

## **FARMERS' RESPONSE TO MITIGATION PRACTICES IN SPAIN**

Sanchez, B<sup>a</sup>, Alvaro-Fuentes, J<sup>b</sup>, Cunningham, Ra Iglesias, A<sup>a</sup>

<sup>a</sup> Department of Agricultural Economics and Social Sciences, Universidad Politécnica de Madrid, Madrid, Spain

<sup>b</sup> Departamento de Suelo y Agua, Estación Experimental de Aula Dei, Consejo Superior de Investigaciones Científicas (EEAD-CSIC), P.O. Box 13034, 50080, Zaragoza, Spain

### **1. Introduction**

European agriculture faces new policy objectives derived from the need to reduce greenhouse gas emissions (GHG). The implementation of agricultural practices for GHG mitigation is a challenge for European farmers and farmer's advisers. Although the knowledge of advisors related to soil sustainable management is very comprehensive, some aspects related to GHG mitigation need further understanding to reach standardised practices that meet the new policy objectives (Ingram et al, 2007). In addition, there is a lack of knowledge on how cultural and social factors (such as education, information, traditional local practices, among others) and policy incentives interact for making possible the implementation of mitigation measures (OECD, 2012).

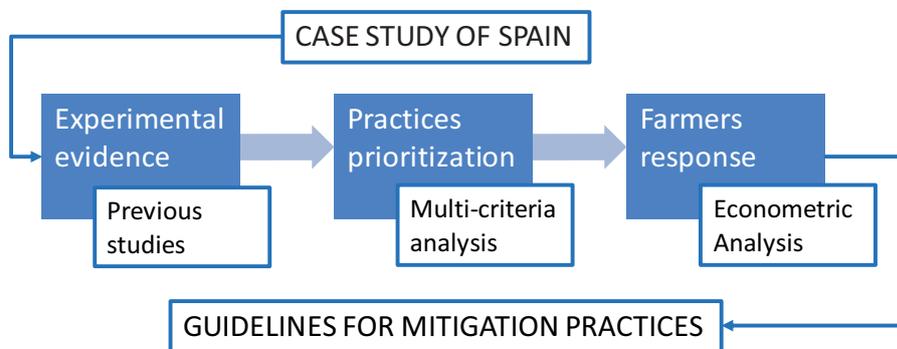
Here we evaluate farmers' behaviour and the determinants of implementation of mitigation practices at farm level in Spain. First we evaluate the potential mitigation practices based on a survey of previous studies, then we select the most adequate practices by consulting and expert panel and carrying out a multi-criteria analysis of their responses under two climate scenarios. Finally we evaluate farmers' potential implementation by conducting a wide-survey.

### **2. Methods**

Our methodological approach includes three components (Figure 1):

- a) The agronomic potential is evaluated by reviewing experimental evidence of soil and crop management practices that reduce GHG emissions. The data collection in our case study area takes information from existing publications and studies, analyzing the agronomic experimental evidence. The result is a selection of practices that have more potential for mitigation in Mediterranean regions.

- b) The sustainability of the practices is evaluated by multi-criteria analysis (UNFCCC, 2011). The data for evaluation is derived from interviews with an expert panel. The result is a prioritisation of the selected practices from social, economic and environmental perspectives.
- c) Based on a survey, we develop a logit model from farmers' responses to estimate the probability on implementation acceptance as function of behavioural traits and production characteristics of farmers. We also analyse the barriers and incentives for implementing mitigation practices based on the results of the survey



**Figure 1:** Methodological framework

### 3. Results and Discussion

Agricultural mitigation practices share objectives with best practices of soil and crop management (Ingram et al, 2007). For example, an efficient artificial and organic fertilizer management ensures adequate levels of soil nutrients and the maintenance of soil structure through improved soil organic matter content; low tillage results in less soil compaction and soil water losses.

Based in the results we propose guidelines for selecting mitigation practices that may be useful to advisory services.

#### **4. Conclusions**

The willingness to implement the best mitigation practices and the effects of doing so in the Mediterranean region is evaluated. In addition we analyse the limitations involved. (Work in progress)

#### **Aknowledgements**

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#### **References**

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