

Comments

This manuscript addresses an important issue on human-water interactions in Myanmar's river basins. Authors' efforts are highly appreciated. However, the manuscript is found to be merely a review which is too much dependent only on the literature cited. Some of the references are not updated ones, and the authors did not seem to make a new analysis at least either based on available information or on their own survey. There are a lot of shortcomings with respect to the review of current water resources sectors and related ones. The manuscript needs a thorough revision as a whole, and some validations, if possible based on own survey, are also necessary.

Of course, I agree with that there are very few research publications about every sector of Myanmar, and it is also very difficult to get access to the published documents many of which are only available within the country. Consequently, the discussion could result a departure from the existing conditions in the country. Moreover, scarcity on reference information is not an excuse for a research which could be published to world-wide readers.

I do not recommend the manuscript is suitable for further publication in its present form.

Specific comments:

1. In Abstract, what does the "sound knowledge" mean for? It must be clarified.
2. In abstract, line 9-12. The meaning of the clause is not clear. "Though" should be omitted in the sentence.
3. In Abstract, line 17-19. "On the one hand" must be changed to "On one hand".
4. In the introduction, line 16. "Burmese" must be changed to "Myanmar". Like this other places must be changed.
5. Page 4, line 21. Source citation should not be used such as BBC News.
6. Page 5, line 21-23. The clause "We hypothesize.... Permanently change" is not clear. What are the all components? Are they interacting with each other? Which driving forces do authors mean? Please provide examples (such as regional climate change?).
7. Page 6, line 19. Myanmar is not the largest country in Southeast Asia with respect to overall country's area, and it is the second largest country after Indonesia which comprises of many large islands. However, considering the size of successive land, Myanmar owns the largest land size in Southeast Asia. Therefore, the authors must provide the clear information to readers. Since the sentence (Page 6, line: 18-21) has no citation, and therefore it must be authors' finding or knowing via some calculations or using existing maps. Please make sure what the real message is for the readers.
8. Fig. 2. The quality of the figure is not good. The legends for administration boundary and state boundary are not clear. Different colors for these legends should be used. Moreover, only three major cities are given on the map, pointing with red circles, but the legends are not provided. If it is not necessary, they can be omitted. If not, please provide necessary

legends for the major cities mentioned on the map. Overall, the quality of the figure can be improved by GIS techniques, providing clear information, labels and associated legends.

9. Section 2.1. Page 6. How do you decide the important physical features? Only two features are given, i.e. physiographic characteristics and soil types which are retold from previous studies. How about others, such as geology?
10. Page 8, line 4-13. Five sub-climate regions for Myanmar are mentioned according to Koeppen-Geiger classification. It is better to provide a figure showing the country's map with these five sub-climate boundaries.
11. Page 9. Line 20-22. The citation is too general. El Nino events not only results in drought, but also floods in summer monsoon periods in Myanmar. There are a lot of evidences for such situations. Authors are encouraged to find more recent literature on El Nino impacts on Myanmar's regional climate as well as the consequences across the country.
12. Page 10. Line 8-10. "During the rainy season..... the cooler winter season'. Actually, there is no cooler winter in Myanmar like Europe. Instead, there is a cold season during November and February. It is better to change "cooler winter season" to "cold season".
13. Page10.Line 25. 'Katchin state'. Please correct as 'Kachin state'
14. Page10.Line 21. Use 'Myanmar' instead of "Burma".
15. Page 11. Line 5. Please make sure the unit of average annual discharge. Is it 420 km³ per year? Even though we say "average daily discharge", the unit would be m³/sec, not m³/day. Therefore, attention should be paid to the units.
16. Page 11. Line 8. The expression "the suspended load to be 325+/- 57 x10⁶t" needs a description. What is "t" in this expression? ton? 10⁶ is wrong. Correct it.
17. Page 11. Line 9. In the phrase "ca. 1500km from Yangon", is "ca." an English expression or a German word? It is better to use "approximately 1500 km".
18. Page 14. Line 13-14. I don't get a clear view on the clause "For the future,projected to increase." A clear meaning should be provided: The occurrence of 100-year floods is more likely to happen in future (or) the magnitude of 100-year floods likely to increase (or) other meanings? Please revise the sentence.
19. Page 14. Line 24. What is "14 mio people"? Is it "14 million people"? Please correct it.
20. Section 4 Flora and fauna. Key biodiversity area map should be given. As far as I know such kind of map has already been prepared. Then you can discuss how rich the biodiversity is in Myanmar and how vulnerable they are to climate change, which could also be one of major threats.
21. Section 5.1 Agricultural land use. The authors cited mostly FAO literature regarding Myanmar's agriculture. Annually, the Ministry of Agriculture and Irrigation in Myanmar issues agricultural statistic which is available only in hard copy. Nonetheless, it is recommended that such a reference should be cited. Land use is an important factor worth to be known for various aspects, such as agriculture, flood protection, climate

change adaptation, socio-economic development etc. The authors can refer to the previous studies emphasizing Myanmar's land use. If there is difficulty in finding relevant literature, the authors can use global land use data which is freely available, and do necessary analysis for providing land use information.

22. Page 19. Line 10. Citation "(data from 2000)" is not accurate. Try to provide a legal citation. Otherwise. Please omit it.
23. Section 5.2.1 Central Dry Zone. In this section, only pump irrigation is highlighted for farming in dry zone. Of course, there are pumping systems dedicated to farming in this area. However, it doesn't play a role compared to storage reservoirs from which irrigation water is delivered via canal networks to the irrigated fields. For farming in this central dry zone, there are several storage reservoir projects implemented by the Irrigation Department. The authors are encouraged to focus more on such kind of irrigation system rather than pumping. Then, the discussion could focus on how important these storage reservoirs are to farming in dry areas when drought comes.