

Analysis of farmers' attitude toward irrigation with desalinated brackish water in Israel's Arava Valley

Andrea Ghermandi*, Tom Minich

University of Haifa, Department of Natural Resources and Environmental Management, 199 Aba Khoushy Ave., Mount Carmel, Haifa 3498838, Israel, Tel. +972 (4) 828 8542; Fax: +972 (4) 824 9971; email: aghermand@univ.haifa.ac.il

Received 10 July 2016; Accepted 23 August 2016

ABSTRACT

Desalination has been proposed as a more sustainable alternative to brackish water irrigation in arid areas such as the Arava Valley in Israel. We explore the perception of 128 farmers in the Central and Northern Arava Valley regarding limiting factors in desalination, policies to address them, and willingness to irrigate with desalinated water. Most respondents are aware of the electro-conductivity of their irrigation water (95%) and are concerned about its increase over time (89%). About half is either planning to switch to desalinated water (18%) or intends to do so over the next few years (32%). Economic reasons are identified by 87% of respondents as the main limiting factor in the transition. The results of an ordered logistic regression show that water electro-conductivity, cultivation of at least one salt-sensitive crop, and attribution of high importance to water saving in agriculture are the main factors affecting the willingness to switch to desalinated water. When asked about their preferred type of financial assistance in transitioning to desalinated water, partial coverage of construction costs is preferred over assistance in switching to new (salt-sensitive) cultivations. Overall, the results support the notion that the agricultural sector in the region is mature for transitioning to irrigation with desalinated water.

Keywords: Agriculture; Brackish water; Innovation; Israel; Membrane desalination

*Corresponding author.

Presented at the 3rd International Congress on Water, Waste and Energy Management 18–20 July 2016, Rome, Italy.