



Image source : Demos (2007)

# Responsible nanotechnology R&I – Societal engagement practices Nanodialogues (United Kingdom)

## Introduction

**NANO2ALL** is an initiative funded by the European Union's Horizon 2020 Research and Innovation programme under the Grant Agreement Number 685931. It supports the establishment of Responsible Research and Innovation (RRI) policy and governance on nanotechnologies. NANO2ALL also aims to identify RRI practices, with a focus on societal engagement in nanotechnology research and innovation (R&I) across Europe and beyond, with the purpose to share knowledge, experience and recommendations with other nanotechnology stakeholders and motivate a wider application of such mechanisms in our region.

RRI is an approach that anticipates and assesses potential implications and societal expectations with regard to R&I, with the aim to foster the design of inclusive and sustainable R&I. As a dimension of RRI, societal engagement implies interactions between relevant stakeholders (companies, research organisations, policymakers, civil society organisations (CSOs), consumers, affected citizens and others) in order to align research, development and innovation with the values, expectations and needs of the society. Such interactions can take various shapes, such as brainstorming, scenario workshops, user committees, online forums, dialogues, informal / formal meetings, or other formats.

This short report provides brief insights into the **Nanodialogue on land remediation using nano-particles, one of four dialogues held as an experiment in upstream public engagement with nanotechnology** funded by the British government's Office of Science and Innovation and conducted from January 2006 through January 2007 by the British think tank Demos. Data for this report were gathered via desk research.

## The Nanodialogues project

**Demos** is an independent, cross-party think tank based in the United Kingdom that specialises in the development of evidence-based solutions on issues of social policy. It was founded in 1993, and has since worked on a variety of questions including – but not limited to – poverty, education, community issues, finance and the impact of new technologies. The Nanodialogue project pertains to the latter field.

The early development of nanotechnology, back in the early 2000s, took place in what Demos researchers described as “an institutional void,” with “policy-in-the-making designed to accommodate science-in-the-making.” At the same time, it coincided with an increased urgency in increasing public involvement in decision-making, particularly regarding science – a field where such initiatives had found it difficult to gain traction before.<sup>1</sup> The emergence of nanotechnology was seen as an opportunity to try engagement ‘upstream’, before public views on the topic become polarised.

In an attempt to address these issues in the UK, and responding to the 2004 report “*Nanoscience and nanotechnologies: opportunities and uncertainties*”<sup>2</sup> by the Royal Society and the Royal Academy of Engineering calling for more research into public attitudes and government-initiated dialogue, the British government’s Office of Science and Innovation commissioned in 2005 the Nanodialogues project with four major goals:

- “**experiment with new methods of ‘upstream’ public dialogue on nanotechnologies;**
- ensure that these dialogue experiments were framed in a way to **inform institutional decision-making and priority-setting;**
- **generate intellectual and practical resources** for public, policy and scientific debate about the social implications of nanotechnologies;
- **identify wider lessons and insights** to inform the policy and practice of public engagement in science and technology.”<sup>3</sup>

To meet those goals, Demos led a series of four experimental dialogues on different themes relating to nanotechnology, its usefulness and its regulation. The first dialogue held in partnership with the UK Government’s Environmental Agency is by far the most publicised and referenced experiment and forms the subject of this report. A brief description of the other three dialogues is available in the text box below.

May through June 2006, Swindon (England): in partnership with the Biotechnology and Biological Sciences Research Council (BBSRC) and the Engineering and Physical Sciences Research Council (EPSRC), DEMOS aimed to broadly **explore the potential for public engagement in shaping public research agendas and policy**, particularly relating to the convergence of nano- and biotechnologies.

July 2006, outskirts of Harare (Zimbabwe): in partnership with the campaign group Practical Action, DEMOS facilitated a discussion **focused on the usefulness of nanotechnology to communities in developing countries**, particularly to obtain clean water.

December 2006 through January 2007, Port Sunlight, Newcastle and London (England): in partnership with the company Unilever, the dialogue **tackled the question of upstream public engagement in corporate research & development**.<sup>4</sup>

*Textbox 1. An overview of three of four dialogues conducted under the Nanodialogues project*

<sup>1</sup> [Nanodialogues – Experiments in public engagement with science](#), Jack Stilgoe, Demos report (2007)

<sup>2</sup> [Nanoscience and nanotechnologies: opportunities and uncertainties](#), The Royal Society (2004)

<sup>3</sup> [Science Report – A people’s inquiry on nanotechnology and the environment](#), Irving *et al.*, Environment Agency report (06/2006)

<sup>4</sup> [Governing at the Nanoscale – People, policies and emerging technologies](#), Kearnes *et al.*, Demos report (2006)



## A people's inquiry on nanotechnology and the environment – design and operation

The first UK Nanodialogue was held from January through February 2006 in London in partnership with the Environment Agency. It **discussed the use of nanoparticles for environmental remediation (clean-up) of chemical contamination in the ground**, asking whether the method was safe enough to authorise.

