Appraising the socio-ecological role of pasture-fed beef - as part of the UK food system and in the context of a warming planet

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Sustainable Food Trust
NATURAL ENGLAND

Scientific reports that have been influential in debates and gained media attention in 2019

Food in the Anthropocene: the EAT–*Lancet* Commission on healthy diets from sustainable food systems

Walter Willett, Johan Rockström, Brent Loken, Marco Springmann, Tim Lang, Sonja Vermeulen, Tara Garnett, David Tilman, Wood, Malin Jonell, Michael Clark, Line J Gordon, Jessica Fanzo, Corinna Hawkes, Rami Zurayk, Juan A Rivera, Wim De Vries, Ashkan Afshin, Abhishek Chaudhary, Marie Herrero, Rina Agustina, Francesco Branca, Anna Lartey, Shenggen Fan, Bess Victoria Crona, Max Troell, Therese Lindahl, Sudhvir Singh, Sarah E Cornell, K Srinath Reddy, Sunita Narain, Sania Nishtar

Executive summary

Food systems have the potential to nurture human health and support environmental sustainability; however, they

we found with a high level of cer
of the reference dietary pattern w
benefits, including a large reduc

Proposed a "universal healthy consisting largely of vegetabl grains, legumes, nuts, and un low to moderate amount of s and **no or a low quantity of** processed meat, added sugar and starchy vegetables.

DEBATE

'Livestock are not the global warming enemy'

ffinlo Costain argues that the focus on ruminant methane in causing global warming is ill-informed and in fact restoration of grass-based systems can result in net zero emissions from UK agriculture by 2030.

FARMERS own and manage more than 70 per cent of land in the UK. Unfortunately, many of them feel marginalised and threatened by the current focus on ruminant methane in causing global warming. However, this focus is ill-informed and runs the risk of alienating precisely the constituency we must inspire in the race to mitigate and adapt to climate change, restore biodiversity, and increase our food security. It could also drive dangerously unsustainable land use and the further intensification of animal and arable agriculture.

New science, by a team of researchers for the Intergovernmental Panel on Climate Change (IPCC), based at the University of Oxford, categorically shows that methane

Grass-based cattle and sheep systems can be climate neutral by 2030, and help to restore biodiversity and soil health

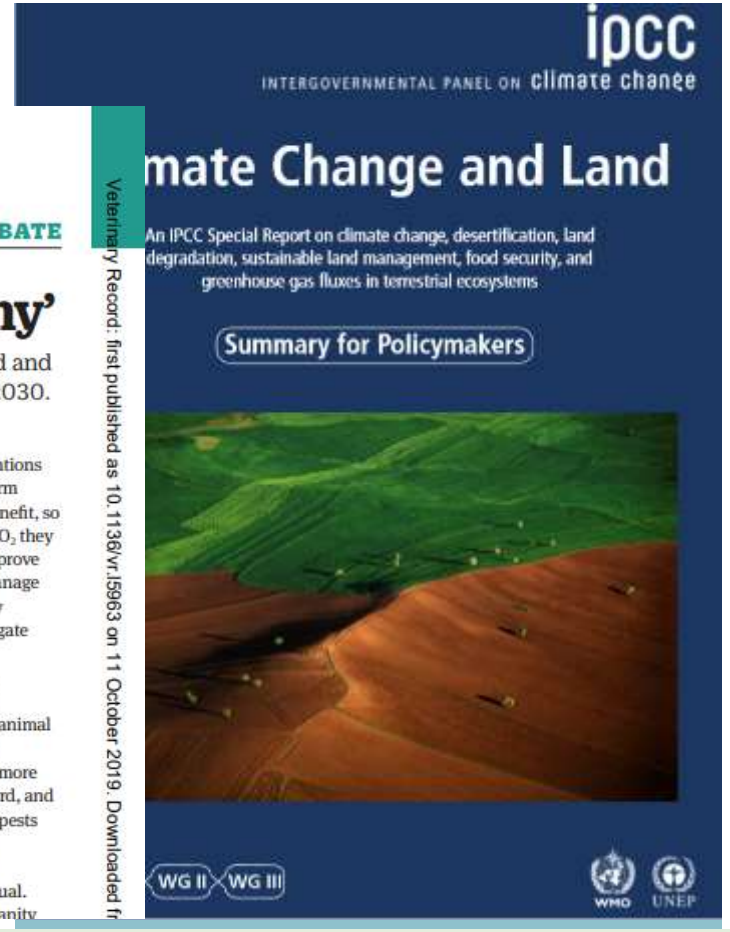
While carbon dioxide (CO_2) and nitrous oxide (N_2O) are active in our atmosphere for many generations, methane is broken down in about a decade.[4] This means that the methane emissions of a herd of 100 cows today are simply replacing the emissions that were first produced when that herd was established by a previous generation of farmers. There was an initial pulse of warming when the herd was established, but there is no ongoing warming from that herd.

