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Feasibility studies for water harvesting from fog and atmospheric moisture in Hormazgan coastal zone (south of Iran)

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The level of precipitation in the coastal towns & islands of the Hormozgan province is very low, but the relative humidity so high that wets the soil at below dew point temperatures and could therefore be utilized for relieving the water shortage, to some extents by employing water harvesting systems from fog & air moisture.
The inhabitants of Qeshm Island have made efforts from the ancient times to collect air moisture along rainwater gathering. The reminders of these efforts are 366 small wells drilled in stone, which are now a tourist attraction. This method is also applied today in a less elaborate manner.
This research has been carried out to study the feasibility of water harvesting from fog and air moisture in the coastal towns and islands of the Hormozgan province of Iran on the northern shores of the Persian Gulf.
To examine the potential water in the atmosphere, the data from Bandar Abbass synoptic station with a statistical period of 1961-2005 was reviewed and the humidity values of over 70% and wind speed less than 5m/s were analyzed. The average water content of each cubic meter of air in Bandar Abbas in its most dry condition is 16.2g which amounts to 19.5g in its most humid state. The maximum water yield by applying this method could be harvested from 22 June until 22 September. The recorded data show that highest rate of moisture in each cubic meter of air occurred in 1961 while the highest extractable water potential was in 1995. Mentioning these facts, somehow indicate the importance of parameters effecting water harvesting such as wind speed and direction and the amount of moisture in the air. More details have been presented in the paper.
Field observations and archeological artifacts approve the results obtained by the conducted estimations showing the feasibility of water harvesting from fog & air moisture in this region and its rates in the different seasons.