

Interactive comment on “Quantifying the impact of climate change on water resources at the basin scale on five continents – a unified approach” by M. C. Todd et al.

M. C. Todd et al.

m.todd@sussex.ac.uk

Received and published: 14 February 2011

Reviewer 2 rates the paper as ‘good’ in each category but makes some valuable suggestions for improvement. Specifically, 1. Potential problem of overlap with the paper of Gosling et al. (2011, same issue).

We agree that there was a degree of overlap and redundancy with the Todd et al. and Gosling et al papers, and that the Todd et al. paper did not have a clear enough focus and aims. Accordingly, we have substantially revised the Todd et al., paper such that the unique focus and content of the paper is clear.

C5087

(i) We have clarified the specific aims of the Todd et al. paper (last paragraph Section 1). Namely, (i) to serve as an introduction to the special issue, (ii) to provide a detailed description of the methodology used to generate the climate scenarios used in the individual papers of the special Issue, including Gosling et al. (iii) to provide a very brief synthesis of the main results of the special issue papers, in a very digestible form for those readers who may not want to read all the special issue contributions

In contrast the Gosling et al. paper aims specifically to undertake a ‘comparative analysis’ of climate change simulations for river basin scale water resources derived conducted using a global hydrological model versus those from catchment hydrological models.

(ii) To emphasise the unique focus of the paper we have changed the title and shortened the introduction (Section 1). The introduction now explains the justification and rationale for the QUEST project and the particular methodology adopted, including the value of the unified set of climate scenarios described in Section 2.

(iii) Section 2 describing the generation of climate scenarios now forms the major part of the paper and provides all the necessary detail to support the papers in the Special Issue which reference the methodology. This ensures that the methodology is not repeated in each of these.

(iv) Section 3 has been reduced by about 70% such that it now provides a concise and easy to digest synthesis of the major findings of the individual papers. This addresses reviewer comments 1 and 2.

2. The reviewer questions the extent to which the paper successfully provides an ‘assessment of the overall outcome of the special issue’. They note that ‘It has to be clear (including in the abstract) what the added value of this summary paper is’

(i) Section 3 now provides a concise and easy to digest synthesis of the major findings of the individual papers.

C5088

3. 'The assessment of the overall contributions, relative between the study basins, and with respect to overall previous conclusions drawn by other studies is not taken as far as it could and somewhat hidden in the manuscript. What are the main conclusions?'

(i) The content of Section 4 is now more clearly distinct from the other sections. Here, we place the results of the project within the wider context of previous work in the field and provides some reflections on the implications of the results for climate change adaptation activities and policy. We feel that a discussion of the results is more appropriate than identifying a few major conclusions in this context. Finally the reviewer makes 2 further suggestions

4. 'that the authors add a table that summarizes the main conclusions drawn.'

This is an interesting suggestion. Having tried to make a table we feel that it would be rather cumbersome and so we prefer the numbered list of findings in Section 3 followed by reflections in section 4.

5. 'the are references missing, e.g. Chiew (2007) is not listed. Please check all your references.'

References now fully checked

Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/7/C5087/2011/hessd-7-C5087-2011-supplement.pdf>

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 7485, 2010.