

Sustainability

The PG Tool and the iSAGE Toolbox

Marion Johnson, Chiara Tuoni, Lisa Arguile | ORGANIC RESEARCH CENTRE

Nicola Noble | NSA



Innovation for Sustainable
Sheep and Goat
Production in Europe



National Sheep Association

THE ORGANIC
RESEARCH
CENTRE



ELM FARM



Sustainability

Bruntland 1987

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs

FAO

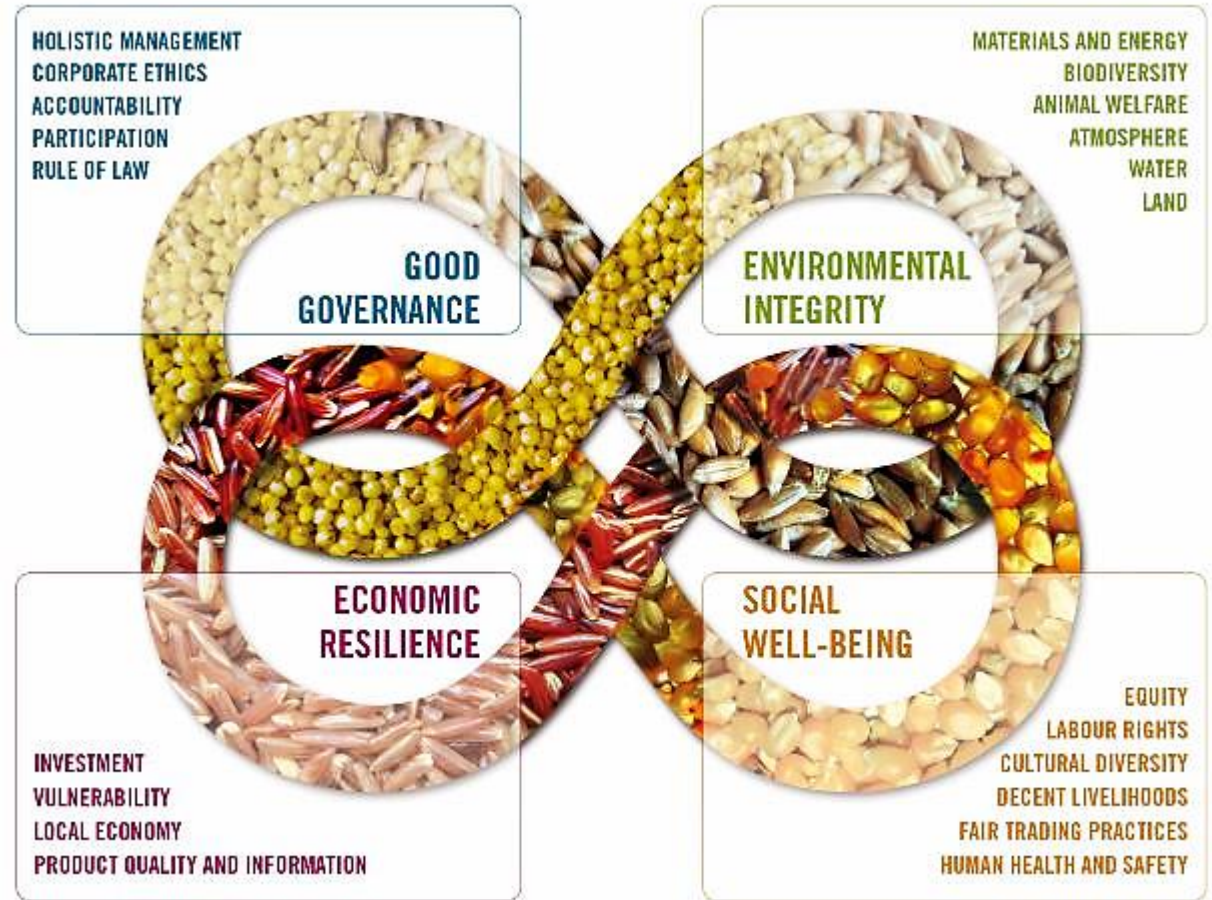
....conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technologically appropriate, economically viable and socially acceptable...



Sustainability

- FAO SAFA
- 4 pillars approach to sustainability

Unless good governance is seriously considered, sustainability will remain a mirage



A close-up photograph of a cow's face, focusing on its eyes and nose. A semi-transparent white circle is overlaid on the left side of the image, containing the title and a list of questions. The cow's fur is dark brown, and its nose is visible at the bottom of the circle.

Sustainability Assessments on farm

- What questions are being asked
- What answers are being provided
- How are those answers arrived at
- What is the purpose?



The PG Tool

- Originally developed in 2012 as an assessment tool for organic farmers
- Subsequent research projects have developed it for use within a variety of systems



What are Public Goods?

- **Available to all** – Others cannot be excluded from the benefit
- **Non-Rival** – If “consumed” by one person, still available to others
However, different grades, pure public goods are rare
- Supply not secured through markets, users have no incentive to pay



Use of the PG Tool in recent projects

1

NATURAL ENGLAND: TOOL
DEVELOPMENT

pilot on 40 organic
farms

2

CONVENTIONAL PILOT
(PROJECT OF0398)

32 conventional farms

3

FP7 SUSTAINABLE, ORGANIC
AND LOW INPUT DAIRYING
PROJECT (SOLID)

70 organic and 32 low
input dairy farms
in 9 countries

4

WAITROSE / TSB FUNDED
PROJECT LED BY IBERS

8 farms assessed in
Wales

5

ADAPTED THE TOOL FOR USE
IN AN INTERREG FUNDED
PROJECT ON HEDGES AND
WOODFUEL

6

CURRENTLY BEING USED AS
PART OF THE UK RESEARCH
COUNCIL FUNDED PROJECT
SEEGSLIP

60 Pasture for Life
certified farms





How did we adapt the PG Tool in

iSAGE

LITERATURE REVIEW

Outcome and process indicators

INDICATOR SURVEY WITH EXPERTS

Greece, UK, France, Italy, Spain, Finland, Turkey

35 responses

TOOL ADAPTATION

Social, animal welfare and governance indicators

ON-FARM TESTING

2 x farms in Greece, UK, France, Italy, Spain



What is the PG Tool?

