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Discussions

Interactive comment on "An extended modeling approach to assess climate change impacts on groundwater recharge and adaptation in arid areas" *by* H. Hashemi et al.

Anonymous Referee #2

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H. Hashemi et al. present results from an interesting case study in Iran. The topic "climate change, flash floods, recharge with impacts on groundwater management in arid areas" is important and interesting. The work seems to be well designed and the connection between climatology and hydrology is good. The manuscript, however, will need much more focus on presentation and writing style. At present, the manuscript is unclear and some sections are too long which also makes the review of this manuscript hard.

Major comments: Section 2: Is this section needed? If so focus on recharge in arid environment by river flooding. This must be reviewed somewhere shortly (in Intro maybe).

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Section 3: A geological cross-section should be presented. Also a conceptual model is needed to show main water fluxes. The title could be improved to include some of the final outcome of this work The uncertainty of the modelling needs more attention A geological and conceptual model of the aquifer should be presneted (an its uncertainty must also be discussed)

Minor comments: p 11799 remove word “scholars” p 11800 line 4 Replace “hydrogeological” models with “groundwater” models p. 11800 line 13-25 poor style and logic p. 11805 line 14 you say geology determine runoff amount??? Correct this. I suppose climate (P-ET) determine rainfall amount (or T if snowmelt). section 3.1 the role of increase water used after MAR could be better highlighted in this work (as this is important information to the water management community, even if it is already reported in some other studies). section 3.3 here you repeat information from earlier. section 3.4 why did you not use a common empirical model to get ETP? was you approach better? section 5.3 here also some results are repeated The result section 5 start with a text does not seem to be related to “results” The result section in general is poorly written with a mix of method and results It seems that old CC scenarios are used which needs justification

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 11797, 2014.