

Case Study

Nanodialogues

A series of 'upstream' dialogue experiments

Vital statistics

Commissioning bodies:

Demos in partnership with the Environment Agency (EA), Practical Action, Biotechnology and Biological Sciences Research Council (BBSRC), Engineering & Physical Sciences Research Council (EPSRC) and Unilever

Duration of process:

26 months: April 2005 - June 2007

Number of public participants:

100

Number of experts/stakeholders involved: 34

Cost of project: £240,000 total,
Sciencewise-ERC funding =
£120,000

Nanotechnology is the study of manipulating matter on an atomic and molecular scale. There is much debate on the future implications of nanotechnology. It may be able to create many new materials and devices with a vast range of applications such as in medicine, electronics, biomaterials and energy production. Conversely, nanotechnology raises many of the same issues as any new technology, including concerns about toxicity, environmental impact and their potential effects on global economics.

Nanodialogues was developed as a result of recommendations by the Royal Society and the Royal Academy of Engineering on how the Government should take forward the new and challenging area of nanotechnology research. The project involved a series of 'upstream' dialogue experiments, which enabled experimentation in public engagement, as well as the opportunity to examine different nanotechnology issues from a range of perspectives. The project involved four different experiments, co-ordinated by Demos, in partnership with the Environment Agency (EA), Practical Action, the Biotechnology and Biological Sciences Research Council (BBSRC) with the Engineering and Physical Sciences Research Council (EPSRC), and Unilever. Each dialogue process was tailored to the needs of the partner, who used the results to help develop its own policies on nanotechnology, and on how it would engage with the public and other stakeholders in the future. Each partner had different aims under the overarching project objectives relating to their focus of work, covering policy development, nanotechnology uses in developing countries, understanding the public, and corporate science.

Key messages from the public

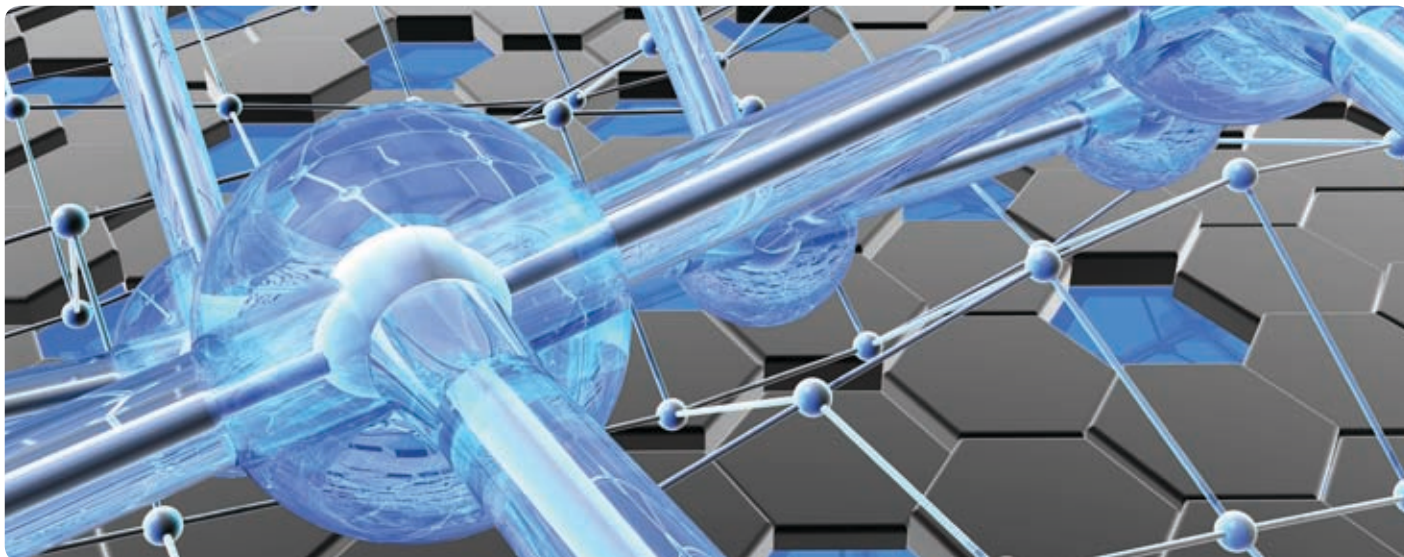
- The general public can and does care about new technologies and how their development and use is managed
- The public can understand and work with complex scientific and technical issues
- The need for continuing public engagement as the science develops was clearly identified
- The project identified the need for new political spaces that bring together the 'uninterested' public with interest groups

- The need for more everyday links between scientists and the public was identified
- Participants want to see the outputs of dialogue so they know what is going forward to influence policy and to know how their input has been used in decision-making.

