

## Optimal location of rural waste disposal with fuzzy logic in Zarrindasht County

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### Extended Abstract

#### Introduction

World population growth and rampant consumerism culture in recent decades due to urban and rural communities with something called mass disposal of waste generated face. Although it is a history in cities, in rural areas of our country is considered a new phenomenon. As long as the rural lifestyle of simple, traditional and introspective have had, waste production and waste compared to urban population at a level very low, but with changing lifestyles and the arrival of new products and increased consumption in the rural community, the amount of waste generated in rural households is also increased; As a result, Management and Disposal in rural areas is also important to own again. Disposal of waste in rural areas is because not only cause disease, stench and ugliness of the environment, but also with contaminated soil and climate create a lot of damage in the natural and social lifecycle. Solid waste management challenges to the plethora of problems developing countries have been added. Changes in infrastructure and pollution of natural ecosystems, including recent developments are the rural community. Perhaps the words of the expansion of urban consumption patterns and the influx of some polluting sources privacy rural villages and changing consumption patterns, environmental pollution in rural areas of the country has provided. Rapid population growth, industrial development and technological progress days and thus an increase in waste, causing serious health problems among human societies have, in addition to collecting such materials in most countries of the world, especially in developing countries do not have the technology so advanced. Absence of proper management in the management of municipal and rural ranging from waste products of human, animals and plants in the environment, because of the different types of food wastes with moisture and the right temperature and sanctuaries has always been piles of trash are the main factors causing many are human and animal diseases.

#### Methodology

The research method is descriptive - analytical and data gathering practices documents and field studies. For this purpose, nine variables were selected using the method of fuzzy HP (FAHP) as are mutually compared. Results and discussion. At this stage, a questionnaire designed for this purpose and by the consulting engineers providing rural plan and experts of Islamic Revolution Housing Foundation, which is specialized to the village and matters of villages was completed with a total of 20 people to the questionnaire perfect answer them; Since the decision-making

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process of locating a multi-trait selection of software that should make it the contract in question. Selection of indicators and variables in this study were derived from literature related theoretically and empirically that due to the characteristics of the study area, these indicators have been finally selected. In this study, 9 layers of information: distance from fault, distance from a watercourse, geology, soil type, distance to roads, distance from settlements, altitude, slope and land use as layers of information was used by the GIS, all the layers spacing and then each layer is classified raster and the end of all the layers overlap, and the final layer was drawn.

### Results and discussion

The distance of rural settlements the most weight in between all the criteria to be allocated and this means that in terms of relevant experts in locating waste landfill waste, human health first priority is and why it should be at least five kilometers landfills waste away from human settlements. Land use is selected as the second most important criterion in the selection of waste. Important for land use must be considered is that of land with low fertility and a sense of moorland used. The use of agricultural land or land suitable for grazing in addition to land degradation and destroys the economy of the villagers losses. Because the majority of the rural economy, agriculture and animal husbandry, agricultural lands and pastures landfill contamination and pollution have poisoned the land is rural and livestock diseases.

### Conclusion

Statistics show that the situation in Iran landfill has been less attention to recycling and landfill waste in the ground is not even considered. We are witnessing more buried much of the country are unsafe and outdoor. Landfill must take place without damage and contamination of the environment, including groundwater and surface water away from sensitive land uses such as urban and rural population areas and agricultural lands to be done. Choose a place thus perfectly suited for a landfill as landfill area is essential to the environmental and social damage on the environment is much less. The results show that a variety of factors including distance from settlements, land use, through communication, geology, distance from waterways, soil, slope, distance to fault and height in optimal site selection affect rural waste disposal. Given that the majority of villages in the city, have not suitable landfill sites. Therefore, in this study, using the model FAHP the study criteria, expert on weight, and finally, the combination of 9-layer information in the GIS, the best place to bury waste was identified optimal. The results show that the use of FAHP measure of distance from human settlements accounted for the highest weight and height, minimum weight criteria to be allocated. The results show that the most optimal locations using GIS overlay layers of buried waste around roads are rural and worst places for landfill near their settlements.

**Keywords:** location, waste disposal, hierarchical model, Geographical Information System GIS, Zarrindasht County