Encourage governments to heed scientific advice

To stop evidence-based policy losing its clout, researchers need to engage with policymakers and understand their needs, says Bill Colglazier.

The scientific community has seen its policymaking influence rise worldwide over the past two decades. Researchers advise on decisions relevant to the scientific enterprise and on key issues from agriculture and environment to security, crime and economic growth.

The US National Academies of Sciences, Engineering, and Medicine provide more than 200 expert studies each year, mainly requested by the US government, on these topics and more. Science, engineering and medical academies and other scientific institutions provide similar advice, individually and collectively. The United Nations has recognized the importance of this kind of exercise, and is strengthening its science-policy interface to help leverage science, technology and innovation to achieve the 17 sustainable-development goals of its 2030 agenda.

Yet, as a meeting of the International Network for Government Science Advice begins in Brussels this week, events in 2016 so far could be seen as something of a setback. The UK Brexit debate unfolded with little or no recognition of the evidence offered by those with expertise in social sciences, natural sciences, engineering and medicine. The same has been true to a considerable extent in the US presidential election campaign on public discussion of key policy issues. The lack of influence from science in such important public debates in two of the most technologically advanced countries is causing some hand-wringing among scientists.

On the basis of my experience, I hope I can offer some reassurance. Most governments do want to consider and harness science, technology and innovation. Their aim is to create more jobs and stimulate economic growth, as well as to ensure security in this globally connected, highly competitive, fast-moving world. If countries are to avoid being left behind, strengthening domestic research communities and incorporating their insights into decision-making processes will be essential. Why, then, is science losing its clout in the current political debates? In my view, the explanation is relatively simple. In the short term, politics, or more precisely value judgements, trump science. This is especially true when there are scientific uncertainties.

Value judgements come in three varieties. Distributional values assess fair outcomes — costs, benefits and risks to individuals, groups, generations, ideologies, things people value and so on. Procedural values assess the fairness of a decision-making process — people are sometimes willing to accept an outcome they disagree with if the process is viewed as fair. Finally, evidential values concern the weight of evidence needed to justify a decision, and the question of ‘how sure is sure enough?’

These evidential values are the most tangible to a scientist interested in policymaking. But they can be heavily influenced by often conflicting perspectives on distributional and procedural aspects.

The contrasting views of US Republican and Democratic administrations concerning two issues clearly illustrate this phenomenon. Republican administrations have emphasized the scientific uncertainties in

evidence on human-induced climate change, and minimized uncertainties in the long-term safety of nuclear-waste disposal. Democratic administrations have done just the opposite. The difference in views of the United States and Europe on genetically modified foods and the ‘precautionary principle’ is another example.

That’s why scientists should not become too discouraged by the state of current political debates. In the long term, scientific evidence can and does shift views that are related to distributional and procedural values. We see this on an international scale, with increasing support for policies to mitigate and adapt to climate change.

Rather than get frustrated, the science community should focus more on encouraging governments to build better science-advice systems. This strategy leaps over some of the debates about values. Actions that should result in science having more clout on policy include the

appointment of a chief science adviser who reports to the head of state, and an advisory committee of non-governmental scientists and technologists to assist.

Relevant government ministries and legislatures should have their own advisers, and should create positions for people with scientific and technical backgrounds to serve as civil servants. Governments should solicit independent science advice from respected non-governmental scientific institutions and make it public. To build awareness and links, science funders and societies should offer

fellowships for early- and mid-career scientists, engineers and medical professionals to spend time in government.

Beyond government machinery, more universities should create courses on science and technology policy, and train students for careers that combine scientific and technological competence with knowledge about policy in the public and private sectors. Scientific professional societies should present awards for high-quality science journalism.

Most importantly, rather than wailing at the apparent dismissal of evidence and expert advice, more scientists and technologists need to engage with policymakers to understand their needs, questions and time frame. There is an art to responsible science advising, including stating clearly when the advice incorporates value judgements. That art needs to be learned if those who offer input are to have credibility.

Providing objective, high-quality advice that is free of politics and special interests is an important civic responsibility for the science community. And they should keep at it. In the long run, any political leader who disregards scientific evidence does so at his or her peril, and most politicians know this. ■

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