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Italian Geologist Reflects on Tragedy of 2009 Earthquake

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Gianluca Valensise

Earthquake science. Italian geologist Gianluca Valensise heads a project examining seismic risks in central Italy.

This weekend, it will be 5 years since a massive earthquake, centered on the town of L'Aquila, killed 309 people in the Abruzzo region of central Italy. The aftershocks of that tragedy included a controversial court case in which a judge found four scientists, two engineers, and a former government official guilty of manslaughter ^[1] for having misleadingly reassured the citizens after a series of earlier tremors; the prosecution argued that residents would have otherwise followed the traditional practice of fleeing houses before a major quake hits. Each was sentenced to 6 years imprisonment ^[2], but the judgment is still under appeal.

The earthquake on 6 April 2009 has also led to new research. Gianluca Valensise, a geologist at the National Institute of Geophysics and Volcanology (INGV), is the scientific coordinator of Progetto Abruzzo, which involved opening a research center in the “red zone” of L'Aquila—the devastated area of the city's historical center that is largely uninhabited and restricted to traffic. Valensise recently spoke with *Sciencemag.org* about the effort, which has been funded since 2012 by Italy's research ministry, and the general relationship between Italy's geoscientific community and citizens since the trial. While some progress has been made, problems remain in his view. Despite their crucial role in a hazard-prone country like Italy, and the demand for effective communication to the public, Italian scientists “have never received any formal training in the communication of science and of natural hazards,” he notes. Valensise's remarks have been edited for brevity and clarity.

On how the Italian public views earth scientists now and vice versa

Most people do [believe] that some top-level scientists were caught in a communication jam orchestrated by others. I have no evidence of disrespect for what INGV scientists do. Instead, people do expect scientists to make statements on how current earthquake sequences will evolve—but many scientists have been severely distressed by the outcomes of the L'Aquila trial and tend to share critical information only among themselves.

What is Progetto Abruzzo?

Our research focuses on the entire Abruzzo [region] for producing high-resolution seismic hazard data and elaborations that are normally unavailable for other parts of Italy. It also aims to provide institutions with a database of geological features that may interact with buildings and infrastructures, including active and inactive faults, shallow landslides, deep gravitational slides, and karst collapse. ... We also run various initiatives for communicating science and spreading the awareness of geological risks.

On whether the court decision changed the trust and cooperation between scientists and the public

Unlike before the earthquake, today it seems we all share the same goals: completing the reconstruction, preventing future catastrophes, increasing everyone's awareness of natural hazards. ... [Yet] many seismologists have changed their approach toward communicating their findings. It is not just a question of fear, although that indeed is a major aspect of this change. There is a sense of confusion about the role of all actors involved: scientist, civil protection authorities, local administrators, citizens.

On whether Italy would handle the same incident better now

Following the L'Aquila trial, the Italian Civil Protection [Department] has reorganized the Italy's National Commission for the Forecast and Prevention of Major Risks [Commissione Grandi Rischi], fostering profound changes in its structure, responsibilities, and procedures. It is unquestionable that things are now clearer, and that if a new 6 April earthquake occurs anywhere in the country the response will be different.

Will another tragic event like the 2009 earthquake happen?

L'Aquila earthquake is a midsize event that Italy may experience every 5 years or so. Even such events may be locally catastrophic, and they may come unexpected over one-third of the national territory. When combined with the concentration of the Italian population, this circumstance may result in frequent “minor” earthquakes having a significant yet largely unexpected impact. Many of us suspect the next damaging Italian earthquakes will again be a surprise, at least for citizens and administrators.

Links:

[1] <http://www.sciencemag.org/content/338/6104/184.summary>

[2] <http://news.sciencemag.org/earth/2013/01/judge-laquila-earthquake-trial-explains-his-verdict>