Hydrol. Earth Syst. Sci. Discuss., 12, C3876–C3878, 2015
www.hydrol-earth-syst-sci-discuss.net/12/C3876/2015/

Hydrology and Earth System Sciences
Discussions

Interactive comment on "The use of semi-structured interviews for the characterisation of farmer irrigation practices" *by* J. O'Keeffe et al.

Anonymous Referee #1

Received and published: 27 September 2015

I read hess-2015-254, "The use of Semi-Structured Interviews for the Characterisation of Farmer Irrigation Practices", by J. O'Keeffe and colleagues with a great interest. The paper promotes using semi-structures interviews for obtaining various data on irrigation practice directly from farmers. These data can be then used for decision making as well as informing hydrology/water resource system models (and ultimately Earth System models) for understanding the extent of human-water interactions in time and space. This is quite important considering the lack of measured data on irrigation water use and the fact that current estimations contain various sources of uncertainty, which are often large in their quantity. The paper is well-written and certainly within the scope of HESS; however, the paper suffers from several, some rather major, deficiencies, which should be improved prior to the final publication in HESS. Below I try to briefly elaborate

on these limiting points – please consider these comments as positive. I believe there can be a good paper in here.

First, although authors provide quite an extended description of "semi-structured" interviews, it is not very clear how this mechanism was applied in this particular case. Authors should provide information on how the farmers were approached, interviews were guided, and more importantly, how the truthfulness of the information obtained can be verified independently using e.g. local observations etc. I suggest, therefore, that Section 3.1.3 is extended to provide enough description for interested readers to replicate such procedures in other cases.

Second, the results are rather raw considering the arguments made in the introduction. Section 3.2 briefly presents few statistics and discuss their variability between and within regions. This is totally fine but is not enough considering the motivation highlighted in Section 1. In particular, how can such information be used in large-scale models instead of bottom-up and top-down estimations? Please elaborate on that.

Third, what are the sources of uncertainty in the information obtained from these interviews and how can these uncertainties be quantified and taken into account in modeling and/or decision making applications? Without such information, it would be very hard to convince modelers and decision makers to use such data.

Forth, how can these data be compared with various top-down and bottom-up estimations? Data on global, nationwide and regional water use are available through various sources (e.g. FAO-AQUASTAT), which can be downscaled based on various proxies to the regions considered in this paper. Alternatively, various algorithms are available to estimate the irrigative water demand (and with some assumption water use), e.g. the difference between PET and ET. These estimations should be compared with the data obtained from interviews.

Fifth, what sort of qualitative data are obtained in here? All variables mentioned in Section 3.1.4 and 3.1.5 are purely quantitative and I am wondering what are the merits

of semi-structured interviews in here? I am not a social scientists and my knowledge on qualitative methods are rather minimal, however, I think all the information obtained in here can be obtained using simple questionnaires with exact questions and exact answers. So there is no room for “previously unknown information to emerge”. Regarding this, I think authors should take into account the short comments made earlier on their paper.

I also have two minor comments: First more information is required for RQDA software and how it can be used to process the information obtained from interviews. I suggest a stand-alone subsection for this. Also the quality of Figures 3 and 4 should be improved.

Many thanks for your attention and best of luck with revising the paper!

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 8221, 2015.