Sustainability

The PG Tool and its use within iSAGE

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iSAGE

Innovation for Sustainable Sheep and Goat Production in Europe

National Sheep Association

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Sustainability

Bruntland 1987

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

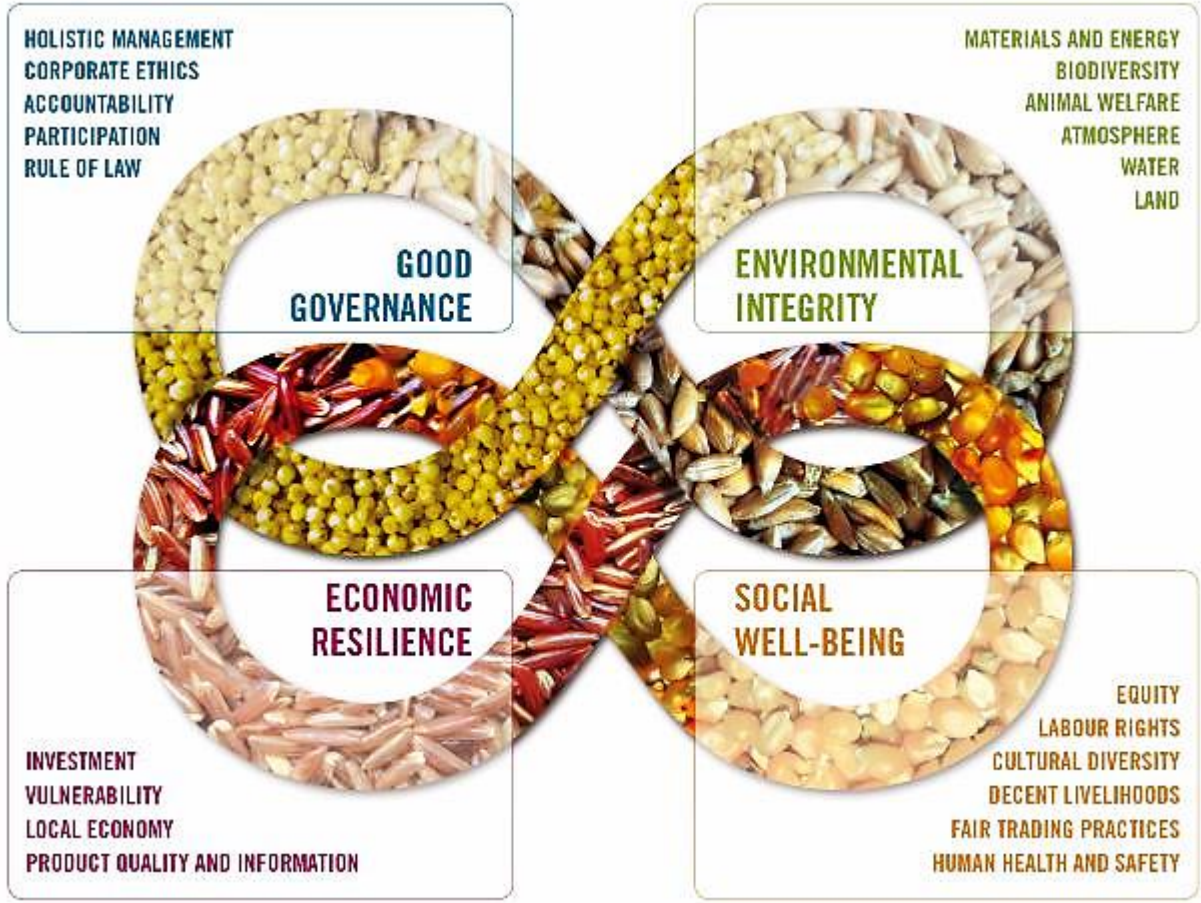
FAO

….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



Sustainability

Overused

- Question what is being claimed
- Question how it was assessed

… the phrase is utterly meaningless because the body responsible for certifying palm oil is made up of some of the most destructive growers and producers …. a henhouse insurance scheme run by foxes…

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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 Public Goods (PG) Tool

- Originally developed in 2011 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
- May be used to justify continued financial support

Use of the PG Tool in recent projects

1	2	3	4	5	6
Natural England: tool development	Conventional pilot (project OF0398)	FP7 Sustainable, Organic and Low Input Dairying project (SOLID)	Waitrose / TSB funded project led by IBERS	Adapted the tool for use in an INTERREG funded project on hedges and woodfuel	Currently being used as part of the UK Research Council funded project SEEGSLIP
pilot on 40 organic farms	32 conventional farms	70 organic and 32 low input dairy farms in 9 countries	8 farms assessed in Wales		60 Pasture for Life certified farms

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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
• 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	• Social Capital	• Farm Business Resilience • Food Security	• Governance

