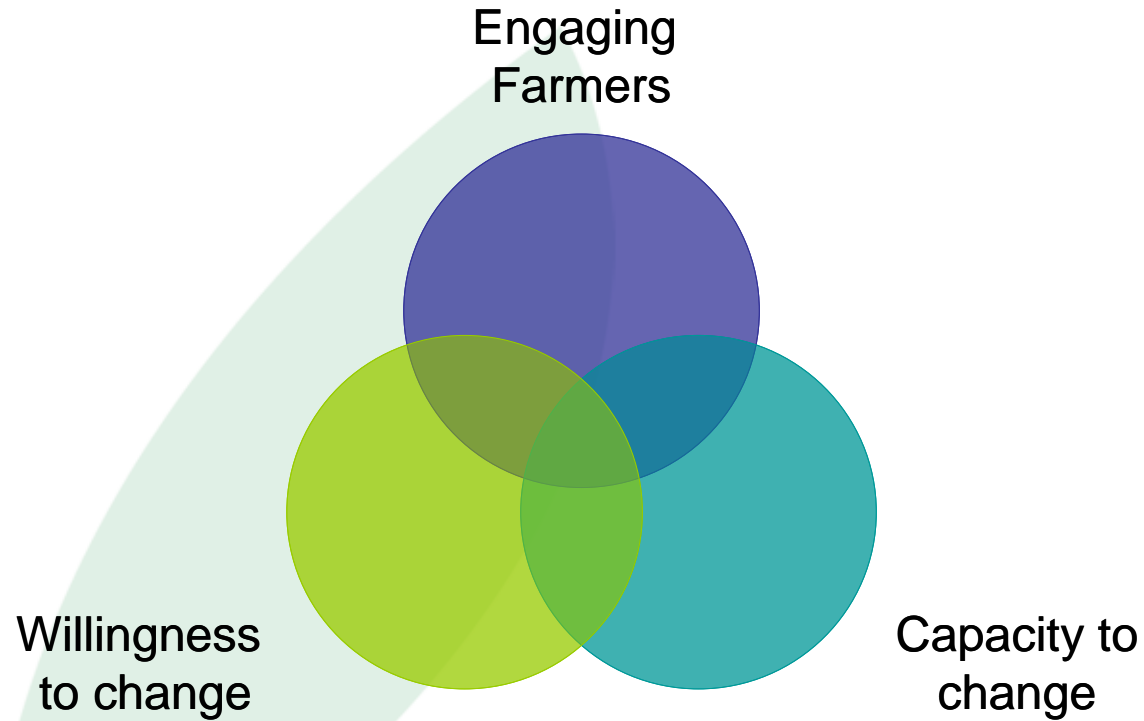


Socio-economic and behavioral barriers to soil carbon management

Dr Julie Ingram
Countryside & Community Research Institute, UK

Understanding farmer behaviour



Soil carbon management: challenges & opportunities

Farm and farmer heterogeneity

Soil heterogeneity

Short term farm business v. long term benefits

Win-win practices

Farmer knowledge

Stewardship ethos

Growing awareness





