



## Towards an Applied Science of Past Disasters

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### ABSTRACT

Extreme climatic events are forecast to become more frequent in the future. This contribution argues that the past may hold clues to efficient, cost-effective, and culturally sensitive adaptations to and relief measures following such events. It is widely recognised that disasters emerge in the interplay between extreme geophysical events and the human communities affected by them. Whilst detailed knowledge of a given event is critical in understanding its impacts, an equally thorough understanding of the affected communities, their economies, ecologies, religious structures, and how all of these have developed over time is arguably as important. Many extreme events leave methodologically convenient traces in the geological and archaeological records. This contribution focuses on two volcanic eruptions that have significantly affected Europe: the eruption of the Laacher See volcano (Germany) in the 13th millennium BCE and the eruption of Vulcán Ilopango (El Salvador) in the 6th century CE – to illustrate the power of the case-control comparative method for examining European vulnerability and impacts in the near- and far-fields of these eruptions. Although issues of data resolution often plague the study of past disasters, these limitations are counterbalanced by the access to unique long-term information on societies and their material expressions of livelihood, as well as a similarly long-term perspective on the critical magnitude/frequency relationship of the geophysical trigger(s) in question. By drawing together aspects of disasters science, archaeology, volcanology and historical sociology, this contribution offers a programmatic statement and methodological roadmap for a European science of past disasters that can make historically-informed, evidence-based statements on general processes of cultural adaptations to climatic processes and events, and on contemporary vulnerability and impact from a deep time (historical and prehistoric) perspective [1].

### REFERENCES

1. Riede, F. (in prep.) Towards a science of past disasters. *Natural Hazards*.