# The link between water supply and earthquake in Iran

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### Abstract

With considering water as a main factor in creating the first human civilizations in Iran, we have examined its role in the unwanted neighborhood of people with earthquakes. By investigating the earthquakes in Tabas (1978), Bam (2003) and Dasht-e-Bayaz (1968), we have shown that water has been a factor in attracting people to places with high seismic potential. Also, the role of faults in creating water springs (Sardar river, Tabas), and the creation of suitable areas for the digging of the Qanat (Tabas, Bam, Dasht-e-Bayaz) has been studied. Since the people of Iran today face drought and earthquake hazards, we have outlined the importance of simultaneous attention to these two basic problems for the Iranian people, using paleo-seismological studies. It is also necessary to study other regions of Iran. In most areas, people are faced with two dangers of earthquakes and droughts. By recognizing the history of earthquakes in a region, the possible future earthquakes are known. Also, with recognizing climate change over time, we can plan for a better future.

Keywords: (drought, Qanat, earthquake, climate change, Iran).

#### **Research Highlights**

- Water supplies are the main cause of people's neighborhood and earthquakes.
- Faults have been the main cause of the formation of the first human civilizations in Iran by creating water springs and proper conditions for digging the Qanats.
- Paleo-seismological methods are great tools to study the link between water supplies and earthquakes.

#### 1. Introduction

Having 11 climates out of the world's 13, Iran's climate is diverse, ranging from arid and semiarid, to subtropical along the Caspian coast and the northern forests [1]. Over 90% of the country's population and economic production are located in areas of high or very high water stress [1]. Widespread drought and water problems have become the most serious problem for the Iranian people in recent decades. Many scholars are working to solve the water and environmental problems in Iran. To solve Iran's climatic problems, understanding of Iran's climate over the history can be useful. Geoscientists use various tools to study the link between water and earthquake, one of which is paleo-seismological and paleo-climatological studies. The importance of using these methods is to simultaneously study climate change and earthquake risk. This paper investigates the linke between water supply and earthquakes in Iran and shows how the early civilizations were formed in places where reserves of water were accessible.

## 2. The problem of fatal attraction in Iran Plateau