Under the new, accurate metric, which has been termed GWP*, total UK agricultural emissions fell from 45.6 million tonnes of CO_2 equivalent ($MtCO_2e$) in 2016 to just 9.5 $MtCO_2e$*. Of these emissions, warming from CO_2 and N_2O are the same as previously

rich grasslands. These interventions should be integrated within farm systems to offer the greatest benefit, so that in addition to absorbing CO_2 they help to restore biodiversity, improve soil health, and restore and manage water flows. Renewable energy generation can be used to mitigate emissions even further.

Additional flora for climate mitigation will also create the potential for greatly improved animal health and welfare, with more shelter from extreme weather, more nutritional diversity in the sward, and better natural management of pests and diseases.

For clarity, GWP* is not a prescription for business as usual. As the population grows, humanity



"**The way we produce our food matters**; dietary choices can help reduce emissions and pressure on land" (IPCC 2019)

Now a debate on the WAY we produce beef:

The Telegraph News Politics Sport Business Money Opinion Tech Life & Styl

Family Women Men Fashion Food & Drink Cookbook Health & Fitness Beauty Tel

Lifestyle · Food and drink · Food and drink features

Forget free-range: is grass-fed and pasture-raised better for animals, industry, and us?

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Wakanui Feedlot Drone screenshot from SAFE video. Photo / Supplied

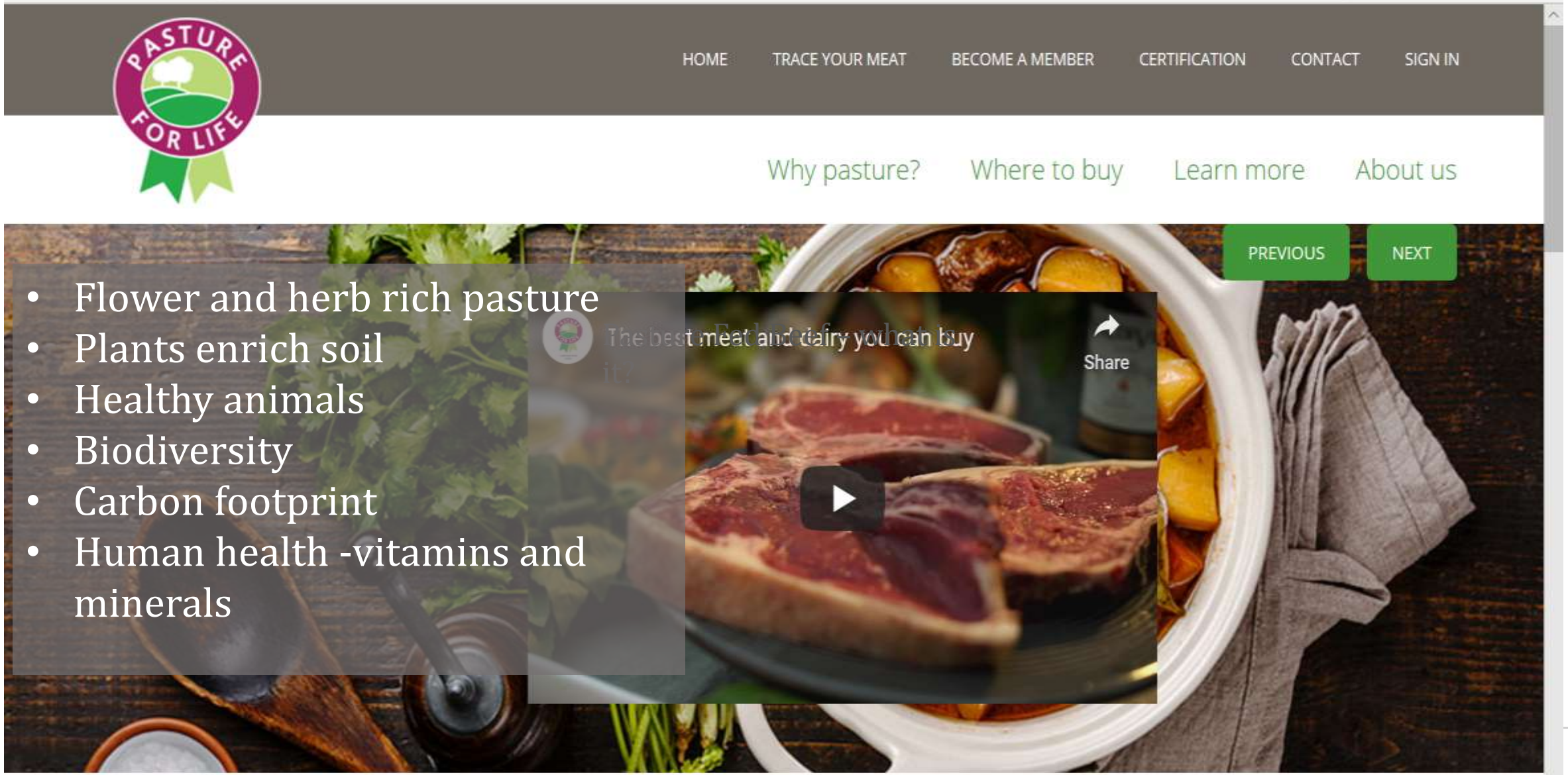
Dr Anne Galloway, Associate Professor, Design for Social Innovation, Victoria University of Wellington comments:

