



The role of desalination in water management in southeast Spain

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ABSTRACT

The aim of this paper is to evaluate the importance of seawater desalination to the supply of fresh water to SE Spain in order to tackle the problem of the shortage of water resources. The Mancomunidad de los Canales del Taibilla (MCT) supplies water to a population of more than 2,400,000 inhabitants in SE Spain. Resources managed by the MCT include the Taibilla river basin, water from the Tajo-Segura transfer, other unusual occasional groundwater contributions and from 2003, sea water desalination. Four desalination plants: Alicante I and II and San Pedro del Pinatar I and II together with resources from other desalination plants provide a significant amount of resources. For a decade (2004–2013) the resources coming from sea water desalination averaged 20.2% of all the resources used by MCT, with 427 Mm³ of total production in the period studied. However, the yearly contribution of desalination has changed depending on the availability of other resources. Moreover, seawater desalination has been essential to ensure water supply in the Alicante and Murcia areas. This resource has been important in periods of shortage, but also in unusual exploitation situations, such as that of the post-transfer tunnel detachment, which was classified as the most important breakdown of this infrastructure within its long lifetime. Moreover, scenarios of future climate changes could increase demands for water supply.

Keywords: Water resource diversification; Desalination; Mancomunidad de los Canales del Taibilla; Water supply; Mediterranean Region

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