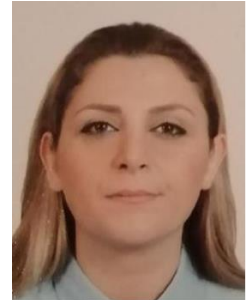


Combination of DEA-AHP-Express methods to identify highly vulnerable areas to flood

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7th October 2020-IHE PhD Symposium

The main structure of current research

- **Introduction**
- **Overall aim of this paper**
- **Data**
- **Developed Methodology**
- **Result and discussion**
- **Conclusion**
- **Reference**
- **Acknowledgment**

- **Introduction**

The need to have an accurate and reliable method to recognize the flood susceptible areas prompted the authors to examine novel combined models in order to identify the new capability of these techniques (DEA-AHP-E) and above all overcome to limitation of DEA method that Huang and et al. used this in 2011.

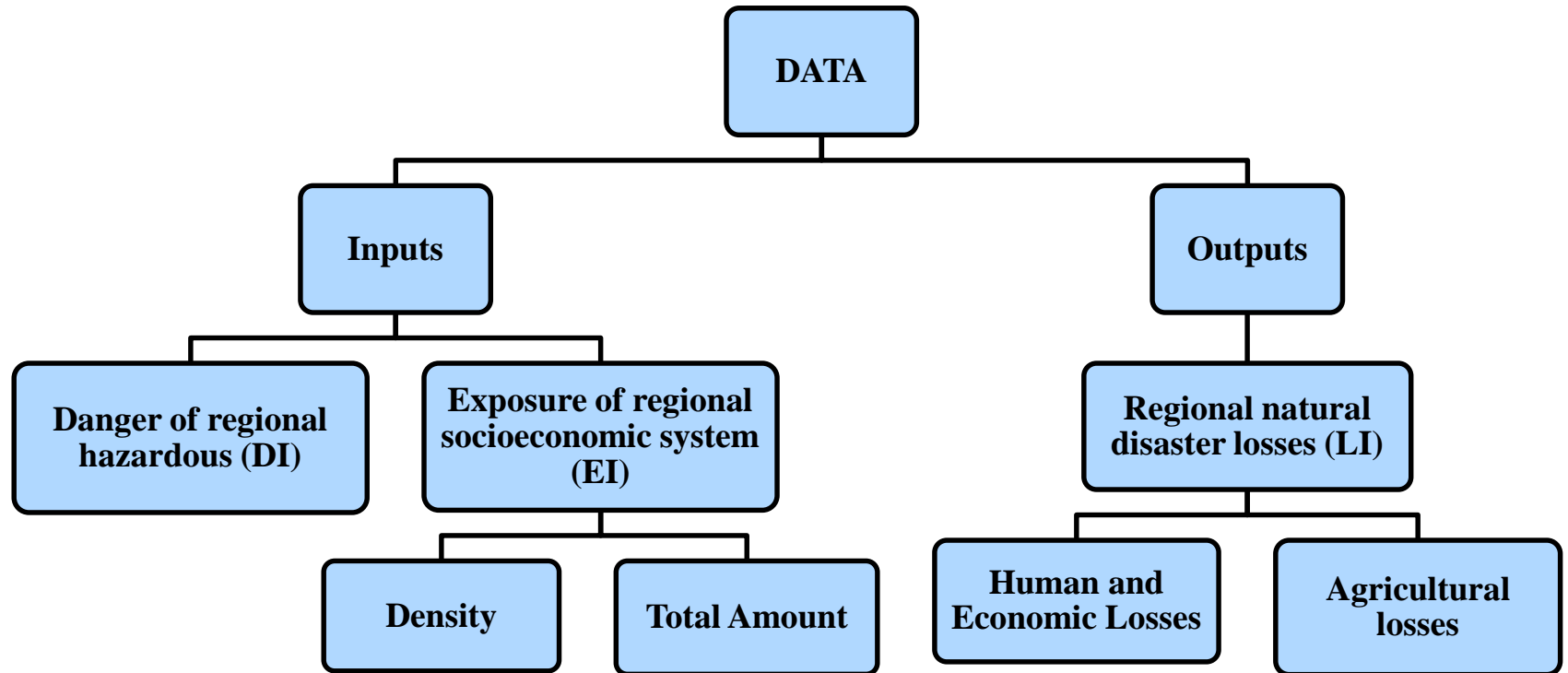
- **Overall aim:**

1-New method for quantifying ranking highly vulnerable regions.