- Multi criteria, analysis based assessment
- Immediate results
- Mixture of quantitative and qualitative indicators
- Simple programming in Excel-spreadsheet

Non weighted averages



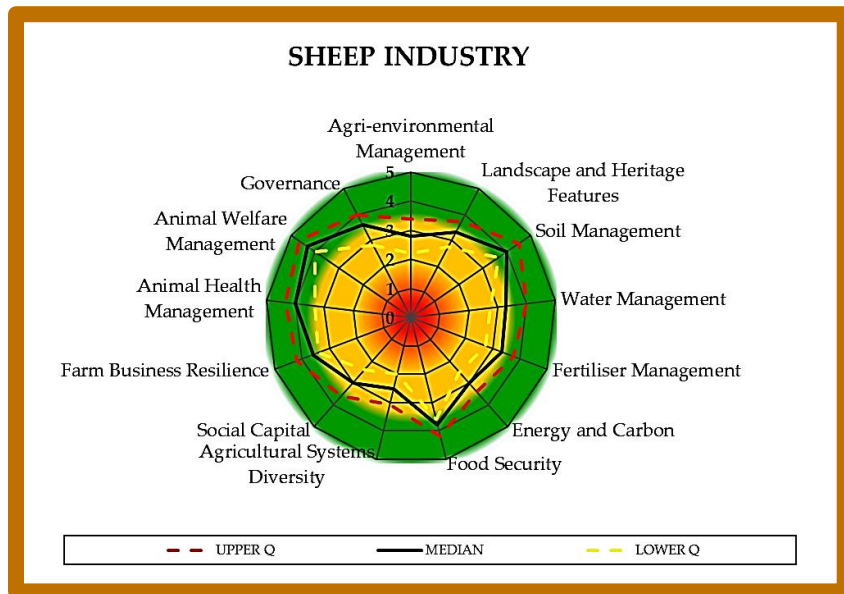
Public Goods ‘spurs’

Environmental integrity	Social wellbeing	Economic resilience	Good governance
<ul style="list-style-type: none">• Agricultural Systems Diversity• Agri-Environmental Management• Animal Health Management• Animal Welfare Management• Energy and Carbon• Fertiliser Management• Soil Management• Landscape and Heritage Features• Water Management	<ul style="list-style-type: none">• Social Capital	<ul style="list-style-type: none">• Farm Business Resilience• Food Security	<ul style="list-style-type: none">• Governance



How does it work?

- Farmers answer questions associated with the 13 spurs
- Each answer is ranked on a **1-5 scale**, cumulatively generating an overall average for each spur
- The results are presented in a radar diagram





PG Tool – conducting the assessment



Structure: On farm interview, between an experienced researcher and farmer / client

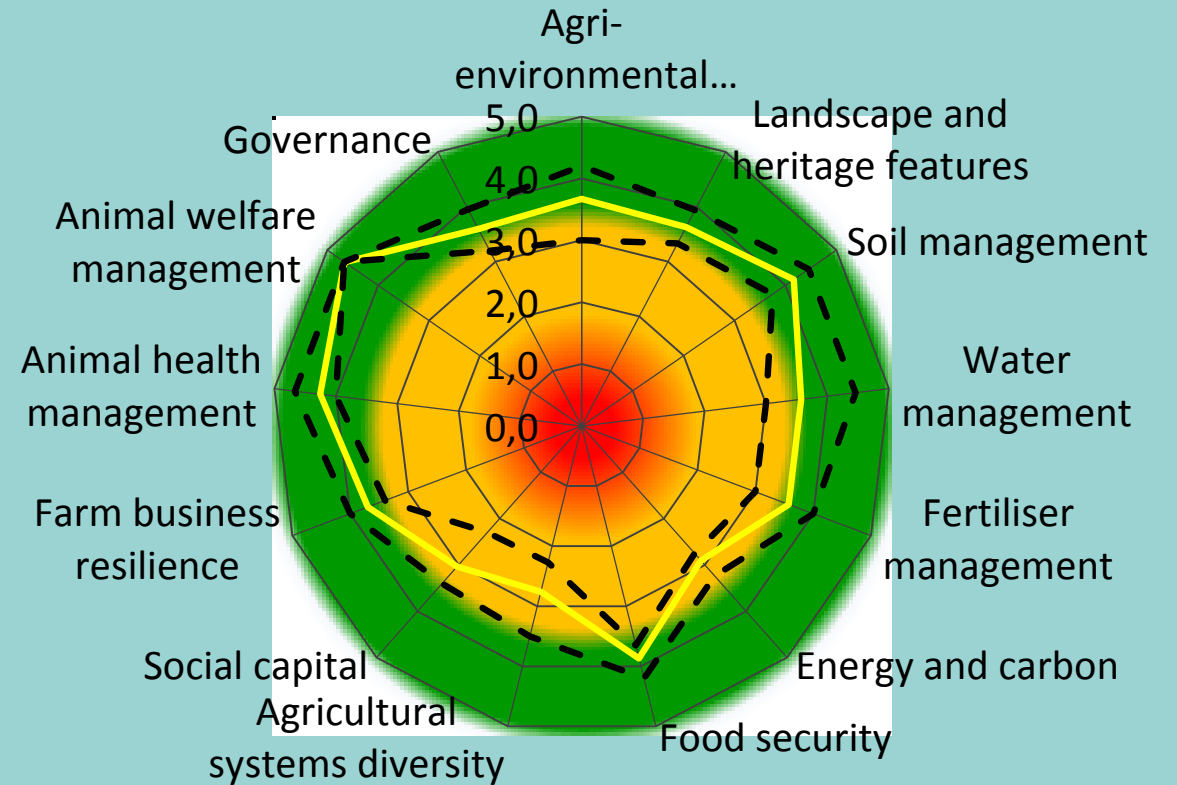
Duration: 3-4 hours
(including 30 min farm tour)

Goal: Promote discussion around sustainability and what works for an individual business



PG Tool – results

- Scores provide an indication of current performance
 - 1 = poor performance
 - 5 = very good performance
- Based upon industry recommendations and benchmarks
- Providing a holistic overview of the farm business

