

Interactive comment on “Hydrologic effects of land and water management in North America and Asia: 1700–1992” by I. Haddeland et al.

Anonymous Referee #1

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The paper covers an interesting and contemporary hydrological problem of quantifying effects of human activities on hydrological responses. A rather ambitious approach is taken of quantifying effects of changes of a) land cover, b) irrigated area, and c) large-dams at the sub-continental level, i.e. for North America and Asia.

The major weakness of this paper is that techniques and several data sources are used without justifying the selection of a technique or data source.

The authors have not justified the selection and use of the variable infiltration capacity model.

The accuracy and applicability of the following data sources are never critical dis-

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cussed:

1. Historical cropland data from the SAGE database.
2. Irrigated areas from Siebert et al. (2005).
3. Vegetation and cropland data from Ramankutty and Foley (1999).

The source of meteorological data is never presented. The period simulated by the Variable Infiltration Capacity is given as part of the discussion of results, yet this should have come right at the beginning of the Methods section. The method used to estimate precipitation used for enable modelling at the sub-continental level is never presented.

It is very difficult to accept the validity of the results obtained without a discussion of how the accuracy of the data used, and the suitability of the method adopted affects the outcomes.

The implications of the results with regards to watershed/river basin management, and water resources management in general should also be discussed.

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