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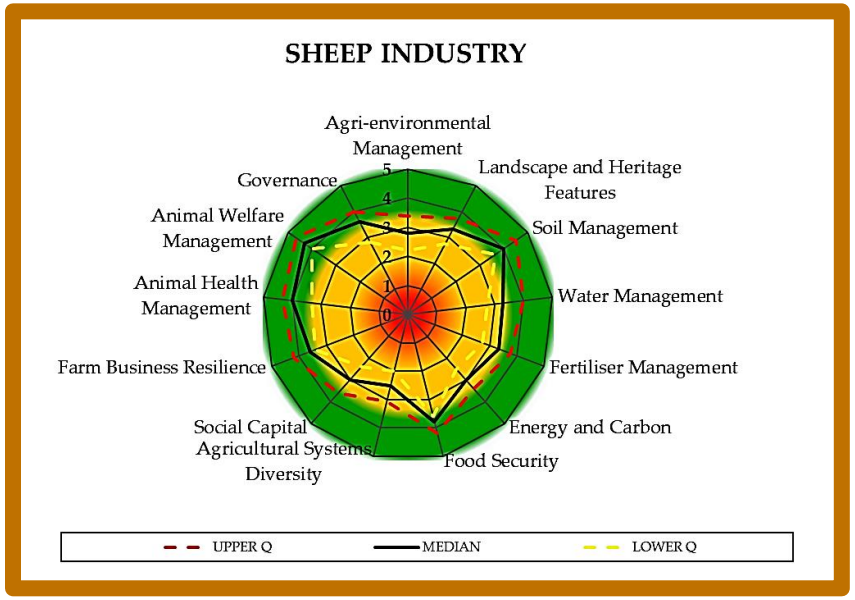
How does it work?



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

PG Tool – conducting the assessment

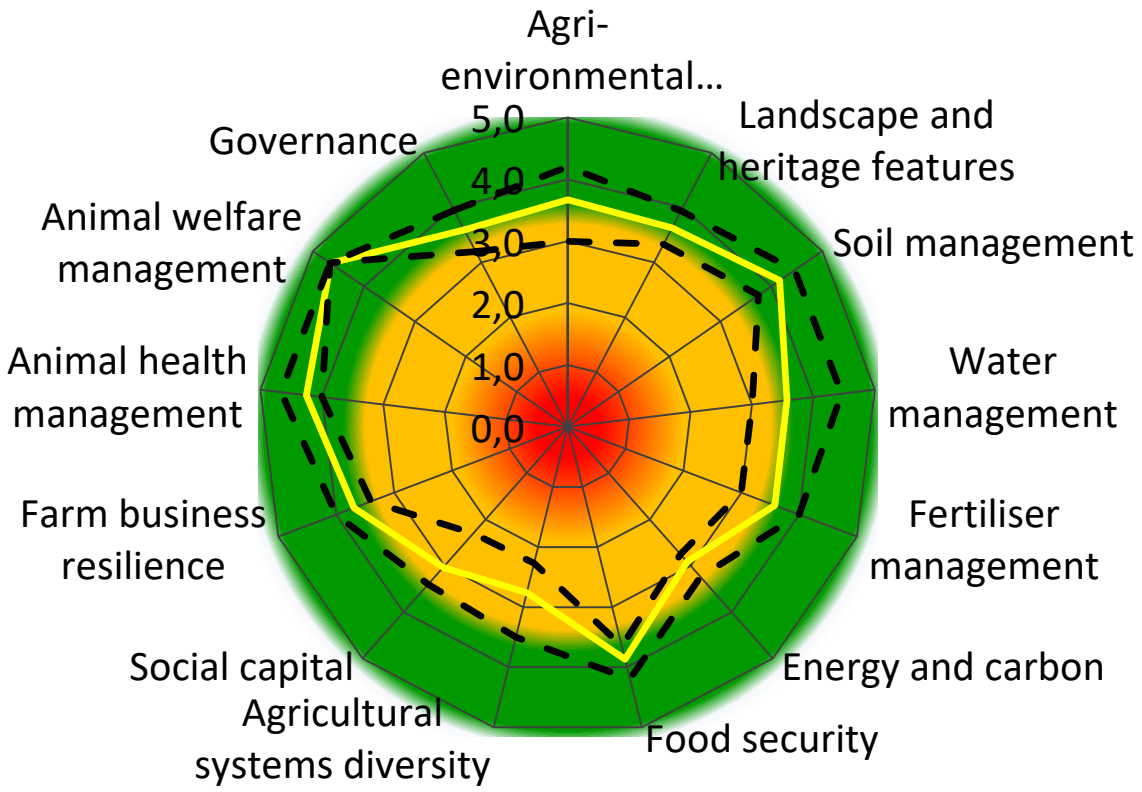
Structure: On farm interview, between an experienced researcher and farmer / client

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



Remember

The PG Tool provides a snapshot of current sustainability performance

Next Steps

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

Regenerative agriculture

- A system of farming principles and practices that increases biodiversity, enriches soils, improves watersheds, and enhances ecosystem services
- Aims to capture carbon in soil and aboveground biomass, reversing current global trends of atmospheric accumulation
- At the same time, it offers increased yields, resilience to climate instability, and higher health and vitality for farming and ranching communities
- The system draws from decades of scientific and applied research by the global communities of organic farming, agroecology, Holistic Management, and agroforestry