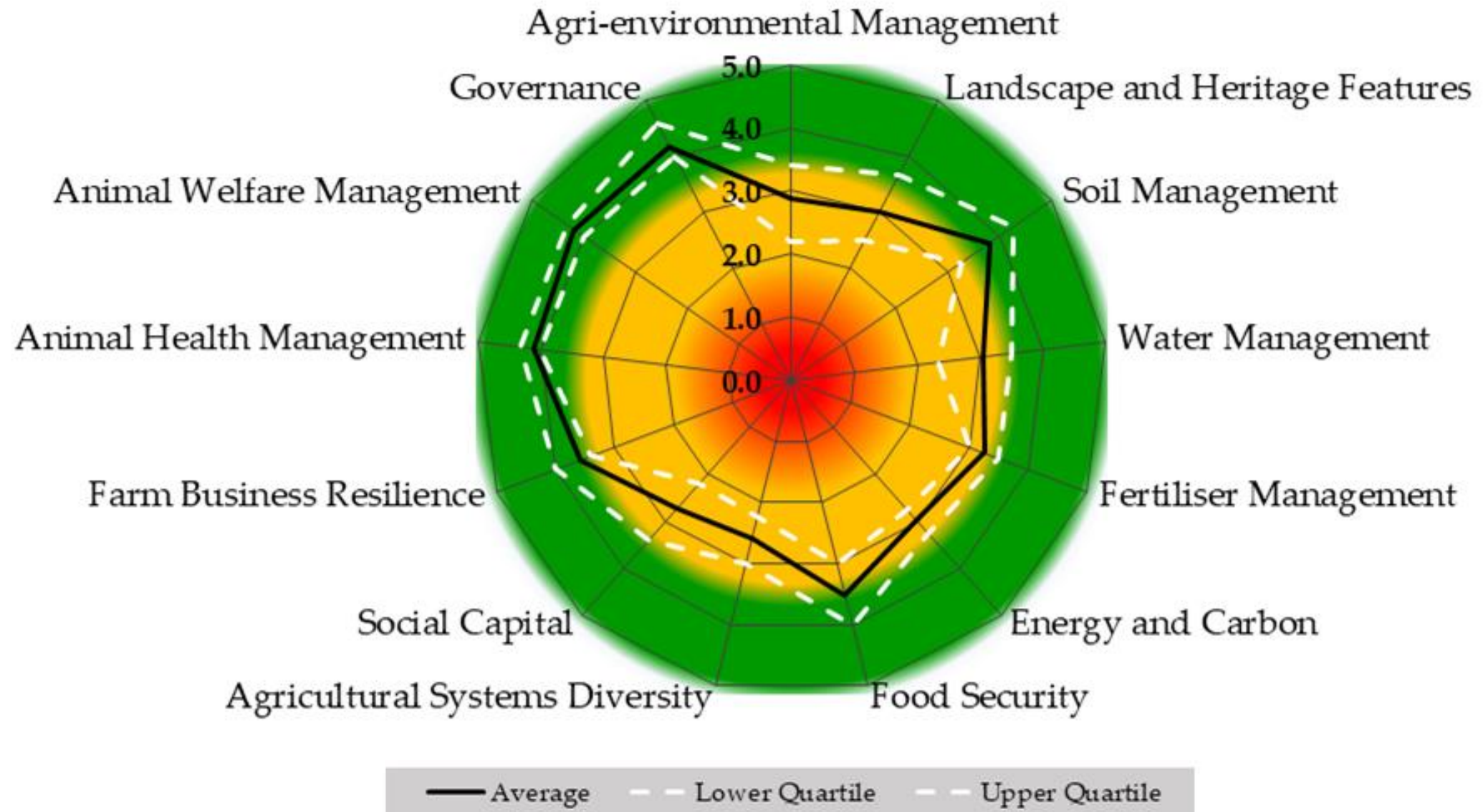




Farms assessed in Spain

TYPOLGY	SPAIN TOTAL
Sheep: Intensive dairy farms (e.g. high input of purchased feedstuff)	11
Sheep: Dual-purpose farms (farms where the farmer sees value in 2 or more different products e.g. meat and wool, meat and dairy)	2
Sheep: Semi-intensive or extensive meat farms (e.g. normally pasture fed animals)	11
Sheep: Intensive meat farms (e.g. high input of purchased feedstuff)	0
Goat: Semi-intensive or extensive dairy farms (e.g. normally pasture fed animals)	7
Goat: Intensive dairy farms (e.g. high input of purchased feedstuff)	9
Goat: Dual-purpose farms (farms where the farmer sees value in 2 or more different products e.g. meat and wool, meat and dairy).	0
Goat: Semi-intensive or extensive meat farms (e.g. normally pasture fed animals)	4
Goat: Intensive meat farms (e.g. high input of purchased feedstuff)	0
TOTAL	44

Spanish PG Tool Results





Remember

The PG Tool provides
a snapshot of current sustainability
performance



A group of people, including men and women, are gathered around a metal pen containing several white sheep. They appear to be observing or discussing the animals. The background shows a green field and a dark vehicle. A semi-transparent circular overlay is positioned on the left side of the image, containing the text 'Next Steps' and a list of two items.

Next Steps

- Acting on the results
- Where to get the information?



1. SIGNPOSTS TO SUSTAINABILITY

iSAGE Toolbox 2. SAGEGUARD

2.1 SAGEGUARD.NET

2.2 SAGEGUARD CARDS



Developing the Toolbox

- iSAGE partners select sustainability indicators that they feel relevant
- Sustainability questions in the PG Tool

