

Review:

The authors present a great overview about lines of thought, prospective fields of application and modelling approaches in sociohydrological modelling. Referring to ecohydrology and (more extensively) to socio-ecology is a smart choice as these fields provide a wealth of viewpoints, theories and modelling approaches that can be used as a source of inspiration.

There are two more major comments about this otherwise excellent paper:

1. The paper should pay some attention to two lines of research that involve mild sociohydrological influences and are precursors to sociohydrology:

- Integrated assessment modelling: Integrated assessment model (such as Image) include the full interaction between the economic, water, energy and eco subsystems (<http://www.pbl.nl/en/news/newsitems/2014/image-30-released>).
- Global water resources models. This is the line of research starting with WaterGap and WBM at first considered human impact on water resources separately: comparing water availability and demand, but has recently integrated human water demand, consumption and return flows in the hydrological cycle, where at the short time water demand reacts to availability and availability reacts to water consumption, but also socio-economic scenarios are used (this time not coupled) that prescribe future economic development. Examples are:
 - Water use reacting to and influencing drought (The authors could also cite Wanders and Wada (2015) here, or a precursor to this work: Wada et al., 2013) -> -> 8767 (5)
 - Future water scarcity under climate and socio-economic change where water use is a function of water availability, climate and socio-economic change and water demand feeds back on hydrology (Haddeland et al., 2014) -> 8767 (5)

2. The paper is not easy to read. It travels through so many different concepts and it practically the size of a small book on the subject. Perhaps it is not meant to be read in one go (I certainly was not able to make it). So a figure explaining the structure of the paper and the relations between the chapters may improve readability.

Minor points

- Page 8775, line 17-21: this is a curious sentence. Multiple feedbacks may also yield grossly different solutions that may also be pareto-optimal for some given criterion and thus are in fact political alternatives. This seems a great challenge.
- Page 8778, line 10: bracket “)” after 2011 (“ before “Adger”.
- Page 8787, line 1: “winnow”?