

# Research and responsibility

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Gone are the days when scientists did their research, published and moved on. Science is often front-page news and we increasingly need to consider the implications not only of the research we do but also how we communicate it.

For the last four years NERC has been defending court proceedings brought against us by a citizen of Bangladesh, alleging negligence against us. The case involved a survey of groundwater by the British Geological Survey in central and north-eastern Bangladesh in 1992. The survey dealt with the hydrochemistry of the groundwater for its possible use in fish farming and agriculture and the report set out very plainly the suites of elements tested. Arsenic was not one of them and it was subsequently discovered that the groundwater was severely contaminated with arsenic. The claimant said that NERC was negligent in not testing the water for arsenic or in failing to make it clear that it had not done so. The result, it was said, was that the public authorities in Bangladesh were misled into believing that the water was safe to drink, although the public authorities themselves never made any such claim.

Whilst scientists are not above the law and can be held liable for professional negligence, in this case our lawyers told us that there was clearly no case to answer. However, attempts to strike it out were subject to appeals and it was not until it got to the House of Lords on 5th July 2006 that it



was decided unanimously in favour of NERC, one of the Lord's ruling that 'the claim was hopeless'.

This was an important decision for science. Research attempts to answer a specific question at a point in time, based on current knowledge and understanding. The progress of research could be inhibited if scientists feared to explore the unknown in case they be held to account in future for unexpected consequences or for not researching a particular question.

Although the scientists were completely vindicated we can learn some lessons from

this case. It demonstrates that the risk of being involved in claims which are distressing and expensive – whatever the outcome – has as much to do with the way we communicate our science to the world as the quality of the science itself.

In the first place, we need to be clear about our aims and objectives when we design new research projects and apply for grants. When we write up our reports, we should pause to think about how our work could be interpreted or misinterpreted by the lay public or the media. We need to consider in each case what disclaimers are necessary to ensure that people do not misinterpret scientific data.

What I'm taking from this case is that as scientists we must take care to communicate clearly, not only what our research shows, but also what it doesn't show.

A different but nonetheless classic example relates to how well we communicate uncertainty in scientific evidence when many users would naturally prefer certainty. As scientists we know that stating the uncertainty – the error bars – is not only required as part of the scientific method but also in many cases it is as intellectually challenging as defining the result itself. Much has been written about risk and uncertainty but it remains one of the most difficult aspects of communication between, for example, scientists and policy-makers.