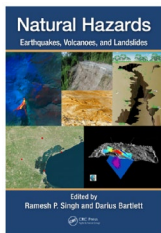


Ramesh P. Singh and Darius Bartlett (Eds): Natural Hazards: Earthquakes, Volcanoes and Landslides

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Bibliography

Natural Hazards: Earthquakes, Volcanoes and Landslides
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Over the last two centuries, natural disasters have been a regular feature of news headlines. In the last two decades alone, loss of life has exceeded 600,000; but until recently very few were attributed to the hand of man. Now, however, it is suggested there may be a new cause—the politically correct concept of climate change caused by the profligacy of mankind.

This compendium is designed to remove conjecture, by condensing disparate theories and methods into more universal scientific principles. Using case studies from the 3 primary causes of natural hazards, earthquakes, volcanoes and landslides, the editors have brought together 47 authors in 20 chapters to provide a more coherent explanation of whether climate change is a cause or an effect.

All science is based on measurement and observation. For earthquakes the technologies of ground deformation, liquefaction assessment, and geophysical data, in conjunction with satellite-based imaging radar, ionospheric perturbation and thermal infrared, coupled with ground-based seismic networks, have not so far proved sufficient to predict future events with any degree of certainty. It is opined that better international liaison between the various government institutions could well accelerate relevant knowledge, so necessary if prediction of major events is to prove possible.

Erosion is dealt with as a separate process; and it is claimed more closely related to climate change. The major causes of

erosion are wind and water, whilst the more minor glacial erosion, caves, springs and biological causes are also considered. A separate chapter on dust storms stresses the major impact such storms exert on the atmosphere, exemplified by the Saharan sand found so regularly throughout Europe. Apart from the removal of large quantities of nutrient-rich fertile topsoil, minute soil particles are carried into the atmosphere, causing multiple health problems to desert dwellers and many others, even spreading over places that exist very large distances from the source of the dust. Arid and semi-arid regions cover some 41% of the world's land area. Wind erosion is a very major problem that cannot be questioned, but much of the cause is thought to be overgrazing by the local populace—but this is a political issue, not one of science.

Two forms of subsidence are dealt with; coastal and those occurring on the earth's surface, the latter divided into shallow and deep, caused by mining activity and tectonic shift. Prediction of events still largely relies upon point-to-point observation, using the geodetic techniques of InSAAR and PSinSAAR. Earthquakes, amongst the most devastating of natural hazards, are most abundant along the boundaries of lithospheric plates. This fact suggests a better knowledge of the science should allow a higher degree of predictability. However, with plate boundaries running for thousands of kilometres, and stress areas hundreds of kilometres wide, no methods of more precise prediction are suggested.

The most spectacular events are erupting volcanoes. Unlike the other natural hazards, these are always located in a fixed area, creating the advantage of relatively low observation costs, timeliness and continuity. Although the book's introduction implied a link with climate change, this theme is not developed in any convincing way by any of the authors. It is very clear that despite the application of a whole battery of well-established scientific instrumentation, coupled with satellite observations, prediction of future natural hazard events remains elusive.

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