



Responsible nanotechnology R&I – Societal engagement practices

NANOPLAT

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 Europe.

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&I¹. As a dimension of RRI, societal engagement implies interactions between relevant stakeholders (companies, research organisations, policymakers, civil society organisations, 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 **NANOPLAT (Development of a Platform for Deliberative Processes on Nanotechnology in the European Consumer Market)** support action, whose main objectives was to evaluate selected deliberative processes in Europe and develop a deliberate and science-based platform for a stakeholder dialogue for research and political actions. Data for this report was gathered via desk research and an **interview with Pål Strandbakken, Researcher at Høgskolen i Oslo, Consumption Research Norway (SIFO)** and an **interview with François Jégou, Director of Strategic Design Scenarios in Belgium**.

¹ <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation>



NANOPLAT Consortium

The NANOPLAT Consortium was coordinated by the Consumption Research Norway (*Statens Institutt for Forbruksforskning*, SIFO). SIFO is a non-profit, transdisciplinary research institute at the Centre for Welfare and Labour Research at OsloMet, the Oslo Metropolitan University. SIFOs² aim is to understand the role of consumption and consumers in society and to provide the knowledge basis for public consumer policy in Norway. Created in the 1930s with the start of home economics, laboratory work and product testing was until recently a central part of its operations.



The consortium of NANOPLAT was formed by the University of Manchester, IÖW in Berlin, Central European University in Budapest, Sabanci University in Istanbul, Bergen University and Strategic Design Scenarios in Brussels.

Deliberative process developed in NANOPLAT

NANOPLAT reviewed a selection of deliberative processes related to nanotechnology in Europe to identify the necessary conditions for them to be able to enhance the democratic processes. Different **forms** of deliberative processes exist (driven by a wide variety of organisations) —from a one-evening event to processes running over half a year— with varying number of participants in each exercise. Both direct/tangible **outcomes** (recommendations, reports, etc.) and indirect/intangibles ones (learning experiences of participants) can be found. But the actual **impacts** of the deliberations are difficult to assess due to lack of data, specified goals, and information about dissemination activities. Therefore, **to assure actual impact on decision-making, a description of how the deliberative process is going to influence policy-making should be made.**

The NANOPLAT project developed a case for a more permanent form of deliberation to be necessary for enabling an **ongoing process of collective responsibility**. The consortium developed an online tool for the deliberation on consumer products, which might serve as a starting point for this process. The challenge was to have more deliberative processes organised on different technologies by reducing the costs of the deliberative process and make them more accessible and international through on-line tools. The argument of the NANOPLAT consortium for the necessity for more permanent and economical forms of deliberation is also reflected in the 2009 Communication of the European Commission³. NANOPLAT developed a **web-tool platform for stakeholders to exchange opinions and offer expertise on the ethical foundations of nanotechnologies and how they impact society.**

The NANOPLAT consortium considered Cohen's four criteria for **ideal deliberation** as a starting point⁴ to transfer deliberation to an online tool. These criteria are that: (1) It is **free** discourse; (2) It is **reasoned** and require reasons supporting proposals; (3) Participants are **equal**; (4) It aims at rationally-motivated **consensus**.

The proposed deliberative process developed by NANOPLAT⁵ is based on two steps: the kick-off session and the open revision session.

² SIFO website: <https://www.hioa.no/eng/About-HiOA/Centre-for-Welfare-and-Labour-Research/SIFO/Presenting-SIFO>

³ [Nanosciences and Nanotechnologies: An action plan for Europe 2005-2009. Second Implementation Report 2007-2009](https://ec.europa.eu/research/science-society/document_library/pdf_06/understanding-public-debate-on-nanotechnologies_en.pdf), Brussels, 29.10.2009, COM (2009) 607 final.

