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Decision Making Based on Fuzzy and Analytical Hierarchy Process Methods in Environmental Capability Evaluation of Land for Development of Range Management Land Use

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Abstract

Various kinds of information applied for land use planning bring complexity to the process. Therefore, application of decision making methods, which may decrease such limitations during land use planning, is suggested. The aim of this study is environmental capability evaluation of the land, based on two methods of decision making including analytical hierarchy process (AHP) and fuzzy simple additive weighting (FSAW) in order to develop rangeland management of Gheshlagh dam watershed area (parcel A in Kordestan Province) in western Iran. The information was collected and classified into ecological and socio-economic variables. The classified variables were categorized and weighted on the basis of pair-wise comparison and

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fuzzy triangular function. Then, criteria layers were prepared and overlaid according to AHP and FSAW methods. The results showed that FSAW method is more precise and compatible to real nature of environmental issues when applied for land use planning purposes. Also according to the results we specified that eastern parts of the study area had higher suitability to develop rangeland management.

Keywords: Environmental Capability Evaluation, Rangeland Management, Land Use, AHP, FSAW.

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