

# RGS-IBG consultation response

## ● A Vision for Science and Society, October 2008

The Royal Geographical Society/Institute of British Geographers (RGS-IBG) welcomes this opportunity to respond to the consultation on *A Vision for Science and Society* by the Department for Innovation, Universities and Skills (DIUS).

The RGS-IBG is the learned society and professional body for geography and geographers. We are one of the leading learned societies in the field of public engagement and knowledge transfer to policy and have had a long tradition of involvement in these areas. Two of our four key objectives as an organisation are in public engagement and knowledge transfer. We are supremely well placed to engage the public with the many emerging and evolving geographical issues that affect our societies and environments and, through that, our lives. We engage a wide range of audiences through our public engagement and knowledge exchange activities, including policymakers, business/employers, teachers and pupils, and the wider public. The activities include briefings, seminars, conferences, debates, exhibitions, advisory services, interviews, lectures, publications, prizes, websites, videos, on line forums and use of social networking sites. We estimate that our activities reach about 500,000 people each year.

### General comments

We have four general comments on the issue of science and society.

**Comment One: Change/clarify the title.** It is confusing and misleading and does not serve to increase public engagement. The definition of science in the preface of the consultation embraces all key areas of discipline-based knowledge. The *Public Attitudes to Science 2008; A Survey* (RCUK, 2008) clearly shows that people have as much, if not more, interest in social science issues as they affect their lives than in natural science. Yet this consultation document persists in focusing on STEM and indeed it is STEM subjects that, in our experience, people identify as 'science'. Most of the public ceased their education at school and for them, science is the subject they studied at school and did not necessarily like or understand.

In short, 'science and society' is understood in common usage as STEM and society, and applied by government largely to mean STEM and society. There is a strong argument to suggest that the terminology needs to change if we are to engage more of the public effectively and for the communities within social sciences and humanities to feel properly included. Why not 'knowledge and society' or 'research and society' as the generic title within which can sit 'science and society' as the more specific STEM subset?

Thus, we strongly recommend that clarity is given (and acted upon) to whether 'science and society' really does entail involving the social sciences and humanities on an equal footing with STEM subjects or if these discipline areas are to be considered independently.

Our responses to this consultation have defined 'science' as including subjects such as geography which bridges the social sciences and humanities (human geography) and natural sciences (physical geography).

**Comment Two: Foster understanding of the others' perspectives.** Greater and more effective engagement between researchers, policymakers and the public requires each to raise their game and to understand the others' perspectives.



- Researchers: to improve their communication skills and to understand what style and level of information the users seek and, in the case of STEM, learn to communicate in a way that helps to redevelop the trust among the public
- Policymakers: to demonstrate how research/public feedback has been used to improve policy outputs; i.e. to be accountable to those who spend time and effort communicating with them.
- Publics: to learn to see the relevance of research to improving their quality of life and that of their children, and in supporting a sustainable future for the world; to gain the confidence to suggest ideas and see a response to them.

**Comment Three. Make better use of existing expertise:** a number of the leading subject-based learned societies and professional bodies are very experienced in knowledge exchange and public engagement; it is part of their rationale and purpose. To date very little use has been made of that expertise; a great deal of time and effort would be saved by building upon existing expertise to help such organisations further extend their reach beyond the ‘already converted’.

**Comment Four. Shift the goal posts:** the research community's behaviour is largely and understandably governed by the Research Excellent Framework criteria. Until real recognition is given in those criteria to policy-relevant research and the wider dissemination of the research findings we will see little sustained behaviour shift in the research community. Adding expectations of dissemination into Research Council awards is a good first step but these awards only embrace a relatively small subset of the research community.

### **Specific questions**

#### ***Q1. What steps can we take to co-ordinate better or streamline science and society activity to make it more effective?***

Co-ordination can be advanced by further engagement with learned societies and professional bodies as effective intermediaries between science, society and policy. As set out in paragraph 3.6, these organisations can be ‘bridges’ or ‘brokers’. There are potentially valuable opportunities to build on the expertise and resources of these organisations, many of which are already highly active in public engagement activities, are independent of government, and oversee memberships that combine academics with business, teachers, consultants and the wider public.

Recent reports by the British Academy and the Academy of Social Sciences have outlined the potential for learned societies in the humanities and social science to contribute to these science and society agendas (*Punching Our Weight; The Humanities and Social Sciences in Public Policy Making*, British Academy 2008; *Developing Dialogue; Learned Societies in the Social Science: Developing Knowledge Transfer and Public Engagement*, Academy of Social Sciences 2008).

