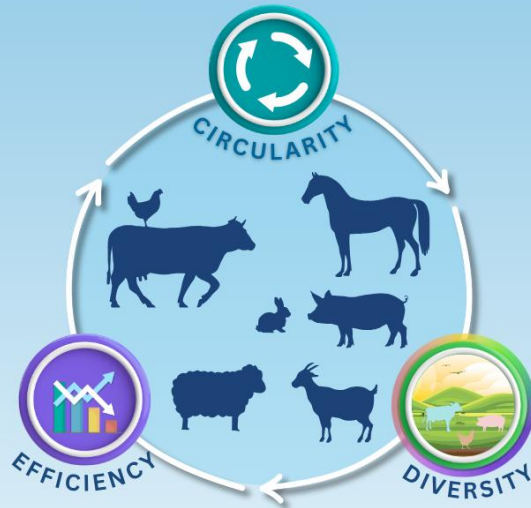


LIVESTOCK FARMING SYSTEMS IN NEXT GENERATIONS



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?

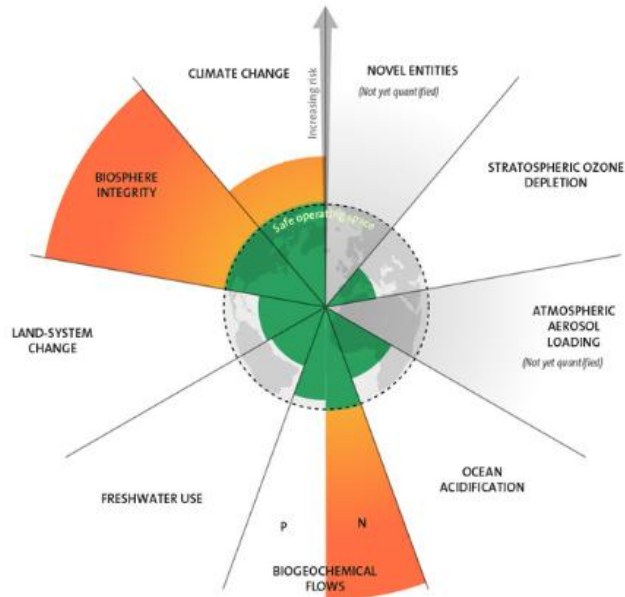
“Towards the design of a Safe and Just
Operating Space for European livestock
systems”