http://www.regenerativeagriculturedefinition.com

iSAGE Toolbox

1. Signposts to Sustainability
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**

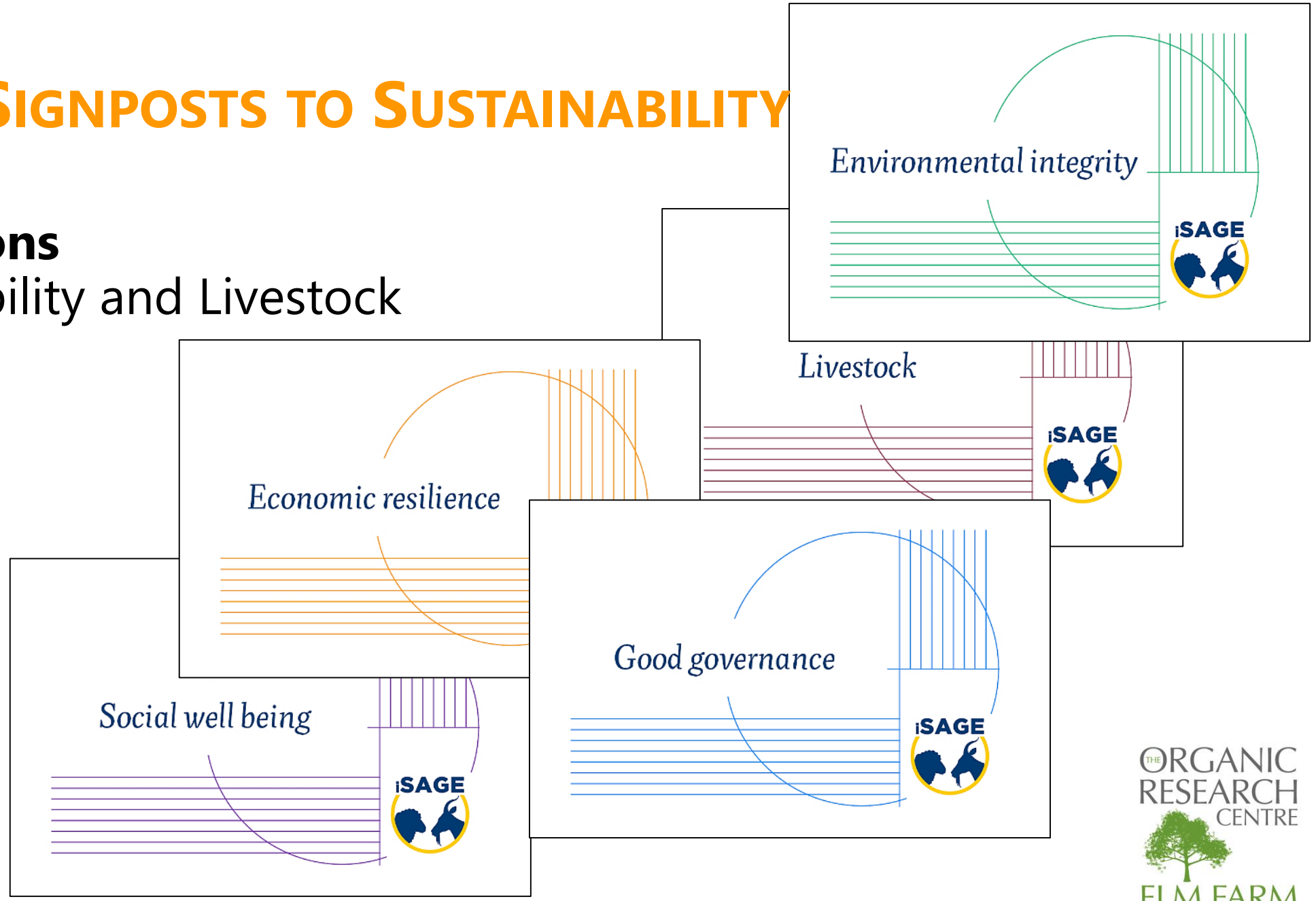
1. Signposts to Sustainability

- 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



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1. Signposts to Sustainability