#### ***Q2. How should we measure progress? What indicators do we need to measure success?***

We welcome the commitment to the measurement of success and progress. As the 2007 DIUS/ESRC study by social scientists concluded: “there is no systematic evaluation culture associated with science and society programmes and initiatives” (*Evaluating Science and Society Initiatives: A Framework for Evaluation*, Tavistock Institute, 2007). Evaluation practices vary in quantity and quality, and the evaluation is not adequately grounded across the board in robust, rigorous concepts, models and methods.

The priority here is implementing evaluation measures rather than considering once again all the options of indicators, such as those set out in Annex B of the consultation. For example, the 2005 Research Councils UK guidelines on evaluation are still valid (*Evaluation: Practical Guidelines*, Research Councils UK/Office for Science and Technology, 2005).

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To measure progress, it is important that DIUS and other science and society leaders embed consistent definitions of science and society activities so that we can measure the same things over time. The repeated changes of definition may reflect an evolution in thinking and institutional structures but makes it harder for longitudinal assessments. For instance, *A Snapshot of Science in Society Activities Throughout the UK* (DTI, 2004) list of activities do not map on to the current consultation. The 2004 'snapshot' excluded education and publications, but the current definition includes these items. Researchers themselves are also not clear of the definition. The Royal Society survey on science communication recommended that greater clarity be given to public engagement definitions (Recommendation 1 in *Survey of factors affecting science communication by scientists and engineers*, Royal Society/RCUK/Wellcome Trust, 2006). DIUS can take the lead in showing all public engagements institutions a consistency and clear definition of this subject.

We also recommend that there needs to be an important spatial perspective in evaluation. For instance, how evenly spread are our public engagements activities across the UK?

**Q3. How can scientists further improve and professionalise engagement with the public?**

To ensure a highly professional approach to public engagement, it is essential to use intermediaries such as learned societies and professional bodies. Training and professional development may assist scientists and researchers, but interacting with society and policymakers is a full-time job that requires dedicated, well-trained, professional staff. These can be found in the most active learned societies and professional bodies. Busy journalists, civil servants or politicians expect a high degree of knowledge and skills about their working methods and research-active scientists may not have enough time to learn all these techniques and methods.

Intermediaries can also create opportunities for scientists and act as independent honest brokers between the public and researchers. Some research is just not suitable for public engagement – however well-trained the researcher may be – and learned societies and professional bodies can help manage what will or will not work. Consideration should be given to sharing good public engagements practice between smaller subject bodies. (See recommendation C3 of *Developing Dialogue; Learned Societies in the Social Science: Developing Knowledge Transfer and Public Engagement*, Academy of Social Sciences 2008).

The RGS-IBG annual geographer's conference receives more media coverage than any single academic discipline. One reason for its success is that the Society's team of press officers offers university geographers guidance and practical help when dealing with the national UK media. The support is greatly appreciated amongst the scholarly community as well as deadline journalists. The liaison work also includes diplomatically advising many conference presenters that their work is not suitable for media consumption.

Paragraph 4.3 should include archives and libraries – not just museums and galleries - as 'cultural institutions which make an important contribution as centres of learning and expertise.' For example, the MLA-designated archives of the RGS-IBG are highly effective public engagement resources, advancing both formal education (particularly geography, history and citizenship in schools) and informal education, through free exhibitions, family history days and community workshops.

**Q4. How should high quality engagement be recognised and rewarded?**

The RGS-IBG recommends that there need to be more measures to reward applied, policy relevant and knowledge exchange work in the forthcoming Research Excellence Framework (e.g. *RGS-IBG Response to Consultation on Proposed Research Excellence Framework*, Higher Education Funding Council for England, 2008). We look forward to seeing the final recommendations of the Council for Science and Technology review led by Janet Finch on rewarding policy engagement.

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Consideration needs to be given for dedicated champions and chairs of public engagement in social sciences and humanities as seen in the natural sciences e.g. the Imperial College London Professor of Science and Society (Lord Winston), the Charles Simonyi Professor of the Public Understanding of Science, University of Oxford (Richard Dawkins), and the Professor of Geosciences Communication, Plymouth University (Iain Stewart).

We also support prestigious and independent prizes and awards for knowledge exchange such as the RGS-IBG Ness Award for public engagement in geography or the Royal Society's Michael Faraday prize excellence in communicating science.

