Hydrol. Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/hess-2020-568-AC1, 2021

Hydrology and Earth System Sciences
Discussions

Interactive comment on "Water erosion research in China: A review" *by* Haiyan Fang

Haiyan Fang

fanghy@igsnrr.ac.cn

Received and published: 6 March 2021

Dear referee, Great thanks for your invaluable suggestions and comments. According to your descriptions, the suggestions or comments were extracted and summarized into the following aspects. Specific responses to the comments were given as followed. 1, The coverage should place the developments and trends described into a broader international context, and an example was given for the development of the water erosion in China, and the socio-political environment was given in the revised manuscript. Response: It is a very good suggestion. The backgrounds of the three development periods were added at the end of each period.

2, A further related area which I feel has been given too little consideration is the organization of the scientific community responsible for water erosion research. Response: According to this suggestion, more scientific communities, including some

institutes of Chinese Academy of Sciences, Chinese Academy of Forestry Sciences, Chinese Academy of Agricultural Sciences, and other provincial institutes as well as many enterprises were added. Yes, these universities, institutes, enterprise and the large River Basin Conservancy Commissions (e.g., YRCC) promote water erosion research. This information was also added in the second and the third paragraphs of the revised manuscript.

3, Did the establishment of large research institutes coupled with large River Basin Conservancy Commissions (such as the YRCC) influence the development of water erosion research? Response: Yes, the river basin conservancy commissions are responsible for runoff and sediment monitoring and soil erosion control in each basin in China (Fig.1.). Also, the data monitored in all the provincial centers and their subcenters were summarized in the larger River Basin Conservation Commissions. Those institutes can get data from these river basin conservancy commissions to do research. This information was added at the second paragraph of the 2.3 section in the revised manuscript.

4, Did the subsequent expansion of research into the Universities, where individuals were perhaps more influential and had greater possibilities to innovate, introduce change and exert a significant influence on the subsequent development of water erosion research? Response: Yes. For example, the established Chinese Soil Loss Equation by Professor Liu Baoyuan in Beijing Normal University greatly promotes the development of water erosion research. This information was added at the second paragraph of the 2.3 section in the revised manuscript.

5, I was surprised and indeed disappointed to find little or no attempt to identify individuals who have made important contributions to the development of water erosion research in China. I feel sure that in most countries such persons are recognized. Why not in China? Response: Yes, most countries have their own persons who have great contributions to water erosion research. The persons who made great contributions seldom methioned when the manuscript was written. According to your invaluable sug-

gestion, some persons including Qianning , Huang Bingwei, Cai Qiangguo, and Liu Baoyuan were added in the revised manuscript. The information was added in the second paragraph of 2.1 section, the first paragraph in 3.1 section, the first paragraph in the 3.2.1 section, and the second paragraph of 2.3 section.

6, The title of this manuscript does not include the word history. Response: Thanks for your suggestion. All the six subsection in section 3 were carefully edited, and the history information was added for each subsection. One phrase “in the last one hundred years” was added in the title . Also, the reference Tang et al. (2019) was also downloaded and cited in the reference list.

7, I would also suggest that the coverage of the 6 areas highlighted in Section 3 is somewhat unbalanced . The treatment of the achievements related to global change (Section 3.5) and to the role of sediment as a pollutant and as a vector for the transport of nutrients and contaminants (Section 3.6.2) could be seen as very limited in scope in view of the importance of these topics for the international scene and contemporary research activity. Response: Yes. According to your suggestion, some content for the 3.5 section for global changes was added. The changes in sedim1ent load in Chinese large rivers were given, and those basins that get worse or land use types with higher soil erosion rates as well as future key places to implement soil conservation measures were also pointed out. Furthermore, the actual effects after taking reasonable soil erosion protection including the rising soil organic carbon, increased fertility, and farms' income were also added. In respect of 3.6.2 section, the history of water erosion impact on water pollution and existed problems were further analyzed, and more information was added in the revised manuscript.

8, Any attempt to review developments in a field of research, such as that provided here, inevitable faces problems in referring to a large number of studies without the text becoming little more than a list. In places, this manuscript suffers from this problem. Page 3 of the manuscript illustrates this. There is a need to achieve a balance between providing a narrative and overloading the text with numerous examples. Response:

Thanks for your suggestion. According to this problem, Page 3 was rewritten to balance the narrative description and the overloaded examples.

9, I would suggest that there is scope to extend the analysis presented in Figure 3 to compare the trends associated with publications in Chinese and those published in English. Response: Because Fig. 3 is related to different times of water erosion and the achievements obtained. Therefore, according to this suggestion, more analyses shown in Fig. 3 were done in different parts, including the three stages of water erosion development, and achievements in 3.6 section.

10, It is arguable whether it is appropriate to include Section 4 dealing with Research Needs in a manuscript destined as a contribution to an SI focused on ‘The History of Hydrology’. Response: In my opinion, it should not be deleted because it represents the inheritance and development of history. Furthermore, if this section is deleted, the story is not complete. Therefore, this section was kept in the revised manuscript.

11, I found the manuscript relatively easy to read and free of major errors in grammar and syntax. However, if the manuscript, or a revised version, does proceed to publication, I feel that there will be a need to undertake careful editing to ‘polish’ the English and avoid errors. Use of a professional editing service is probably required here. A few examples of the text requiring such attention are provided below. (a) Line 82 I presume that this should read ‘Ansai’ rather than ‘Ansi? (b) Line 86 ‘Loess’ not ‘Loss’ (c) Line 142 I think that a different word than ‘stable’ is required, If something is developing it is arguably not stable. (d) As indicated above, Page 3 provides an example of overemphasis on lists. (e) Line 192 The meaning of the heading for Section 3.2 ‘Erosion Processes and Variation Mechanisms’ is not clear. Response: Yes, before this manuscript is reviewed, it has been polished by a professional editing service (see the attached). Maybe, some professional sites such as “Ansi” and “Loss” were not noticed. After all, many parts were edited according to the comments, if they are ok and many errors still existed, it can be polished again. According to the suggestions in (a) and (b), the errors were corrected; the “stable” was replaced by “steadily” for line 142 of

the original manuscript. For the suggestion (d), the contents in 3.4 were written. More specific phrase “Slope and catchment water erosion” were used for section 3.2.

12, Recommendation: In short, I am far from convinced that this manuscript represents a suitable contribution for an SI dedicated to ‘The History of Hydrology’. I also feel that many of the limitations that I have identified also apply to a review of developments is water erosion research in China. A more explicit international perspective is required if it is to be published in an international journal. The coverage also needs to be more balanced between different areas of the subject. Response: Yes. I agree with you that it is not easy to write a review paper. However, the manuscript can be improved greatly after revision according to your invaluable suggestions and comments. Explicit international perspectives were added for many of the parts of the manuscript which were used to compare Chinese water erosion study with other countries. Furthermore, climate and land use change impact on water erosion and its influence on water pollution were enriched in order to balance the coverage.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2020-568, 2020.