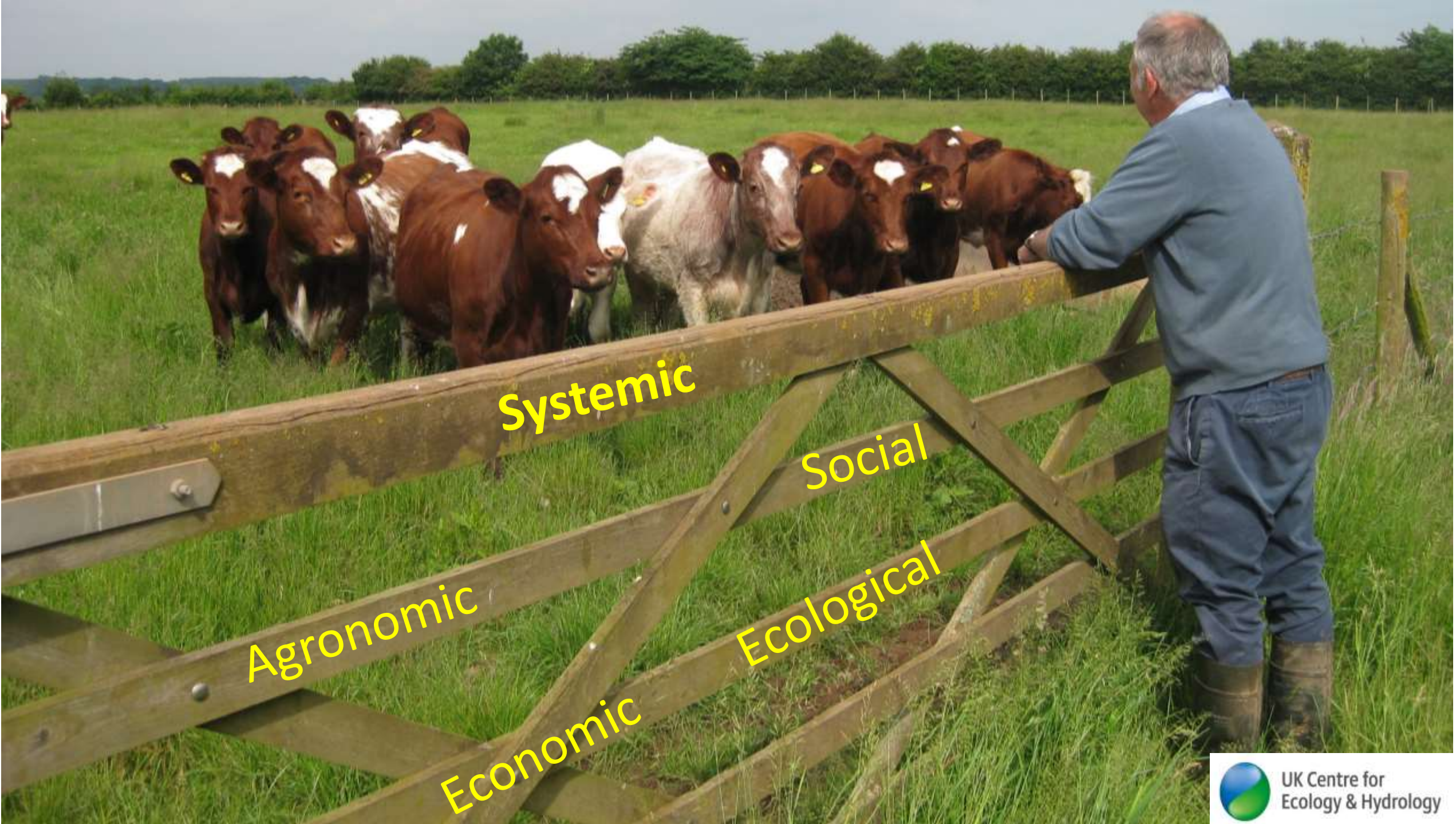
How important are consumer attitudes towards farming styles?

