



Comparative analysis of economic and institutional aspects of desalination for agriculture in the Sultanate of Oman and Spain

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ABSTRACT

Water availability is the most critical component for sustaining agriculture in the Sultanate of Oman. Farmers along the coastal strip of AlBatinah region started using small desalination units to supply of good-quality irrigation water from brackish groundwater aquifers. We conducted a research project aiming to explore different aspects of the use of desalination technology for agriculture in the country. Economic and institutional constraints of desalination for agriculture in Oman were explored and compared with the leading experience of Spain. The study revealed that desalinated water in Oman is exclusively used to irrigate low-income field crops. Despite the energy subsidy in Oman, current agricultural practices and economic returns make the desalination technology an expensive option for providing irrigation water. Moreover, none of the farmers are following the regulations that outline the nature of use of small desalination units set by the Omani governmental agencies. On the contrary, there is no exclusive use of desalinated water for irrigation in Spain. Spanish farmers mix it with low-quality surface and ground water in efforts to reduce the cost of desalination. Farmers own the desalination plants and their agriculture is practiced within their organized societies to compete with local and international markets. The Spanish government has clear institutional framework that defines the use of desalination for agriculture. Given the current situation of agricultural desalination in Oman, we are suggesting considering alternative sources of water for irrigation. However, such sources will not be feasible unless agricultural practices are managed through more efficient practices of irrigation schemes.

Keywords: Oman; Spain; AlBatinah; Almeria; Desalination; Irrigation; Soil; Salinity; Seawater intrusion

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