Public recognition of the importance of high quality engagement must also be supported in practical ways such as training and continuing professional development in public engagement. For example we applaud the British Association training workshops for those with EPSRC Partnerships for Public Engagement awards and Senior Media Fellowships.

**Q5. How can the scientific and policy communities make science more interesting for the public and particularly for those difficult to reach groups?**

We disagree that science needs to be made 'more interesting'. Science – when broadly defined – is of high interest to the public. The DIUS/RCUK survey suggests that the UK population see science as more important compared with 2000 and 2005 (*Public Attitudes to Science 2008; A Survey* RCUK 2008). If the definitions of science include health issues then almost 100 per cent of respondents expressed interest in these topics. Also, nine out of ten of those surveyed said they were interested in environmental issues.

In order to reach groups that report less involvement in science, we recommend analysing the techniques of those outside science that have similar challenges, such as public health communication professionals, advertisers, or museums and galleries with track-records of reaching non-traditional groups.

It is also important for policy makers to keep in mind that attitudes do not necessarily change behaviours. For instance, the RCUK survey may have found an increased fascination with science-related issues but the number of people visiting science museums, centres, zoos, planetaria and laboratories has fallen (paragraph 3.2 *Public Attitudes to Science 2008; A Survey*, Research Councils UK 2008). Sustained changes to attitudes, beliefs and behaviours may only be tested by another science 'crisis'. If another BSE affair were to happen tomorrow, are we convinced that the public would react differently?

A public 'amazed' by the achievements of science also needs to be qualified. A healthy scepticism amongst citizens about science is an important part of an open, democratic society. Critical engagement must include a capacity to judge when to be enthusiastic and when to be concerned, when to have confidence and when to question particular institutions or initiatives. Ironically, it is just this quality of "healthy scepticism", that is central to the methodology of science itself.

**Q7. How can the media better support society's need for balanced information that accurately portrays the nature of science and improves scientific literacy? Q14. What more can the science community and the media do to foster a shared understanding of the nature of science?**

More training and workshops are required for early career journalists with responsibilities that cover STEM subjects or social sciences. Researchers and their representative bodies fear that offering advice and training might make them open to accusations of being patronizing. Yet recent informal briefings for new science journalists at the Science Media Centre have been popular. The workshops for journalists run by Royal Statistical Society continue to sell out and offer invaluable introductions on how to successfully communicate official statistics. Journalists can value continuing professional development just as much as researchers.





Learned societies like the RGS-IBG offer independent and non-partisan hubs of expertise. We combine world-leading academic expertise with the wide knowledge and skills from our 15,000 members in business, consultancy, government, media and NGOs. For instance, our Policy Advisory Group helps us horizon-scan for policy opportunities and threats. The Group combines 20 leading academic geographers with policymakers from 6 UK government departments and agencies, UN and EU. Unlike many think-tanks or single-issue campaigning groups, we provide policymakers scholarly rigour, combined with political non-partisanship.

One way of convincing policymakers about the benefits of public engagement is to highlight past successes. There has been more success resulting from public debate around human embryology and genetics, from the pioneering work of the Warnock Committee in the 1980s through to the activities of the Human Fertilisation and Embryology Authority and the Human Genetics Commission. It is felt that these have 'worked' in a way that similar processes around GM have 'failed' (Demos *See-through Science*, 2004). As Professor Sheila Jasanoff, Harvard University, notes in the 2004 Demos report: 'If the growth of agricultural biotechnologies was marked by too little deliberation, then human biotechnologies seem burdened by almost a surfeit of public soul-searching' (Demos *See-through Science*, 2004). It may be that one reason why public debates over human biotechnology are considered to have played out more successfully is that deliberative processes began early and have kept pace with scientific developments.

We look forward to seeing the recommendations of the Council for Science and Technology review on rewarding policy engagement, due for publication in October 2008. We recommend that the next Research Excellence Framework exercise includes measures to reward researchers who make a positive and demonstrable contribution to policymaking.

**Q22. What additional mechanisms should be put in place to enable scientists to better interact with policy makers? Q23. How is good practice by scientists engaging with policy makers celebrated and rewarded? Q24. What additional mechanisms should be put in place to enable policy makers to better interact with scientists? Q25. How is good practice by policy makers engaging with scientists celebrated and rewarded?**

Scientists and other researchers may benefit by following the advice of the ESRC-funded Centre for Evidence & Policy at King's College London on ways to enhance the prospect of interaction and impact with policymakers:

- plan research impact as thoroughly as research design;
- aim to achieve change in one or more areas – knowledge, understanding, attitudes, behaviour;
- create a dialogue – interactive, recursive – don't just disseminate;
- multiply effort – don't rely on one shot (which may miss the target) or one size (which will not fit all);
- take the long view and stick at it – sometimes impact just takes time ('Research and Policy; Building a Good Relationship' *ESRC Society Today*, May 2003).

