Monitoring grassland biodiversity using farmer-derived data: opportunities and challenges

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Why involve farmers in monitoring grassland biodiversity?

- Citizen science approaches useful for increased data coverage and public engagement
- Farmers have a unique role – their decisions influence grassland biodiversity
- Grasslands are unique habitats – biodiversity depends on farmer management
- Can farmer-derived biodiversity data can support monitoring of public goods in European grasslands?

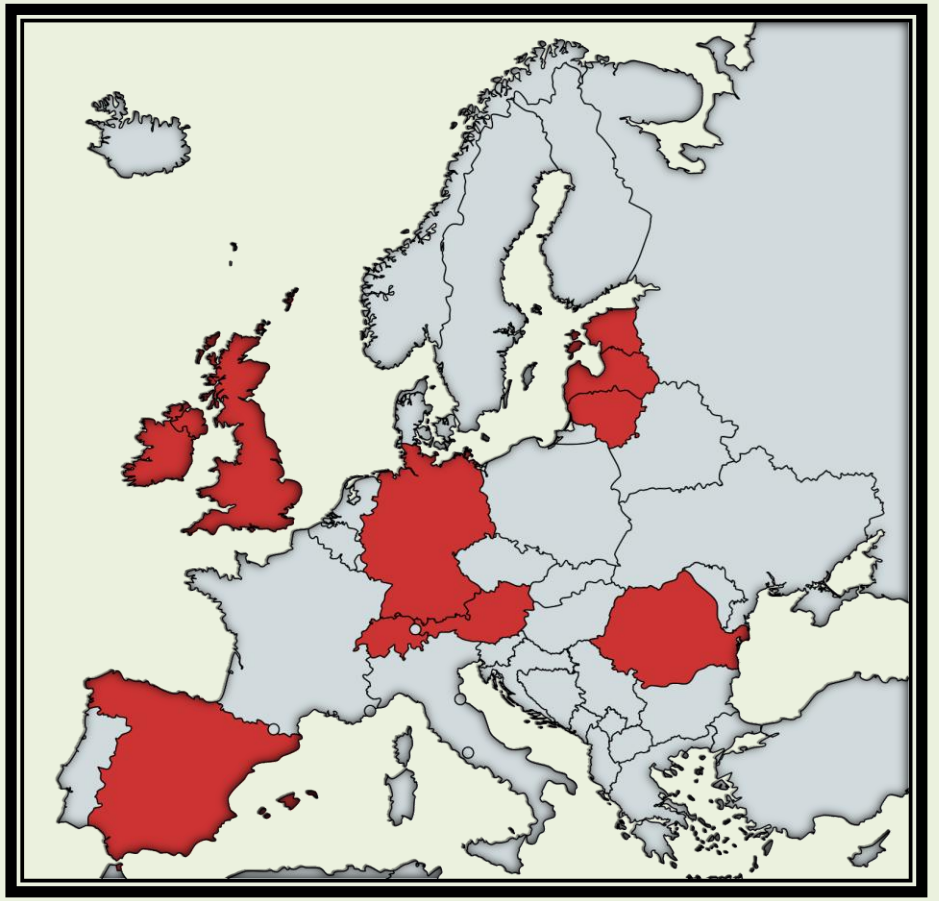
Methods

Lessons learnt from previous farmer biodiversity recording schemes

- Review of case study schemes (n=14)
- Interviews with stakeholders (n=8)

Development of a **simple farmer recording scheme**

- Tested in 3 countries: UK, Sweden, Romania
- Based on:
  - Plant indicators – positive and negative
  - Number of non-grass plant species in quadrats
  - Grass/legume/forb coverage
  - Practice-based indicators



Countries included in the case study review

Leucanthemum vulgare

Cirsium arvense

Plants from a quadrat in Romania

Results

What can we learn from previous farmer recording schemes?

1. Incentives and motivation

Financial

e.g. results-based payments, natural capital markets

Interest in biodiversity

"Some farmers are just curious and they want to learn more"

"The main outcome was that the farmers really change their perception on the grasslands and learned a lot"

Results

What can we learn from previous farmer recording schemes?

2. Barriers to participation

Time

“Data collection has to be in May and June. And it's also then when you have to do all the other works on the farm”

Technical skills

“Most difficult for them is to understand the species”

Results

What can we learn from previous farmer recording schemes?

3. Technology

Overcome skills barrier

*"quite **a lot of farmers are really excited** being like 'oh, we didn't know we had that plant here'"*

Data quality and verification

*"all of the data points, geotagged, time stamped, and we can **validate with quite a high level of precision"***

But is it accessible?

*"Some people are less familiar with using a mobile app and still **prefer traditional paper**"*

*"We've developed an app that is **intuitive enough even for farmers with limited digital literacy"***

Results

What can we learn from previous farmer recording schemes?

