

Citizen and consumer attitudes to grassland landscapes in Europe

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Abstract

Permanent grassland (PG) landscapes offer an important mix of ecosystem services (ES) which include habitat provision, carbon sequestration, water quality protection, food production and cultural activities, among others. In policies relevant to PG management, citizen and consumer demand for ES are less well considered than the supply of ES. In order to develop sustainable grassland food systems, it is important to understand attitudes of citizens and consumers to ensure sustainable management of PGs, and the balance of ES they provide, in order to develop sustainable grassland food systems. This study focuses on the work of researchers in the H2020 SUPER-G project (Sustainable Permanent Grassland Systems and Policies) to identify priorities and preferences of citizens for ES provision from PG landscapes in a comparison across five biogeographic zones in Europe. We present results of an international online survey (n=3,184) conducted with a nationally representative sample of citizens in five European countries (UK, Spain, Sweden, Czech Republic and Switzerland) in 2021. Structural equation modelling is used to model the drivers of public attitudes to grassland landscapes, including understanding factors that predict behavioural intentions to spend time in grasslands, and purchase products from grassland. We discuss the results in the context of the processes required to co-develop sustainable policy options for PG, and the role of citizen priorities in the development of agri-environment policy.

Keywords: ecosystem services (ES), permanent grassland (PG), citizens and consumer attitudes, sustainable management, agri-environmental policy, quantitative analysis

Introduction

Permanent grasslands (PG) are multifunctional landscapes that produce multiple benefits for environment and society through delivery of a variety of ecosystem services (ES). Management of PG is often governed by policies that consider a narrow range of ES while not fully considering societal demand for ES. However, as more holistic policies are to be implemented, including linking financial support for farmers to production of public goods, there is a need for a greater coherence when considering public attitudes to, and preferences for, ES from PG. This is to ensure that agricultural policy and farm practices align with societal priorities and respond adequately to the development of citizens' attitudes and values. Attitudes are a 'deeply held mental stance' that connect to preferences for, and perceptions of land or landscape, as well as the way that people attach meaning and value to it (Swanwick, 2009). Previous studies have explored citizen attitudes to grassland landscapes in relation to landscape preference, perceptions of cultural ES, and willingness to pay for ES, often in specific regions including mountains, and marginal or protected landscapes. Multiple factors have been found to affect peoples' perceptions and attitudes, including age, gender and education, as well as rural-urban residency (Martín-López *et al.*, 2012), and environmental interest (Schmitt *et al.*, 2021). However, there has been little consideration of the drivers that underpin positive or negative attitudes to PG across different socio-economic contexts,

and climatic regions in Europe, including influences on behavioural intentions associated with PG. In this study, we aim to understand the drivers of citizen attitudes towards, and values associated with PG in five European countries (Spain, UK, Switzerland, Czech Republic and Sweden), representing five biogeographic regions, and a variety of PG types within each region, in order to make comparisons between different geographical and demographic populations.

Materials and methods

A total of 3,184 participants from the 5 European countries were quota sampled based on age, gender and socio-economic class, and rural versus urban residency. Participants were nationally representative of the population for each country, with 620 citizens surveyed via a 30-minute, self-directed online questionnaire, administered through a social research agency, in each country. We used a structured questionnaire (translated and back translated into local languages), with closed ended questions. Five-point agree-disagree Likert scales were used to measure attitudes and values towards: (1) threats to the countryside; (2) personal benefits from the countryside; (3) social trust; (4) management of the environment; (5) attitude to the environment (using the Environmental Attitude Inventory (EIA); Milfont and Duckitt, 2010); and (6) consumer attitudes towards PG products. Likert scales using priority measures were used to explore (7) attitudes towards ES, and the overall behavioural intention of consumers; to (8) buy products from PG; and (9) spend time in grasslands and meadows. Nine hypotheses (Figure 1) outlining the relationship between influential socio-economic factors, attitudes to PG, and behavioural intentions from a citizen and consumer perspective were tested by applying factor analysis, principal component analysis, followed by structural equation modelling (SEM) based on partial least squares approach (SEM-PLS).

Results and discussion

The full results of the SEM process (analysing the drivers of citizens' attitudes) will be reported in the final paper. Here we discuss some preliminary results. Across the whole survey, we found that there were significant differences between the responses of citizens in each country, indicating that there are different perceptions and attitudes to PG across Europe. Across the five countries the highest proportion of respondents indicated that they visit the countryside for recreation and leisure, with up to a quarter of

