

Can data help identify impending natural disasters?

By [Morne Bekker](#)

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From Hawaii's volcanic eruptions through to Cape Town's drought, the world has seen its fair share of natural disasters over the last couple of months.



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A few weeks ago, Hawaii's Kilauea volcano continued to eject a continuous stream of lava and a crest of ash into the atmosphere. At that stage, the Hawaiian Volcano Observatory had reported over 360 earthquakes around the summit of Kilauea alone.

The effects of these disasters are far-reaching, should alarm bells not be sounded on time.

A few years ago, the eruption of Eyjafjallajökull in Iceland resulted in the largest shutdown of airspace in Europe since the World War II, when the volcano's ash came into direct contact with the jökull (glacier). Now scientists are even predicting that future eruptions may have global ramifications.

Looking towards technological solutions

In search of solutions to proactively identify impending disasters and ultimately protect innocent bystanders, scientists are now looking towards technological solutions - and data management in particular.

A team of volcanologists from the University of Leeds, Iceland and the British Geological Survey are doing just that by analysing the data collected from the crystals that were flung out during the early stages of the Eyjafjallajökull eruption. By analysing the data, they had the ability to have a complete understanding of the volcano's magma patterns, and how it built up in the six months before the actual eruption. With that knowledge in tow, they will have the ability to predict future eruptions based on previous trends.



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Germany's National Weather Service (Deutscher Wetterdienst - DWD) is also using data to combat the effects of natural disasters. Around the clock, the weather service is constantly processing weather data that is critical to transportation, agriculture, the military, utilities, and the safety of the general public.

No aircraft in Germany takes off the ground without first checking DWD's weather forecasts.

Fast, reliable delivery of time-sensitive data is essential

Emergency first responders – by road, sea, and air – depend on real-time, precise weather data from DWD. Fast, reliable delivery of this time-sensitive data is essential, especially in poor weather conditions such as thunderstorms, black ice, hurricane-force winds, or volcanic ash.

By implementing NetApp All Flash FAS, DWD has been able to reduce application response time from 15 seconds to 1 second. Additionally, it was also able to accommodate larger weather models while remaining within a three-hour update window, provide forecasters with new features such as roaming displays and reduce operating costs.

With the causes of Cape Town's drought still hotly contested, the collection, management and analysis of objective data may provide a direction for future solutions.



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Come rain or shine, meteorologists from around the world could provide precise forecasts earlier.

Ultimately, data management and analysis should become the preliminary step in preventing future catastrophes.

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