Incorporating ecosystem services in evaluating the sustainability of innovative organic farming systems using the Public Goods tool

Agroforestry for the Green Deal transition. Research and innovation towards the sustainable development of agriculture and forestry

EURAF 2022
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Abstract

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Topic: Agroforestry and the Environment

Subtopic: Landscape planning and management

Keywords: Human nutrition, social well-being, biodiversity, farm-scale sustainability assessment, sustainable food production

Type of presentation: poster

Abstract

Rethinking the organisation of sustainable and organic food systems value chains is necessary to increase the sustainability and efficiency of food systems and to reduce trade-offs between production and distribution stages. The European project FOODLEVERS (www.foodlevers.org, SUSFOOD2 and CORE Organic Cofund) will analyse several European case studies of innovative organic food systems and innovative sustainable systems including agroforestry systems (Table 1) and identify best practice processes from multiple perspectives of resource efficiency: environment, economy, social and governance.

In earlier studies, a tool was developed to assess the sustainability of farming systems – the Public Goods Tool (PG-tool) (Gerrard et al. 2012). This tool was developed predominantly for use in food farming and in the current study it will be adapted for innovative examples in organic farming. To achieve this, new indicators were identified in addition to those already in the PG Tool. Special attention was given to incorporating indicators which could capture provisioning of ecosystem services by farming systems, in particular those with a focus on biodiversity, human nutrition and social well-being. Areas that are also currently underrepresented in the PG Tool.

To ensure that everyone's views are included we used a participatory approach. This approach uses the 'power of the crowd' and the principle of consensus through feedback to get to the result that is most 'right'. For this to work, it is necessary to have several stages of desktop research and feedback:

1. Structured literature review by the project partners (mainly researchers) to identify ecosystem service indicators responding to the specific characteristics of the partner case studies.
2. Ranking and prioritizing indicators by the project partners (mainly researchers).
3. Survey in each case study country to identify the most important sustainability indicators according to the perceptions of national stakeholders (farmers, advisors, retail, other value chain actors, decision makers) based on factors such as relevance, comprehensiveness, interpretability, data quality and efficiency.
4. A practical workshop with stakeholders closely involved in the case study (mainly practitioners) in order to further reduce the list of indicators and select those indicators which capture the essence of each case study as much as possible.

The aim is to add about 50 new indicators to the PG-tool. To assess the sustainability of the selected innovative organic farming systems, interviews with the farmers will be carried out in spring-summer 2022. During the assessment, the farmer and the researcher will go through the assessment together. During the assessment, immediate feedback is provided on which sustainability aspect the farm is performing well and on which aspects improvement could be made. Farmers learn about their farm's overall sustainability and the role of distribution channels. The results are expected to provide information on the sustainability performance of our selected innovative organic cases. In addition, the performance of each innovative organic case will be compared to its conventional organic counterpart.

References

Gerrard CL, Smith LG, Pearce B, Padel S, Hitchings R, Measures M, Cooper N (2012) Public Goods and Farming. Farming for Food and Water Security. In: Lichtfouse E (ed) Farming for Food and Water Security. Sustainable Agriculture Reviews, vol 10. Springer Netherlands, pp 1-22.

No.	Innovative organic food system/innovative sustainable system	Study location
1	Biodynamic city-farm cooperating with a large network of regional organic farms, consumer-driven decision making, innovative method of distribution	Frankfurt am Main, Germany
2	Organic farm managing silvopastoral systems where walnut plantations and olive orchards are grazed by laying hens	Orvieto municipality, Italy
3	Network of local farms to strengthen market access and get a "grass-fed" standard for beef, to improve short value chains and create a joint shop for community farmers	Poland
4	Community supported farm with over 350 members and innovative governance structure	United Kingdom
5	Biodynamic farm cooperating with a large network of regional organic farms, consumer-driven decision making, innovative method of distribution, volunteer program, on site learning for local school children	Romania
6	Forest farming: Mushroom farms cultivating organic edible mushrooms in forests and indoors, more efficient use of forestry, agriculture and urban side products and waste streams (small diameter trees, grain husks, coffee grounds etc.), courses to farmers and start-ups interested in mushroom cultivation	Region of Uusimaa and Southern Savonia, Finland
7	Community-Shared-Agriculture providing organic meals for a local hospital	Flanders, Belgium

Table 1. Selected European case studies of innovative organic food systems