

## ***Interactive comment on “A novel data-driven analytical framework on hierarchical water allocation integrated with blue and virtual water transfers” by Liming Yao et al.***

### **Anonymous Referee #1**

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This paper developed a data-driven analytical framework for optimal water resource allocation that addresses blue virtual water transfers in the presence of different hydrological and economic conditions. Water resource utilization in district irrigation and conflicts between competing users and social-economic development and environment protection has substantially increased importance in recent years and the ideas proposed in this paper are interesting and valuable.

From my point of view, the work is well-done and provides interesting results to the HESS and thus it merits to be published. Just, I suggest some minor modifications before publication: 1. The conception of “blue water” and “virtual water” should be

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clearly described. Do they have an inclusion relationship? 2. The proposed model focused on the irrigation district problem. So the title of this research article should be more specific to highlight the water allocation in the irrigation sector. 3. There are many useful conclusions drawn from the results of the proposed optimization. Maybe you should give some advice to the decision-makers facing similar problems.

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