➔ **SIGNPOSTS TO SUSTAINABILITY**



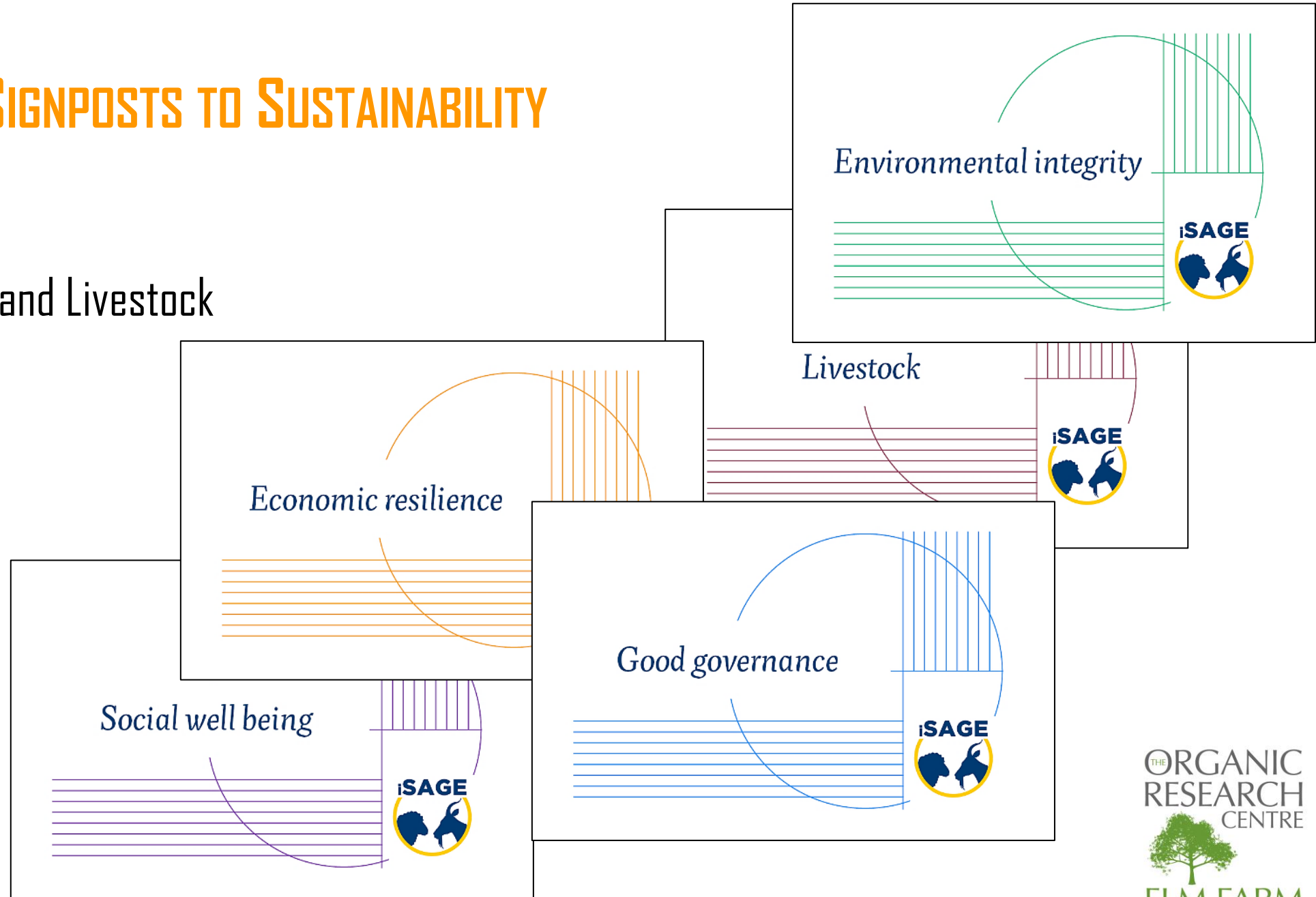
1. SIGNPOSTS TO SUSTAINABILITY

- PG Tool adapted for a quick online assessment
- Series of questions: **Yes** **No**
+ a third option when necessary, e.g. unknown
- Basis for the iSAGE Toolbox



