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"Gheorghe Asachi" Technical University of Iasi, Romania

APPLICATION OF DECISION-MAKING ALGORITHMS IN THE LANDFILL SITE SELECTION

Godwin S. Barnabas*, Arun Vasantha Geethan[2], Valai S. Ganesh[1], M.K.V. Karthikeyan[3], Chrispin M. Das[2]

[1]Department of Mechanical Engineering, Ramco Institute of Technology, Rajapalayam, India
[2]Department of Mechanical Engineering, St. Joseph's, Institute of Technology, Chennai, India
[3]Department of Mechanical Engineering, Vaigai College of Engineering, Madurai< India

Abstract

Solid Waste Management (SWM) has become increasingly intricate in developing countries as compared to developed nations. Composting, incineration, and recycling are commonly employed for solid waste treatment and disposal. However, these methods pose economic challenges, especially in developing countries. Among the available options, landfilling emerges as the most cost-effective method for solid waste disposal. However, selecting a suitable landfill site is a complex undertaking. This complexity is addressed by applying Multi-criteria Decision-Making (MCDM) tools, which aid in identifying appropriate sites. Nevertheless, it is imperative to implement measures to minimize environmental impact when selecting a suitable site. This research delves into applying distinct decision-making algorithms to determine the optimal landfill site for solid waste disposal. Various criteria or factors are considered in the site selection process, including legal, economic, environmental, social, and monitoring quality impacts. The study further explores the significance and limitations of MCDM tools in real-time case studies, providing insights into the challenges and opportunities associated with identifying suitable landfill sites for solid waste disposal.

Key words: comparison, enrichment, multi-criteria, preference, priority, technique

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* Author to whom all correspondence should be addressed: e-mail: godwin@ritrjpm.ac.in