

Science for Environment Policy

Spanish farmers would pay more for guaranteed water supply

Farmers in one of Europe's most water-stressed regions would be willing to pay double the current amount for irrigation water in order to ensure a reliable supply, new research from Spain suggests. The study also shows that they appear unsupportive of new policies proposed by the researchers, such as water markets and tighter controls on groundwater pumping, which could help enable a guaranteed supply of water.

Water management is challenging and policies often lead to social and political conflicts. In Spain, for instance, the transfer of water between river basins is a particularly sensitive issue. To increase acceptance of [water](#) policies, stakeholder involvement in policy design is important. A wide, integrated range of incentives and means of changing user behaviour are also needed.

For this reason, this study (funded under the EU [SIRRIMED](#) project¹) aimed to help policymakers make decisions about water supply and demand which incorporate farmer preferences. The researchers questioned 299 farmers in the Segura River Basin, in the south-east of Spain, about irrigation. This region has the third highest level of water stress in Europe. Overall, 35% of irrigation water is transferred from the Tajo River in central Spain. Pumping of groundwater to supplement the insufficient and variable water supply is also common, and some of this is illegal.

The researchers drew up 36 possible water management plans. Each plan contained three features: (1) a guaranteed amount of water that each farmer would receive under the plan (specified in terms of m³ per hectare per year); (2) one of five new water supply measures that would enable this guaranteed supply, plus a sixth 'no new measure' option; and (3) the cost to the farmer of this plan (ranging between €0.18-0.40 per m³ of water). At the time of the study they paid €0.16-0.18 per m³.

The five new measures suggested were: (1) water transfer from the Ebro River Basin, in the north of Spain; (2) more access to treated urban wastewater; (3) stricter controls over groundwater abstraction; (4) water markets, whereby rights to access water are traded between users, and (5) deficit irrigation, whereby water is supplied at just below the crop's full requirements.

They built a picture of the farmers' general preferences by showing them the plans, two at a time. The farmers had to choose their preferred plan from each pair of plans. They could also choose to reject both plans in favour of keeping current costs and measures. From this exercise, the researchers could see, for example, whether the farmers were more likely to accept a water supply measure if they considered the price or supply amount to be agreeable, or if they were likely to reject a measure under all circumstances.

The results suggest that these farmers would be willing to pay, on average, €0.35/m³ for a guaranteed supply of water, i.e. around twice what they paid at the time. However, this was only if no new water supply measures are introduced, and existing sources and measures are maintained.

In fact, they were against all five proposed new measures. The measures that the farmers were least opposed to were the Ebro River Basin transfer and the use of treated wastewater. These were relatively preferable, the study believes, because they do not require farmers to change their existing practices, personnel or equipment. Therefore, while the farmers appeared to welcome initiatives that improve the reliability of water supply, as suggested by their willingness to pay more, they were particularly against measures in which they have to actively participate, such as water markets, and which policymakers are likely to support.

The researchers suggest that policymakers should find the right balance between government policy and farmer preferences, and encourage farmers to share more responsibility for water management, through awareness-raising and institutional changes, for instance. In future, water scarcity may force the river basin authority to introduce demand-reduction strategies, but these would need to be implemented gradually and in co-operation with local farmers, the study says.

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