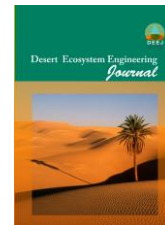




University of Kashan

Desert Ecosystem Engineering Journal

Journal homepage: <http://deej.kashanu.ac.ir>

## The Application of Fuzzy SAW and AHP Decision-making Techniques to Determine the Production of the Potential Semi-arid Watershed Runoff Regions

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Received: 16/4/2017

Accepted: 11/8/2017

### Abstract

One of the most important issues in watershed management is to determine priority for implementing managerial activities. According to the management and decision-making for selecting appropriate locations to implement watershed management projects and also, due to the cost and duration of watershed operations, using decision making methods are very useful. In this study, by using fuzzy SAW and AHP decision models, Parchin's sub-basins of Tehran province have been prioritized based on eight criteria including area, average slope, form factor, time of concentration, average CN, drainage density, t average annual precipitation and elevation. The obtained results showed that according to the above-mentioned methods, the highest priority is for basin 7 among all the sub-basins. In Fuzzy SAW method, sub-basin 7 with 1.86 has the highest score while sub-basin 9 with 1.69 was in the second order. Likewise, in AHP method, sub-basin 7 with the score of 0.2102 has the first weighted priority and sub-basin 9 has the second priority. According to comparison of two methods, it can be said that the first and second priorities of both models are similar in the study, but in other sub-basins, priorities are varied.

**Keywords:** Hierarchical, Fuzzy SAW, AHP, Prioritization.

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