1. SIGNPOSTS TO SUSTAINABILITY

4 dimensions
of Sustainability and Livestock





1. SIGNPOSTS TO SUSTAINABILITY

Each dimension has **3 associated themes**

Livestock

- Animal Health
- Animal Welfare
- Livestock Management



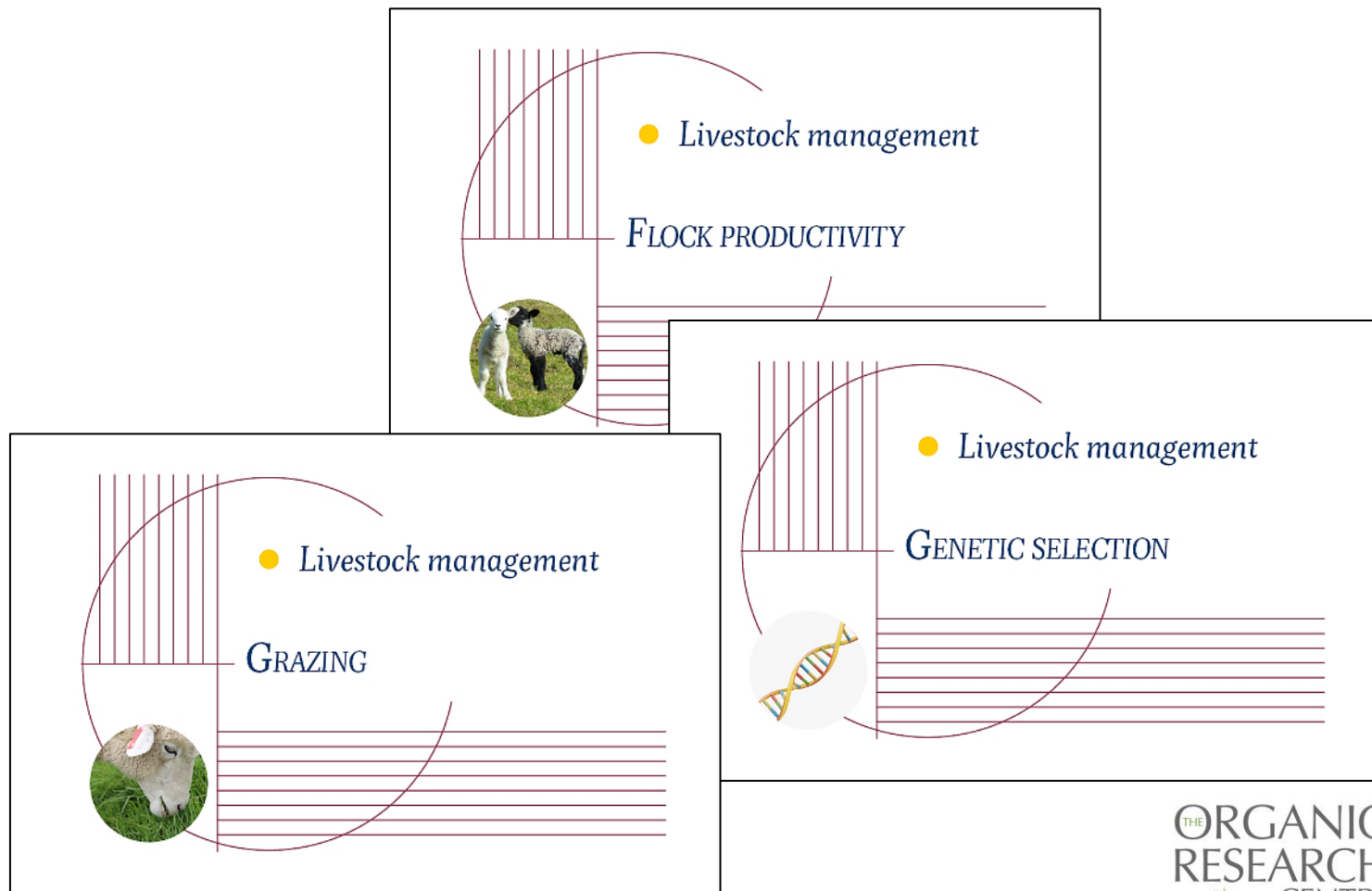


1. SIGNPOSTS TO SUSTAINABILITY

Each theme has **3 sub themes**

Livestock management

- Flock productivity
- Genetic selection
- Grazing





1. SIGNPOSTS TO SUSTAINABILITY

Series of indicators associated with each sub theme

Flock productivity

- Lambing success
- Weaning success
- Culling practices





1. SIGNPOSTS TO SUSTAINABILITY – Excel background

A	B	C	D	E
Dimension	Theme	Sub Theme	Indicator	Questions
Environmental Integrity	Ecological	Soil	Erosion	Are there signs of erosion on your farm?
			Compaction	Are there any signs of compaction across your fields?
			Quality	Do you consider <i>soil biology</i> when managing your soils?
		Water	Use	Do you monitor your farm water use?
			Availability	Do you use <i>replenishable</i> water sources, if you are not reliant on mains?
			Water quality	Have you <i>recently</i> sampled the water quality of your water sources?
		Atmosphere	Direct pollutants	Have you considered the <i>direct pollutants</i> that your farming practice emits?
			Indirect pollutants	Have you considered the <i>indirect pollutants</i> that your farming practice emits?
			Management of pollutants	Do you have measures in place to limit atmospheric pollution?



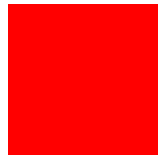
1. SIGNPOSTS TO SUSTAINABILITY – question/answer

Answer the question associated with the indicator

Lambing success

✓ Do you lose over 5% of lambs between birth and weaning?

YES



NO





1. SIGNPOSTS TO SUSTAINABILITY – results summary

Environmental Integrity					
Soil	Erosion		Compaction		Quality
Water	Use		Availability		Water Quality
Atmosphere	Direct pollutants		Indirect pollutants		Management of pollutants
Farmland Biodiversity	Flora and fauna		Diversity of production		Trees and hedgerows
Cultural and Heritage	Historical features		Genetic diversity		Traditional livestock management
Environmental Management	Conservation plans		Ecosystem connectivity		Ecosystem enhancing practices
Fertiliser	Soil testing		Fertiliser plan		Nutrient balance
Energy and Carbon	Renewable energy		Vehicles		Carbon
Waste Management	Recycling		Reducing		Hazardous products
Livestock					
Flock	Breed		Body Condition Score		Replacements
Health Plan	Health plan		Antibiotics		Parasites
Disease Incidence	Flock/herd health		Quarantine		Proactive management
Feeding Systems	Intensive systems		Concentrates		Forage
Housing Characteristics	Condition of housing		Space		Water Availability



2. SAGEGUARD

- Decision support tool
- Find information to help move towards a more sustainable system
- A set of links to further information provided for each subtheme / question



2.1 SAGEGUARD.NET

- Home page describes how to use the Toolbox
- Choose where to start:
 - Explore dimensions or themes
 - Find help with an issue

What is Sageguard

A platform for developing knowledge within the field of sustainable sheep and goat production

Welcome to Sageguard, a platform that hopes to help answer your questions and provide guidance around how to sustainably produce sheep and goats within Europe

We cannot guarantee we have all the answers but through our interactive website you can delve into the depths of what constitutes sustainability, what to look for, and how you can implement these practices to improve your business for the future. Sustainability is not just a short term fix, it is a method of production that guides the reasoning behind your own decisions across every aspect of your business

Navigate through the hierarchical levels of sustainability to reach your answers, using the dimensions Cards below or the menu on the top right of your screen

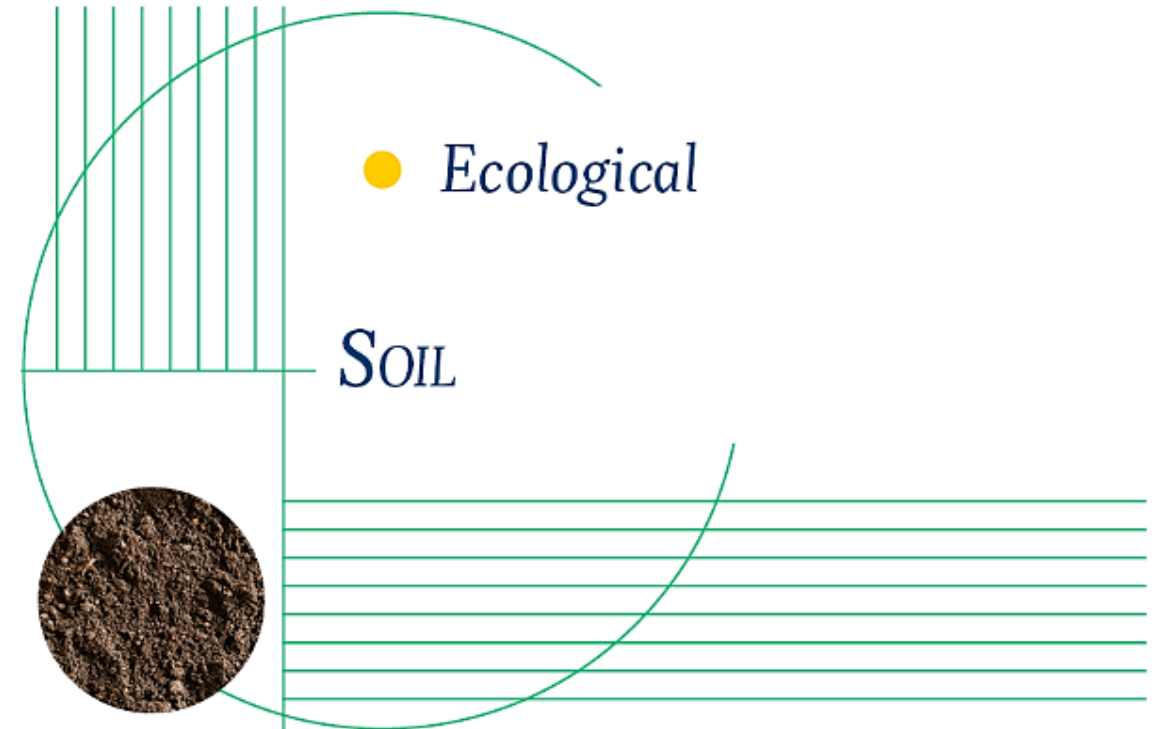


2.1 SAGEGUARD.NET

- Dimension
Environmental integrity
- Theme
Ecological
- Sub Theme
Soil

Ecological

[Sageguard.net](#) > [Environmental integrity](#) > Ecological





2.1 SAGEGUARD.NET

Soil erosion is the process by which soil primary particles and aggregates are removed and lost from their point of origin by wind or water, or even mass wasting from gravitational forces and agricultural activities. In agricultural soils, **compaction** is caused by compression from machinery traffic or stock trampling. **Soil biology** is the study of soil biota and the interactions they have with each other and their environment.



