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RESOURCE

# Multi-criteria analysis for improving strategic environmental assessment of water programmes, a case study in semi-arid region of Brazil

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**Description / Abstract**

Multi-criteria analysis (MCA) is a family of decision-making tools that can be used in strategic environmental assessment (SEA) procedures to ensure that environmental, social and economic aspects are integrated into the design of human development strategies and planning, in order to increase the contribution of the environment and natural resources to poverty reduction. The aim of this paper is to highlight the contribution of a particular multi-criteria technique, the analytic hierarchy process (AHP), in two stages of the SEA procedure applied to water programmes in developing countries: the comparison of alternatives and monitoring. This proposal was validated through its application to a case study in Brazilian semi-arid region. The objective was to select and subsequently monitor the most appropriate programme for safe water availability. On the basis of the SEA results, a project was identified and implemented with successful results. In terms of comparisons of alternatives, AHP meets the requirements of human development programme assessment, including the importance of simplicity, a multidisciplinary and flexible approach, and a focus on the beneficiaries' concerns. With respect to monitoring, the study shows that AHP contributes to SEA by identifying the most appropriate indicators, in order to control the impacts of a project.

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