

A framework for multi-criteria decision-making with special reference to desalination in the Middle East

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Desalination is rapidly becoming a reality across the Mediterranean. Around the diverse sections of the basin, countries are operating or planning to operate an expanding system of desalination plants with a variety of technologies and objectives. The Mediterranean is a water scarce region whose demand for water is growing exponentially, primarily in the domestic and agricultural sectors. It seems desalination offers that which the region lacks: water - at an increasingly affordable price. But desalination is also an industrial process, and like any industry, it poses costs as well as benefits. This technological transformation will impact communities, coastal resources and other environmental and social values. Israel in particular, is aggressively pursuing desalination as a means to augment its water supply. To date, six desalination plants along Israel's Mediterranean coast are in the planning process with an overall capacity of 365 million cubic metres per year (mcm), about 15% of the country's drinking water needs. The first of these plants is now operational near the southern coastal town of Ashkelon with a total capacity of 100 mcm/year. The management goal of Israel's policy makers is clear. Desalination is the solution of choice for meeting the country's growing water demands and lessening the impact on the region's over-taxed and polluted surface and ground waters. This paper will explore the emergence of desalination as the mechanism of choice for water scarce countries in the region to meet their growing water needs. It will also discuss the role desalination may play in resolving water conflicts between Israel and her neighbors. In addition, the paper will cover why other alternatives, such as water demand management, are less popular among decision makers. The paper will argue that a comprehensive approach to successful water management, including that of desalination, requires weighing the costs and benefits in making water management decisions.