

Interactive comment on “Systems analysis – a new paradigm and decision support tools for the water framework directive” by M. Bruen

Anonymous Referee #3

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The paper “Systems analysis – a new paradigm and decision support tools for the water framework directive” presents a state of art of concordance and AHP methods applied to EU WFD (water framework directive). The paper is divided into two parts. From 1 to 5, the author presents arguments to introduce a new paradigm in multi-criteria decision process using formal methodology.

This section is divided into 3 parts: theoretical presentation of systems approach and the new paradigm, state of art of several methods used in decision process, and implementation in DSS tools (decision support systems). The pedagogic presentation of this part is very useful to understand the advantage of this kind of models in complex situations. Formal expressions are well written.

The second most important part (section 6) develops WINCOMS project. This section is very short in comparison to the first and is not strictly connected to it.

General comments:

The two parts of the paper have to be more balanced. Do not forget that the title contains “for the water framework directive”.

The approach is mostly theoretical and has to be argued by case studies or more examples. Those cases have to be chosen from WINCOMS project if possible.

What are the specific stakeholders in hydrology systems that need to be introduced in such models?

More specific comments:

- Concordance and AHP models have undeniable advantages that are well presented in the paper. But they have also non negligible difficulties such as stability, non linear evolution, partial dependences, etc. Author has to bring up those problems (even not in details) and precise how to get around especially from WFD point of view. Section 3 and 4.

- Examples from hydrology can be added in sections 4.1.1 and 4.1.2 to give more practical applications to readers (section 4).

- Same comments to DSS. Section 5

- The paper has to precise what the specific stakeholders according to WINCOMS project.

- Outline of WINCOMS model should be given: quantitative inputs (hydrologic, economic...), multi-criteria interpretation of those inputs, examples of some results.

The paper is accepted if those comments are taken into account in next version.

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