Claire Rogel-Gaillard

Email: claire.rogel-gaillard@inrae.fr

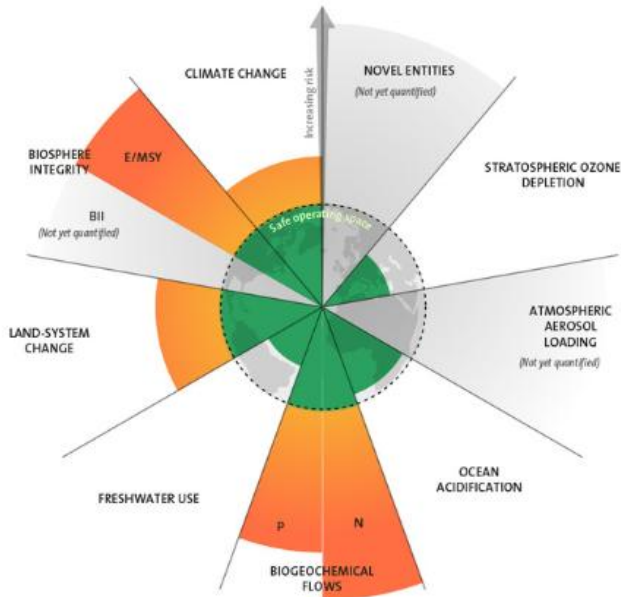
FACTS AND DATA: PLANETARY BOUNDARIES

2009



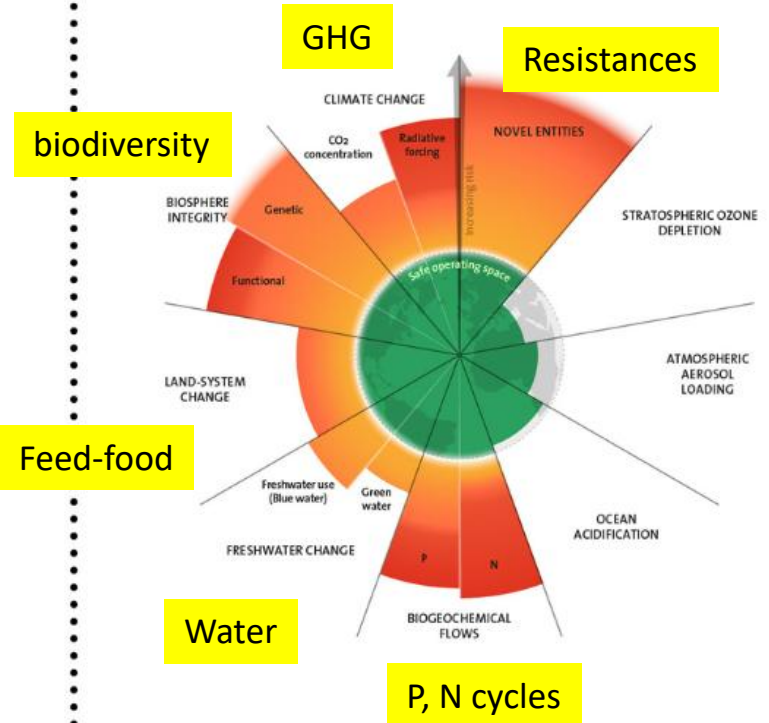
7 boundaries assessed,
3 crossed

2015



7 boundaries assessed,
4 crossed

2023

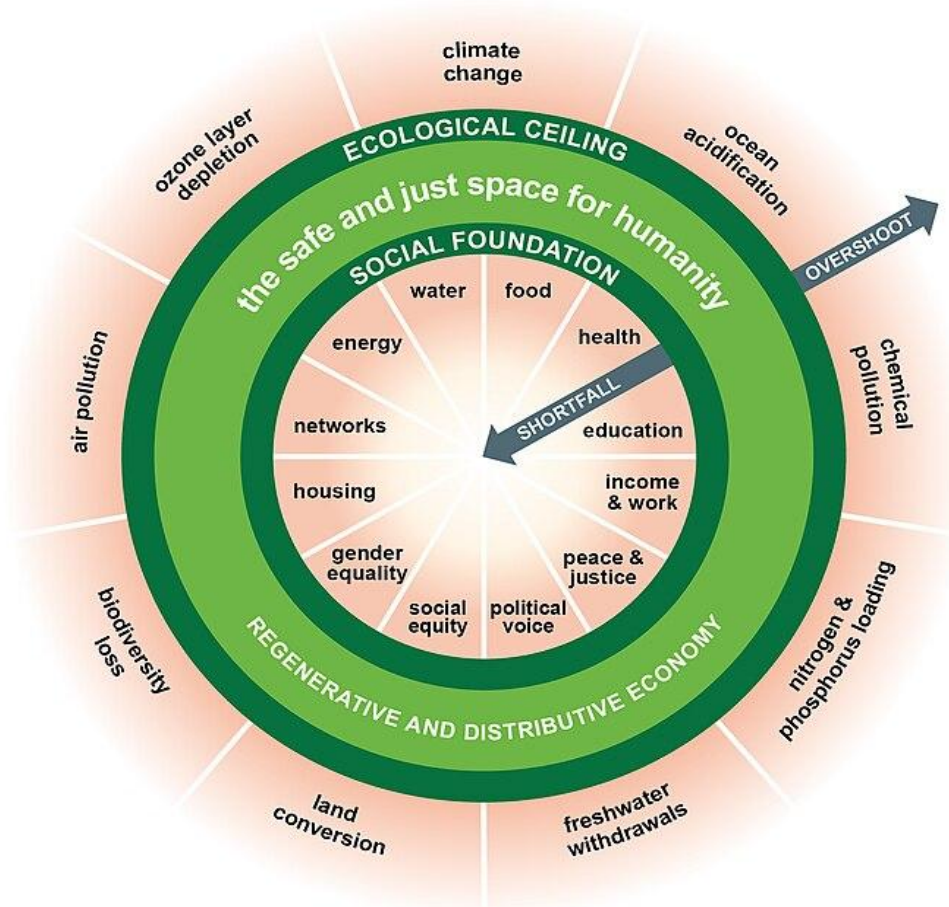


9 boundaries assessed,
6 crossed

<https://www.stockholmresilience.org/research/planetary-boundaries.html>

Rockström et al., 2009, Steffen et al., 2015, Richardson et al., 2023

SAFE AND JUST OPERATING SPACE: SJOS



Source : Raworth (2017)

Representation with a doughnut :

- **Outer circle: SAFE**
 - **Biophysical constraints (= planetary boundaries)** that must not be transgressed
- **Inner circle: JUST**
 - **Social objectives** that must be satisfied/respected (JUST)

An integrated framework for sustainable goals
What about livestock in the EU?

STEP UP: SUSTAINABLE LIVESTOCK SYSTEMS TRANSITION AND EVIDENCE PLATFORM FOR UPGRADING POLICIES



Aim:
scientific solutions
shaping resilient
European policies

- STEP UP is a Research and Innovation Action (RIA)
- Funded under **HORIZON-CL6-2023-FARM2FORK: *Towards sustainable livestock systems: European platform for evidence building and transitioning policy***
- 16 partners representing 10 RPOs and 6 industry representative bodies across 10 European countries
- Total budget ca. €4.7m
- 4 year project (2024 – 2027)
- Kick off meeting on Feb. 7-8, 2024

Coordinator: David A. Kenny

Email: david.kenny@teagasc.ie



Funded by
the European Union

WP6 - ASSESSMENT AND CONDITIONS OF IMPLEMENTATION OF SCENARIOS FOR EUROPEAN LIVESTOCK SYSTEMS WITHIN A SJOS

1. **Defining a SJOS for EU livestock**
2. Elaborating scenarios of interest based on existing and emerging trends and drivers
3. Positioning scenarios within the SJOS for EU livestock
4. Providing recommendations and tools in support of public policies and stakeholders to position livestock systems within the SJOS for EU livestock and agri-food systems



