General Comments

The manuscript "Combined Impacts of Climate Change and Human Activities on Blue and Green Water Resources in the High-Intensity Development Watershed" presents an intriguing analysis of the variations in blue water (BW) and green water (GW) resources in the study area.

We wish to sincerely thank the reviewers for their extensive and thoughtful comments on our manuscript which we have addressed in the revised manuscript as discussed below. Throughout, reviewer comments are in *blue* font and *italic* type, and **our response** in **black** font.

Major Comments:

Readability (Grammar): The overall readability of the English text needs improvement. There are several grammatical issues and problems that complicate the readability of the text. I suggest a thorough review and editing of the text to enhance its clarity and fluency before it can be considered for publication.

Response: Thanks for your good suggestion. We have made great efforts to improve our writing. We asked an English-specialist colleague to proof-read our final manuscript to eliminate language problem as many as possible. All the changes were given in the marked version.

Literature Review: The literature review lacks some recent works that have also analyzed the effects of climate change and landscape change on the water cycle. Specifically, a refined search for studies using the SWAT model would reveal many works that should be mentioned in the introduction to provide a more comprehensive background.

Response: We have added some recent references in the literature review. Lines 84-97 in the revised manuscript:

Water resources management is the primary issue to be addressed for water security. Hydrological models are important tools to meet various needs in water resource management. Hydrological model simulation is an effective method to

evaluate changes in blue and green water resources. As a widely used semi-distributed parametric hydrological model, the SWAT model, which typically subdivides watershed into smaller subbasins, is increasingly used in water resources management at the watershed scale. Based on the SWAT model, researchers simulated the spatiotemporal changes in blue and green water resources in Iran (Jeyrani et al., 2021), the Yangtze River basin (Nie et al., 2023), the Poyang Lake basin (Liu et al., 2023), India (Sharma et al., 2023). Some studies have also used model simulations to analyze the effects of climate change and human activities on water resource changes in China (Liu et al., 2022), Meki River basin (Hordofa et al., 2023), and Ningxia (Wu et al., 2021), etc. However, most of the hydrological models used in the study were calibrated and validated using only observed streamflow data without checking the accuracy of other simulated water variables, which can lead to uncertainties in modeling soil moisture and evapotranspiration (Nie et al., 2023).

Presentation of Results: The results of the calibration and validation are currently presented in the methods section. These should be moved to the results section for better coherence and logical flow of the manuscript.

Response: We have moved the results of the calibration and validation to the results section.

Scenario Definition: The definition of the three scenarios is still confusing. Please clarify how each scenario was considered and defined to ensure readers can easily understand the distinctions and implications of each scenario.

Response: We have added the definitions of the three scenarios. To distinguish the single and combined effects of land use change and climate change on the water resources of DRB, three scenarios listed below were established in this study. The land use map was fixed when simulating the influences of climate change on blue and green

water (S2-S1), while climate conditions was fixed when simulating the influences of LUCC on blue and green water (S3-S2). The climate conditions and the land use were altered when assessing the joint influences of climate change and LUCC on blue and green water (S3-S1). Lines 194-201 in the revised manuscript:

Three scenarios were constructed to assess the impacts of climate change and LUCC on BW and GW by changing climate conditions (land use) while holding land use (climate conditions) for the three scenarios simulation each (Table 2). The land use map was fixed when simulating the influences of climate change on blue and green water (S2-S1), while climate conditions was fixed when simulating the influences of LUCC on blue and green water (S3-S2). The climate conditions and the land use were altered when assessing the joint influences of climate change and LUCC on blue and green water (S3-S1).

Table 2 Scenario settings for the simulation of effects of climate change and LUCC on blue and green water

Scenarios	Land use	Climate period	Combined effects	Land use change effects	Climate change effects
S1	1980	1970-1993			
S2	1980	1994-2017			S2-S1
S3	2015	1994-2017	S3-S1	S3-S2	

By addressing these concerns, the manuscript can be further evaluated and considered for publication.

References

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