Each dimension has **3 associated themes**

Livestock

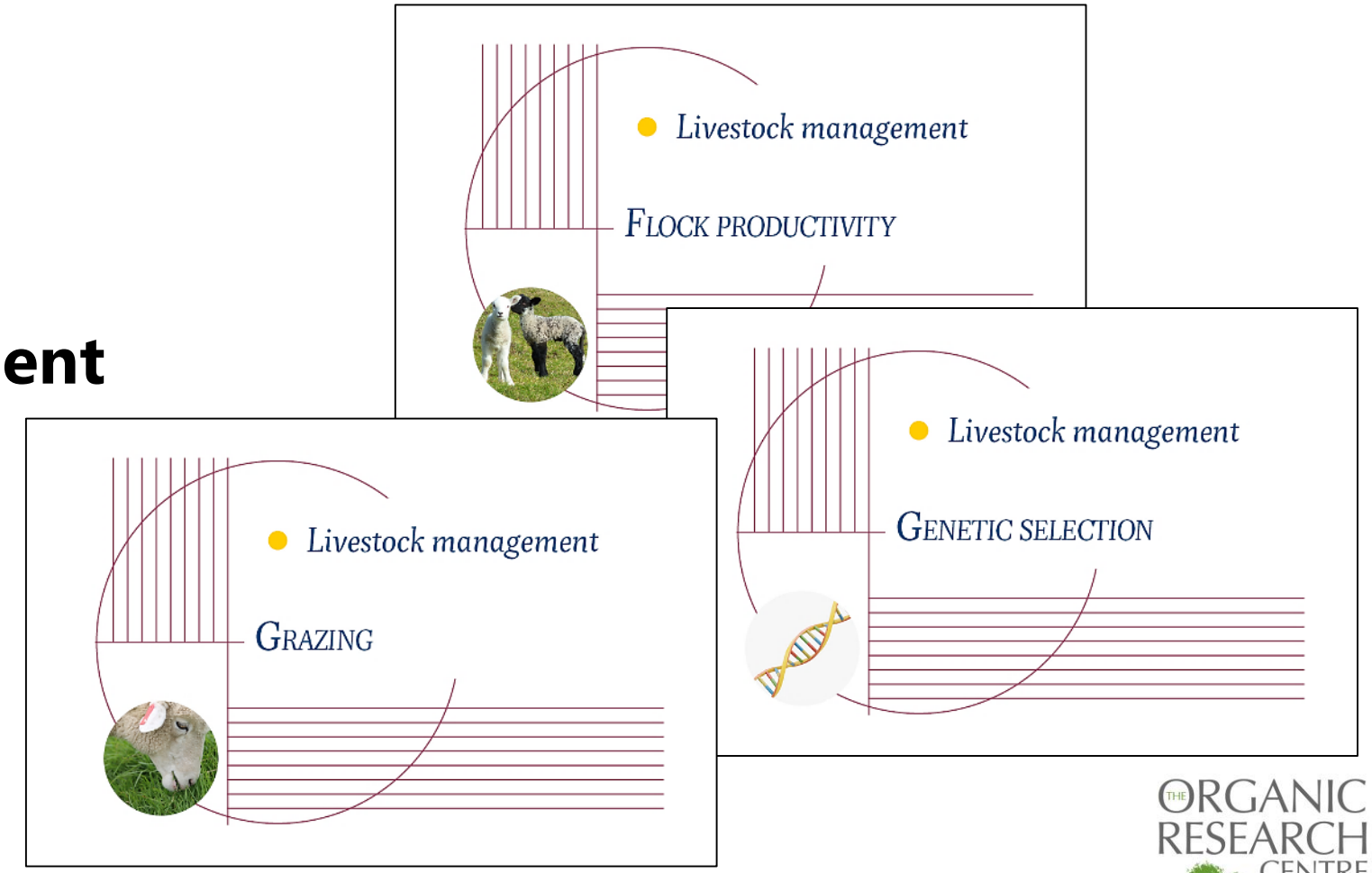
- Animal Health
- Animal Welfare
- Livestock Management

1. Signposts to Sustainability

Each theme has **3 sub themes**

Livestock management

- Flock productivity
- Genetic selection
- Grazing



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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 *soil biology* when managing your soils?
		Water	Use	Do you monitor your farm water use?
			Availability	Do you use *replenishable* water sources, if you are not reliant on mains?
			Water quality	Have you *recently* sampled the water quality of your water sources?
		Atmosphere	Direct pollutants	Have you considered the *direct pollutants* that your farming practice emi
			Indirect pollutants	Have you considered the *indirect pollutants* that your farming practice er
			Management of pollutants	Do you have measures in place to limit atmospheric pollution?

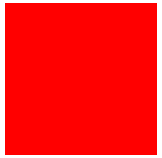
1. SIGNPOSTS TO SUSTAINABILITY – question/answer

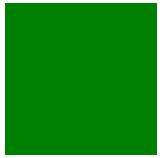
Answer the question associated with the indicator

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

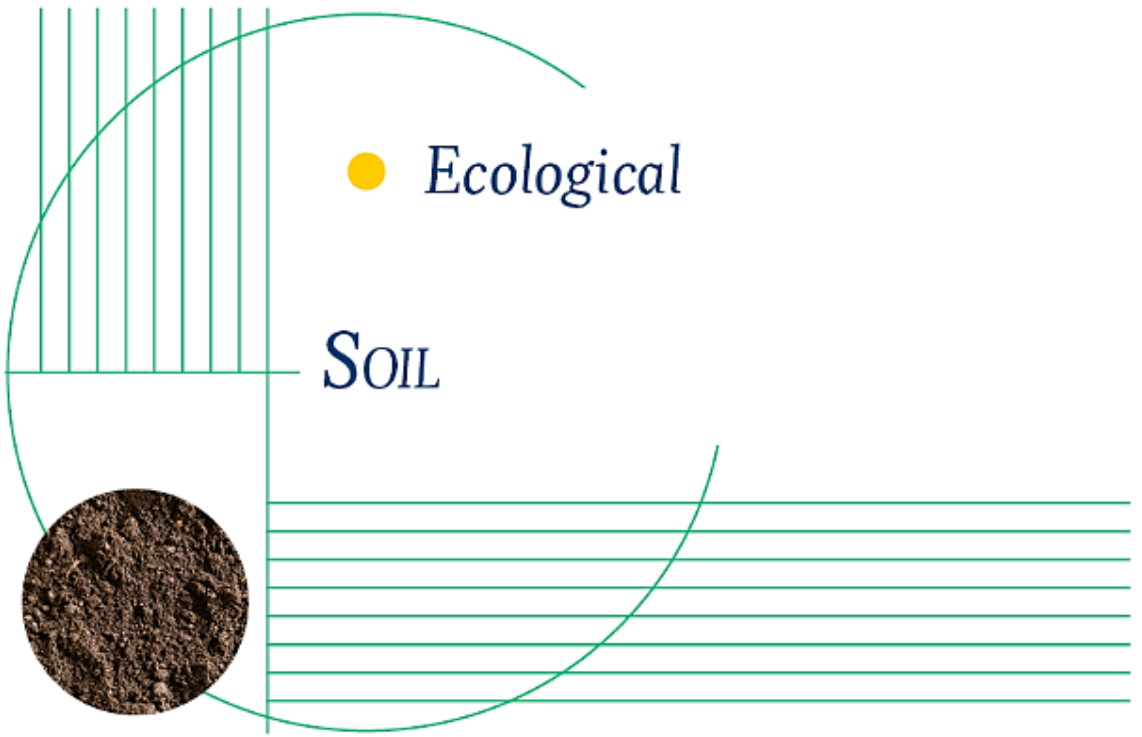
- Home page describes how to use the Toolbox
- Choose where to start:
  - Explore dimensions or themes
  - Find help with an issue