SmartSOIL

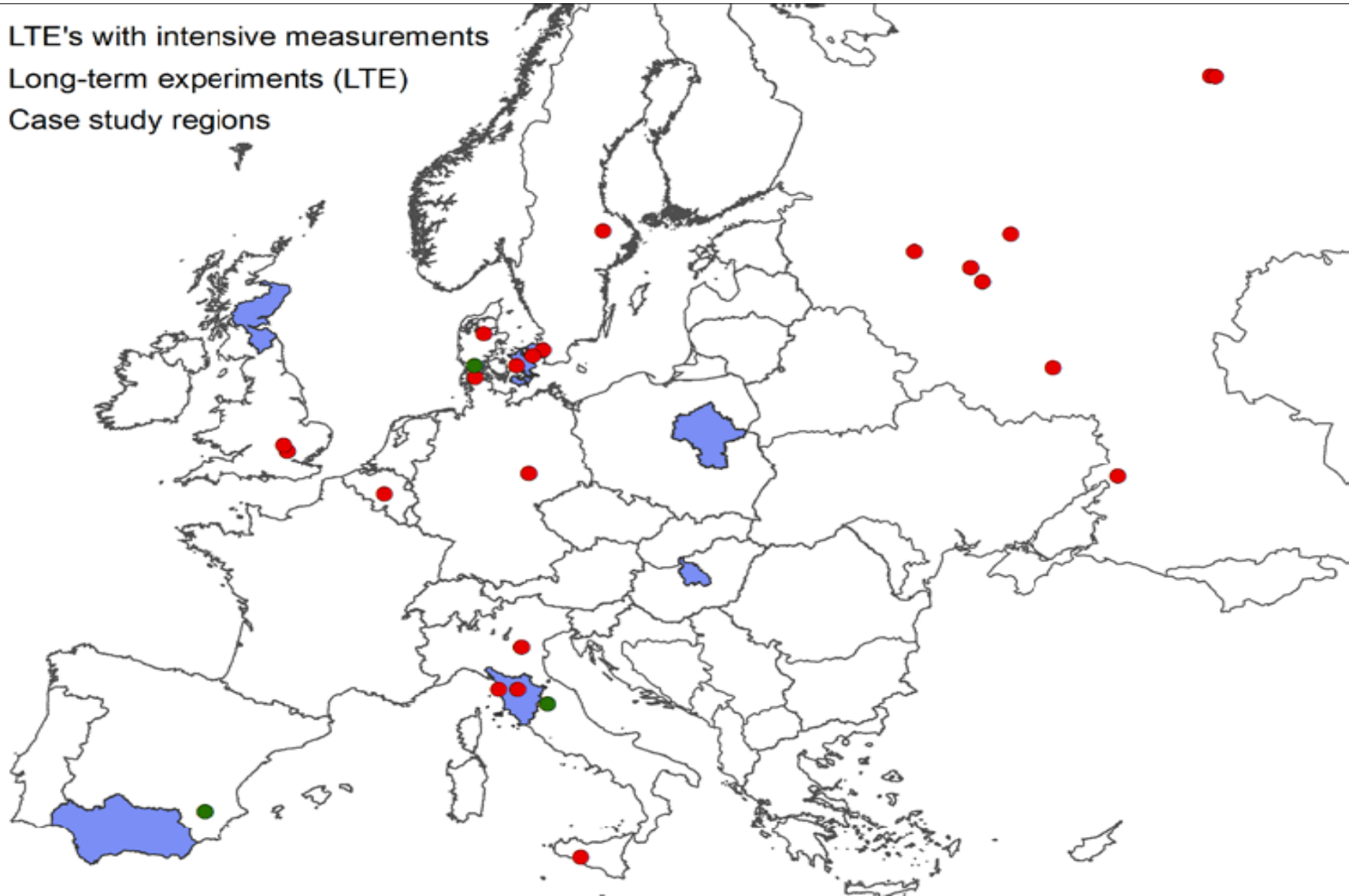
Sustainable farm Management Aimed at Reducing Threats to SOILs under climate change

Aims:

To identify farming systems and agronomic practices that result in an **optimized balance between crop productivity and soil carbon sequestration**

Consultation: advisors & policy makers

- LTE's with intensive measurements
- Long-term experiments (LTE)
- Case study regions