³ http://ec.europa.eu/research/science-society/document_library/pdf_06/understanding-public-debate-on-nanotechnologies_en.pdf

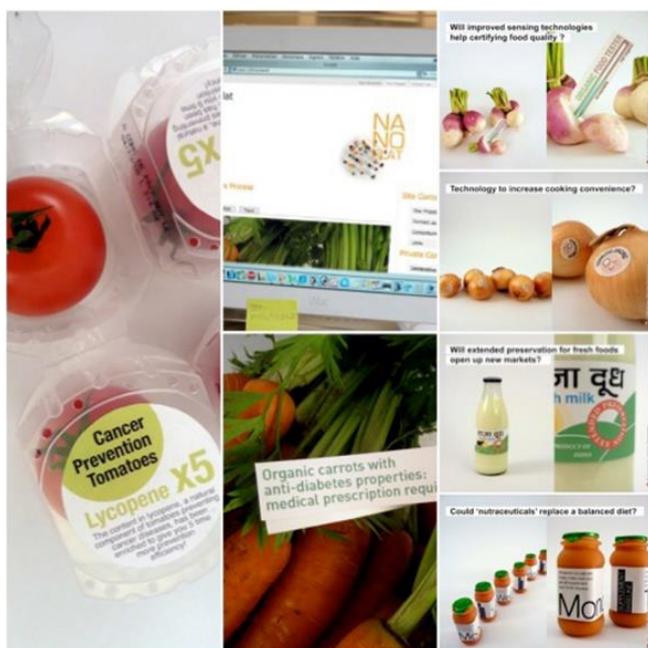


1. Kick-off session: The purpose of the kick-off session is to prompt the emergence of key issues involving a reduced circle of experts in a quick interaction process. These sessions were based on short online conference and a chat-like tool (regular key-board based - no audio or video) allowing short written fluid exchanges between 5 to 10 participants. The purpose of such a setting was to slow down exchanges between potentially antagonist parties on burning subjects. Body language and tone of voice don't appear, and mood is indicated only through the inflexion of written formulations of positions. On the other hand, written contributions essentially require more rational thinking and text is perceived as less volatile. Taken together, the effect of this kind of interaction is to direct participants towards a more reasoned debate, balancing the dynamics of a round table discussion with the argumentation of the written paper and thus meeting Cohen's 2nd criterion (reasoned deliberations). The result is an **8 to 12 pages written dialogue**, produced rapidly (in about 30 minutes) that remains available online as an evidence of the exchanges. It is also a ready to use material to prepare a synthesis for the next step.

2. Open revision session: The purpose of the open revision session is to facilitate the emergence of an agreement within a larger circle of stakeholders. This second type of session is based on free access online revision of synthesis emerged from the kick-off session. The process was based on a wiki-like tool displaying the synthesis and offering to visitors the possibility to edit them and substitute —as there was no comment box— the former version by a new one. The tool also offers the history of all previous versions, the possibility

to restore them, to compare between different versions and evidences the changes that have been made.

The effect of this type of interaction is to facilitate consensus and thus to meet Cohen's 4th criterion (consensus). The log of visits allows the moderating institution to easily follow the number and type of visitors, and to acknowledge their agreement to the synthesis (whether they make changes to its text or if they simply read the text and approve it). The result is the last version of the synthesis, which has been agreed by all participants. Two other important settings of the platform must be mentioned in order to show how it meets Cohen's final two criteria. These are: (1) *invited visitors* or stakeholders are invited in generic terms, without mentioning their identity leaving them free from undue



influences (Cohen's 1st criterion: free discourse) and (2) *anonymous participants* whose identity is not disclosed to one another (Cohen's 3rd criterion: equality amongst participants).

The deliberation among production-consumption-governance actors was semi-directed by an independent promoting institution, that played a key role in defining the framework of the deliberation. This **independent organisation** recruited the participants and monitored the process, ensuring the engagement and proper implementation of the process with the required neutrality and independency from the players. The NANOPLAT platform supports the process but will always require a moderating independent institution to

⁵ *Understanding Public Debate on Nanotechnologies Options for Framing Public Policy*, chapter 5, http://ec.europa.eu/research/science-society/document_library/pdf_06/understanding-public-debate-on-nanotechnologies_en.pdf



bring the deliberative process forward and represent a trustable and reliable party to conduct these tasks in the eyes of all the stakeholders concerned by the deliberation.

NANOPLAT pilot experiment



The simple online tools developed by NANOPLAT facilitated the discussion between remote stakeholders involved in the same nanotech sector. The pilot experiment of the platform was conducted on food and nanotechnology such as: enriched tomatoes preventing cancer, long conservation fresh milk, tearless onions, etc. The objective was not to be exhaustive on the topic, but rather to experiment the platform, explore its potential and point possible improvements.