"New Zealand livestock farming's social license to operate is strongly influenced by consumer attitudes towards different farming styles. Current concerns about beef feedlot operations highlight the role that cultural values play in any public controversy.

"The large majority of New Zealand beef is produced in extensive, pasture-based systems that reinforce the cultural value of 'clean and green' food production. Any alternative can be seen by consumers as a betrayal of their values.

Pasture Fed Beef – what is it?





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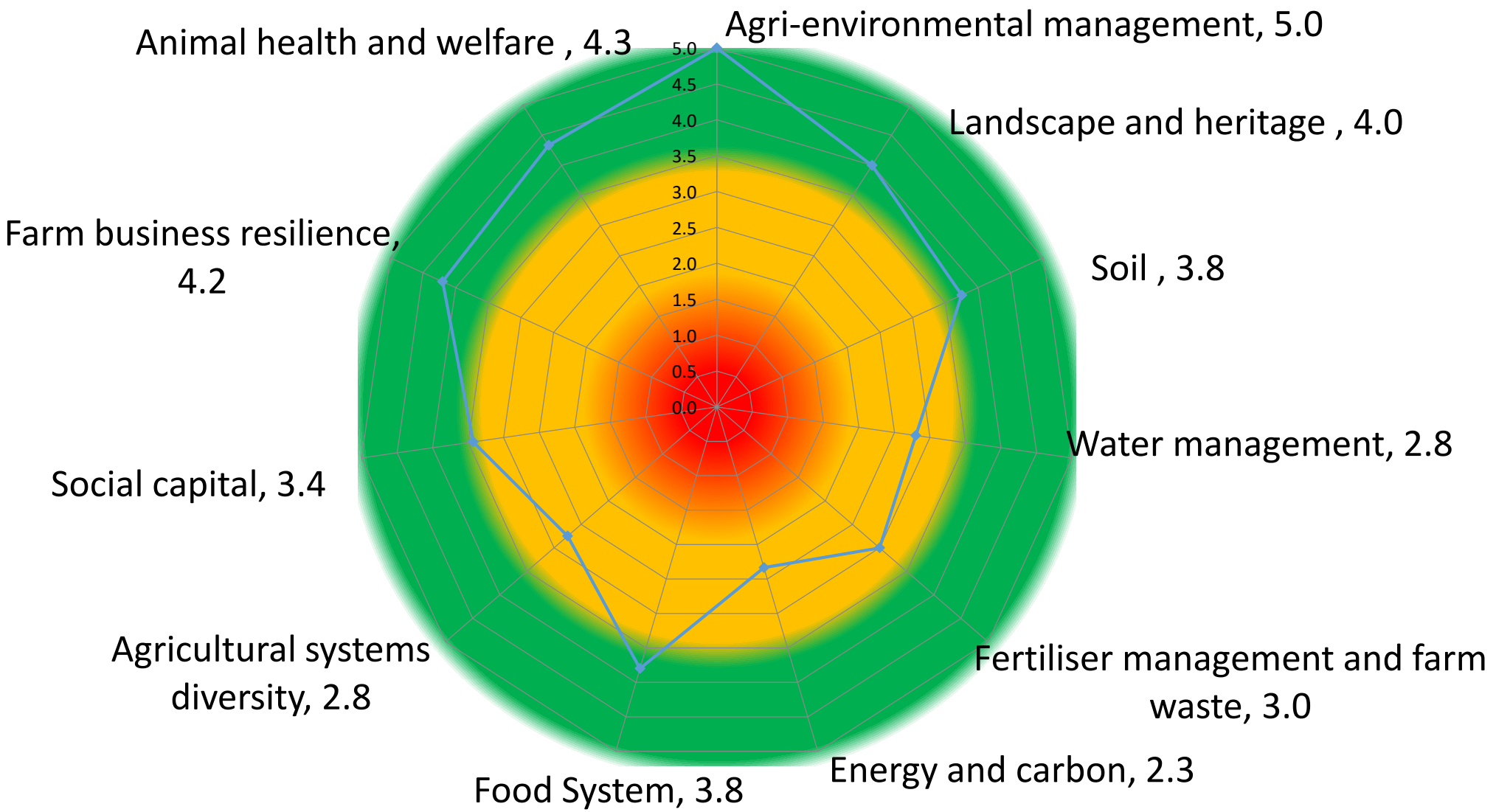
How can we evidence some of the claims?