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.

Sageguard.net
farmers' decision-maker

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

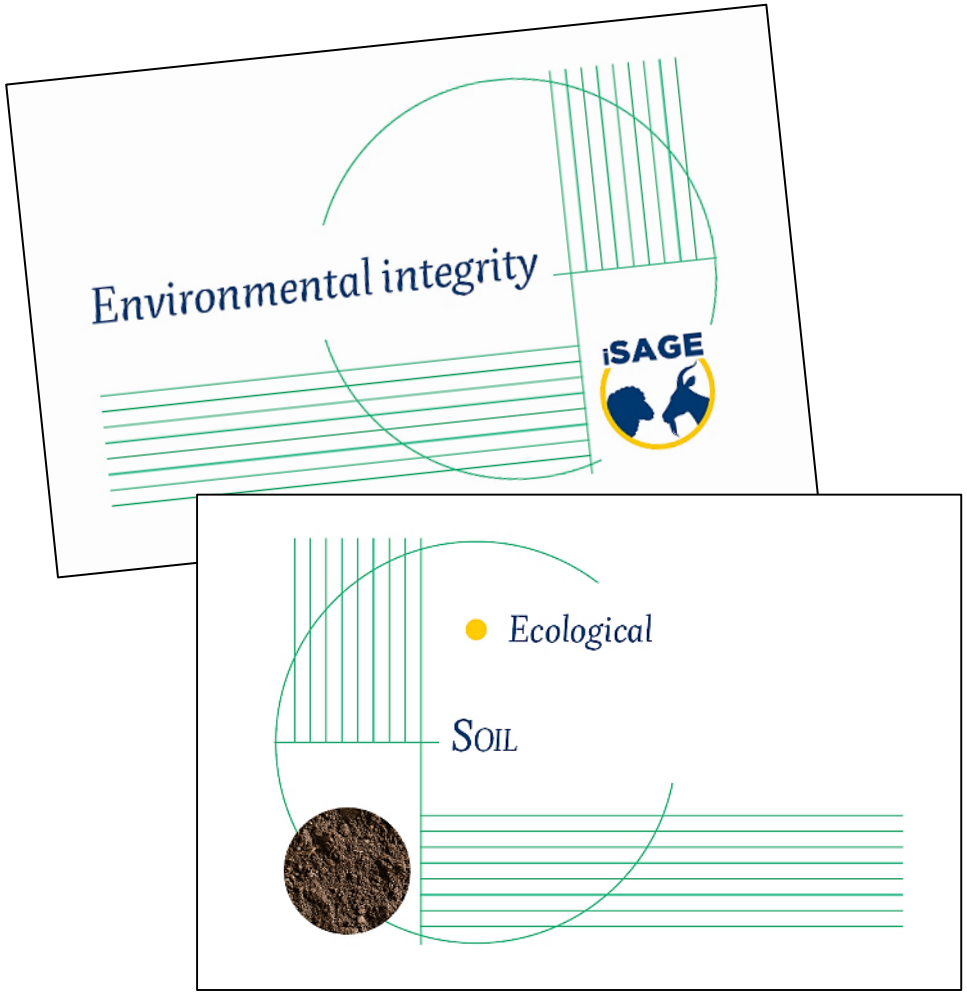
Quality

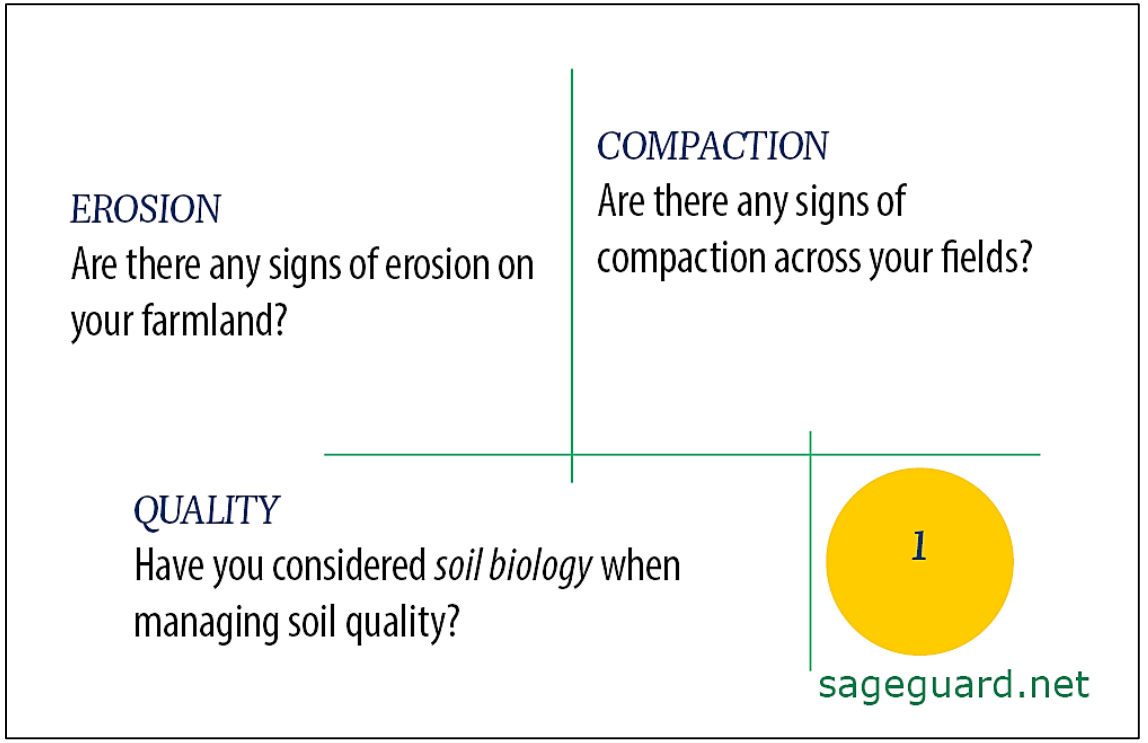
- Soil quality | Nature Education
- Soil quality | Soil Association
