

Sustainable Land Resources Management Using Goal programming MCDA model: Evidence from Best Practice in Natural Resources Management

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SUMMARY

Land resources, particularly the soil from an 'agricultural standpoint', and built-up areas for 'residential purposes', are threatened by a combination of factors – climatic, ecological, and anthropogenic, which results mostly from an ever-increasing demographic pressure. This situation justifies rethinking the general attitude to land, and the ideation for sustainability and sustainable land management (SLM). Current land management efforts are insufficient given the new frontiers of global challenges and solutions which are endogenous to land. Planners and environmental experts face a somewhat difficult situation in land resources management when complex decisions and choices must be made from a range of competing alternatives. Multi-criteria decision analyses (MCDA) tools are being used to resolve such difficulties. Most of these tools for example the Analytic Hierarchy Process (AHP), fuzzy set theories, weighted and aggregation-disaggregation models possess severe limitation in how the outcomes of the aggregated variables resolve parametric uncertainties, and solutions not being Pareto efficient. So, the need to examine other MCDA models is exigent. This study, which is primarily a discourse on the application MCDA for LRM, considers the goal programming model. The study draws largely from natural resources management research to offer possible insight and novel research ideas and directions towards a proactive SLM. It will help to explore the varied potentials within land resources which will significantly improve the land economy, and foster breed realistic platform towards achieving the UN's sustainable development.

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