

## عنوان مقاله:

Applying the Fuzzy AHP and Multi-Objective Land Allocation method for Land use planning Case study: Sari city, Iran

## محل انتشار:

اولین کنگره بین المللی افق های جدید در معماری و شهرسازی (سال: ۱۳۹۳)

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## خلاصه مقاله:

Interaction between various land uses is necessary for sustainable development. This paper presents the fuzzy-AHP and Multi-Objective Land Allocation (MOLA) methods in a Geospatial Information-based System (GIS) to allocate suitable lands for both agriculture and industry towns area. Sari city in North of Iran was considered as the case study. A Landsat8 image, acquired at ۲۰۱۴ with the pixel size of ۳۰ meter was used. This image was classified based on Anderson level ۱ with Maximum Likelihood classification. Factors considered to allocate optimal areas for industry townss were included: ۱) Elevation, ۲) Slope, ۳) Distance from main roads, ۴) Distance from the exterior urban boundary, ۵) Distance from not-built areas, ۶) Distance from forests, ۷) Distance from rivers, ۸) Distance from agriculture areas, ۹) Distance from the airport, and finally ۱۰) Distance from power stations. Moreover, factors to allocate optimal areas for agriculture area were: ۱) Elevation, ۲) Slope, ۳) Distance from main roads, ۴) Distance from rivers, ۵) Distance from the urban, and ۶) Distance from Forests. Comments of ۳۰ numbers of experts in the field of land use were requested for weighting the proposed fuzzy-AHP method. After providing weights of the factors, the fuzzy- AHP method was developed by the Weighted Overlay Analysis to allocate suitable areas. As a result, the most important factors with the highest weights achieved by the proposed fuzzy-AHP method for industry towns areas were: elevation parameters and proximity to not-built areas, and also for agriculture areas were: proximity to water resources and elevation factors. Allocated areas by the proposed fuzzy-AHP method were compared with outcomes of the proposed MOLA and the common areas between these methods were considered as the suitable areas for either agriculture areas or industrial towns

## کلمات کلیدی:

Fuzzy-AHP, Multi-objective Land Allocation, Geospatial Information System, Maximum Likelihood Classification, Land use

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