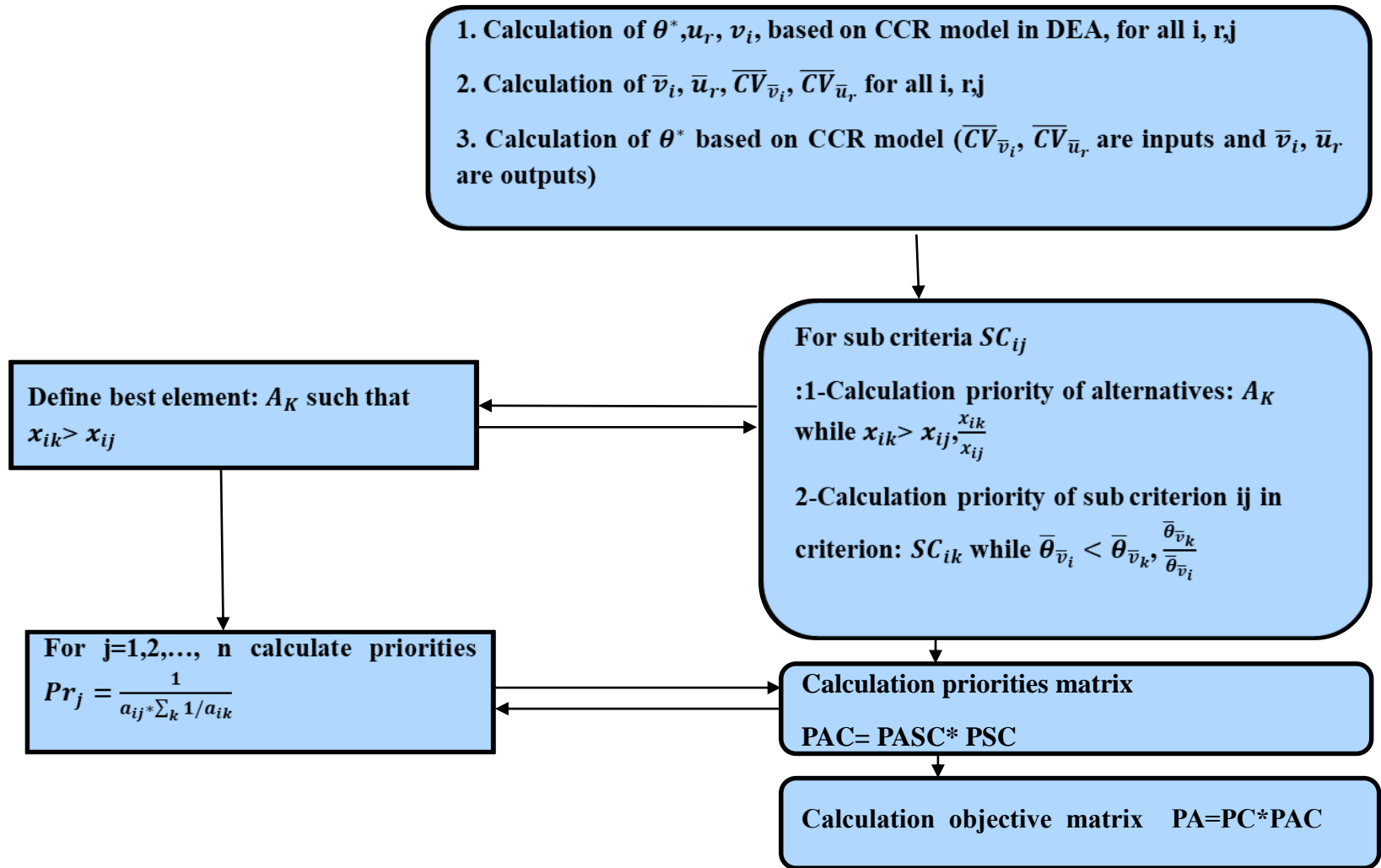
2- Overcoming the lack of ability to discriminate highly vulnerable regions.

