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4, S600-S602, 2007

Interactive Comment

# Interactive comment on "Participatory scenario development for integrated assessment of nutrient flows in a Catalan river catchment" by F. Caille et al.

# Anonymous Referee #2

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### GENERAL COMMENT

The paper is interesting and well structured, and therefore quite easy to follow. It proposes a new methodological approach—participatory scenario development—for the sustainable management of nutrient flows. It also documents well the scenario building process, and could be submitted to any other journal interested in the scenario approach. However, it is not clear that anything new is being argued from a scenario building perspective. Therefore, if the paper is positioned for this journal, a further emphasis on the role of participation and scenario building in water management is needed.

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Moreover, the text should clarify the value of the participatory process for scenario building since the title is 'participatory scenario building' and not another kind of scenario building. Would it be possible to obtain the same storylines by using desk research or expert judgement? What would be different /missing?

At the same time, the role of the model in the overall process is not well explained: is the model used to check the internal consistency of stories or to quantify them? Explaining the link between the narratives and the model in more detail would improve the argument and the narratives. The storylines and the scenario results—as they are—seem to be too easy. For example, the extent of the trade-offs for the sustainability scenario—which is of course the most desirable one as it is—is not clear. Is the rate of growth the same in 'the market governs' and the 'sustainability' scenario? Are all stakeholders winning in the sustainability scenario?

### SPECIFIC COMMENTS

(1)In relation to the scenario typologies, on p. 1271, it is noted that the scenarios fall in the category of explorative and external scenarios given the typology proposed by Börjeson et al. (2006). Following van Notten et al. (2003) typologies, these scenarios can also be classified as explicitly 'normative' (rather than being descriptive). If the authors agree with this point then mentioning this point in the text can be used to clarify the project goal (decision support, for instance). It seems that the aim is to show that given certain conditions, growth can go hand in hand with environmental protection.

(2) It is well-known that a crucial factor that moves the scenario approach beyond the traditional modelling practices is its explicit account of qualitative dimensions of the problem being considered. In the scenario building process and in the narratives, though there is explanation of the shaping factors, there is no reference to shaping actors. One might argue that this is related with the fact that only external factors are taken into account for scenario building. Yet, it might still be useful to clarify the role played by different stakeholders and governance structures (at different levels of

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analysis).

(3) Related with this second point, these scenarios assume that external forces are not under the control of stakeholders. What can the local stakeholders do then to achieve 'sustainability' scenario? Just hope?

- (4) Where does the list of model indicators come from? To be clarified.
- (5) On pp. 1284-85, some challenges of the participatory process are listed. However, the role of the researchers in solving these problems during the process is not well-explained (especially for this case). For example, who decided what is realistic and unrealistic? (p. 1285). What happened when there was no agreement/consensus in the group about driving forces/key uncertainties?

### **TECHNICAL DETAILS**

References are extensive and up-to-date. English style is excellent.

I hope these comments stimulate another round of thinking and a stronger paper.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 4, 1265, 2007.

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