Erosion

- [Erosion | National Geographic](#)
- [Soil erosion | WWF](#)
- [Soil erosion | Defra](#)
- [Soil erosion | BBC](#)

Erosion

- [Erosion | National Geographic](#)
- [Soil erosion | WWF](#)
- [Soil erosion | Defra](#)
- [Soil erosion | BBC](#)
- [Soil erosion | Heritage Land Bank](#)
- [Soil erosion | Ontario Government](#)

Compaction

- [Soil compaction | Farmers Weekly](#)
- [Soil compaction | AHDB Dairy](#)
- [Soil compaction | Soil & Water](#)
- [Soil compaction | Väderstad](#)
- [Soil compaction | University of Wisconsin](#)

Quality

- [Soil quality | Nature Education](#)
- [Soil quality | Soil Association](#)
- [Soil quality | Swarm Hub](#)
- [Soil quality | Science Direct](#)
- [Soil quality | Australian Government](#)





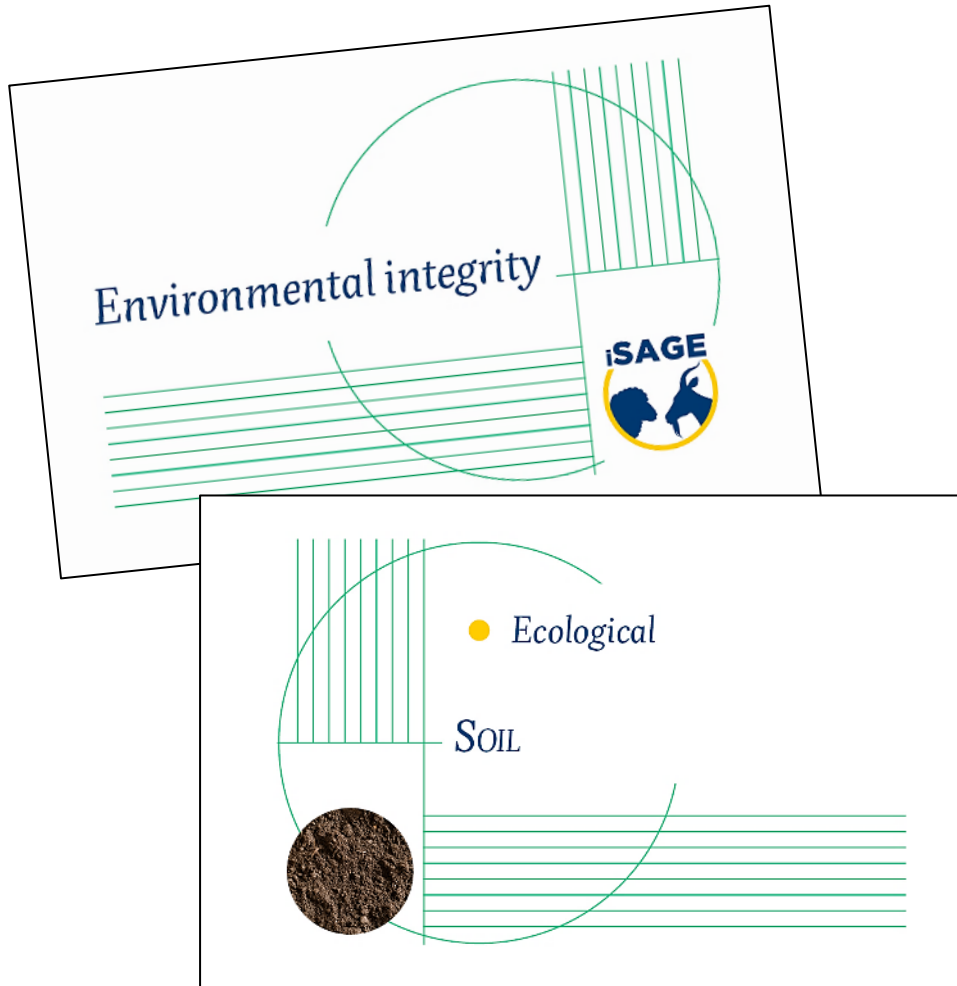
2.2 SAGEGUARD CARDS

- An offline set of cards arranged in a similar manner to Signposts to Sustainability
- Designed to provoke thought and discussion





2.2 SAGEGUARD CARDS



EROSION Are there any signs of erosion on your farmland?	COMPACTION Are there any signs of compaction across your fields?
QUALITY Have you considered <i>soil biology</i> when managing soil quality?	1 sageguard.net



