

Interactive comment on “

Analysis of intra-country virtual water trade strategy to alleviate water scarcity in Iran” by M. Faramarzi et al.

Anonymous Referee #1

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This is a novel and well-written paper about options to increase wheat production and ensure wheat self-sufficiency in Iran, by reallocating patterns of land and water use as probably required in the face of (growing) water scarcity in this country. Only a few points should be considered or presented more clearly before final acceptance, as specified in the following.

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1) Section 2.3(.1): A more detailed explanation is needed of how blue water resources, evapotranspiration, and yields were calculated, and how from these crop water productivity and eventually the water requirements for self-sufficiency were determined. Also helpful would be a map showing the present pattern of crop water productivity.

2) Can you speculate about what potential there is to reallocate the production areas of crops other than the four investigated here (i.e. including reallocation of non-irrigated areas, or even non-cropland areas)? And inasmuch the “historic maximum” of crop area change in a province, which is set as an upper limit here, could be exceeded in the future?

3) It is quite often stated that the focus is on the national crop and self-sufficiency strategy, this statement can be deleted at some places.

4) Section 3.1: The first paragraph belongs to the methods. The parameters should be named here, in relation to Fig. 2.

5) Editorial comments: Page 2622 line 26: What is the “national I value”? Page 2624 line 10: Delete “S3” (mentioned twice). Page 2626 line 18: Delete “of them”.

6) Section 4.1: First part belongs to Methods.

7) Section 4.2 lines 20 ff: I do not understand: If the water required in a recipient basin is larger than in the resource basin, this does not suggest that water transfer projects are inefficient but exactly the opposite is true? The following sentence on water quality should be merged with / moved to section 5. In the latter section a bit more of discussion of the limitations of the present modeling approach and the chosen parameters is needed.

8) Table 4: Is this table referred to anywhere in the text?

9) Fig. 1: The “No” arrow on the bottom right side should be placed next to the “Desirable solution” box and not the “Stop” box. Fig. 3: “resulting” not “resulted”. Especially in Fig. 6 the letters are too small; the titles in the legends of all maps are not needed

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and should be written only once, in the figure caption. Fig. 8: What do the two gray color schemes represent? Where does the figure show virtual water fluxes?

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