Policy influence

The project successfully influenced the EA, EPSRC and BBSRC policy on nanotechnology in a number of ways including:

- The EA changed how it regulated nanoparticles in the environment as a result of listening to the recommendations of public participants
- The results of the dialogues were fed directly into the EPSRC Ideas Factory (2007), which considered priorities for £1.5 million research funding
- Two public participants from the People's Inquiry were invited to present the outcomes of the Inquiry to Defra's Nanotechnologies Stakeholder Forum.



Background

In June 2003, the UK Government commissioned the Royal Society and the Royal Academy of Engineering (the UK's national academies of science and of engineering, respectively) to conduct an independent study on nanotechnology. Their report included a recommendation to carry out public engagement to find out what people think about this complex science and its possible applications in order to inform policy decisions. In response to this report, in 2005, the UK Government acknowledged some of the immediate policy challenges and created a cross-departmental Nanotechnology Issues Dialogue Group to address them. At the same time, the Nanotechnology Engagement Group (NEG) was set up to oversee public engagement through projects such as the Nanodialogues.

Demos and the other partners in the Nanodialogues wanted to explore the prospect that nanotechnologies could open up new sorts of conversation between scientists, policy makers and wider society. They were keen to test the extent to which, rather than simply becoming the next big scientific controversy, nanotechnology could become an arena where relationships between science, innovation and democracy could be redesigned.

- The results were considered by the cross-Government Nanotechnology Issues Dialogue Group (NIDG) which works to enable the development of nanotechnologies and co-ordinate Government activities across departments, agencies and research councils
- The results and learning were used by the NEG
- The dialogues shaped priorities for research council funding of later nanotechnology research
- The dialogues helped create more robust science policy on nanotechnology
- The experiments demonstrated the ability of the public to consider difficult issues and make a valuable contribution to policy governance.
- Identify wider lessons learned to help develop the policy and practice of public engagement in science and technology issues.

The project delivered four different experiments in public dialogue all of which had their own specific objectives:

EA:

- To see how members of the public understood novelty, uncertainty and regulation
- To give a small group of the general public the opportunity to contribute to shaping policy on new technologies

Practical Action:

- To understand the problem of getting clean water into two Zimbabwean communities
- To identify conditions under which nanotechnology might work for these communities

BBSRC and EPSRC:

- To explore the potential for public engagement with research council science

Unilever:

- To assess the potential for upstream public engagement in corporate science

The dialogue activities

The overarching objectives of the Nanodialogues project were to:

- Experiment in a theoretically informed way with new methods of 'upstream' public dialogue
- Ensure that the dialogue experiments were developed to help institutions make decisions and set priorities
- Generate resources to enrich debate within the scientific community and wider society around the implications of nanotechnology

The EA's experiment involved a 'People's Inquiry', which met for a total of 15 hours in East London. This group considered nanotechnology and the environment (land remediation) and involved 13 public participants and 15 experts.

The Practical Action experiment took place in Harare, Zimbabwe, where a three-day workshop explored how nanotechnology might help local communities to secure clean water. This experiment involved six community representatives, such as local farmers, and seven water scientists.

The BBSRC/EPSRC experiment was a three-day public forum in Swindon to explore research priorities, involving 14 public participants and five scientists.

The Unilever experiment undertook four focus groups followed by a reconvened workshop in Liverpool and London to discuss private-sector science and the nature of innovations, with 28 public participants and 10 scientists.

The conclusions and views from the public were considered by the Government's Nanotechnology Research Coordination Group (NRCG) task force on social and economic dimensions. Its report on future research requirements was published in December 2007¹. Nanodialogues also collaborated with the NIDG (the NRCG is a sub-group of the NIDG) and worked closely with the NEG that looked at a number of different initiatives for engaging the public on nanotechnology and evaluated their outcomes.

Summary of good practice and innovation

- The length of time allowed for public deliberative discussions, either in a single block of time or reconvening several times, allowed the participants sufficient time to absorb new information, reflect on it and discuss it with each other, and come to considered views
- In the People's Inquiry, participants agreed and wrote the conclusions and 12 recommendations themselves, ensuring they controlled the outputs
- Although overall boundaries were agreed by the project teams in advance, the public were able to take discussions in the direction they wanted (to some extent), and to define questions for scientists as well as ask for information
- Uncertainty was not hidden. The experiment began with an admission of uncertainty from all sides. This allowed for an open and constructive series of exchanges
- A range of innovative methods was used in the different experiments including scenarios from which working groups produced collages with visualisations of the way they imagined a nano-future and an alternative future
- Each partner produced its own report on its own experiment, allowing it to reflect on and describe its own experiences and learning. These reports were then used in a pamphlet produced by Demos
- Some participants from the EA's People's Inquiry met with key policy makers to submit their recommendations. Policy makers provided early feedback about the value of the Inquiry's contribution and how their recommendations might be dealt with.