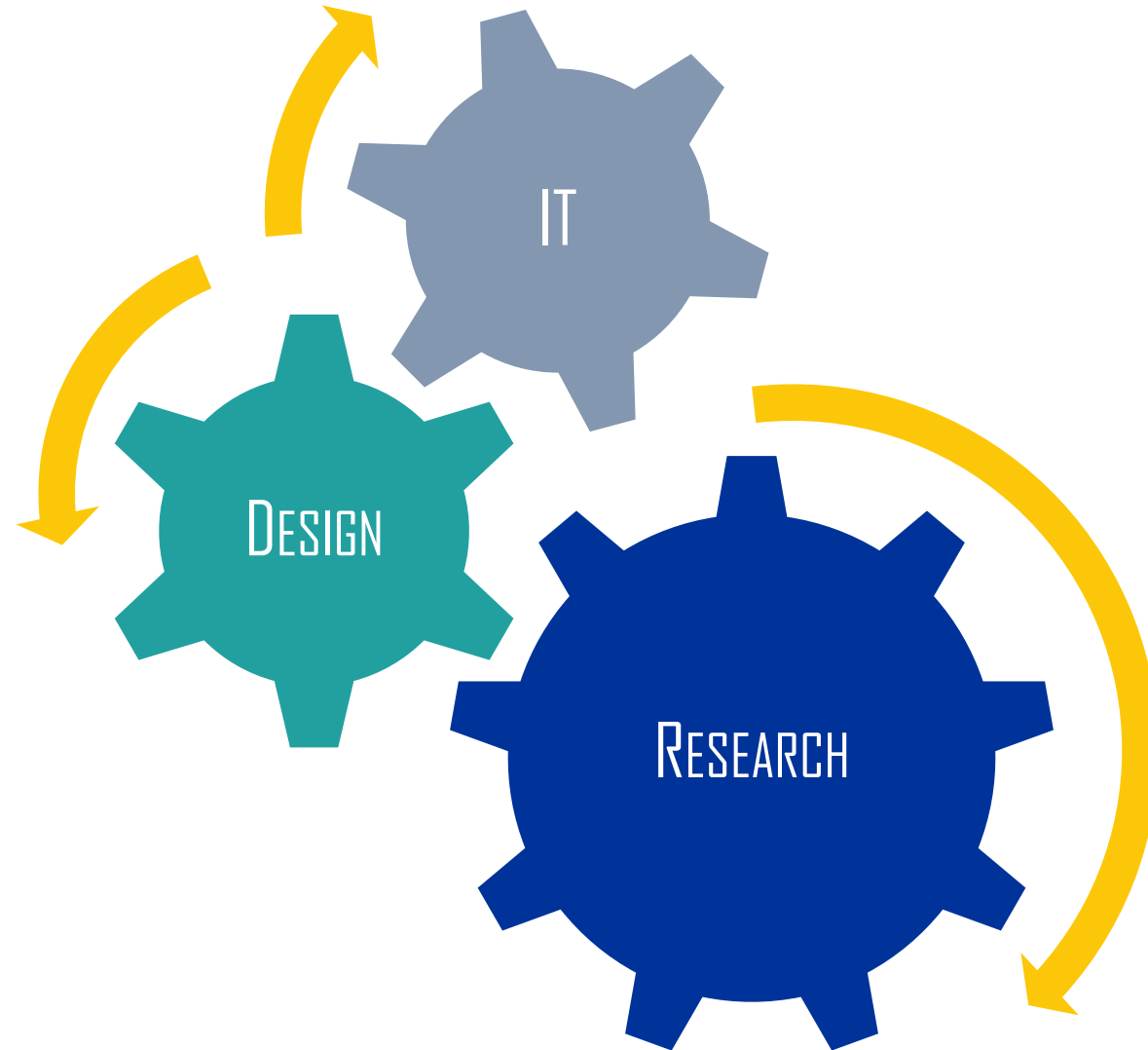
Sustainability on your farm

Each farm has a unique set of circumstances...





Toolbox Team





Design - iSAGE background


What is a toolbox? What our toolbox should be?

Task 1.4: Toolbox development

Partners involved: 30 (ORC - leader), 12 (UNIVPM), 16 (CSIC).

Review the results of tasks 1.2 and 1.3 and use the results to develop **recommendations and advice on tools** for **practical decision-making**. These will be made available **online**. The toolbox will be available in English, Italian, Greek and Spanish. The activities and workshops in this WP involving stakeholders will be utilised to ensure that the toolbox is **user-friendly** and the recommendations are relevant to industry stakeholders. This activity will be coordinated through WP6 to avoid overlap of requests from other WPs and ensure efficient collection of data.

The outcome of this task will be **a tool box of recommendations regarding indicators** (especially for social, economic and animal welfare) **and tools suitable for practical decision-making**. This toolbox will be translated into Spanish, Italian and Greek as well as being available in English.

 = design hints

 = concept hints



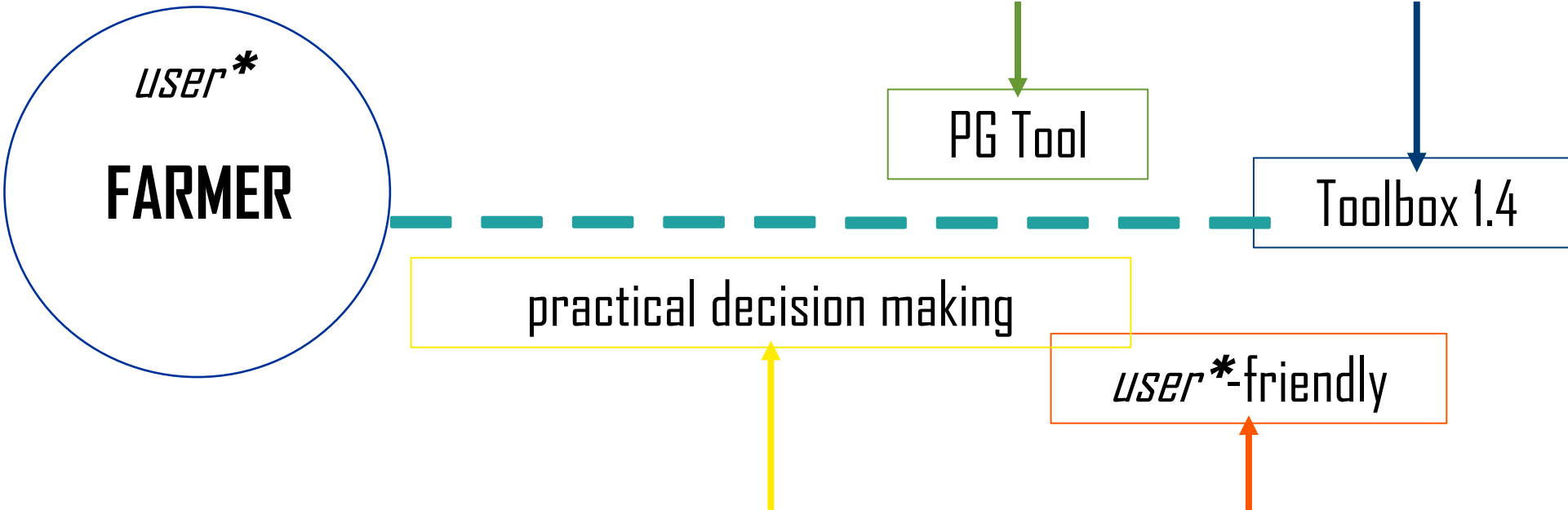
Design - PG Tool background

What is the PG Tool from a design point of view:

- a huge(!) **Excel worksheet**
- a list of indicators (e.g. 'Erosion') **nested** in a list of topics (e.g. 'Soil') nested in a list of dimensions (e.g. 'Environmental')
- mostly **recommendations**, few **direct questions**
some **tips for practical decision-making**

Design - shaping the idea

How to match content with container?



