Geophysical Research Abstracts
Vol. 14, EGU2012-5666-1, 2012
EGU General Assembly 2012

Discussion about decision support systems using continuous multi-criteria methods for planning in areas with hydro-basins, agriculture and forests, from examples in Argentine.

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The authors were involved last years in projects considering diverse decision problems on the use of some regions in Argentine, and also related to rivers or rural services in them. They used sets of multi-criteria decision methods, first discrete when the problem included few distinct alternatives, such as e.g. forestry, traditional or intensive agriculture. For attributes they were different effects, classified then in environmental, economic and social criteria. Extending to other gentler areas, such as at South of the Province of Córdoba, Arg., they have balanced more delicately effects of continuous levels of actions, with a combination of Goal Programming linked methods, and they adopted compromises to have precise solutions. That has shown, and in part open, a line of research, as the setting of such models require various kinds of definitions and valuations, including optimizations, goals with penalties in deviations and restrictions. That can be in diverse detail level and horizon, in presence of various technical and human horizons, and that can influence politics of use of terrain and production that will require public and private agents. The research will consider consideration of use and conservation of soils, human systems and agro productions, and hence models for optimization, preferably in such Goal Programming ways. That will require considering various systems of models, first in theory to be reliable, and then in different areas to evaluate the quality of conclusions, and maybe that successively if results are found advantageous. The Bayesian ways will be considered, but they would require a prospective of sets of precise future states of nature or markets with elicited probabilities, which are neither evident nor decisive for the moment, as changes may occur in years but will be very unexpected or uncertain. The results will be lines of models to aid to establish policies of use of territories, by public agencies setting frames for private agents of different size and kinds, with different horizons of climatic and human changes. The usable models will depend somehow on the type of areas, which have different climates and soils, population, markets and maybe civilizations, starting with Argentine examples, if possible compared in cases with Spain.