Funded by
the European Union

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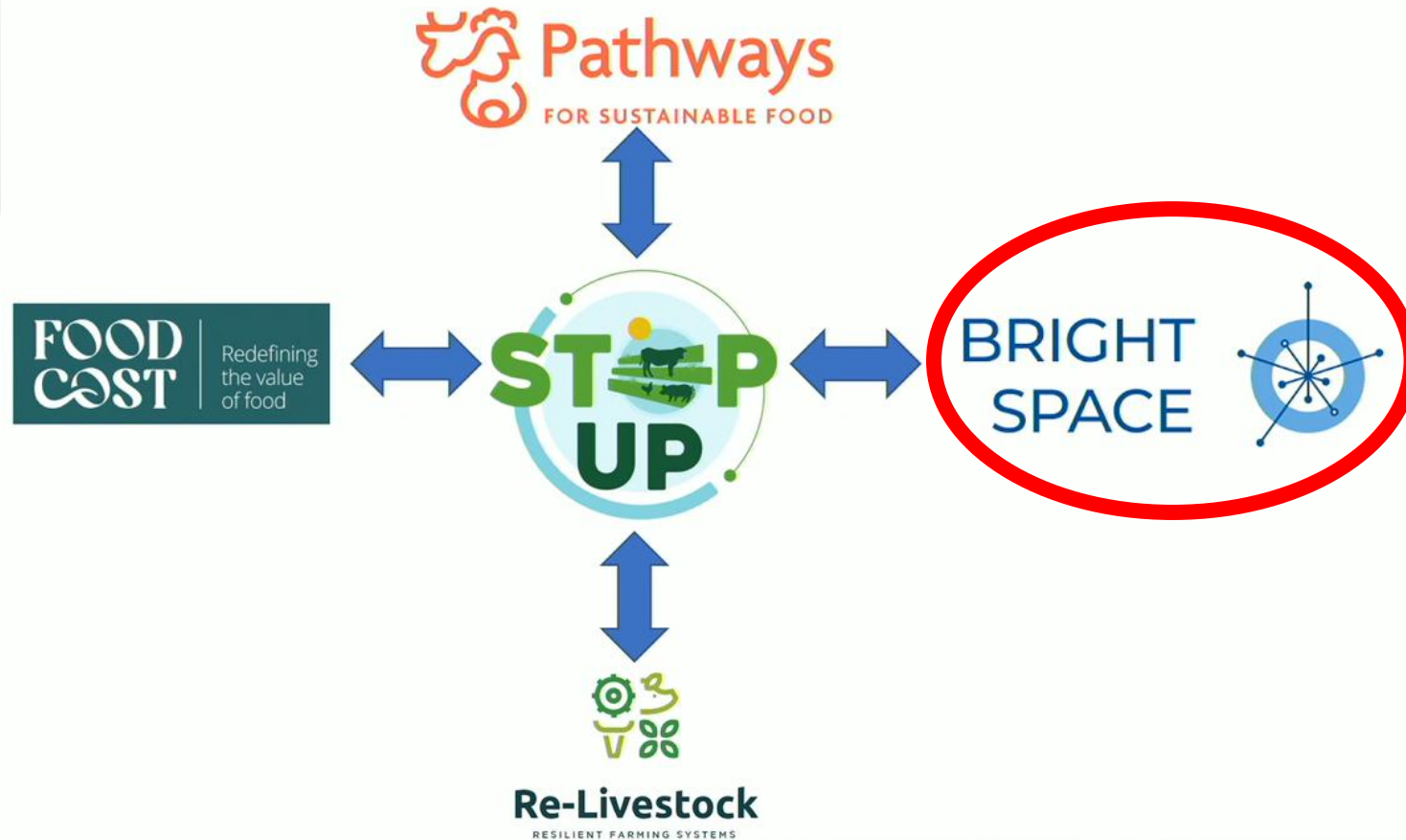


Stepping Up for Europe's Sustainable Livestock Systems



Funded by
the European Union

ASSOCIATED PROJECTS



Designing a Roadmap for Effective and Sustainable Strategies for Assessing and Addressing the Challenges of EU Agriculture to Navigate within a **Safe and Just Operating Space**
<https://brightspace-project.eu/>

DEFINING A SJOS FOR LIVESTOCK IN THE EU: CHALLENGING!

- Two main issues:
 1. Downscaling the concept that is initially defined as global -> application to a region/country/group of regions
 - The geographical region = the EU
 2. Disaggregating the concept -> application to a specific sector
 - The sector = livestock
- There is no unique way to define a SJOS for both a sector and a specific geographic area: political, economical, societal issues
 - The EU x livestock

Adapting this framework to the EU livestock sector involves determining the extent to which it contributes to the current global SJOS

A STEP BY STEP METHODOLOGY

DESIGN PHASE

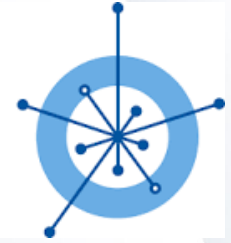
1. **Dimension** = Process group to be monitored (biogeochemical flows)
2. **Variable** = Specific process to be monitored (eg. N cycle ; P cycle)