Briefing documents on the topic were elaborated to introduce to the semi-directed online debates, giving the theoretical framework and synthesis of the main issues in order to facilitate discussions and give an equal knowledge among kick-off sessions participants. Different mock-ups of future food products were extrapolated from scientific conjectures circulating in the media. The resulting series of 12 slightly challenging visualisations were used to stimulate debate on the platform on both likelihood and desirability of such food.

Two kick-off sessions were organised, with 4-8 representatives of each of the different stakeholder groups (industry, government, NGOs, public authorities, etc.). Invitation mails outlined how the debate would be organised in 2 hours meeting period. It was required for each of them to send back a few key issues they would like to debate. This resulted in 6 - 8 key issues obtained by clustering the questions that were submitted. Participants confirmed their interest in taking part of the process (Cohen's criteria of free participation) and received an answer stating the roles of the stakeholders (anonymous) which would be part of the debate. They were assigned usernames and passwords identifying their role but not their personal identity i.e. 1_business 1; 2_research; 3_ngo; 4_authority, etc. Guidelines and rules of participation were presented to the participants, in particular to ask them to **systematically justify** ("give reasons for", "properly explain") their answers (Cohen criteria of reasoned discussion). During the 2 hours meeting, the participants logged onto the platform and one of the consortium members acted as moderator. The key issues were debated for 10-20 minutes each. After the session, a one-page synthesis on each of initial issues was produced by the consortium. This session was very productive, avoiding the presential meetings and learning processes usually associated with deliberative processes. It proved an easy and effective way of collecting information from the different stakeholders in a short time.

For the second-step, each synthesis of the emerging issues was posted on the NANOPLAT platform via a wiki-based tool. Invitations were sent by mail to the kick-off session participants, to the observers of the session, to interested stakeholders that were not available for the kick-off session and in general to a larger range of production-consumption-governance actors of the focused topic. In total 60 invitations were sent, proposing to check each of the issues and eventually revise the related synthesis. The invitations explained that the synthesis would be made public to incentive participation. The consortium monitored the revision process, prompted participation and avoided interventions that were deemed too radical. Of the 46 persons invited to take part, 15 effectively logged on the website over a one-week period. The level of feedback of 33% was particularly high, especially considering the very short time left between the invitations to the sessions to allow



time for the high-level experts to consider that the synthesis have been validated (Cohen criteria of reaching a consensus).

This experiment was too short to draw in-depth conclusions on the platform. More piloting on a larger sample of stakeholders and different topics should be run to confirm the first results. However, it is clear already with this experiment that an online deliberation platform is a promising solution to promote a regular dialogue between various actors of the nanoscience and technology development in Europe and beyond.

The future of deliberative processes

In the NANOPLAT overview of selected deliberative processes, a general observation was that over the years there has been a development of these initiatives, manifested also by an increase in resources and an evident sophistication of the applied methodology. A few problems arose related to the replication of results and that deliberations would raise expectations that would not be met by the political bodies. There were also concerns about the democratic process, if decision making was moved from elected bodies to non-representative ones.



NANOPLAT proposed to add visual and tactile forms of representation of hypothetical products to share scenarios that may result from the deliberative process to stimulate novel insights. This was applied to the third generation of deliberative processes, characterised by having a more specific focus and being closely and/or clearly linked to the decision-making processes, such as the NanoDiode project (2013-2016) in which they tested the methodology on stakeholders in a series of deliberations in Norway, the Netherlands, Germany, France, Austria and Italy.

The deliberative processes represent a democratisation of science and do not represent a threat to democracy, if a clear line is made between public discourses and formal decision-making processes. The simple on-line tools can save time and resources, allowing very busy people from many different countries to participate in a deliberative process amongst stakeholders. It was felt that **in the case of societal engagement of citizens, a presential deliberation process is preferred**. This is because of the important learning experiences and training that are provided to the participants.

We can conclude by referring to the recommendations given in the final NANOPLAT report on including discussions on ELSA aspects within emerging technologies. Before starting a deliberative process, it important to clarify the following questions: (1) **Be specific**: Choose relevant technology and possible specific applications; (2) **Be political**: Link the deliberation to the decision-making processes; (3) **Be responsible**: Choose an independent institution to run the process.