

SOILGUARD's integrated valuation approach to account for the diversity of values soil biodiversity provides for our well-being



Nature's Contributions to People (NCPs) refer to the various benefits that nature provides to human society and are categorized into three broad types:

Material NCPs: tangible benefits people obtain from nature: food, water, and raw materials.

Non-material NCPs: intangible impacts of nature on human well-being, including psychological and cultural benefits like recreation and spiritual enrichment.

Regulating NCPs: natural processes that maintain ecosystem health and functionality, supporting both material and non-material contributions. Examples include pollination, climate regulation, soil fertility...

To increase the understanding of how sustainable soil management impacts soil biodiversity, soil-mediated NCPs and human wellbeing, SOILGUARD uses different approaches to gather information from various groups of people across different areas. This **integrated valuation approach** mainly focuses on the socio-economic system, the benefits provided by nature-based solutions, how they are socially, culturally and monetarily valued and how this contributes to human wellbeing.

SOILGUARD's integrated valuation framework consists of 3 main components:



Assessment of economic values for food production based on market prices and soil formation based on avoided costs for nutrient leaching (cost-based approaches)



Assessment of people's preferences, in 3 regions, for land use through landscape pictures and how much they would be willing to pay for certain natural benefits based on a household survey. We also ask about people's general views on nature and how this relates to their soil management preferences.



Assessment of the importance of NCPs in main European SOILGUARD regions based on a stakeholder survey. The results obtained inform the following household survey in 3 selected regions.

The target group of the qualitative survey was composed primarily of **farmers and landowners** at the cross-biome network of sites, **policy makers, interest groups and other experts**. We received responses from **Spain, Latvia, Belgium, Denmark, Hungary, Ireland and Finland**. Let's dive into the preferences of these groups identify pressures, drivers, and attitudes towards land management and soil biodiversity!

This was the perception of the importance of NCPs across the regions:

The 5 most important NCPs over the 4 regions were:



Food and feed production



Habitat creation



Regulation of climate



Soil formation



Protection and regulation of freshwater quality



Figure 6. The mean perception of importance of NCPs in the regions, rating from 1-not important at all to 6-very important with 0-I don't know.



These were the attitudes towards management practices:

A strong agreement was reached on the management of soil organic matter, and the respondents were aware of its importance. This was confirmed by the strong disapproval of the continuance of inorganic fertilisation. The responses about the increase of organic agriculture were heterogeneous. The answers to the statement about tillage being the standard practice indicates a willingness to change long-established practices and to realign towards a more sustainable soil management. That trend is also validated by the responses about the reduction of pest control agents, which also indicated a willingness to reduce the usage.

