

عنوان مقاله:

Application of Delphi method in site selection of desalination plants

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خلاصه مقاله:

Given the reduced freshwater supplies across the world, seawater desalination is one of the appropriate methods available for producing freshwater. Selecting an optimal location is crucial in the installation of these plants owing to the environmental problems they cause. The present study was conducted to identify optimal locations for installing desalination Plants in the coastal areas of southern Iran (Hormozgan Province) with application of Delphi method. To implement this technique and identify, screen and prioritize effective criteria and sub-criteria, ten experts were surveyed through questionnaires and eight criteria and 18 sub-criteria were identified. All these sub-criteria were evaluated and classified in ArcGIS into five classes as input layers. The maps were then integrated based on the modulation importance coefficient and the identified priorities using a linear Delphi model and the final map was reclassified into five categories. Environmentally sensitive areas and seawater quality were respectively the criterion and subcriterion that received the highest importance. After combining the layers and obtaining the final map, 63 locations were identified for installing desalination plants in the coastal areas on the Persian Gulf and Oman Sea in Hormozgan Province. At the end, 27 locations were high important and had optimal environmental conditions for establishing desalination plants. Of the 27 locations, six were located in the coastal area of the Oman Sea, one in the coastal area of the Strait of Hormuz and 20 others in the coastal area of the Persian Gulf.

کلمات کلیدی:

Delphi method; Desalination; Oman Sea; Persian Gulf ; Site selection

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