QUANTITATIVE ASSESSMENT

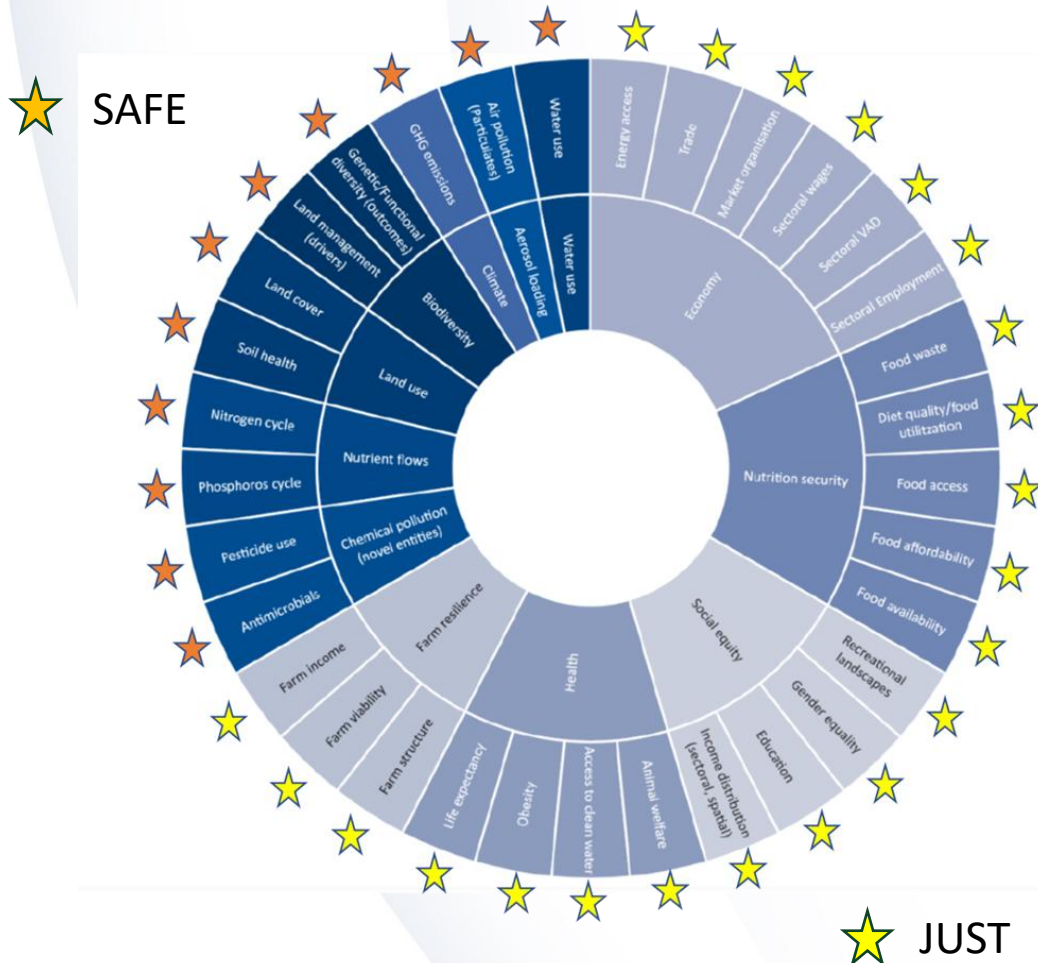
1. **Indicator** = Measure/data that monitors a process/variable (eg. N input to cropland)
2. **Threshold** = Value that specifies a limit (eg. 83 N kg/ha.yr)

PHASE 1: CONCEPTUAL DESIGN

BRIGHT
SPACE



Müller, M., Guyomard, H., Détang-Dessendre, et al. (2024). Deliverable D1.1 (D01) An operational concept for dimensions and indicators of the SJOS. BrightSpace Horizon Europe project GA Nr. 101060075.



From SJOS for EU agriculture to SJOS for EU livestock:

- Choosing a subset?
- Missing thematic areas?
- Specific variables and indicators?

