Science for Environment Policy

How best to implement agri-environment schemes? Spanish olive growers’ preferences revealed

Agri-environment schemes (AES) are widely researched; some important issues, however, remain unstudied. Researchers have investigated some of these issues using a sample of olive growers in southern Spain. Their study reveals the level of monetary incentive needed for farmers to accept an ‘ecological focus area’, and a general unwillingness to participate collectively. These results could help policymakers design more cost-effective AES.

A great deal of research has been conducted on how to design an effective AES, yet some aspects of AES are less well understood than others. This study investigated some of the more neglected issues, beginning with farmers’ willingness to accept cover crops — plants that are grown to manage soil erosion, improve soil health and water availability and help control pests and diseases. Cover crops also have benefits for soil carbon storage, biodiversity, water quality and landscape aesthetics, yet few studies have assessed farmers’ willingness to accept them within an AES.

The research also looked at views on ecological focus areas (EFAs) — areas containing, for example, buffer strips, fallow land, trees or catch crops. They are beneficial for biodiversity and soil conservation and constitute an important element of the Common Agricultural Policy (CAP).1

Finally, the study investigated collective participation. When farmers collectively sign AES contracts it can reduce costs, as the number of applications to be processed and the costs of monitoring are fewer. It can also increase environmental benefits, especially if farms within the collective show high connectivity or closeness and/or present an adequate spatial configuration (for example, 100 m of hedgerows on sloping areas would be more useful to reduce soil erosion, avoid landslides, etc., if they were aligned perpendicular to the slope than if they were aligned parallel to the slope).

The researchers, who received EU funding2, analysed the preferences of olive growers in Andalusia, southern Spain, regarding all of these issues. Olive-grove systems are socially and economically vital for the region but to a certain extent have also resulted in environmental challenges, including soil erosion, biodiversity loss and water pollution. There is great potential for reducing the environmental impact of olive growing through AES, but it is important to design a scheme that farmers are willing to comply with.

To assess farmers’ preferences, the researchers used choice experiments — a technique which involves asking individuals about their preferences among hypothetical alternatives. The choices included two options for cover crop: area (which could be either 25% or 50% of the olive grove) and management (which could be free or restrictive). For EFAs, levels were set at either 0% (equivalent to the requirement included in green payment for permanent crops) or 2% of the olive-grove plots (below the 5% for arable lands established in the CAP). Participation was either collective (a group of at least five farmers located in the same municipality) or individual.

Payment levels were used to assess farmers’ willingness to accept each element of the hypothetical scheme, ranging from €100/hectare (ha) to €400/ha. A total of 295 farmers were asked to choose between two alternatives or ‘no choice’, which means they continue with their current practice.

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The results revealed a wide range of views among farmers, which the researchers grouped into four different classes, categorising the farmers’ attitudes toward AES. There was one clear group of ‘potential participants’, comprising almost 30% of the farmers surveyed. This group had characteristics typical of those likely to take up AES schemes: farmers were younger, with a higher level of education and were more likely to be professionally trained.

A second group (15%) would be willing to participate, but only if restricted management was not required, while two further groups (totalling 56%) were identified as ‘potential non-participants’, who were unwilling to participate in the AES presented. These final three groups shared characteristics with those less likely to take up AES schemes, with the fourth group being the least likely to participate. Farmers making up the last (fourth) group were older, with the lowest levels of education and were the least keen to use cover crops.

The researchers first discuss their results in terms of cover crops — the most important practice for improving the environmental impact of olive groves. The survey showed that the majority (three quarters) of farmers use cover crops, on average covering 25% of their land. Almost half would be willing to use them at a higher level of 50% for low to medium incentives (between €1 and €4.1/ha per 1% additional cover crop area), but most (70%) would be unwilling to manage the crops with restrictions (e.g. restriction on the use of herbicide or in growing tillage). Therefore, if policymakers want to increase AES participation, the researchers suggest they should evaluate current management restrictions (e.g. target restrictions on herbicide usage to environmentally sensitive areas).

In terms of EFAs, almost half of the farmers would be willing to accept a 2% level for low monetary incentives (€8–9/ha per additional 1% of farmland taken up by an EFA), while the remainder would only accept this for moderate to high payments of €41–151/ha per additional 1% of farmland).

The researchers detected a general reluctance towards collective participation, likely due to farmer perceptions of the related transaction costs and potential loss of freedom. CAP regulations include a 30% bonus for farmers who participate collectively, but this would not be enough to encourage any of the classes of farmers identified in the study to do so. The researchers suggest further research is needed to determine the right level of incentive for collective participation in AES.

They also discuss some general factors which are linked to uptake of AES, such as a large farm area (where economies of scale are higher and per-hectare transaction costs lower) and irrigated olive groves (where farmers are more likely to adopt new technology and are less reluctant to adopt cover crops). They also discuss the importance of farmer characteristics, such as age, knowledge and training — all of which correlated to AES uptake in this study.