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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Sustainability of water uses in managed hydrosystems: human- and climate-induced changes for the mid-21st century" *by* J. Fabre et al.

Anonymous Referee #1

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This paper analyses water scarcity in two Mediterranean watersheds. For 2050 scenarios of future water availability and water demand are calculated, "water demand satisfaction indicators" are set up and compared to values from 2000. In principle the overall topic of the manuscript is highly relevant, since the Mediterranean region is facing severe water shortage already today which is accelerated by anticipated global change. Also the methods used are adequate.

However, the paper contains a high level of redundant information compared to two recent papers by the same authors: A. Grouillet et al. (2015), Journal of Hydrology 522, 684–696 deals with historic and future water demand. B. Fabre et al. (2015), Hy-

drol. Earth Syst. Sci., 19, 1263–1285 deals with a historic comparison between water demand and water availability. All papers use the same catchments, the same models and the same data. A manual check revealed a high level of analogy. Several figures and paragraphs of the texts are similar, some parts even identical. This is especially true for parts of the introduction, study area and methodology (Fig. 1 and 2). This means, the present paper needs to be condensed to build upon published information and needs to concentrate on really novel findings that have not been published before.

A recent paper: J. Fabre et al. (2015), Proc. IAHS, 371, 43–48, creates additional problems in this respect. This open access publication is a conference proceedings but comprises exactly the same information as the present manuscript: It compares future water availability and water demand and develops the same indicators as the present study. It contains almost identical results: figure 3/4/5 of this manuscript (in parts of totally) are therefore strictly speaking already published. I leave this decision to the editor of HESS, how published conference proceedings with very similar content are evaluated in terms of copyright and redundancy.

But also disregarding the conference proceedings, the two published papers in HESS and Journal of Hydrology call for major revision of the present manuscript: The authors must shorten their paper, build upon their own published work and crystallize real new results. This is true for all parts of the present manuscript.

The introduction needs more structure, should be condensed and subdivided into paragraphs according to relevant topics. Redundancy compared to the published papers must be avoided. At the end a clear research gap and working hypothesis needs to be developed: What is really new in this paper, how does it build upon existing work? As the main topic of the present paper is water scarcity, relevant papers on water scarcity methodologies need to be introduced and later discussed in the context of the present work: The excellent review (Whitepaper by Brown and Matlock, 2011) is one example. More specific examples include the application of the WEAP tool.

But also the methodology needs to be shortened, since water availability and demand have been calculated and published before using the same model and the same methods. The water scarcity indices have only been introduced in the conference proceedings, so this could a new topic, the paper could focus on. This only if redundancy with the conference proceedings has been clarified (see above). But why do the authors call their indices "indicators for water demand satisfaction“? They are indices for water scarcity and should be compared to existing indices, e.g. reviewed by Brown and Matlock (2011).

Also in the result section entire paragraphs need to be removed, e.g. 4.1.2 on water demand scenarios, which has been published before. Again the problem with the published conference proceedings needs to be solved, because as stated above, the majority of the results are contained therein.

A more detailed review is only meaningful, if redundancy is removed and a fundamentally updated version is submitted.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 9247, 2015.