

Reviewer #3 – General Assessment of the Revised Manuscript

I would like to sincerely thank the authors for their thoughtful and comprehensive responses to my previous comments. It is clear that great effort has been made to carefully address nearly all of the points raised, both in the revised manuscript and in the accompanying point-by-point response. I greatly appreciate the authors' diligence in revising the text, figures, and explanations related to the model structure, parameters, and scenario assumptions.

The revised version of the manuscript reads much more clearly and cohesively, and I believe it is now in very good shape for publication as a model description paper in *GMD*. The improvements have significantly enhanced the transparency of the study, especially for readers who may be unfamiliar with certain modeling or economic concepts. I commend the authors for their extensive revisions and for their commitment to scientific clarity.

That said, I would like to respectfully request that the authors revisit a few remaining (previously major but now minor) issues related to my previous comments. These are relatively minor points, and I leave it to the authors' discretion to determine whether and how to address them, depending on necessity or feasibility. However, I believe that addressing them, where possible, would further improve the manuscript's precision and consistency.

Remaining MINOR Points for Consideration:

(Noe: Here, comment numbers are the same as ones in the previous review round)

- **Major Comment 2:** While the revised manuscript now includes an explanation of how initial reservoir storage levels are given, it still lacks any reference to *dead storage* in the text. If dead storage is assumed to be zero in the current version of the model, this assumption should be also clearly stated in the text.
- **Major Comment 4:** The addition of the discussion regarding the Ricardian rent principle is appreciated. However, it would be preferable to cite a relevant reference or source that supports this economic assumption, to enhance transparency for readers unfamiliar with the concept.
- **Major Comment 18:** The revision helpfully clarifies which components are included in the phrase “a combination of water management options.” However, specifically, “limiting the use of non-renewable groundwater can help satisfy the

demand” still feels somewhat counterintuitive to me. If the intention is to suggest that such a constraint indirectly enables demand satisfaction by encouraging the adoption of other demand management options (as described in the DM scenario), then this causality could be clarified. Otherwise, limiting a water supply source seems to act more as just a constraint (as the authors also mention in the text) rather than as a facilitator in satisfying demand. In the authors’ own explanation, it is the demand management options that directly serve to satisfy the water demand.

To avoid misunderstanding, especially in a scientific context, I would suggest rephrasing the sentence along the following lines. I hope the authors will consider revisiting this sentence to ensure the intended message is as precise and interpretable as possible.

“A combination of water management options (including improving irrigation efficiency and optimizing land and water demand allocation, even with limiting use of non-renewable groundwater) can reduce the water demand to help satisfy the demand.”