How to match function with functionality (=features)?

Design - address the target

How to match content with container?

recommendations and advice

Toolbox 1.4



CARDS
in a wheel

practical decision making

portability

How to match function with functionality (=features)?



Design - the concept

- **The concept.** If you have a smartphone or a penknife in your pocket, you can have Sageguard Cards as well, maybe as your keyring
- **The meaning.** Not to study, not to just play with, you can use these cards as a starting point towards a sustainable system
- **The symbol.** The playing cards as a game, or the tarot ones as a way to tell a story about someone, are both an ancient symbol and part of everyday life from the Far Eastern countries to the European ones

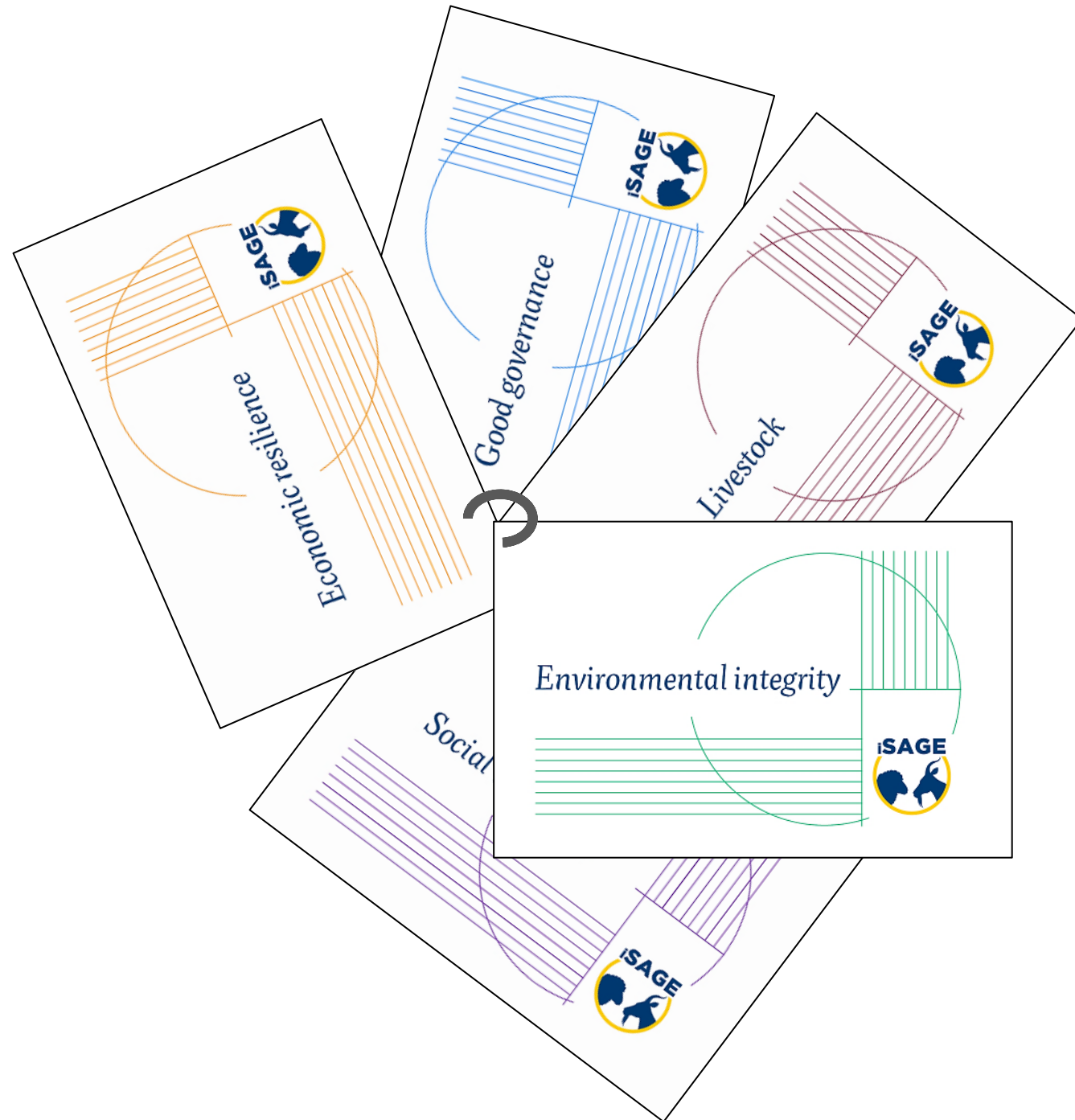


Design - first draft





Design - final version





Design - the graphics

- Each dimension (e.g. 'Livestock') has a **colour** (e.g. 'oxblood').
Each subtheme (e.g. 'Soil') has an **icon** to better visualise it.
Each indicator card (e.g. 'Erosion-Compaction-Quality') has a **number** to better remember it when you want to search for it
- At the end of every dimension there is also a **QR code** that links directly to the iSAGE website. At the bottom of every indicator card there is instead the **link** to the Sageguard.net website
- The **pattern** of lines and circles echoes the paths / furrows and the moon / crop rotation, or the notes (lines) we can jot down to intercept the farm's world closed system (circles)



Design - online adaptation

- The subtheme cards are now single **posts**, everyone within their **categories** (dimension and theme) and **tags** (keywords for search)
- The categories are also **pages** showed in the **breadcrumbs** and in the **navigation menu**
- The questions in the indicator cards are now replaced with the **links**, guidelines towards sustainability
- The **pattern** of Sageguard Cards is used as a button to click on the topic, and the icon of every subtheme is now a full size image displayed alongside the links
- The **responsive design** supports usability, no matter the device



Design - the sustainability

- The CMS (Content Management System) is WordPress, released under a **GNU General Public License (GNU GPL or GPL)**, a widely-used free software license that guarantees end users the freedom to run, study, share, and modify the software
- The hosting server is Bluehost, recommended by WordPress.org since 2005
- The printing press is **FSC** (Forest Stewardship Council) certified



...Do you understand the name?

a starting point towards a sustainable system

recommendations

the moon / crop rotation

an ancient symbol

guidelines towards sustainability

~~SA~~FGE GUARD



Further information

research@organicresearchcentre.com

lisa.a@organicresearchcentre.com

marion.j@organicresearchcentre.com

chiara.t@organicresearchcentre.com



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 679302.

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Thank ewe!