- Soil quality | Swarm Hub
- Soil quality | Science Direct
- Soil quality | Australian Government

2.2 Sageguard Cards

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

2.2 SAGEGUARD CARDS





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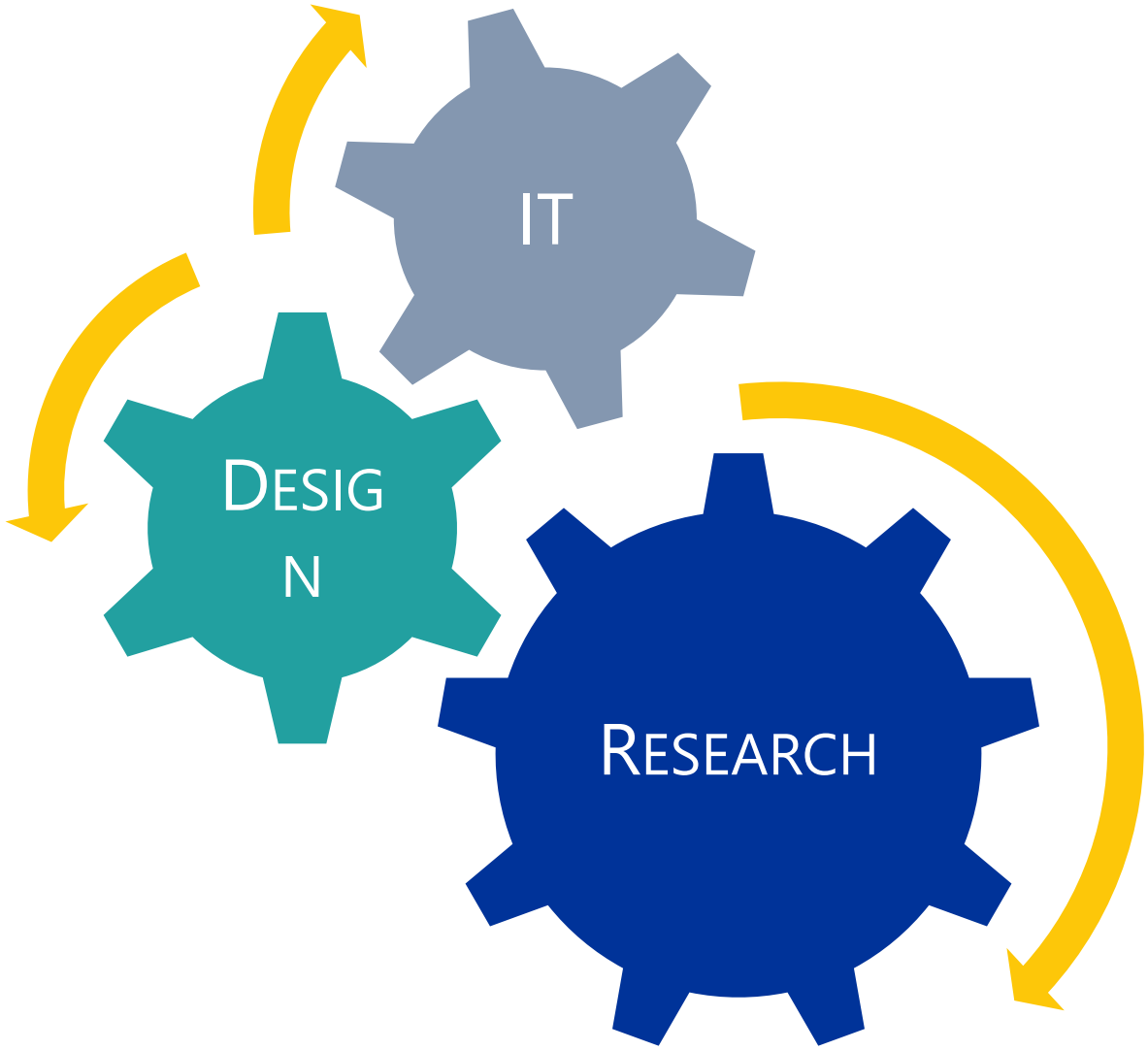
Sustainability on your farm

