A Multi-Criteria Decision Aid Technology to Deal With an Irrigation Problem.

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Taking into account of the importance of agriculture and food-invoice, scientists constantly look for new soils able to be irrigated and then apply a policy of management. Such study requires a multidisciplinary approach involving topography, pedology, geology, geomorphology, agronomy, ecology, economy.
Geographical information systems (GIS) are particularly well adapted to irrigation problems since they provide the decision maker with a powerful set of tools for the manipulation and analysis of spatial information. However, land suitability evaluation has to face two major difficulties. First, there is a huge number of alternatives because, in raster representation each different coordinate is a possible solution. Second, the decision making process is generally based on different criteria, which can be defined on a quantitative or a qualitative scale.
In the context of suitability sites for irrigation, the use of multicriteria evaluation (MCE) techniques is particularly interesting. The integration of multicriteria methods with GIS is forwarded as providing the user with the means to evaluate various alternatives on the basis of multiple and conflicting criteria and objectives. This paper explore the possibility of improving communication between land use and decision makers, using an interactive system.
Thus, an example application based on the search for suitable sites for irrigation in Tlemcen (Algeria) using IDRISI as raster GIS and ELECTRE as MCE methods is included. The potential of this integration forms an interesting spatial decision support systems.
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