Stakeholders evaluate their co-designed farming systems: insights from Greece and Spain

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Abstract

The quest for agricultural productivity has certainly increased the production, but it has come at the cost of natural resources (Egidi et al., 2022).To promote higher ecosystem services, diversifying rotations with legumes has been proposed as a viable alternative (Reckling et al., 2023). Involving local actors when designing and evaluating those alternatives can enhance their transferability and likelihood of implementation (Chopin et al., 2021).

During a first workshop with local stakeholders, diversification options with grain legumes for cereal-based systems were co-designed (Hossard et al., 2024) in Greece and Spain. Using a set of agri-environmental, social and economic indicators, we assessed the performance of designed options in comparison to continuous cereal cropping. During a second workshop, stakeholders were presented with the assessment results and asked to rate i) the importance of the assessment indicators and ii) the performance of the assessed systems.

In this study, we present the results of the stakeholder's ratings using an Importance-Performance matrix (IPM) that measures the satisfaction of stakeholders towards the

assessed farming systems (with and without legumes) based on i) the importance of the indicators (x-axis) and ii) the agri-environmental, social and economic performance (y-axis) (Phadermrod et al., 2019).

Despite the importance of economic indicators to Greek and Spanish stakeholders, they rated the economic performance of farming systems (with and without legume rotations) as low. This illustrates how important it is for stakeholders to consider the economic aspect, but legume diversification still isn't improving economic performance. In contrast, agri-environmental indicators performed largely better but are of low significance to stakeholders. Similarly, stakeholders generally placed little importance on social indicators despite rating them as highly performing. Thus, performing better in social or environmental aspects may not be sufficient to justify diversification with legumes as long as it fails to generate profitable returns.

Keywords: diversification, legume, co-design, multi-criteria assessment, stakeholders

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