Public Goods Tool (ORC)



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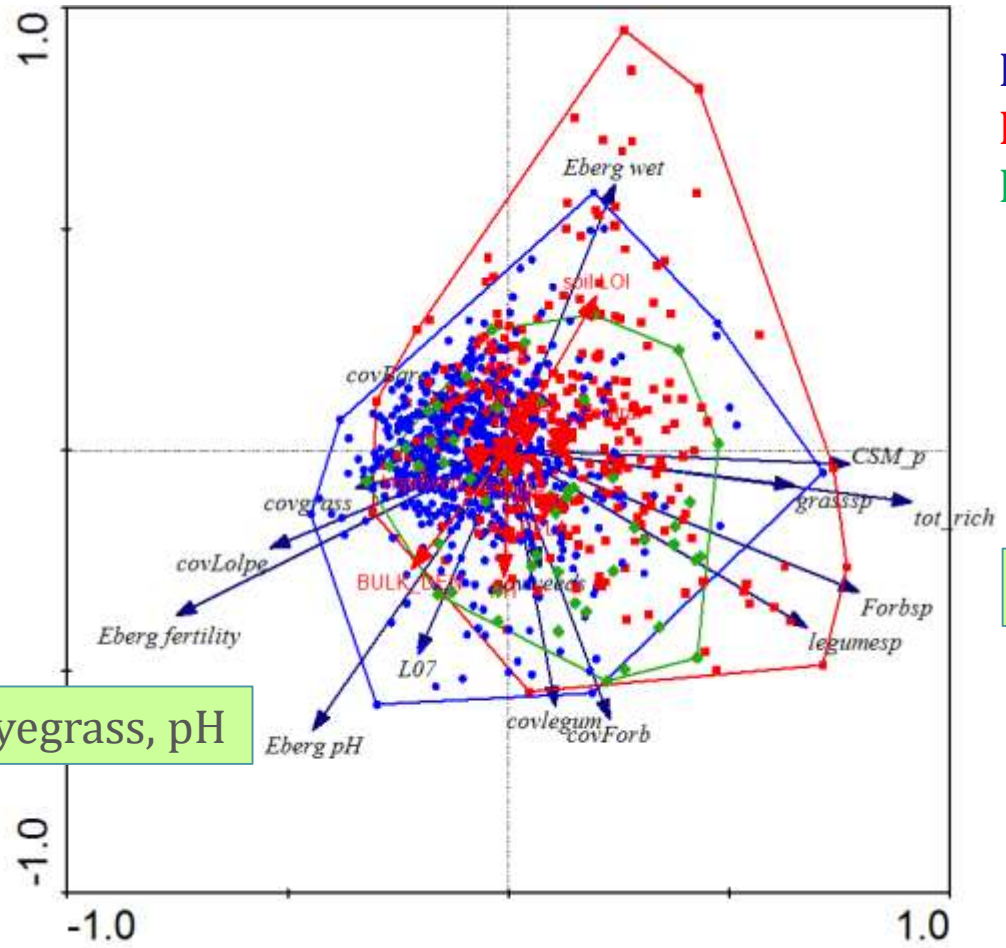
Beef suckler– output and variable costs