3-Using the efficiency of criteria to use AHP method instead of the expert's score and it is our novel approach that is not suggested before.

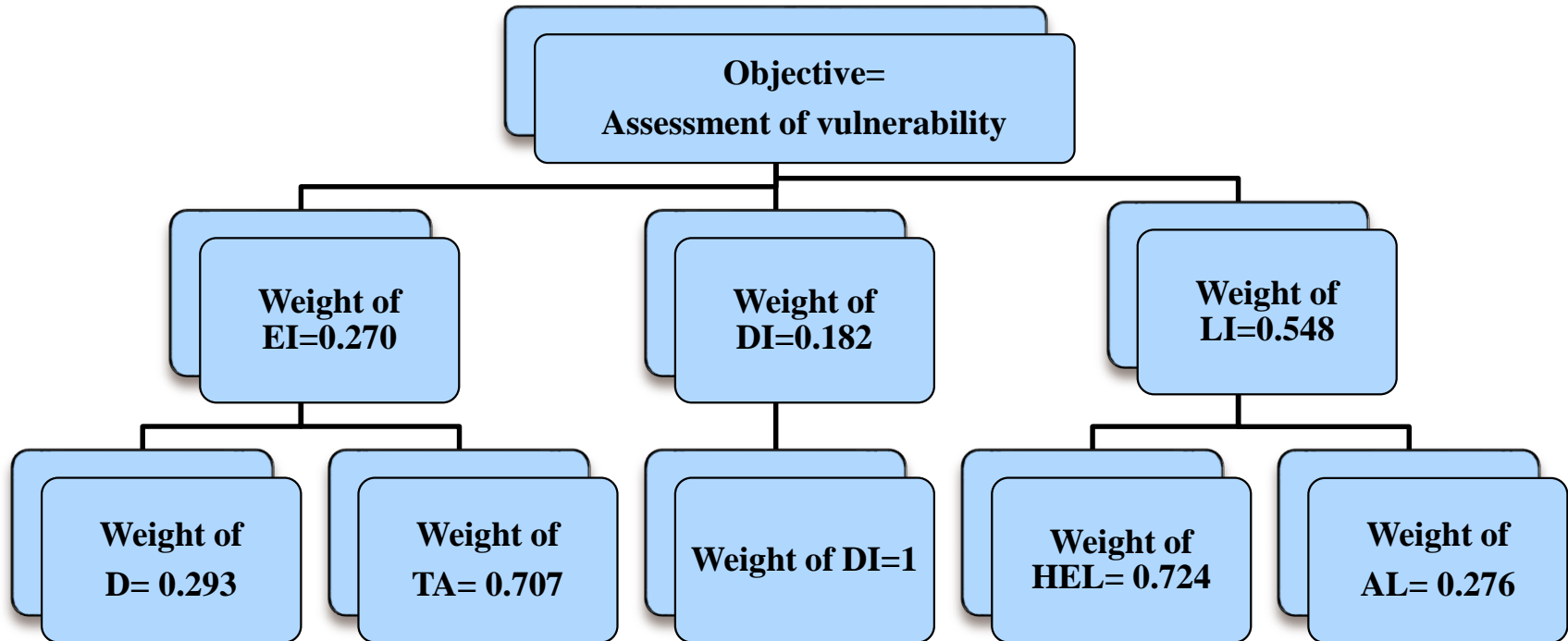
Data for ten regions in China



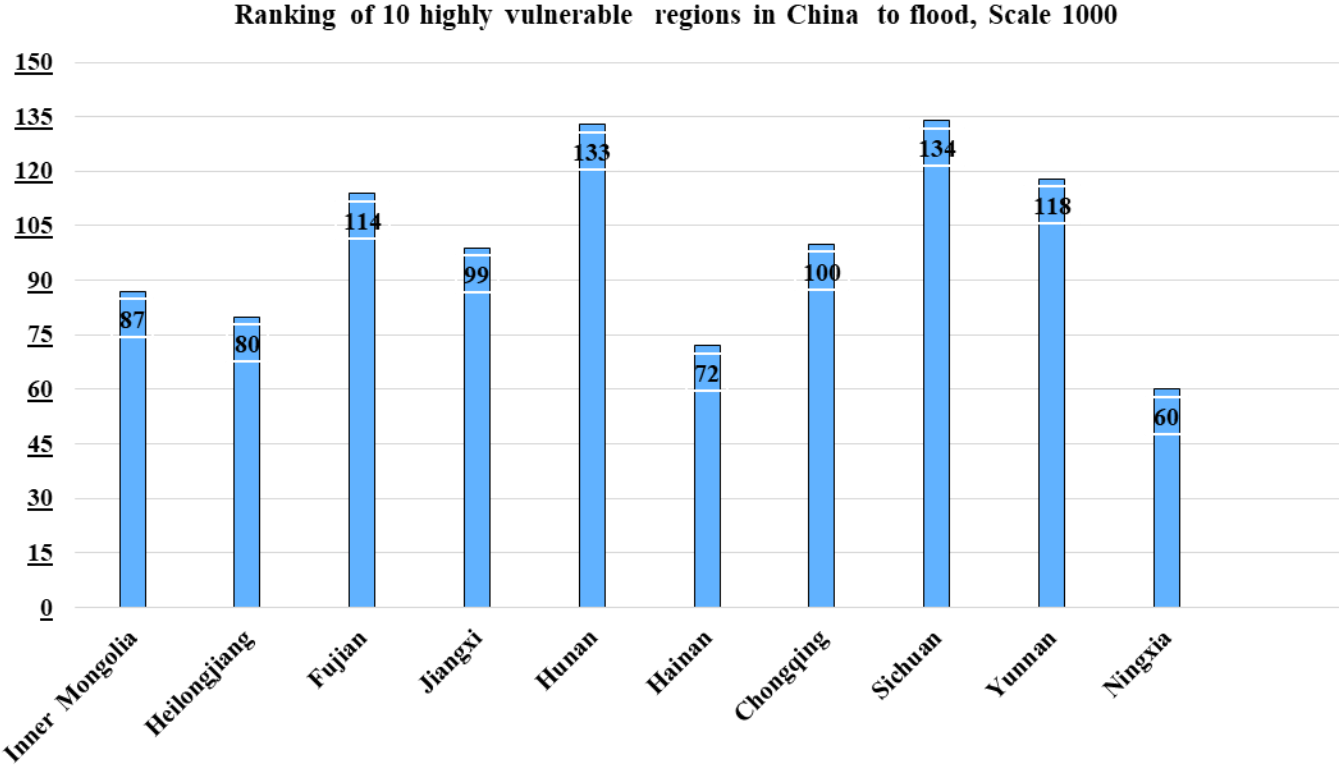
Developed methodology, combination of DEA-AHP-Express method



Result of DEA-AHP-Express method to determine weight's of criteria and sub criteria



Ranking of highly vulnerable regions based on new method



Conclusion

- The implementation of suggested methods on case study demonstrated that Sichuan and Ningxia have first and tenth rank respectively to flood.
- According to the produced final maps, almost around 50% of the area is very high susceptible to flood; therefore, needs more preventive flood mitigation measures.
- The results of this study proved that new ranking model can be successfully applied for detecting the highly vulnerable areas to flood.

Reference

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- **Thanks to listen and devote time to me**

- **Question and answer**