Interaction might be facilitated by making researchers more aware of the evidence needs of government. The British Academy report on policy making and research recommended that all government departments publish their research priorities and needs to 'facilitate interaction and dialogue with the academic research community' (*Punching Our Weight; The Humanities and Social Sciences in Public Policy Making*, British Academy 2008). A number of departments already do this but this should be implemented across government.

Researchers need funding and career development incentives to encourage engagement with policymakers. The UK Research Councils have a number of funding streams to assist researchers in 'knowledge exchange'. ESRC opportunities, for example, include policy review seminars; two-way

secondments; joint PhD studentships and internships. These opportunities need, however, to be better marketed and communicated to the scholarly community.

Until and unless the Research Excellent Framework recognises and rewards the research community for policy relevant research and the dissemination and engagement that flows from that, it will be an uphill struggle to encourage more members of the scientific community to engage in research that is policy relevant and to communicate their findings to wider audiences. The move by the Research Councils to require wider dissemination of outputs is a good start but alone it will not reach the breadth of the research community.

Universities can also reward policy engagement. For instance, University College London professional promotion criteria include ‘involvement (as appropriate to the discipline) in knowledge transfer/exchange which impacts on practice or on quality of life through ongoing engagement and communities’ (reported in *Punching Our Weight; The Humanities and Social Sciences in Public Policy Making*, British Academy 2008 p.36). The Secretary of State for the Department for Innovation, Universities and Skills praised Aston and Manchester universities as they include knowledge exchange as key performance indicators for their staff (*Science and Society* John Denham MP speech at RSA, 16 January 2008).

The RGS-IBG rewards policy and knowledge exchange through its Chartered Geography status (CGeog) for professional geographers. Chartered Geographer is the professional status qualification for those with competence and experience in the use of geographical knowledge or skills in the workplace. Successful applicants must demonstrate how they have made innovative progress or significant contributions to geographic applications, including policymaking (For further information: [www.rgs.org/charteredstatus](http://www.rgs.org/charteredstatus)).

Learned societies and professional bodies can and do act as effect policy intermediaries (see responses to Q11, 12 and 20). As well as proactively facilitating policy engagement, these organisations can offer advice and training on good practice, build networks of links between policymakers and researchers, and give some quality assurance to policy engagement. The Secretary of State for the Department for Innovation, Universities and Skills said in a speech earlier this year that government officials find it ‘hard to source relevant advice’ (*Science and Society* John Denham speech at RSA, 16 January 2008). The minister was concerned that despite his department’s £6 billion expenditure on some of the best research in the world, it can still be “quite difficult for decision makers to access valuable scientific evidence and advice or to obtain advice that is based on the best research but which is tailored to address the choices facing decision-makers” (*Science and Society* John Denham speech at RSA, 16 January 2008). We recommend that research intermediaries such as learned societies, national academies, and professional bodies may assist in finding this research.

We also suggest that policy makers engage with PolicyNet, a network of full-time staff working in science, engineering, and technology policy. Run by the Royal Academy of Engineering, the group includes many policy staff from professional bodies and learned societies and offers an invaluable networking opportunity and source of informal advice for public policymakers.

### **Note on Questions 26 to 33**

This area of questions is ambiguous – is it referring to science, social science, arts and humanities or just to ‘science’ as it occurs in the curriculum? From the nature of the questions it seems to refer to the latter. However, we are answering these questions as if referring to the broader definition.

We feel well placed to contribute to these questions as:

- the organization that argued for, developed, and is delivering the DCSF-funded Action Plan for Geography to enhance the teaching and learning of geography in all maintained secondary schools in

England (including officially advising DCSF);

- geography is the way in which most environmental education and issues at the interface of environment and society (e.g. climate change) are delivered within the curriculum;
- the RGS-IBG is involved in the development of the Humanities and Social Science Diploma. We are on the steering group and as chair of the subject associations working group.

**Q27. What more do schools need to enhance the science curriculum to make it more exciting and relevant?**

First and foremost schools need stability – not more new initiatives – there is currently overload with the introduction of the new curricula at 11-14 and AS/A2 level specifications, shortly followed by the new GCSE specifications. And then there are diplomas, with phase 4 (including science and other subject-based diplomas) coming on stream in 2011, and phase 1-3 diplomas earlier.