Ecological condition of PfL pasture in context

Soil wetness and Carbon content



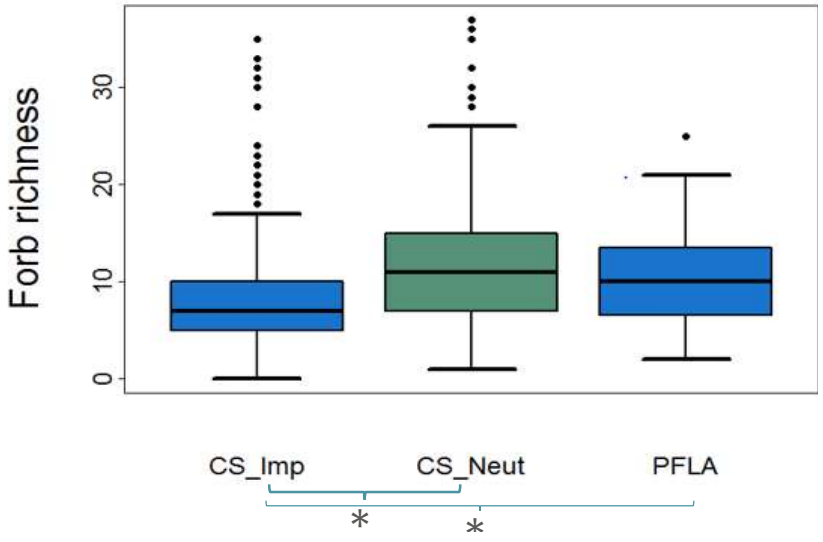
Improved grassland
Neutral grassland
PFLA