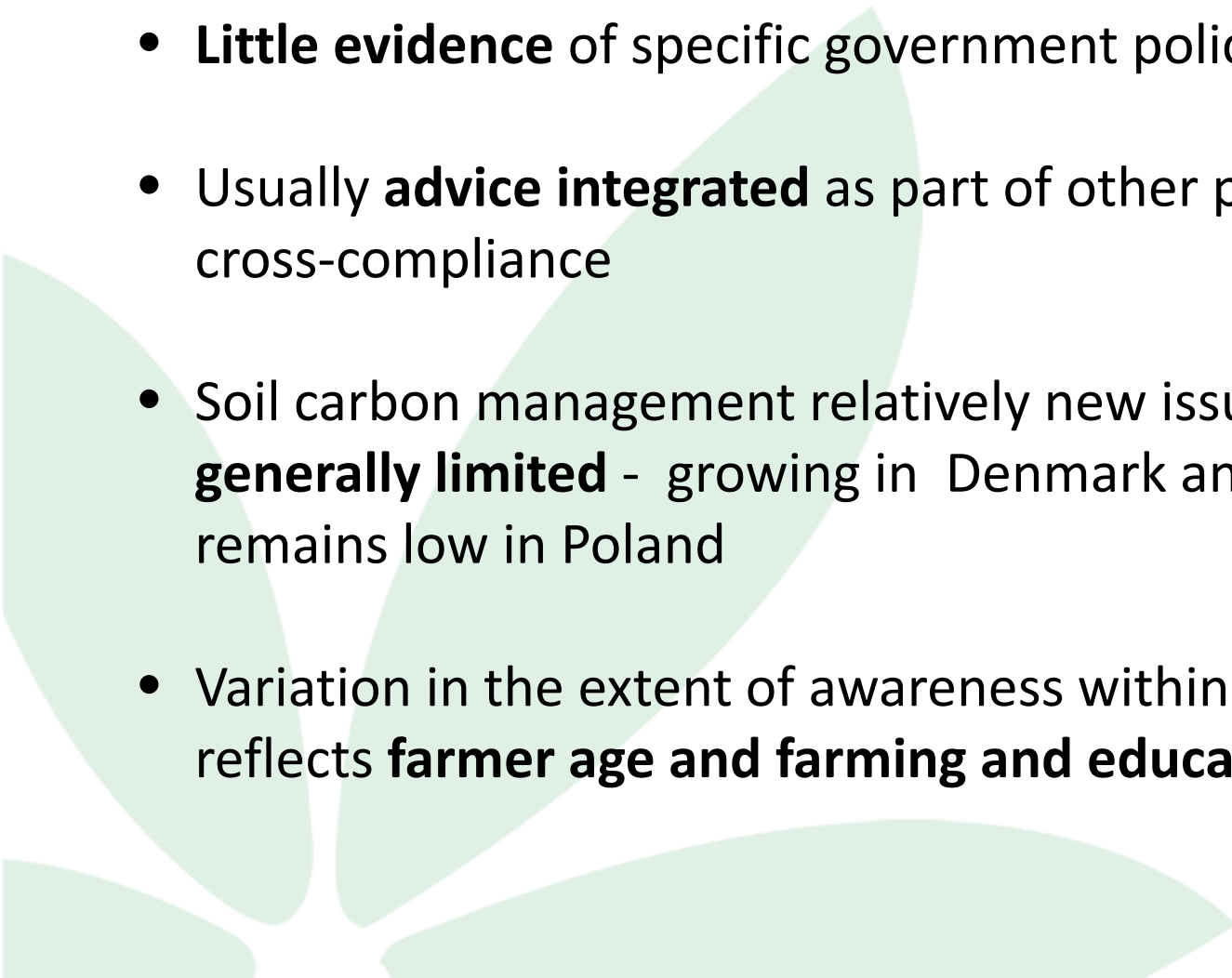
Scotland, Denmark, Poland, Hungary, Italy, Spain

