

Interactive comment on “Assessing water footprint at river basin level: a case study for the Heihe River Basin in northwest China” by Z. Zeng et al.

Anonymous Referee #1

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General comments:

This paper calculates the water footprint in the Heihe River Basin, China with a bottom-up method. The authors have made a great deal of effort in quantification and result analyzing. One of the main contributions of the study is to compare the water footprint with the water resources availability on monthly basis. Since water availability in China is highly seasonal, the comparison is of significance for integrated water resource management in semi-arid area of China.

However, I believe there is some improvement should be done.

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First, the aim of the paper is not clearly clarified. The authors mentioned that few studies have focused themselves at the river basin scale. However, there are still some studies at the river basin scale, e.g. Zhao et al. (2010) calculate the water footprint in the Haihe River Basin, China. The authors should add some relevant references to the paper. Moreover, researching at the river basin scale is not enough to indicate the importance of the study. The authors should also indicate the importance of researching the water footprint at the river basin scale and why the relevant study is scarce.

Second, I suggest that the authors should compare the results of the virtual water content and water footprint with other studies using the same method.

Anyway, I recommend publishing the paper with minor revision.

Detailed comments

“Water footprint” appears many times after you use the acronym WF.

Page 5780 line 25 should read “800 million people lacking of a safe supply of freshwater”

Page 5781 line 4 replace “of” with “for”

Page 5783 line 5 you should explain why you don't include the grey water in your study.

Page 5790 line 3 delete “according to our estimate”

Page 5792 line 3-5 “Moreover, WF includes consumption of green water, in addition to blue water, while the traditional statistics on water withdrawal only account for blue water. In contrast, WF can quantify what type and how much water is consumed by human activities.” The sentences use a long-winded way of expressing that water footprint includes both blue and green water component.