

SONIA QUIROGA

University of Alcalá, Spain

EMILIO CERDÁ

Universidad Complutense de Madrid, Spain

EXPLORING FARMERS' SELECTION OF CROP PROTECTION LEVELS AS AN ADAPTATION STRATEGY TO CLIMATE RISKS**Abstract:**

Among the challenges facing the European Union agricultural sector in the coming years, the impacts of climate change could lead to much greater variability in farmers' incomes. In this context, the insurance industry will have to develop new instruments to cover farmers' incomes against losses due to meteorological factors. Some protective technologies that farmers can use for climate risk management have associated costs that vary as a function of the losses involved. These sorts of instruments compete with other less flexible instruments such as crop insurance. We here analyse an issue of decision-making, where the farmer can decide how much to invest in protection, as in situations where the farmer chooses which portion of a loss to protect in the case of adverse weather conditions, and we propose optimal management to mitigate the increasing negative effects of climate uncertainty. By analysing the optimal policy in a continuous choice situation, we consider whether farmers, as part of their crop management duties, should opt to protect some portion of their harvest value with available technologies, or whether they should protect the entire crop. To analyse this decision-making problem, we employ the cost-loss ratio model and take risk aversion into account.

Keywords:

Crop yield protection, climate risks, information value, cost-loss ratio, decision models

JEL Classification: Q00, C44, Q54