

## **Global and environmental effects of supervolcano eruptions: a threat to civilization?**

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There are many very large volcanoes on the Earth which are capable of colossal eruptions with global consequences. Such eruptions occur frequently on geological timescales, although none has occurred on Earth in the short time that an interdependent civilization has evolved on the planet. Eruptions of supervolcanoes that are sufficiently large to cause a global disaster may occur as frequently as several every 100,000 years are therefore a significant global hazard. They probably occur more frequently than impacts of asteroids and comets of a size, which might cause comparable effects. Supervolcanic eruptions are tens to hundreds of times larger than the biggest eruptions experienced on Earth in the last few hundred years. The global effects are likely to be much more severe. An area the size of North America can be devastated, and pronounced deterioration of global climate is anticipated for a few years following the eruption. A major consequence might be devastation of World agriculture, severe disruption of food supplies and mass starvation. There is also evidence that supervolcanic eruptions can cause destruction of stratospheric ozone, which protects life from harmful ultraviolet sunlight. The effects could be sufficiently severe to threaten the fabric of civilization. Problems like global warming, impacts by asteroids and comets, rapid use of natural resources, and nuclear waste disposal are requiring world leaders and governments to address issues which have very long-term consequences for the global community. Sooner or later a supervolcanic eruption will happen on the Earth and this is an issue which demands serious attention.