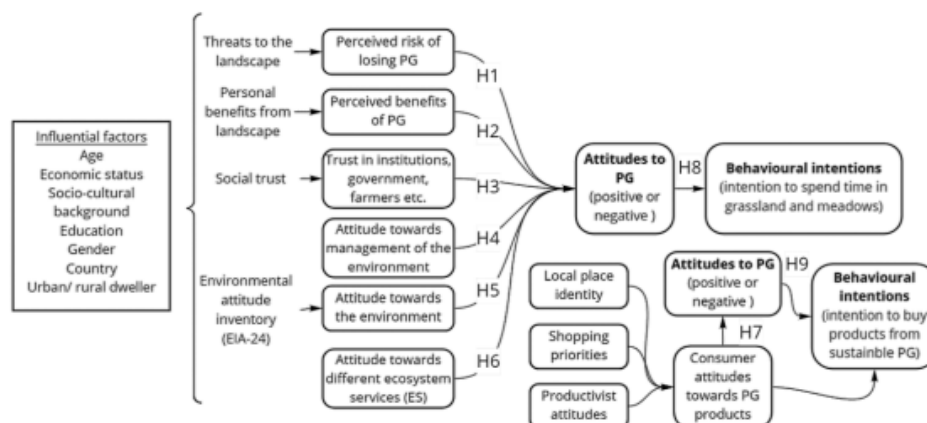


Figure 1. Conceptual model and hypotheses testing. H_1 – Perceived risk of losing PG will influence the attitudes of consumers and citizens towards PG. H_2 – More perceived benefits of PG will positively influence the attitudes of consumers and citizens towards PG. H_3 – Increased trust in institutions and government will positively influence attitudes to PG. H_4 – More positive attitudes towards the management of the environment will positively influence attitudes to PG. H_5 – More positive attitudes to the environment will positively influence attitudes to PG. H_6 – More positive attitudes towards different ES will positively influence attitudes to PG. H_7 – More positive consumer attitudes towards PG products will positively influence their attitudes towards PG. H_8 – A positive attitude towards PG will lead to positive behavioural intention to buy products from PG. H_9 – A positive attitude towards PG will lead to a positive behavioural intention to spend time in grasslands and meadows.

respondents in each country saying they lived/ worked in the countryside (highest in Czech Republic, 26%), and between one-fifth and a quarter of respondents never visiting the countryside (except Spain, 37%). Respondents in the UK rated affective responses to grasslands linked to 'beauty' and 'enjoyableness' higher (more positive) than respondents from other countries. Czech respondents rated 'pleasantness' and 'goodness' higher than other countries, and Swedish respondents rated 'value' and 'interest' higher. Overall, we can infer that the majority of the respondents viewed grasslands and meadows as pleasant, good, valuable, interesting, beautiful and enjoyable. When asked about their intention to visit meadows and grassland, the majority of the respondents noted that they intend to spend time in grassland and think it is easy to spend time there. In terms of sustainability of food, respondents from Spain and Sweden noted that it is easy for them to identify sustainably produced food in general. However, they noted that it is less easy for them to buy sustainably produced food, and indeed is not a food purchasing priority. In general, the majority of respondents from all countries mentioned that trees were an important part of visiting the countryside (average 85% of respondents), followed by feeling happy, having a fascinating landscape, and a sense of peacefulness, and plenty to discover. The presence of meadows and pastures and open landscape were important when visiting the countryside for a slightly lower proportion of respondents (average 76 and 75%); however, varied landscapes were also seen as important (average 78% of respondents). The most likely problems in the countryside were attributed to bad behaviour by visitors (highest in the UK, 74%), lack of young farmers taking over farming (highest in Spain, 72%), and misuse of chemical fertilizers (highest in UK, 70%). Conversion of pasture or meadows to forest or woodland, and too many livestock causing damage to the land were of least concern (on average less than 35% agree they are a problem). The level of agreement differed between countries investigated but the greatest concern in terms of perceived risk was common across five countries. Our results so far show that affective responses of citizens are linked to non-monetary ES associated with PG. In our forthcoming analysis we will use a SEM to assess the relationships between drivers of attitudes, and attitudes, as well as behavioural intentions, for: (1) citizen attitudes towards ES associated with PG; and (2) consumer attitudes to the products of PG.

Conclusions

This study gives an insight into the drivers behind citizen and consumer attitudes to PG, including in relation to behavioural intentions to spend time in, and buy products from PG. Results will be relevant for using value and perceptions of PG as a basis for current and future public policy and practice design.

References

- Martín-López B., Iniesta-Arandia I., García-Llorente M., Palomo I., Casado-Arzuaga I., Amo D.G.D., ... and Montes C. (2012) Uncovering ecosystem service bundles through social preferences. *PLoS ONE* 7(6), e38970.
- Milfont T.L. and Duckitt J. (2010) The environmental attitudes inventory: A valid and reliable measure to assess the structure of environmental attitudes. *Journal of Environmental Psychology* 30(1), 80-94.
- Schmitt T.M., Martín-López B., Kaim A., Früh-Müller A. and Koellner T. (2021) Ecosystem services from pre-alpine grasslands: Matches and mismatches between citizens' perceived suitability and farmers' management considerations. *Ecosystem Services* 49, 101284.
- Swanwick C. (2009) Society's attitudes to and preferences for land and landscape. *Land Use Policy* 26, S62-75.