DIMENSIONS, VARIABLES AND INDICATORS – SOS

DIMENSIONS	QUESTIONS	VARIABLES	INDICATORS
BIODIVERSITY	What is the state of biodiversity associated with livestock production systems ?	BIODIVERSITY STATE	Farm Birds Index (FBI) (CAPRI)
			Total Permanent Pasture Area
			Livestock density on pastures
			Domestic diversity
			Pollinators
			Soil biodiversity
			General biodiversity

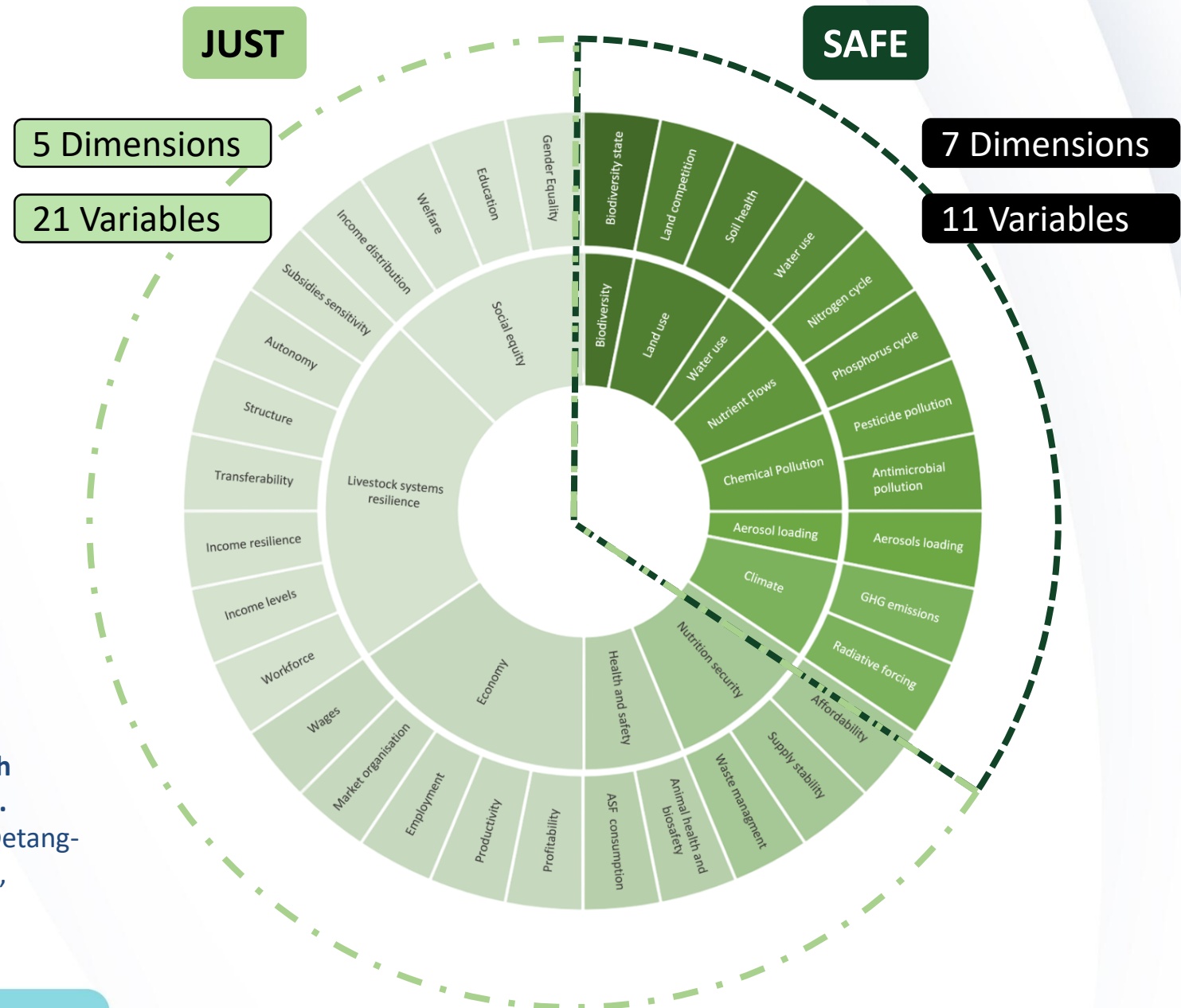
DIMENSIONS, VARIABLES AND INDICATORS – JOS

DIM	QUESTIONS	VARIABLES	INDICATORS
N U T R I T I O N	Can European consumers buy animal-source foods as recommended at an affordable price ?	AFFORDABILITY	Share of population that cannot afford animal-source foods
			Increase percentage of price of animal-source foods
			Price of animal-source foods
			Price share of animal-source foods in dietary recommendation
	Does the EU guarantee a stable supply of animal-source foods ?	SUPPLY STABILITY	Import dependency ratio for animal-source foods
			Self-sufficiency ratio for feed
	Is there an over-consumption of animal-source foods ?	OVER-COMSUPTION	Share of population that over-consume animal-source foods
	Is Europe producing excessive waste from animal-source foods?	WASTE MANAGMENT	Share of animal-source foods waste from food processing, transport and food waste from commodities and food services consumption