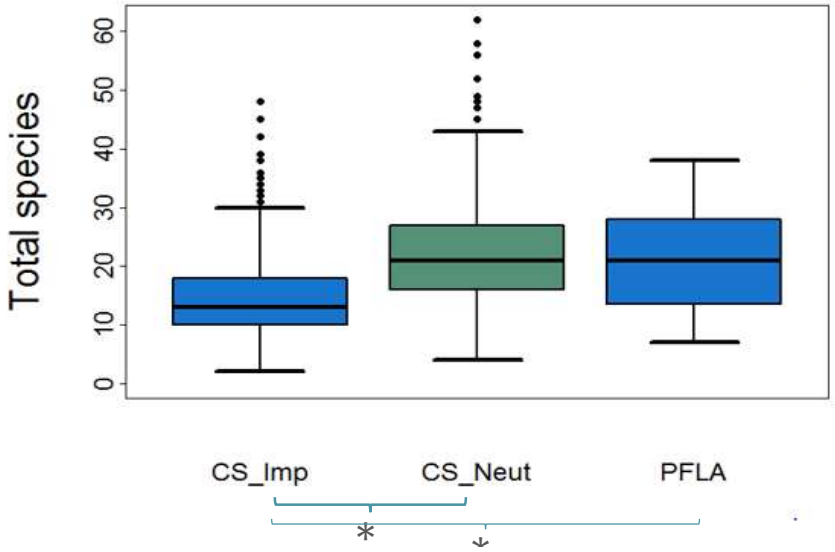
Higher species richness

Fertility, Cover of ryegrass, pH

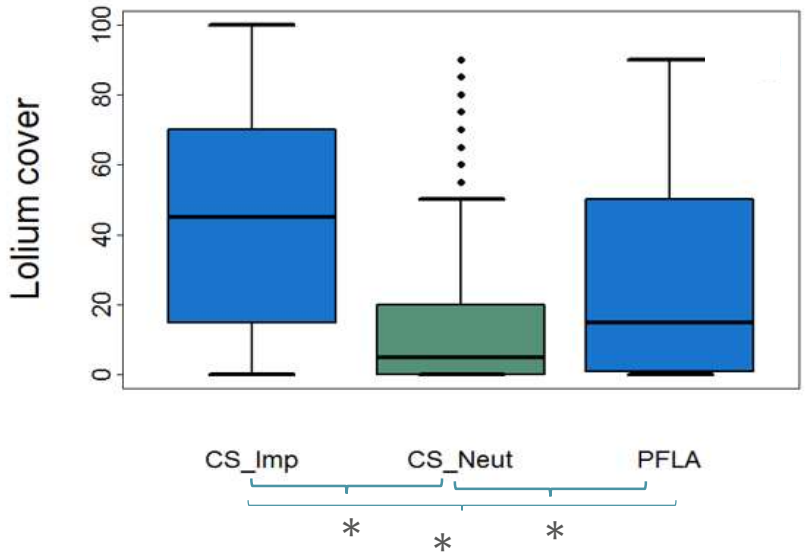
Cover of legumes and forbs (herbs)

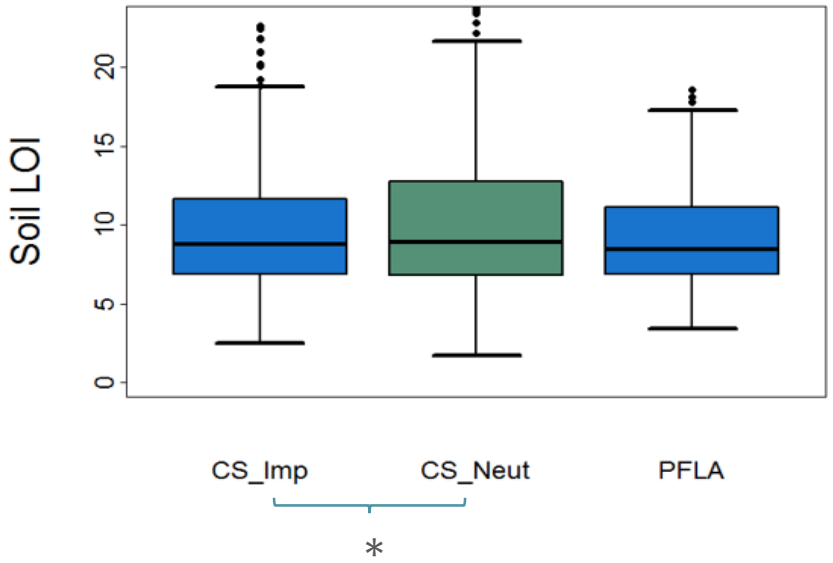
Ecological condition of PfL pasture in context





- Forb richness is high on PFLA farms
- Total species richness is high on PFLA farms





