Water Savings and Agricultural Sustainability - are they compatible?

Italian researchers have recently studied the effects of different agricultural and water pricing scenarios on the sustainability of irrigated farming systems. They have shown that there is a trade-off between reducing environmental impacts and maintaining agricultural sustainability. This highlights the difficulty of regulating both environmental and economical sides simultaneously and suggests policies should be coordinated better.

Since the 1960s, the Common Agricultural Policy (CAP) has played a major role in supporting farmers. However, the present framework of this policy will cease in 2013. By that time, when the financial support and payments to producers are supposed to decrease, the Water Framework Directive (WFD) should have been completely implemented (by 2012). By requiring the full cost principle, the implementation of the WFD will probably lead to a water price increase. The joint effects of water policies and a decrease in CAP payments will thus affect the viability of farming systems, especially in the case of irrigated farms. To date, scientists have partially investigated the impact of expected changes in parameters such as water price or CAP payments on economic, social and environmental sustainability of irrigated agricultural systems.

In a recent study carried out under the EU-funded research project WADI 1, Italian researchers studied the effects on Italian irrigated farming systems of alternative water and agricultural policy strategies under different market and technology scenarios. Irrigated agriculture represents 40% of all farms and accounts for about 50% of the total national water use in this country. By modelling the farm types of a selected agricultural system under different agricultural and water policy scenarios, the authors have simulated their impacts on the performance of the farms.

The results of the simulations show a significant variability of the outcomes in different areas, depending on the specific agricultural system features. Overall, the main findings are:

- From an economic and social point of view, the best scenario is to maintain some level of intervention through targeted agricultural prices and payments.
- Under global market liberalisation (no CAP payments), the economic sustainability of farming is strongly affected in most cases. However, liberalisation is accompanied by water use reductions which are in accordance with WFD objectives, even without strict pricing policies.
- For each scenario, implementing water pricing has lower economic effects than the different agricultural markets and policy scenarios considered. However, cereal, rice and citrus agriculture are the most water-dependent agricultural systems and will have to adapt.

The authors conclude that there is a clear trade-off between reducing the negative environmental impacts of agriculture and maintaining the livelihood of the sector. Overburdening farmers with increases in water prices could strongly influence the sustainability of the sector. Nevertheless, some specific crops such as non-intensive crop systems (rice, cereals) could sufficiently adapt (e.g. reducing their water usage or improving their irrigation system) to increased water prices Therefore, in these cases, water pricing could be a good economic mechanism in order to provide incentives for saving water.

Furthermore, the results of this study highlight the need for more integrated analysis when setting such water policies. The economic viability of farming systems should also be taken into account in the design of policies and in particular of regulations related to water.

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1 WADI project: “Water Demand Integration” (http://www.wadi.unifi.it/), supported by the EU fifth framework programme within the project “Sustainability of European Irrigated Agriculture under Water Framework Directive and Agenda 2000” (EVK1-2000-00057).


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