The authors have clarified most of the comments and concerns. However, one major concern remains: authors should include and analysis the uncertainties and sensitivity of the water management components. While large-scale hydrologic models have been developed and validated under the uncertainties and assumptions that holds at the large-scale (e.g. 1 deg resolution), when moving to hyper-res processes should be revised (including water management) and uncertainties should be understood. Since the focus of this paper is the implementation of water management at hyper-res scale and potentials to expand it to global scales, understanding of the uncertainties (and sensitivity) of the water management components at the hyper-res scale must be address prior to publication.

Previous comments and replies:

Review comment: This modeling exercise demonstrated how models with localized inputs perform better than with global inputs. It would be great if the authors could provide a sensitivity analysis of the different input datasets to identify which are the most critical for improved performance. I propose a validation analysis using a leave one input out approach. In this way, besides just reporting what we know is already expected (localized models perform better), this paper has the potential to actually inform the scientific community of which of the inputs for hyper-resolution modeling we should be focusing on improving. Of course, all of them are important, but ranking them would greatly value future work in this field. Is that crop data? Precipitation? Water use and withdraws, etc.

Author Reply: Thank you for this comment. For hydrological simulation, we have newly conducted a sensitivity test. Please see our response to Dr. Luka Brocca for the results. In short, the results indicate that the usage of local meteorological observation dominantly contributed to improving the performance. Similar sensitivity simulations can be done for other components, including irrigation water requirement estimation and dam operation, but we omitted them because we can easily expect earning the same conclusions.

Review Reply: I appreciate the authors efforts to include the sensitivity analysis on the precipitation products, as suggested by the other reviewer. I suggest moving it to the main body of the manuscript. However, the main objective of this paper is the implementation and assessment of water management at hyper-res scales and the potentials of expanding it to global scales, isn't it? The authors should include the sensitivity analysis of the water management components (irrigation and dam operation are great examples). Although the authors expect the same conclusions, in my opinion, the uncertainties in water management components or human influence processes are far much larger and must be understood before applying and using these models to simulate water management at the local scales. Quantify these uncertainties will provide confidence (or not) that such processes are well represented at H08 at the hyper-res scale. Furthermore, it can provide the scientific community with novel insights on what needs to be done or pathways forward to implement such water management components at global scales. Many papers have already quantified the uncertainties of precipitation data quality to hyper-res modeling, this manuscript has the unique opportunity to be the first to quantify the uncertainties of the water management component at this scale.