

## **Development of a Decision Support Tool for On-site Wastewater Treatment Systems in Jamaican Communities**

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Proposals for new on-site wastewater treatment systems in Jamaica are approved by responsible authorities based largely on expert judgment. This study has analyzed the technical inputs in onsite sanitation decision making and the processes followed in Jamaica at the national and parish levels. A standardized methodology for groundwater vulnerability assessments (DRASTIC) and an assessment tool for project managers in sustainable development work have also been reviewed. These materials have been brought together and adapted to create a decision support tool for on-site wastewater systems in Jamaica.

This decision support tool evaluates technical site data using DRASTIC and project sustainability using checklists adapted from the reviewed assessment tool. In addition to environmental data and economic viability, the support tool evaluates socio-cultural respect, community participation, and political cohesion as components of social sustainability. As a result, the score represents a triple bottom line (environmental, economic, and social) evaluation of the proposed project. Parameters from each of these methodologies are evaluated and weighted to generate a project appropriateness index.

This score represents the project's suitability in terms of relative risk of environmental contamination and social and economic feasibility. It is hoped that adoption and use of this tool by health authorities will result in better on-site sanitation decisions and help ensure the safety of drinking water for the future.