4. Simplicity

*"the data collection process is built to be **really, really intuitive** and requires **minimum training** and that's a fundamental design principle for us…**scalability is essential"***

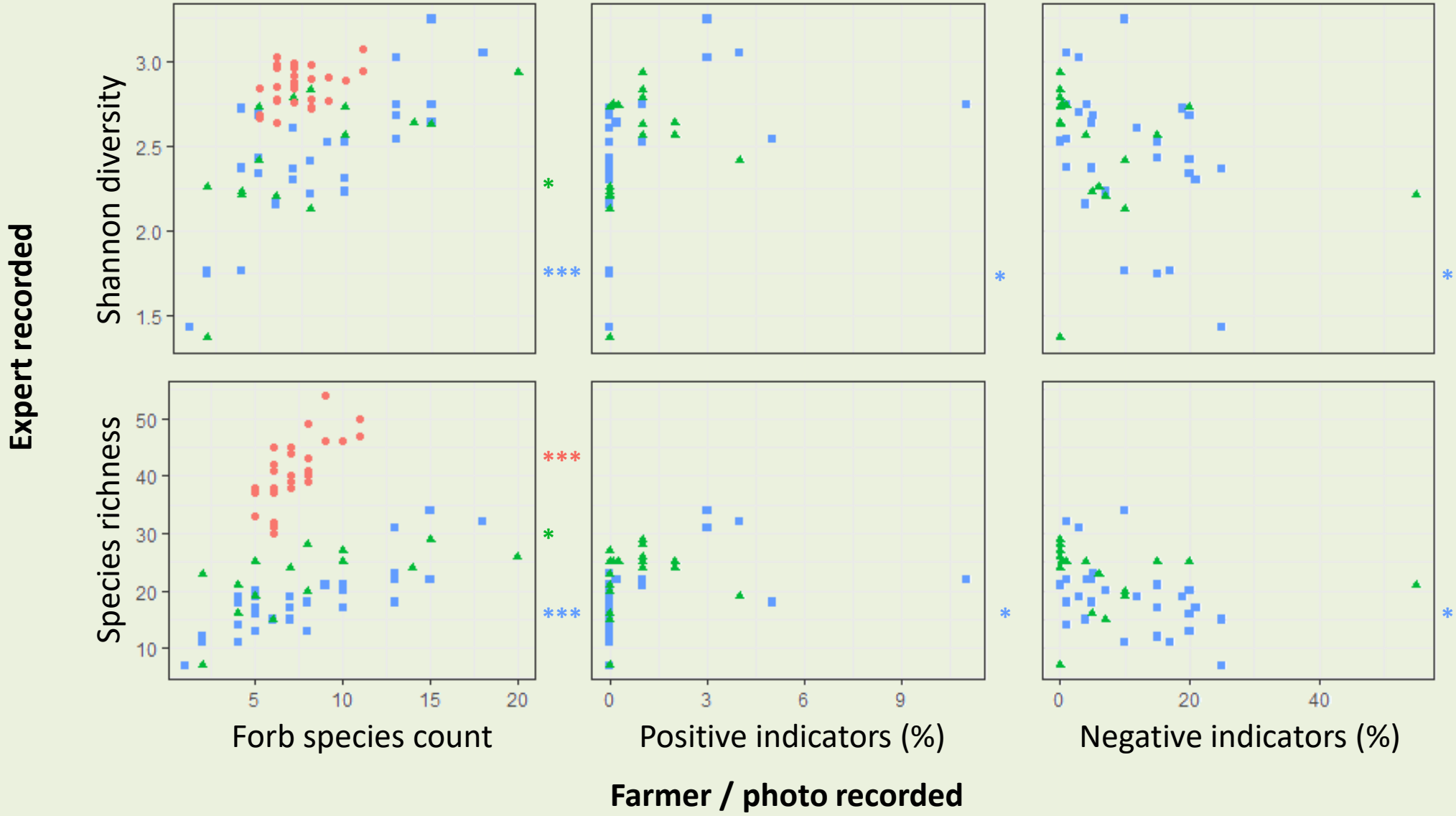
Avoid complexity

"I think our field form is super, super crazy complicated"

Embrace simplicity

*"**less is more**… to do it in a most simple way for ordinary people, and this is the biggest challenge"*

Results:
Testing a simple recording scheme



Conclusions: can farmers monitor grassland biodiversity?

- **Motivation** is key – financial, biodiversity, or both
- **Barriers** – time and technical skills
- **Technology** can help – but only if simple and intuitive
- **Simplicity** is essential – less is more
- Simple count of non-grass plant species is a **good proxy** for plant diversity
- **Next steps**: test practice-based indicators (PG Tool sustainability assessment)

  deliverable report and journal article

Thank you

Any questions?

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