

# Using a choice experiment to link conservation objectives and farmer preferences in the design of Agri-Environmental Agreements

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## Abstract

There has been a growing interest and need for carefully designed policies to protect and improve ecosystem conditions, especially under the EU 2020 Biodiversity Strategy. Although the basis for each policy may rely on different assumptions and terms and conditions, many if not most of them aim to minimize and resolve existing conflicts between conservational efforts and land-user interests. In this context, economic instruments have been applied to mitigate the impacts that human activities may have on ecosystems, and the services they provide.

Agri-environmental agreements are one of such instrument, conceived as financial incentives designed to encourage farmers to protect and enhance the environment on their farmland through the application of Good Agricultural Practices. The periodical review of the Portuguese Rural Development Program, to take place in 2014, creates the opportunity to propose alternative contract designs, in order to increase the acceptance and cost-effectiveness of agri-environmental agreements oriented towards nature conservation objectives.

The performance of the current agri-environmental schemes related to human-shaped multifunctional ecosystems (*montados*) is assessed, using a case-study located in the southeast of Portugal. The analysis focuses in particular on the so-called Integrated Territorial Intervention (ITI), a type of scheme designed to promote the management of agricultural and forestry systems suitable for conserving rural landscapes and biodiversity in areas of special interest, such as Natura 2000 sites.

Based on ITI's current performance in the case study area – insignificant number of contracts and low acceptability by farmers – the main research question is how to improve ITI's contract design in order to increase farmers' participation in future Rural Development programs. The research addresses one specific ITI agro-environmental measure, namely extensification of grazing and *montado* regeneration.

In a first step, interviews with farmers were conducted to understand their perceptions of the current ITI design, as well as their motivations and expectations regarding land use change and biodiversity conservation. The results of the first stage were used to set up a choice experiment aimed at identifying farmers' preferences regarding contractual requirements (e.g. duration, density of cork trees, cattle density), including the estimation of acceptable compensation payments.

The choice experiment, conducted with a sample of farmers in the case study area, tested alternative configurations of contract design, by combining different characteristic features of the contract with an attached compensation value. The main trade-off in this case is to increase tree density and abandon intensive grazing in productive pastures for which the farmer receives financial compensation in return. The estimated opportunity costs for this ITI measure are compared with the compensation levels considered acceptable by farmers.

Based on the choice experiment results, proposals to redesign ITI schemes are presented, in order to make the contract requirements and provided compensation more attractive to farmers, and still comply with the conservation goals established for *montado* regeneration in the case study area. Involving farmers in the design of this type of policy instrument contributes to increasing participation levels, while enhancing ecological effectiveness and policy legitimacy by ensuring feasible contract terms and an effective allocation of financial resources.

### **Abstract teaser**

This research explores the potential to improve agri-environmental measures' effectiveness, in the context of a multifunctional agro-forest system in Portugal. The analysis assesses farmer preferences through a choice experiment and informs contract design and acceptable compensation levels for agri-environmental agreements targeting Natura 2000 sites.