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A SANITARY LANDFILL SELECTION IN NAXOS ISLAND WITH THE USE OF GIS AND A SYSTEM OF MULTIPLE CRITERIA

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ABSTRACT

Selecting a suitable area for a sanitary landfill is a very complicated task involving a series of parameters. For the needs of this paper, we categorized all the parameters into five major groups: a) Geological – Geomorphological – Hydrological - Hydrogeological, b) Land planning, c) Environmental d) Operational and e) Financial. Each group may contain many sub-groups and so on.

In this study we attempt to indicate the most suitable areas for the establishment of a sanitary landfill at Naxos island, using Geographical Information Systems. The method of 'multiple selection criteria', helps to objectively specify suitable areas, based on given weight factors for each parameter.

Geographical Information Systems enabled the processing of all necessary parameters and weight factors in order to develop different theoretical models for Naxos island. All resulting areas, were automatically marked by the GIS, and the best possible solution was isolated. Moreover, we developed different thematic maps, graphically representing the elimination criteria and the resulting positions.

Key Words: Naxos, environment, landscape, morphology, sanitary landfill, GIS