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Check your legal position before advising others

Next week's trial of seismologists in Italy highlights the risks to scientists who offer public advice. **Willy Aspinall** *considers what can be done.*

The world is litigious and scientists are not immune. Next week, six scientists and an official are scheduled to go on trial in Italy charged with multiple manslaughter. Their alleged crime? That they were negligent in giving advice on the risk to public safety during the seismic unrest that culminated in a magnitude-6.3 earthquake near L'Aquila in central Italy on 6 April 2009, which killed more than 300 people. Prosecutors in Italy say that residents were misinformed by the group's advice, and that this contributed to some people choosing not to leave their homes, with fatal consequences (see page 264).

This is not a trial of earthquake-prediction science, as some seismologists seem to think. Rather, it is about possible negligence in the provision of hazard-assessment advice, for which there is little or no case law or precedent, unlike, say, professional liability in civil engineering or medicine.

Even before the trial begins, consequences of such legal action are clear: knowledgeable scientists may distance themselves, leaving those who are largely naive, dogmatic or blasé about legal risks to offer opinions.

I have personal experience of these issues. In 1997, I was chief scientist at the Montserrat Volcano Observatory in the Caribbean when an eruption of the Soufrière Hills volcano killed 19 people. After the eruption, a scientific advisory panel was set up, of which I am a member, to issue outlooks every six months or so. Together with day-to-day advice from the observatory, these alerts underpin policy decisions, such as where entry is allowed and where is off-limits.

We saw our work as a civic responsibility, but our legal position was uncertain, and eventually it became clear that we might be vulnerable to claims — civil or criminal, genuine or vexatious. One Montserrat resident who was injured in the eruption filed a lawsuit against government officials for failing to enforce protective measures; others sued on the basis that those same measures had infringed their rights of access to their homes. The government countered that it had acted lawfully and, pertinent for us, on scientific advice. However, the nature and legal standing of our advice were never tested in court.

We felt our position was clarified when the UK government, responsible for security and public safety on Montserrat as an overseas territory, issued guidelines on scientific advice in 2001 (updated in 2007). These included a clause that seems to indemnify committee members, provided that they have "acted honestly, reasonably, in good faith and without negligence". However, under UK law, negligence can be decided only in court, so this cannot deflect action under all circumstances.

It is worth mentioning that volcanologists are more familiar with short-term scenario forecasting than seismologists, who tend to concentrate on advancing theoretical understanding. Short-term 'operational earthquake forecasting' — using activity traits to infer increases in earthquake hazard level — has been initiated in California to alert people after a big quake to the immediacy and size of aftershocks. But strong resistance to the concept remains. Notorious failed earthquake predictions from the 1970s have left many seismologists hesitant about the notion, concerned that it is prediction in another guise. This scientific caution can, arguably, make us unreceptive to hints of an impending threat, as, for example, with the unusual sequence of quakes that occurred off the coast of Japan on 9 March 2011, two days before the disastrous quake and tsunami.

What is to be done? It is always difficult to convey scientific uncertainty without giving the impression that nothing useful is known, but overstating scientific certainties can be more dangerous. Volcanologists have adopted a protocol on professional conduct in crises (see go.nature.com/wjueqm), and some of the principles could be helpful to seismologists for situations such as L'Aquila.

Certainly, scientists who provide assessments and forecasts must be aware of legal implications. Ideally, they should provide advice in writing, staying within their domain of expertise and citing evidence that is robust under peer review and defensible in law. Sloppy arguments and casual errors — even in reports or papers elsewhere — risk exposure if a related issue crops up in subsequent legal proceedings.

If verbal advice must be given, scientists should make a record of it — public officials on the receiving end are certain to keep notes. From experience, critical phone calls during a crisis should be recorded: even the precise timing of a call could be material in retrospect. Off-the-cuff comments are easily misconstrued, sometimes wilfully, so scientists in sensitive situations should think carefully about their use of social media. Electronic messaging can propagate alerts — and rumours — instantly and widely, but the legal status of their content remains unclear.

One change could be that the same level of legal liability protection granted to colleagues such as weather forecasters in federal or national agencies is afforded to scientists in official advisory roles. When the lives of thousands of people are at risk in a crisis, university and independent specialists often work pro bono. It is more than poignant that resources for providing scientific advice before a disaster are invariably dwarfed by those devoted to scrutinizing that advice in a legal post-mortem. And it is salutary that scientists who have shouldered professional obligations voluntarily can find themselves legally exposed. ■

SCIENTISTS IN SENSITIVE SITUATIONS SHOULD THINK CAREFULLY ABOUT THEIR USE OF SOCIAL MEDIA.

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