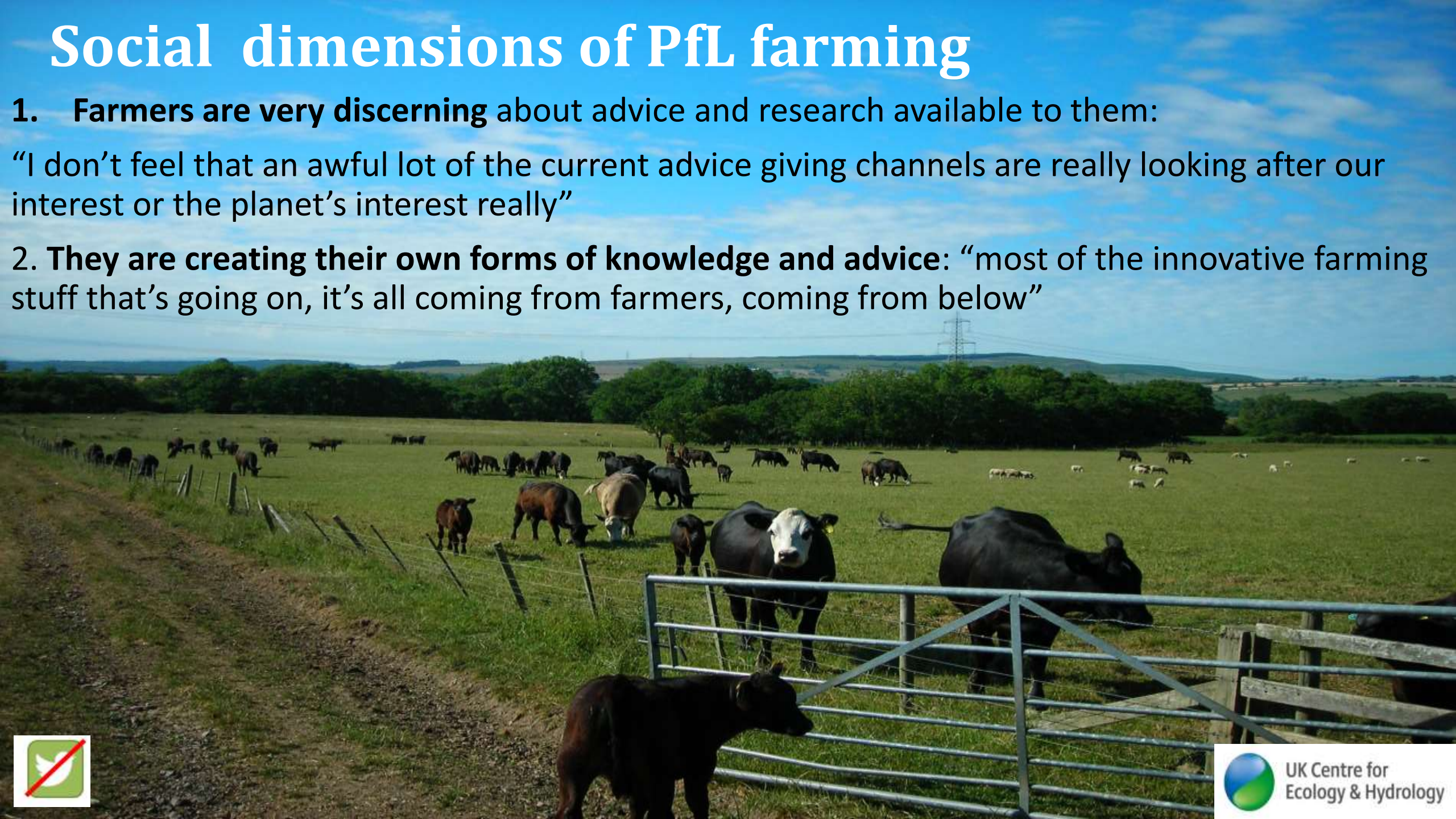
- Ryegrass cover is low on PFLA farms relative to Improved grassland
- Soil Carbon on PFLA farms is not significantly different to that on Improved grassland

Social dimensions of PfL farming

1. **Farmers are very discerning** about advice and research available to them:

"I don't feel that an awful lot of the current advice giving channels are really looking after our interest or the planet's interest really"

2. **They are creating their own forms of knowledge and advice**: "most of the innovative farming stuff that's going on, it's all coming from farmers, coming from below"



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Social dimensions of PfL farming

3**. Farmers note a lack of discernment in food retailers**
“Morrisons will buy a lot of our beef because they are short horn, and Morrisons like short horn… but they really couldn’t give a stuff how we produce it… “

4. **But PfL farmers value the multiple benefits of PfL methods anyway**
“…we are producing more and more with less and less”

“…and improving the soil, and more carbon, less fertiliser, no worming”

5**. Farmers are learning together**
“…there’s so much of interest posted in the [PFLA] Google group and including you know research and things.”

“they write amazing, insightful helpful answers, which in terms of money, ……. is into the thousands of pounds on the smallest farm.”

Social dimensions of PfL farming

6. Farmers are learning and acting – not necessarily waiting for policy support.

"…the overarching thing was really about trying to make species rich grasslands which are a really valuable resource in my opinion, and one we're losing quite fast, even now. [The goal] is to make them a viable or even, you know, make them part of a thriving agriculture business, so that **the choice is not necessarily thanks to a policy lever which is at the whims of politicians, but something that would drive forward on its own**, if we get it right."

Sustainable Economic and Ecological Grazing Systems – Learning from Innovative Practitioners (SEEGSLIP)

- As well as the amount we consume - the WAY we produce our livestock produce matters
- Learning from, and with, practitioners is important for research and for policy

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