Consultation: Barriers & incentives

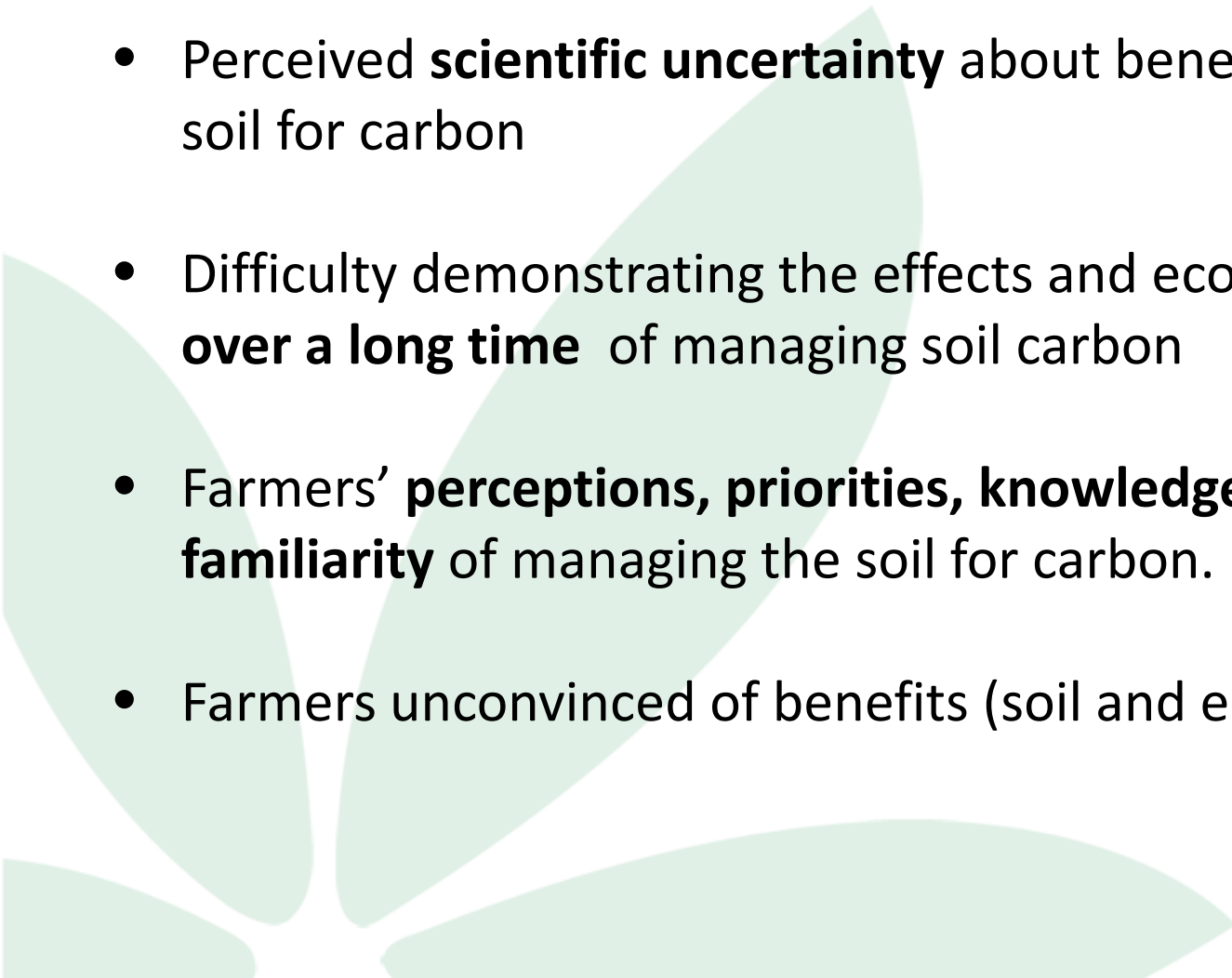
- Cover crops
- Reduced tillage
- Crop rotations
- Residue management
- Manure and fertiliser management



Managing the soil for carbon: promotion and awareness

- **Little evidence** of specific government policies
 - Usually **advice integrated** as part of other programmes, e.g cross-compliance
 - Soil carbon management relatively new issue so **awareness generally limited** - growing in Denmark and Scotland but remains low in Poland
 - Variation in the extent of awareness within countries - reflects **farmer age and farming and educational background**
- 
- A decorative graphic of several overlapping, light green leaves is positioned on the left side of the slide, extending from the top to the bottom.

Managing the soil for carbon: barriers

- Perceived **scientific uncertainty** about benefits of managing soil for carbon
 - Difficulty demonstrating the effects and economic benefits **over a long time** of managing soil carbon
 - Farmers' **perceptions, priorities, knowledge and lack of familiarity** of managing the soil for carbon.
 - Farmers unconvinced of benefits (soil and economic)
- 
- A decorative graphic of several overlapping green leaves is positioned on the left side of the slide, extending from the bottom towards the top.

Managing the soil for carbon: Incentives

- **Financial incentives**
- Messages - use **simple language and quantify impact**
- Evidence of benefits – impact on **productivity and profitability**
- **Integrating advice** into existing advice channels , policies and regulations
- Real life **case study** examples





Soil organic matter

Organic matter is of fundamental importance to soil structure and ultimately to crop production. But research shows that in many soils levels are dropping, thanks to climate, land use change and inappropriate management.

This guide will provide growers with information on what soil organic matter is, and how to manage it more effectively through agronomic practices and soil amendments, such as compost, farm yard manure and bio-solids.

Read our in depth guide

Are you doing enough to manage the levels of organic matter in your soils? Read our in depth guide to find out more about:

- Why organic matter is crucial to health of soil
- Managing organic matter can improve your bottom line
- How min-till, manure and compost help soil health

[Read the guide](#)

Case studies:

Compost use: Vitacress



Compost trials by salad producer Vitacress have shown the potential to increase yields of spinach and rocket crops by 10%.

Strip tillage and compost: Simon Bayliss, Staffordshire



Tight, compacted soils were the catalyst for Simon Bayliss to start taking soil organic matter more seriously.

Straw for muck trading: Gordon Rennie, Fife



Keeping soil in good health is fundamental to growing successful, high-yielding crops.





Conclusions

- Understand heterogeneity
- Understand motivations and constraints
- Communicate- credibility & relevance
- Support & facilitate-upskill