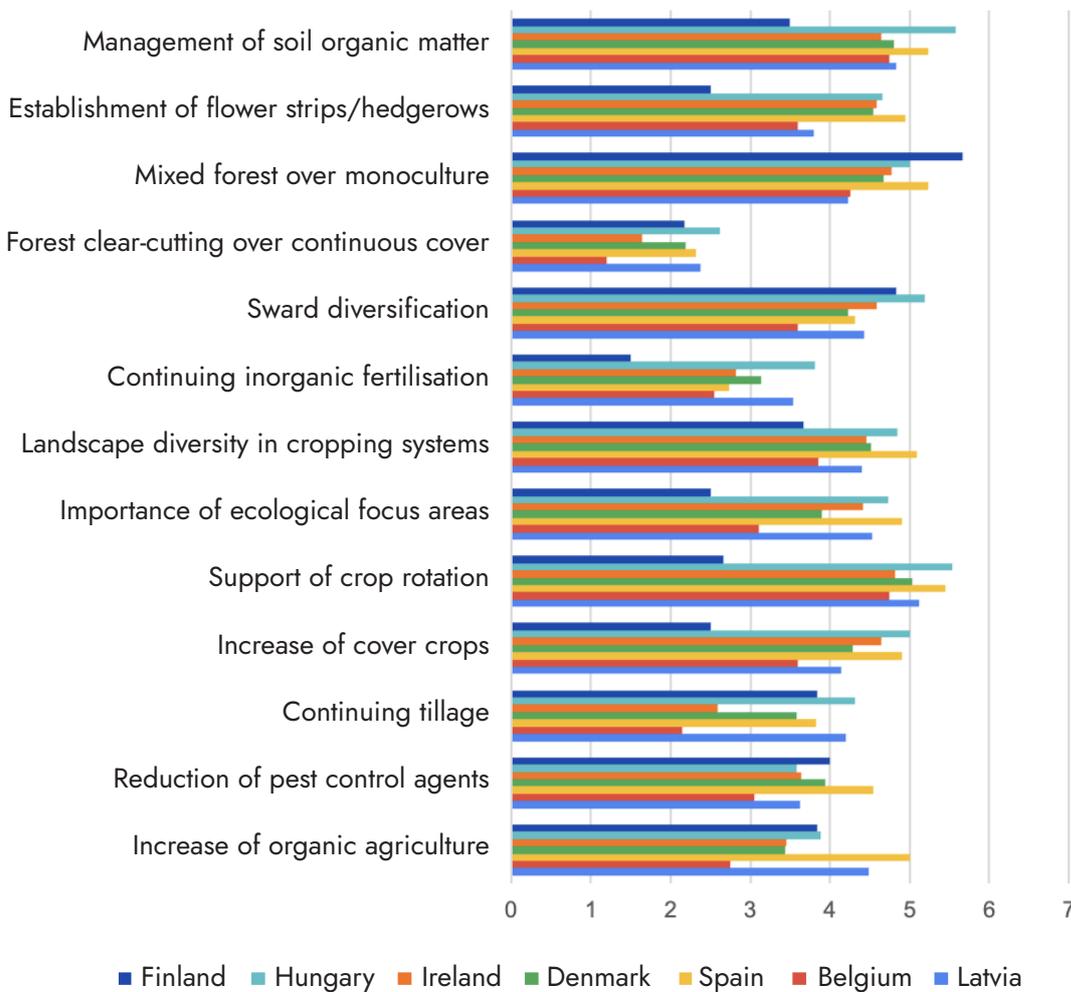


Figure 9. Mean preferences for management practices in the qualitative survey, rating on a scale from 1-strongly disagree to 6-strongly agree with 0-I don't know. A full list of the statements is the appendix included (Supplementary material IV).

Finally, these were the preferences in terms of legal instruments and economic incentives:

A strong agreement was assessed for the statement about the lack of awareness of sustainable soil practices. The stakeholders also agreed on the need of advisory services to support sustainable soil management. The agreement among the regions to the statement about whether carbon credits would be useful to support sustainable land management varied greatly. The answers about stricter regulatory measures to decrease unsustainable soil management varied as well. This shows different opinions on the instruments and their effectiveness for sustainable soil management.

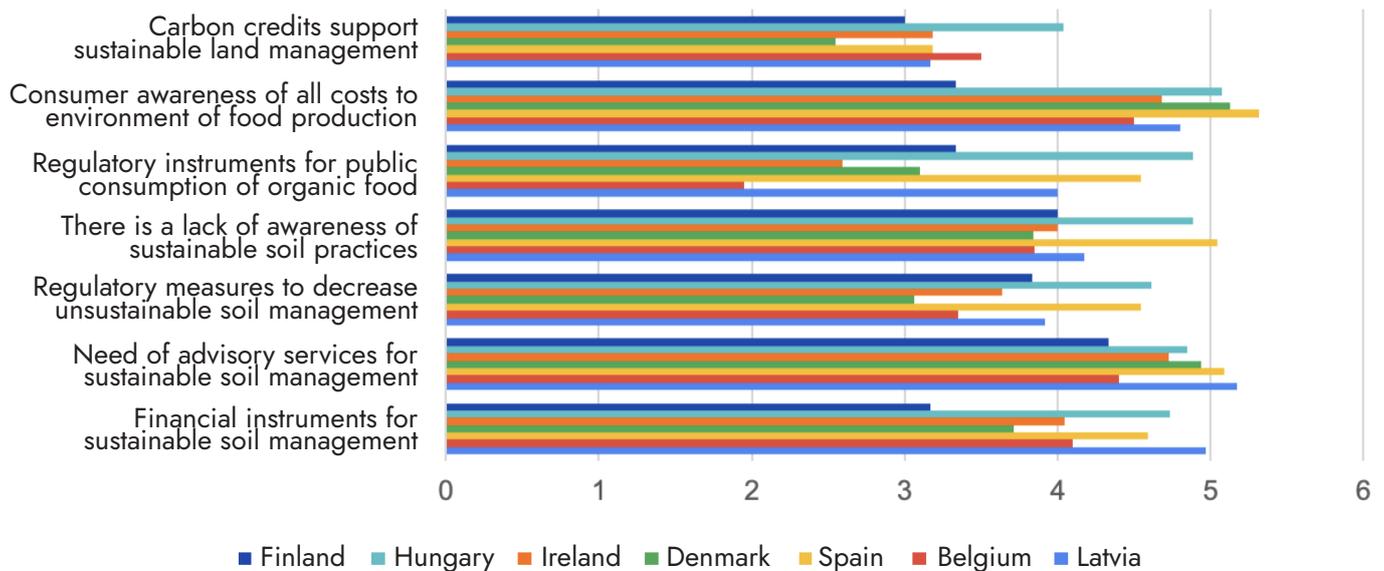


Figure 10. Mean preferences for legal and economic instruments in the qualitative survey, rating on a scale from 1-strongly disagree to 6-strongly agree with 0-I don't know. A full list of the statements is the appendix included (Supplementary material V).

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