The dialogue consisted of **three meetings**. **13 citizens from East London** formed the 'people's panel'; they had previously expressed their interest in such exercises and were paid for their time, but didn't know the topic or nature of the activity before the first meeting itself. Among them were two teachers, a recruitment consultant, two nurses, a web developer and a full-time mother. A group of **twelve professionals** including representatives of the Environment Agency, researchers from multiple universities and Greenpeace and Corporate Watch staff brought **VIPs – very important perspectives on the issue at hand** throughout the three days. Their role was foreseen as not just explaining the facts but reflecting on the limits of available knowledge and engaging with citizens' questions.

The three meetings, each lasting five hours, were facilitated by Demos staff. During the meetings, the people's panel were invited to **ask the experts any questions that came to mind and to freely discuss and explore the issues at hand**. Moreover, they were asked to **contribute their own ideas and perspectives**, which the experts might benefit from. At the end of the process, **the panel were asked to formulate recommendations to be addressed to policy-makers**. The organisers preferred to avoid the language of a citizens' jury (e.g. 'charges,' 'witnesses,' and 'verdicts'), considering this antagonistic.

The discussion touched upon themes such as **uncertainty** (about effects and ways forward, which may not be easily resolved through more research), **openness** (a mindset of open and pro-active sharing of information as problems are collective), **placing discussions of science, technology and risk in context** (broader issues at play, various pressures such as time, the viability of alternative technologies), regulation (an open, flexible approach); **consultation, communication and engagement** (more opportunities, at different levels) that took shape as 12 recommendations supported by all participants. The organisers describe the final mood of participants as one of informed scepticism, including about whether their recommendations would make a difference.

Follow-up was considered important by all those involved. The recommendations were transmitted to the government's **Department for Environment, Food & Rural Affairs** (Defra). An additional meeting was also convened in May 2006 between four panel members and three members of Defra's nanotechnology policy team to **reflect on their experiment and hear about the government's approach to nanotechnology and the environment**, a discussion that by all accounts proved empowering. Defra responded to the people's panel in writing in September 2006. Furthermore, Demos took internal steps to inform their staff of the issues raised and engage with government (both local and national) in hopes of ensuring that the panel's recommendations would be taken forward in other ways.

In the months following the first workshop, **the British government passed legislation on nano-remediation that mostly echoed the panel's recommendations**. It remains difficult, however, to precisely evaluate the



Nanodialogues project's impact on this legislation, as the recommendations it produced were largely in line with those of the major scientific institutions of the Royal Society and the Royal Academy of Engineering.<sup>5</sup>

## Evaluation & recommendations

The University of Liverpool undertook an independent evaluation of the Nanodialogues project's first workshop. The verdict is largely positive: evaluators noted that the initiative was widely perceived by participants as worthwhile and a step in the right direction. Evaluators were also impressed by the interpersonal quality of the engagement, the amount of knowledge it generated and the openness and transparency of the Environment Agency throughout. A few highlights from their observations are presented below.

Participants reported the engagement to be enjoyable. The retention rate was high, with participants continuing to look up information or discuss the matter with colleagues, family and friends between the sessions. On the part of the organisers, there was **clear communication about the objectives of the engagement practice and a willingness to consider and discuss with participants how this experiment fits in the policy-making process.**

Expert advice was delivered in a conversational style, with participants being encouraged to challenge expertise, explore issues of uncertainty and identify topics of importance. This allowed their own social knowledge to be incorporated in the discussion. The fact that organisers were **open to side discussions on participant interests'** such as health and safety and trust in the government also contributed to an open and engaged process.

However, some panel members reported scepticism as to the sincerity and usefulness of the exercise. It was felt that they would have been better served if the panel had had **a voice in the selection of experts and the general shaping of the experiment.** Indeed, the experts had been selected in advance and came mostly from a research perspective, leading to a rather science-heavy discussion. The organisers could not respond to participant requests to meet with Defra representatives or the Member of Parliament for East Swindon.

The Nanodialogues were also intended to contribute to the understanding of the practice of (especially upstream) public engagement. Evaluators remarked that the topic under discussion, a regulatory case, could not be characterised as upstream as the use of nano-particles in land remediation was already a well-developed technology and trials had already taken place in the United States. Participants raised questions and suspicions about plans to use this technology in their area. Ultimately, **discussions gravitated towards the wider place of nanotechnology in society at large** (and the panel's recommendations were also framed in this way) rather than just in relation to managing risks associated with the implementation of this particular technology.<sup>6</sup> Nevertheless, the Environmental Agency as the activity's sponsor and participants alike found the discussion useful and productive. The discussions also showed that governance matters are interesting to the public at large.

<sup>5</sup> *Improving Risk Governance of Emerging Technologies through Public Engagement: The Neglected Case of Nano-Remediation?*, Grieger et al., in *International Journal of Emerging Technologies and Society* 10 (2012)

<sup>6</sup> This finding also emerged in the NANO2ALL dialogue processes. See NANO2ALL [D3.3 Responsible Innovation Agendas at national level](#) (2018)

