Hybrid system (m-sald) of multicriterial analysis as a decision support tool for the selection of areas for the construction of hydraulic structures

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The identification of feasible areas for the location and possible construction of dams allows to guide and optimize the conservation efforts of the natural ecosystems, as well as the social and economic means that are around the area of analysis. The objective of this article is to present the proposal of a hybrid system that, using multicriteria and georeferenced analysis, allows the selection of possible potential areas to locate/build dams in them. In addition, a definition of the proposed hybrid system is proposed and a general methodological outline is established that guides the conduct of future studies. During the development, qualitative techniques based on simple analysis and the experience of experts were analyzed; and quantitative techniques based on the use of statistical and optimization models; in addition to spatial techniques used as tools for the realization of simpler quantitative processes. Of these, the latter have advantages, since they consider the execution of more detailed analyses, both of criteria and of restrictions and threats. The minimum phases that must be carried out are the definition of the objective to be prioritized, the selection and processing of

criteria; the identification of restrictions and threats; as well as the choice of areas through optimization methods. Knowledge of the different methodologies makes it easier for decision makers to choose or combine the most suitable ones for the main objective.