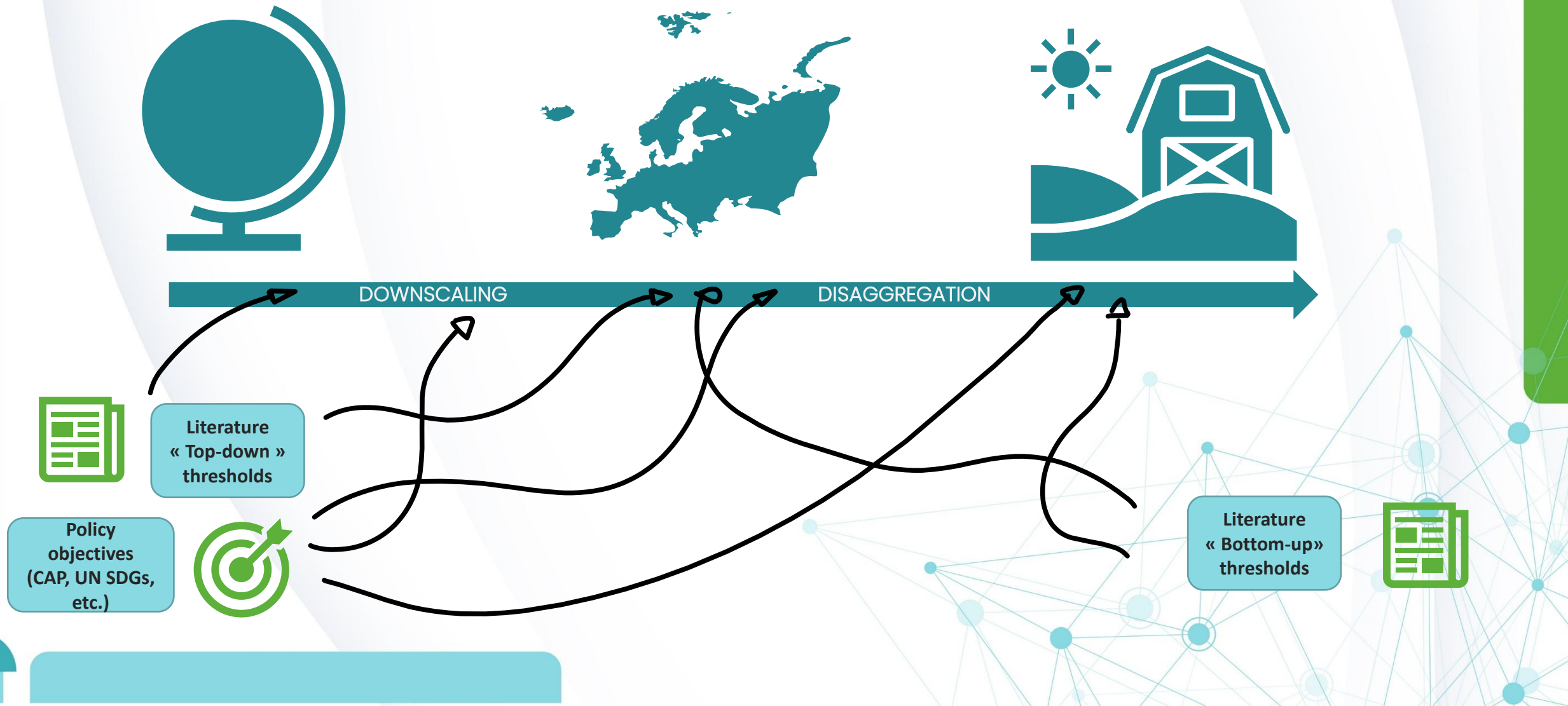
PHASE 1: CURRENT DESIGN

Selection of 12
dimensions and 32
associated variables
for the EU SJOS

D6.1 Definition of a SJOS for EU livestock with identification of its various dimensions. 2024.
(Rogel-Gaillard, C., Letrou, T., Guyomard, H., Detang-Dessendre, C., Gagaoua, M., da Silva Vieira, R., Kenny, D., De Ponti, S., Blanquet, I., Sturm, V., Marek-Andrzejewska, E.)



PHASE 2: QUANTITATIVE -> DATA, VALUES AND THRESHOLDS