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

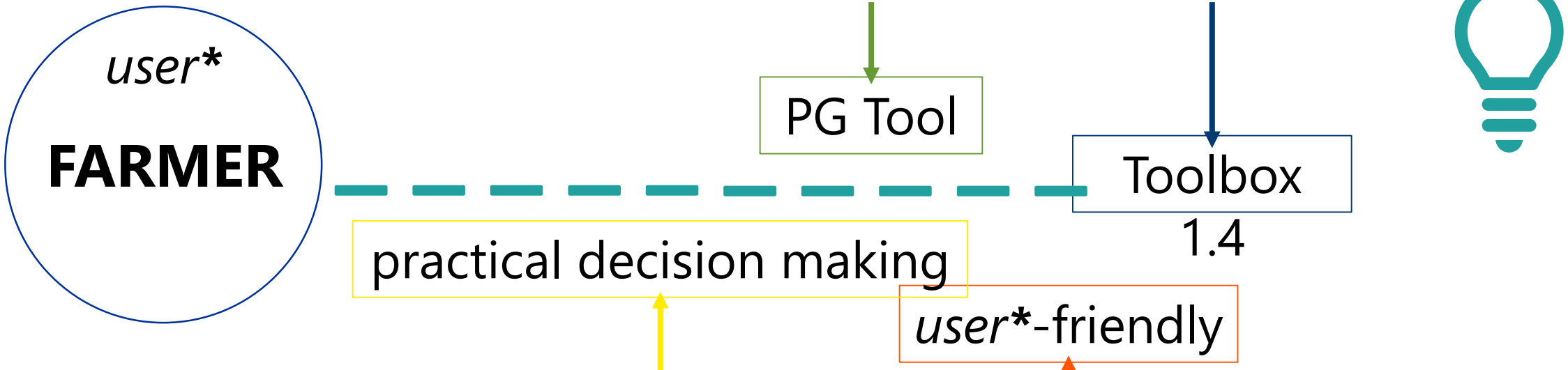
Design - PG Tool background

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

- a huge(!) **Excel file**
- 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**