Lessons for future practice include:

- Although 'upstream' in one sense, some technologies were already in use. The focus was, in practice, on finding new policy solutions for a new technology, while recognising that this may mean it is difficult to identify policy impacts
- Process needs to come second; the 'how' of public engagement should always follow the 'why'. New ways need to be found for members of the public to set the terms of debate, in negotiation with the organisations that invite engagement
- The need for continuing public engagement as the science develops was identified clearly
- The public can understand and work with complex scientific issues: people care about new technologies and how their development is managed
- Different value was accorded to public engagement in science and innovation in different systems. In Zimbabwe, scientists see community participation as vital but complicated; in the UK, systems often work against community and public engagement
- The impacts of public engagement can take a long time to be seen in terms of changes in policy, especially with upstream engagement
- The project identified the need for new political spaces that bring together the 'uninterested' public with interest groups
- Initial decisions on the detailed design of the dialogue need sufficient discussions between commissioning bodies (and advisory/oversight groups) and contractors to ensure clarity and agreement.

Impacts

Policy impacts are covered on the first page of this summary. This section identifies the impacts on all of the participants in the process.

Influence on policy makers and policy organisations

- The dialogues influenced BBSRC and EPSRC in their thinking about their role as investment broker, balancing demands from scientists and policy makers to allocate resources, and in considering where research agendas come from more widely
- The EA prepared a formal response to the recommendations from the People's Inquiry, explicitly valuing the nature of the questions asked by the Inquiry, their focus on uncertainties and risks, the need for contextual research, openness, accountability and education. The EA felt that its socially framed evidence added weight to the existing Government position on the use of nanoparticles in environmental clean-up
- The dialogue encouraged policy makers to be more transparent through a process of engagement, creating a 'sea change' within the policy makers involved.

Impacts on public participants

- Participants were left with a sense of having made a real contribution to an important national issue
- Some public participants went on to become advocates of public engagement, including speaking at a major national event in London in June 2007
- Many public participants learned a great deal about nanotechnology and about research decision-making, which made them more interested in science
- The dialogues changed participants' views on the importance of fundamental science.

³ <http://tinyurl.com/3v3fcn2>

“... the findings of the NEG, including Nanodialogues, were quite important in terms of shaping how the UK nanotechnology policy was put together. For example, the first area of funding was for nanotechnology in solar energy, which was highly endorsed by the public. The same with nanomedicine.”

Research Councils policy maker

“Most participants felt they had learned not only about nanotechnology, but also about the inner working of the research councils, which for some rekindled an excitement and interest in science not felt since their school days.”

Dr Jason Chilvers, Project evaluator

“There are strong arguments that public deliberation and interaction can lead to more robust science policy, particularly in areas that are intrinsically interdisciplinary and explicitly coupled to societal goal.”

Professor Richard Jones, EPSRC

“I learnt about the willingness of people to accept there is a role for fundamental science, for pushing forward the boundaries of knowledge without having an actual application in mind ... there seemed to be more trust in scientists than I had thought there would be.”

Scientist stakeholder

Impacts on scientists/experts and other stakeholders

- Scientists learnt how quickly citizens got up to speed with very complex technical issues, and were surprised at the depth of discussions among participants, their willingness to support blue skies research and to listen to scientists
- It changed some scepticism into some support for dialogue among the scientific community
- Scientists across all four projects learned new communications skills in the preparation for, and practice of, talking with the public
- Scientists had opportunities to consider ethical issues as well as to examine assumptions about science and how priorities are set.

Wider impacts

- The project successfully brought together a range of organisations that had not worked together in the past, both within Government bodies and with other stakeholders, such as the private sector, think tanks and non-governmental organisations (NGOs).

Overall impacts

The project has had significant impact on policy and policy makers, as well as on other scientists and experts involved. Public participants learnt a lot and some became advocates of public engagement in nanotechnology, and science and technology more widely.

Several publications resulted from the experiments, which have become key texts in the development of public dialogue in science and technology: ‘*Nanodialogues. Experiments in public engagement with science, to increase awareness and understanding*’, by Jack Stilgoe, published by Demos in 2007², and ‘*Democratic technologies? The final report of the Nanotechnology Engagement Group*’, by Karen Gavelin, Richard Wilson and Robert Doubleday, published by Involve in 2007³.

Contacts and links

Commissioning bodies

This project was funded through open competition

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Reports

Full project and evaluation reports available from Sciencewise-ERC on www.sciencewise-erc.org.uk/cms/nanodialogues-2/

² <http://tinyurl.com/42y6fvu>

³ <http://tinyurl.com/3ucf48h>