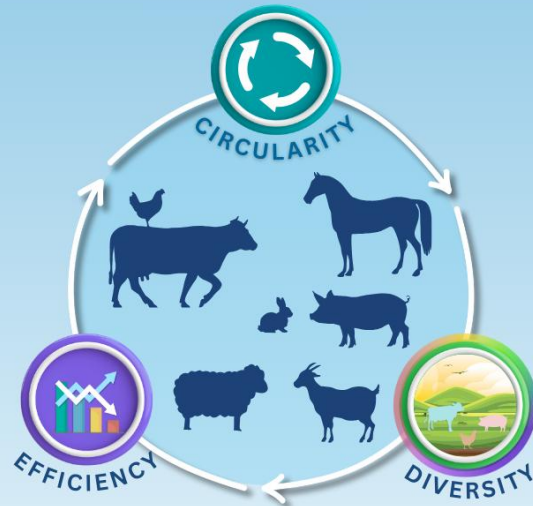


NEXT STEPS

- Completing the list of indicators
- Identifying available data
- Quantitatively assessing the indicators with associated data
- Deciding on thresholds and limits to apply -> sensitive and political issues

THANK YOU FOR YOUR ATTENTION!

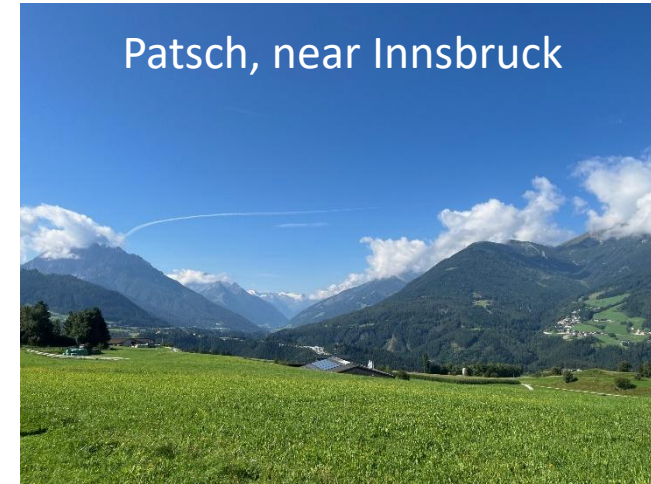
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Patsch, near Innsbruck



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