

Interactive comment on “Modeling for transboundary water resources planning and allocation” by D. Juárez and R. Lidén

D. Juárez and R. Lidén

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First we would like to apologize for this delayed response to comments presented by referees to our paper. However, issues out of our control have made it difficult for us to react on time.

We thank the Anonymous Referee #3 for the time spent reviewing our paper and the comments presented. Responses to comments, where appropriated, are given in following paragraphs. In general the authors find that some of the comments made raise important questions that cannot be incorporated in the current paper without distorting the original objective of it. In fact such issues like the role of models and system analysis tools in international agreements are wide topic and one that often related to specific socio-economical and political setup of water resource system in question.

This current paper discusses the situation in Southern Africa and is based on the few examples of the cases where the agreed framework by SADC member states has been tested see also Juizo et al. 2006 for details. In fact that paper discussed extensively on the issues and roles of models in the process of reaching agreements and lead to the need to assess the soundness of the tools used for reaching the allocation in these models. Apportionment of transboundary waters in SADC is mainly the definition of the agreed development scenarios. The co-basin states define in the agreement what level of development is agreed for different sectors of the economy. The operational aspects of the agreement are a different matter and not the one of direct interest to this paper. The authors agree with the Anonymous Referee #3 that optimization will lead to different results depending on the objective function being used in the optimization process. In the same way the optimum is also related to the development scenario being tested. The last comment from Anonymous Referee #3 touches upon the core issue of the current paper and the reason why such research was necessary. In fact it is seen in all three models that the model developer (his own words) can manipulate the results to favor one or another user of scenario. However, this can be minimized by increasing transparency and agreeing first on the allocation principles adopted in the model. The participatory approach is necessary to generate legitimacy of the results. As pointed out by Reitsma et al. 1996 (in Dent 2000) "Sharing of models and information among interest groups assumes the acceptance by all parties of those models and data"; The other issue with models is that they generally embody a sequence of assumptions and have cultural background that influences the minds that help develop them (Dent 2000). Given these statements the role of stakeholder participation should not be underestimated in the process (Juizo et al. 2006, pp 234). Finally the Authors have incorporated the changes suggested by the Anonymous Referee to the degree that they do not change the original objective of the paper as pointed out in the previous paragraphs.

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Discussion Paper

