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Reach out about climate

Where political leadership on climate change is lacking, scientists must be prepared to stick their heads above the parapet.

Consider the following as a statement of national ambition: "The Federal Climate Change Action Plan presents a strategy for launching a transformation in public attitudes and behavior towards climate-change risk. Key state, industry and nonprofit sector allies stand ready to build on the federal strategy to create and sustain a national climate-change risk reduction campaign. The national campaign will increase the public understanding of the risk; advance effective national, state and local climate-change policy; and deliver financing and other incentives to help citizens mitigate climate change. This national climate-change effort — led jointly by the federal government and key national partners — will fundamentally change citizens' expectations and behavior."

That is the wording of a US federal action plan produced last summer, with just one change introduced by *Nature*: the original was not about climate change but referred to indoor radon — a naturally occurring radioactive gas that contributes to lung cancer. Sadly, the altered statement is politically impossible in today's United States. Yet it would be an entirely sensible response to the vastly greater global and local risks posed by climate change as described in the international scientific literature and in national impact analyses conducted by the US government itself. Indeed, it would be a welcome response by any government.

With US politics in gridlock, Europe in financial turmoil and minimal progress at the climate conference in South Africa in December, 2011 was a bad year for political progress in tackling climate change. In addition, surveys of public opinion show a declining belief that climate change is an urgent problem. Clearly, the need to make the public aware of the threat has never been greater. In the face of climate-change contrarians and denialists, some of them with political clout and voices amplified by the media, climate scientists must be even more energetic in taking their message to citizens.

COMMUNICATING RISK

The radon-awareness campaign offers lessons to climate-change communicators. The health risk of radon is unlike the risks of climate change, being uncontroversial, local and directly identifiable. But, like climate change, the risks are not immediately apparent and they are easily ignored. Whether to invest in mitigating measures is the individual's decision, but in the case of radon the US government — like many others — has decided that it has a duty to advise and encourage homeowners to make the changes.

Such campaigns need a strategy for communicating risk that will persuade citizens to spend their own money. Those already involved in risk communication will be familiar with the strategies recommended by the World Health Organization to deal with the dangers of indoor radon: identify core messages, understand and engage with your target audiences — both direct (householders) and indirect (such as teachers and bankers) — through surveys and in-depth discussions, develop information sheets and websites, use trusted networks and ensure that your message is coherently delivered across multiple channels.

So what can climate scientists learn from such strategies? What should their core messages be? Should they relate current trends in local weather to the predicted trends, or show what the 'four-degree-warmer' world — which on current emissions trends lies ahead of us — actually looks like? Either way, there are freely available online resources to call on. Some countries have produced national climate-change impact studies. For example, a 2009 US government report examines both regional and economic sector impacts under high- and low-emission scenarios (see go.nature.com/9fnsk1) in measured tones — here the numbers tell the story.

Those wishing to draw attention to disastrous but entirely possible futures can use reports of an international meeting in 2009 that put together multidisciplinary studies of a world that warms by 4° C or more this century (see go.nature.com/mj8c8f), and on a summary produced by the UK government (see go.nature.com/zu2frk).

"2011 was a bad year for political progress in tackling climate change."

As many scientists as possible should convey these messages through outreach to local or national organizations, the media, in blogs and in policy discussions. Even better if one can be extra-creative and provide people with interactive tools to explore the possible scenarios, such as the energy-pathway calculator launched last month by David MacKay, chief scientific adviser to the UK Department of Energy and Climate Change (see go.nature.com/1wfvnx).

A more taxing and wearying task is to actively counter misrepresentation — whether in the form of crass errors made by politicians and public figures, or more subtle assertions that require detailed examination. The latter can be scientifically revealing, as discussed by climatologist Ben Santer at last month's meeting of the American Geophysical Union (see video at go.nature.com/mwwleu).

Two challenges face those who communicate the science of climate change to the public. The first is to make the messages from models and observations as vivid as possible while maintaining scientific probity — avoiding the blurring of dispassionate discussions of the science and the equally important individual right of advocacy. The second is to find the right ways of conveying uncertainties without losing grip on the central, generally agreed, conclusions. Training in communication is advisable (see, for example, climatecommunication.org). Those who engage with the media could do worse than take on board the maxims of the late Stephen Schneider's 'mediarology' website: know thy audience, know thyself, and know thy stuff (see go.nature.com/dehvsf).

Even if governments find it difficult to achieve the same clarity of national action on climate change as they can for radon, scientists and their organizations need to do more to help citizens engage with the issues and not be misled by travesties of the evidence. Let that be a resolution for 2012. ■