Secondly, teachers need to be allowed, encouraged and supported in taking subject-specific CPD so that they can make the most of the (more flexible and locally tailored) opportunities the new curricula offer. Many teachers still find it difficult to gain leave for subject-specific CPD from their head teachers, whose eyes are often focused on generic and awarding-body centred CPD.

Thirdly, the move in some secondary schools towards integrated learning at the expense of discipline-based learning needs to be carefully monitored.

Relevance is difficult to teach as it requires the teacher being up to date in the subject matter and in its applications. Good supporting online teaching resources and online CPD is essential if the majority of the teacher workforce is to succeed in this area. It is needed across all subjects to support teacher sin introducing the new curricula.

Science is already very well supported with c. 50 million pounds of funding per annum for the national and regional science centres from the government and the Wellcome Foundation. It is the other subjects that need support, and especially those that deal with relevance through social science, addressing such big issues as responding to climate change, migration, regional and international development, globalization, identity and diversity – including geography, economics, and sociology. The skills that young people learn through these disciplines are highly valued by employers.

**Q28. What can the science and business communities do to tell young people about the career opportunities that a science education opens up in all work areas?**

The best people to tell young people about careers opportunities are the professional bodies, which can draw upon role models and exemplars that are using their discipline knowledge and/or associated skills in the workplace.

In addition, the science and geography ambassador schemes work well and cost effectively (especially in the case of geography) to introduce young people to role models and career opportunities. Both schemes should be continued and funded by government; between them they cover the statutory core entitlement for young people in 'science' and in 'social science' at school.

**Q29. How can we measure future demand for science skills in the UK?**

Future demand for science and skills depends on likely future projections for employment types and this is inevitably uncertain, especially currently.

What should be distinguished here is future demand for 'scientists' in the limited definition (e.g. biotechnology and pharmaceutical industries) as opposed to future demand for a skill set that can be

learned through 'science', but which is not unique to 'science' (e.g. financial services). In the case of the latter it is important to realize that many disciplines (not just 'science' in its limited definition) can supply the relevant research, problem solving, and analytical skills for employment.

**Q30. What can business do to make sure that its efforts in enrichment activities are co-ordinated and effective?**

Leave its efforts to be coordinated by others – either spatially as in regional coordination, or thematically as in subject-based coordination. In both instances, given the demise of most local authority support services for teaching, the coordination is best managed through those organizing the ambassador schemes (STEMNET and RGS-IBG), or by the professional bodies where such schemes do not exist. Those organising ambassador schemes are already managing and brokering large scale coordination between business and schools and can readily be scaled up. Building on what currently exists and is proven to work is better than reinventing wheels. Business funding to help support extra coordination would be most helpful.

**Q31. Is there a different way to teach science subjects which could help overcome the issue of under-representation of some groups?**

Yes, by engaging those groups in ways that interest them – i.e. think of the user perspective and relevance. For example, the Royal Geographical Society (with IBG) has been highly successful at engaging young people from the Sikh, Muslim, Chinese and Afro-Caribbean communities through its *Crossing Continents: Connecting Communities* ([www.rgs.org](http://www.rgs.org)) programme that uses archives to explore shared heritages and thus help to underpin community cohesion.

Regarding the teaching of 'science' we suggest that you place more emphasis on the scientific aspects of geography that are already in the curriculum, namely the study of environmental processes and change – e.g. climate change, flooding, landscape development, pollution etc. While it may seem to some like 'soft science' it does generally have more appeal and could provide an effective entry point for some pupils.

**Q32. How can the science community and employers show society that they welcome and embrace diversity, including women, ethnic minorities and older people? Q33. What can policy groups and business do to address issues of under-representation and retention?**

This is not an issue if the broader definition of science is being used. If, however, the consultation is referring to 'science' in its limited definition, then the obvious answer is through role models – female, BAME, and older – in the media, TV, as spokespersons, ambassadors, etc.

**Other issues**

**Q34. Do these areas and questions provide a suitable framework for addressing the challenges we have identified?**

The questions and issues might provide a suitable framework IF they concern the breadth of science, social science, arts and humanities equally represented. However, IF they concerns the narrow definition of 'science' that seems to come through from the consultation questions then they do not provide a suitable framework for going forwards as society need sits social scientists just as much as it needs its scientists.

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