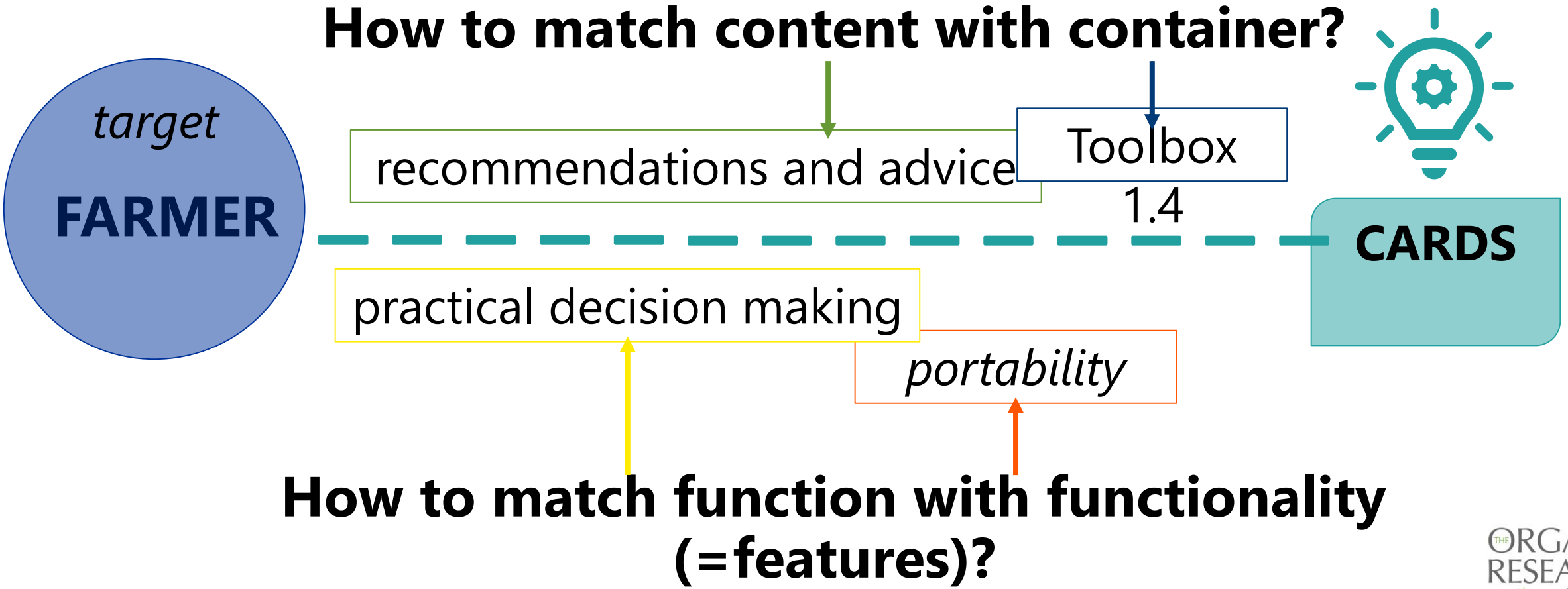
Design - shaping the idea

How to match content with container?



How to match function with functionality (=features)?

Design - address the target



Design - the concept

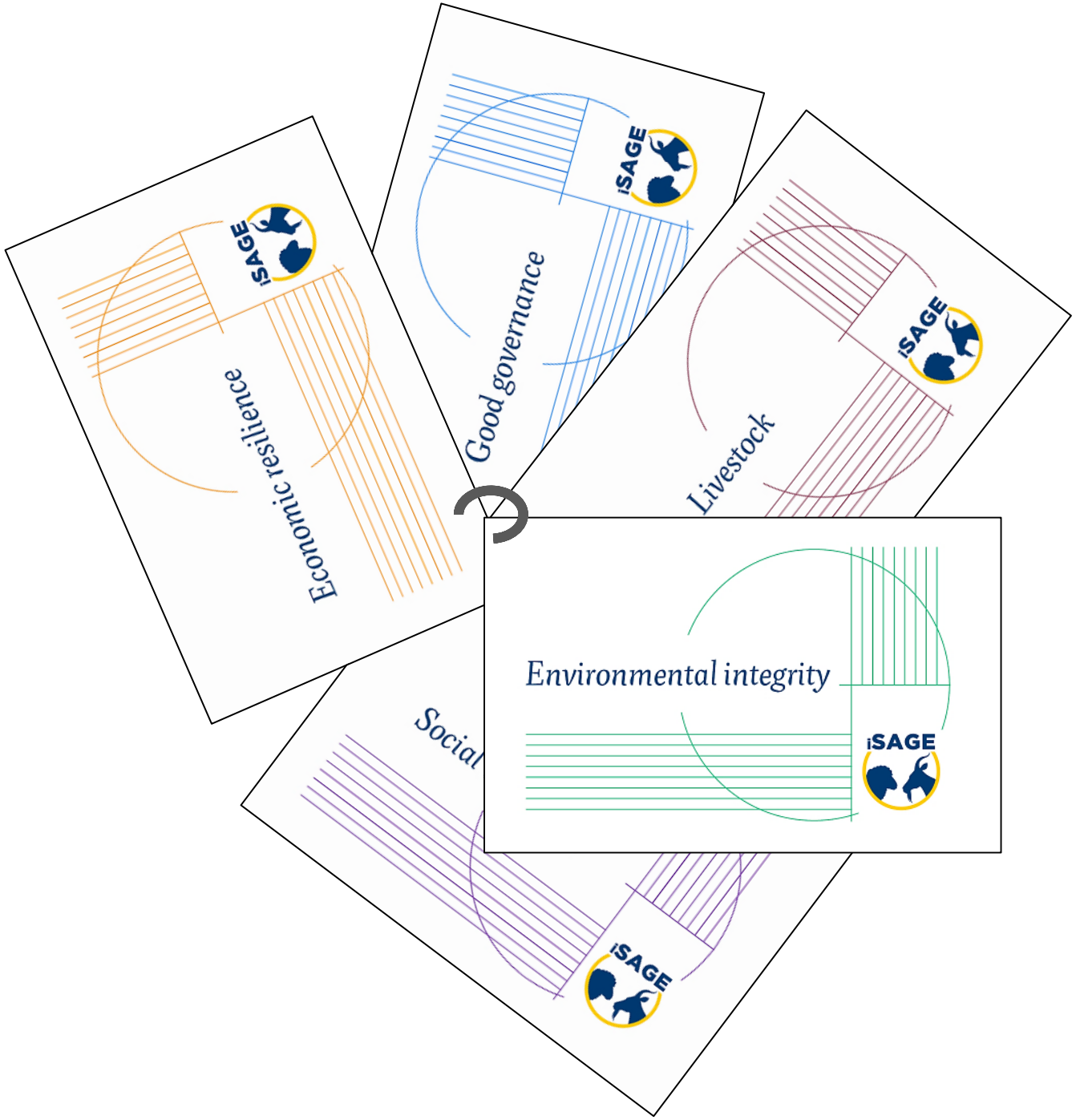
- **The concept.** If you have a smartphone or a penknife in your pocket, you can have Sageguard Cards as well, maybe as your keyring

- **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

Sageguard

WHERE DO YOU THINK THE NAME CAME FROM?

Solution

a starting point towards a sustainable system

recommendations

the moon / crop rotation

an ancient symbol

guidelines towards sustainability

SAGEGUARD

Further information

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Thank ewe!