

The challenge of capacity-building strategies and perspectives for desalination for sustainable water use in MENA

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ABSTRACT

The desalination industry is increasingly growing in the Middle East and North Africa (MENA) due to the increase in water demand and reduction in desalination costs resulting from advances in desalination technologies. Within the next 20 years, it is estimated that the MENA region will become so dependent on desalination technology for sustainable water supply that a minimum of 50,000 additional technical experts of various professional levels will be needed to service the desalination industry. Over the last decade, desalination experts, industries and manufacturers have launched awareness programs for building capacity in the MENA where there is a greater need for human resources to cater to the needs of the huge water market. Only a few institutions have implemented some academic programs and provided short courses and workshops in desalination; other institutions developed web-based training to the desalination community. But these actions cannot compensate for the need of real institutional training and education as well as for research and development. Capacity-building is urgently needed at different levels: operators, educators, academics and management. Achieving this target requires more specific training efforts in desalination technologies to encompass the principles, practice, operation and maintenance, design, human resources management as well as research and development. A capacity-building program is necessary not only to operate and improve existing plants but also to develop new sustainable technologies. Wastewater treatment and water reuse technologies should also be included in capacity-building programs to achieve a better integration in water resources management. An overview of a capacity-building strategy and perspectives for desalination in MENA are presented. The Middle East Desalination Research Center's approach to enhance human resources and expertise in the region via training, academic education and research and development is outlined.

Keywords: Capacity-building; Training; Desalination; Academic education; Integrated water resources management; Research and development

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