

Response to Editor's comments

Dear Editor:

Thank you for your letter and the comments concerning our manuscript entitled "Population exposure to droughts in China under 1.5° C global warming target" (ID: esd-2017-100). Those comments are all valuable and very helpful for revising and improving our manuscript. We studied comments carefully and made corrections in the manuscript. The response to the comments are as follow:

1. In the abstract, please remove the reference to the Hu line as this is not widely known outside China. Perhaps rather describe this as the east vs. west of China or similar.

Authors' response: *Thanks for your suggestions. The statement was replaced to "Results revealed that population exposure to droughts on the east of China is higher than that on the west" in Page 1, line 17.*

2. The abstract misses a conclusion at the end.

Authors' response: *Thanks for your suggestions. The conclusion was supplemented at the end of abstract, Page 1, line 24-25. The statement is "The study suggested that reaching the 1.5°C target is a potential way for mitigating the impact of climate change on both drought hazard and population exposure".*

3. Page 2, line 4: droughts are "likely to increase" (instead of "increasing").

Authors' response: *Thanks for your advice. The statement was replaced to "likely to increase" in Page 2, line 5.*

4. Page 2, line 28: Reference for ISI-MIP Project?

Authors' response: *Thanks for your suggestions. Reference for ISI-MIP Project "(Warszawski et al., 2014)" was supplemented in Page 2, line 29.*

5. Page 2, line 29: Also, add a reference for the SSPs.

Authors' response: *Thanks for your advice. Reference for the SSPs "(O'Neill et al., 2014)" was added in Page 2, line 30.*

6. Page 2, last sentence: This evaluation... it does not provide effective strategies, but rather provides a basis for such strategies. Please adjust.

Authors' response: *Thanks for your suggestions. The statement was fixed to "This evaluation ... is expected to provide a basis for adaptation and mitigation strategies." in Page 2, line 33.*

7. Page 3, line 10: Define GMT.

Authors' response: *Thanks for your suggestions. GMT has been defined in Page 1 line 27. To make it clearer, we also added its definition "global mean temperature (GMT)" in Page 3, line 10-11.*

8. Page 3, line 20: add degree latitude/longitude to 0.5°.

Authors' response: *Thanks for your suggestions. We have added "degree latitude/longitude" to 0.5° in Page 3, line 21.*

9. Page 3, line 25: "normalized normalization". Please fix.

Authors' response: *Sorry for our inappropriate description. The statement was fixed to "and obtains the drought index value by standardizing" in Page 3, line 26.*

10. Page 4, line 14: "which is referred to Jones et al. -- What do you mean?"

Authors' response: *Thanks for your comments. It means the definition of population exposure to droughts used in this study is referred to Jones' study about exposure to heat extremes. Sorry for our inappropriate writing. The statement was replaced to "the annual average percentage of mild, moderate, and extreme droughts multiplied by the number of people exposed to that outcome (Jones et al., 2015)." in Page 4, line 13-15.*

11. Page 8, line 21: What you list there are not four key conclusions, but is the summary of what you find. This is something different. The last sentence of the paragraph is more of a conclusion. Please adjust the text accordingly.

Authors' response: *Thanks for your suggestions. We have adjusted the text accordingly. Page 8, line 21: The statement was replaced to "This study leads to four key findings". Page 8, line 29: The statement was replaced to "To conclude, in the 1.5°C global warming scenario...".*

12. Figure 2: Define red line.

Authors' response: *Thanks for your suggestions. Definition of red line was supplemented in Page 13, line 3-5, the caption of Figure 2. The statement is "Red line is Hu line, an imaginary line that diagonally divides the area of China into two parts, stretching from the city of Heihe in Heilongjiang Province to Tengchong in Yunnan Province, which is also called the 'geo-demographic demarcation line'."*