

International survey shows different perceptions in science and practice

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An international survey reveals different perceptions from science and practice regarding agricultural biodiversity, ecosystem services and decision-making processes . Credit: Free Pics/Unsplash/Ricardo Gomez Angel

To minimize negative impacts of agriculture on biodiversity and related ecosystem services, 'biodiversity-friendly' management is needed. Why scientific results are rarely translated into agricultural practice could be explained by their different perceptions of agricultural biodiversity,

according to the results of a recent survey of European scientists and farmers. The study was led by Bea Maas of the University of Vienna and published in the journal *Biological Conservation*.

For the study, 209 farmers and 98 [environmental scientists](#) were asked how they perceive agricultural biodiversity and its management in Germany and Austria. "The results show that the perceptions of scientists and farmers on biodiversity, [ecosystem services](#) and management measures are very different," says Bea Maas, lead author from the University of Vienna. "Especially the diverging perceptions of information sources that are important for agricultural decisions show need for more cross-disciplinary collaboration in sustainable development processes," adds Maas.

The survey integrated transdisciplinary data and concepts and included demographic factors in the analysis of responses. Results showed that scientists rated biodiversity, agri-environmental programs and [conservation measures](#) as more important to [agricultural production](#), ecosystem resilience and sustainability than farmers. "Scientists also valued scientific information as more important for agricultural decisions, while farmers valued government and agricultural sector information sources more," explains Anett Richter, co-author of the study from the Thünen Institute in Germany.

Richter adds, "Critically, female farmers and farmers with [higher education](#), or utilizing organic farming methods, rated biodiversity and its conservation as more important than other farmers." Co-author Yvonne Fabian from Agroscope in Switzerland explains: "These different perspectives of scientists and farmers reveal crucial knowledge and communication gaps between agricultural research and practice." "Our findings provide new insights for the key challenge of better integrating research, agriculture and policy practice," concludes co-author Sara Kross from Columbia University in the US.

The authors provide four specific recommendations for action on how knowledge and experience can be shared and used more effectively between agricultural science and practice:

First, make [scientific information](#) more accessible to practitioners by promoting and establishing education and advise programs for farmers. Second, develop targeted approaches to [agricultural research](#) and practice that integrate diverse stakeholder perspectives in their design and application. Third and fourth, support inclusive and integrative collaboration between science and practice by actively promoting cross-disciplinary communication. These efforts require "partnerships and political commitment at the highest level to make inclusive approaches central to the development of sustainable agriculture" according to Maas and her co-authors.

More information: Bea Maas et al, Divergent farmer and scientist perceptions of agricultural biodiversity, ecosystem services and decision-making, *Biological Conservation* (2021). [DOI: 10.1016/j.biocon.2021.109065](#)

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