

Author's Responses to Comments from the Anonymous Referee 2

Comments made by Anonymous Referee 2 are shown in black text.

Author responses are provided in blue text (line and page numbers refer to the clean version).

General comment: This paper reviewed a mega-flood in 1998 which caused tremendous losses in mainland China. Since rapid urbanisation and extreme climate result in great challenges, novel flood risk management is in urgent need. The findings of this study seem to have a guiding role for efficient flood risk management, but there're some issues need to be addressed prior to the acceptance of paper publication in NHESS. Additionally, the authors may pay attention to some aspect of the conventional research writing, especially the connection between the sentences, the components/structure of the key parts (Abstract, Introduction, Body, and Conclusions). I suggest the authors may read the following references to modify the paper accordingly. Glasman-Deal, H. (2010). Science Research Writing for non-native speakers of English. Imperial College Press, London, 228p.

Accepted: Thanks for the acknowledgement of the importance of our manuscript and the suggestions for further improvement. We made a thorough revision, performed additional proof reading, and in particular improved the connections between sentences and sections to enhance the logical flow. Note that the chosen structure is typical of type 'Brief Communication' type papers in NHESS; several similar examples are listed below, which are also used in other NHESS papers (Please check the references below).

Reference:

Aerts, J. C. J. H.; Botzen, W. J. W., Brief communication "Hurricane Irene: a wake-up call for New York City?". Nat. Hazards Earth Syst. Sci. 2012, 12 (6), 1837-1840.

Mysiak, J., Surminski, S., Thielen, A., Mechler, R., and Aerts, J.: Brief communication: Sendai framework for disaster risk reduction – success or warning sign for Paris?, Nat. Hazards Earth Syst. Sci., 16, 2189-2193, 2016.

Mysiak, J.; Castellari, S.; Kurnik, B.; Swart, R.; Pringle, P.; Schwarze, R.; Wolters, H.; Jeuken, A.; Linden, P. v. d., Brief communication: Strengthening coherence between climate change adaptation and disaster risk reduction. Nat Hazard Earth Sys 2018, 18 (11), 3137-3143.

Detailed comment 1. China's mega-flood in 1998: The objectives of this study should be inserted into an appropriate place. This may significantly enhance the readability of this paper.

Accepted: Thanks for the good suggestion; we have included the objective more clearly in the revised Abstract and in the manuscript at lines 12–13 on page 1 and lines 5–6 on page 2.

Detailed comment 2. Fig. 1: The authors present the variations in the flood protection and others' investments against the time. However, the data source has not clearly reported yet, which causes a difficulty in convincing general readers to conduct further analysis and/or comparison by retrieving the data presented. Please clarify.

Accepted: The data source is: Ministry of Water Resources: China Water Statistical Yearbook 2017, China Water Power Press, Beijing, 2017. The reference has been added in the revised version (lines 6–7 on page 3).

Detailed comment 3. Fig. 2: The data source again has not reported yet. Please provide where the data come from and indicate whether the presented data are retrieved from other research.

Accepted: The data source is: Ministry of Water Resources: China Water Statistical Yearbook 2017, China Water Power Press, Beijing, 2017. The reference has been added (lines 1 on page 4).

Detailed comment 4. P4, L7-9: The authors indicated that during 2016-2035, China is expected to suffer two-thirds of the global direct production losses caused by floods, US\$389 billion, with an indirect impact of about US\$300 billion to other countries. No data source available.

Accepted: The data source is: Willner, S. N., Otto, C., and Levermann, A.: Global economic response to river floods, Nature Climate Change, 8, 594-598, 2018. The reference has been added (line 9 on page 4).

Detailed comment 5. Future adaptation: The presence of the new challenges forces the development of countermeasures. The authors also list their suggestions against mega flood. Notwithstanding that, details in regard with the mega flood hazard prevention and mitigation are missing. Please elaborate with the details necessary.

Accepted: Thank you for the good suggestion. In the revised version, we have added the following sentences with regards suggestions for flood hazard prevention and mitigation (lines 4–6 on page 5):

“One component of the new policies could be enhanced flood protection systems, especially in urban areas with high economic values and large exposed populations (Ward et al., 2017). However, structural measures can also release the 'levee effect', further stimulating exposure in protected areas”.

Detailed comment 6. References: State-of-art researches should be cited and by comparing with the state-of-art researches, the significance of this study should be highlighted. The following research articles would help to make the manuscript more professional and sound;

1. Lyu, H.M., et al. (2018). Flooding hazards across Southern China and perspective sustainability measures. Sustainability-Basel, doi: 10.3390/su10051682.
2. Wang, Z.F., et al. (2018). Investigation into geohazards during urbanization process of Xi'an, China. Natural Hazards, doi:10.1007/s11069-018-3280-5.

Clarified: Thanks for recommending the insightful papers, which we have used to strengthen our manuscript. We have added one of them to the reference list, due to the limited number of references (up to 20) allowed in 'Brief Communications'.