

Session 5A: Agricultural Water Pricing and Reallocation

Rapporteur: David O. Treguer

This session's presentations dealt with farmers' responses to a price signal for irrigation water. All the examples presented were located in places facing water scarcity issues: northern Greece, the Klamath watershed in Western US, in the Murray Darling Basin in Australia and in Eastern India

In northern Greece, the study dealt with the hypothetical implementation of a volumetric price for irrigation water. The model predicted that farmers would move to low-value crops on dryland (and not to high-value crops). This is counter-intuitive to some respect and might originate in the fact that the model used (Positive Mathematical Programming) is better at tackling marginal changes than transformational changes like the implementation of a price on irrigation water.

In the US, Short-term Water Buyback program were implemented through land idling in the Klamath Water Basin (between California and Oregon). A complex hydrological model was built to compare land idling bids made by farmers to the shadow price of water determined by the model. Land idling bids exceeds the derived value of the corresponding amount of surface irrigation by between 10 and 75%. This is mainly due to 3 aspects: (i) the design of the water buyback program is based on land rather than water idling, (ii) farmers might be engaged in long term commodity contracts and (iii) a participation factor.

In Australia, Long term exit from irrigation: a survey assessed irrigators' willingness to accept exit packages, which are meant to compensate them for giving up their rights on a permanent basis. The main conclusion of the paper was that irrigator participation response is price –elastic. Moreover, given the fact that the price elasticity of volume sold is heterogeneous across sub groups of irrigators, policy makers would have to implement targeted policies if their objective is to maximize the volume of water removed from production, and not only the participation rate.

The 3 preceding examples dealt with surface irrigation, a fourth example studied the efficiency of groundwater markets and the determinants that would lead farmers to become either buyers or sellers of groundwater. The main conclusion of the paper was that in the end the sustainability of groundwater extraction hinged on pricing policies for the electricity used in pumping.