Monitoring public opinion on Nanotechnology in Europe

European Platform on Nano Outreach and Dialogue (NODE)
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Content mapping review and exploitation strategy of past FP6/7 and OECD results

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List of Figures

List of Tables

Disclaimer

The assessment reported in this document was done as part of the NANOPINION project to build an online repository. The scoring of the different content is based on an assessment developed from the perspective and the needs of NANOPINION and does not reflect a general assessment of the projects. The authors take no responsibility in this sense.

Contents

1. Aim and Scope

The NANOPINION project aims at providing European citizens and all relevant stakeholders a "repository" of all the best content that was produced in the last years on nanotechnology knowledge and dialogue. The present document is therefore a "content mapping" effort: an analysis of content developed in past European-funded projects and Organisation for Economic Co-operation and Development (OECD) activities that have focus on nanotechnology communication. The content mapping is extended also to some local (national) initiatives. For completeness, the report also highlights key resources developed by European scientific advisory boards, authorities and consumer organizations. The result of this mapping work is a set of recommendations on the best content that has been developed for the different stakeholders, which will serve as the basis for the NANOPINION repository.

2. Nanotechnology communication in the EC: a short history[1]

Back in 2005 a Eurobarometer[2] survey gave some interesting insight of optimism and pessimism felt by citizens of the European Union about "technology". Eight technologies were compared, among which was nanotechnology: clearly, surveyed people had very little knowledge on nanotechnology and only about 40% felt it could be beneficial. The results of this survey were backed by other commercial surveys[3] in the US, UK and Germany, and numerous scientific publications[4], which confirmed a substantial "knowledge gap": the general public was mostly uniformed about nanotechnology, particularly in the EC. In the meantime, media was only starting to cover nanotechnology, most of the time emphasizing its opportunities and showing a high level of optimism[5]. However, the term "risk" started to be often associated with the concept of "nano", mainly by some NGOs and civil organizations that were concerned by what they saw as the precedent of asbestos. They cautioned against the emergence of a new technology (and a new set of materials), portrayed as "miraculous" and pushed too soon for commercialization without an accurate analysis of the potential risks for workers and for the environment. A moratorium on all nanotechnology research and development was demanded by one NGO[6] in 2003 and in 2006 the same NGO ran a "nanotechnology hazard symbol contest"[7]: 24 countries participated to this contest with hundreds of symbols designed. Although these events didn't lead to any policy actions, they highlighted a problem which policy makers, researchers and ultimately communicators had to confront: **nanotechnology had to be properly communicated and involvement with key stakeholders initiated at an early, rather than a late, stage**. The "risk factor" clearly emerged as a crucial issue, in particular the distinction between "perceived" and "real" risk. Other key stakeholders (industry, regulatory bodies, etc.) were also concerned with the evolution of nanotechnology, but there was a lack of coordination and direction, and most were in a "wait-and-see" mood/mode. However, past

[1] For a complete and thorough review of the EC communication efforts in nanotechnology, the reader can refer to: 'Communicating Nanotechnology: Why, to whom, saying what, and how?' Edited by Matteo Bonazzi, EC 2010
[2] Europeans and Biotechnology in 2005: Patterns and Trends- Eurobaromiter 64.3
[3] BMRB international (2005): Nanotechnology: Views of the general public (http://www.nanotech.org.uk)
[4] Cobb M.D; Macoubrie (2004): 'Public perceptions about nanotechnology: risks, benefits and trust', J. Nanoparticles Res., 2004, 6, 395-405; Bainbridge (2002): 'Public attitudes towards nanotechnology', J. Nanoparticle Res. (2002), 4, 561-570
[5] A. Grobe, C. Eberhard, M. Hutterli (2005): 'Nanotechnologie im Spiegel der Medien:Medienanalyse zur Berichterstattung über Chancen und Risikender Nanotechnologie', Risiko-Dialog Report
[6] ETC group in Canada
[7] A summary of this event can be found in the Nanowerk news dated 24/01/2007: http://www.nanowerk.com/news/newsid=1326.php

experiences with emerging technologies, for instance GMOs, indicated that a proactive approach was needed, to ensure the safe and responsible development of nanotechnologies.

In June 2005 the EC published "Nanosciences and Nanotechnologies: an Action Plan for Europe 2005-2009"[8], followed in 2008 by the Commission's "Recommendation on a Code of Conduct for Responsible Nanosciences and Nanotechnologies Research": those documents defined a series of principles to ensure that nanotechnologies were developed to their potential taking into account the need and desire of all stakeholders, creating a "general culture of responsibility". They also defined a set of actions to be taken for the immediate implementation of a safe, integrated and responsible strategy for nanoscience and nanotechnologies. Among these, was the need to address citizens' expectations and concerns and to ensure that all Member states would create the conditions for an effective two-way dialogue with the public. One of the outcomes of these policy documents was therefore the need to define a communication strategy for nanotechnologies. At the core of this strategy was an **"upstream approach to communication"**, which regards the stakeholders as 'subjects, not objects, of the process'. This means that stakeholders should 'shape decisions, rather than having their views canvassed by other actors to inform the decisions that are then taken'[9]. This should have an impact to policy making, since 'a participatory approach to policy-making is seen as a way of building social cohesion. It is a useful process to achieve consensus when differences in opinion and even conflicts need to be resolved'[10].

Communicating nanotechnologies appeared challenging from the beginning: because of the specificity of the field and its overlap with other technologies; because of the use of the term "nano" as synonymous with "magic" in some advertising[11] and in media; because of visionary scenarios involving "self-replicating" nanomachines portrayed in some science fiction movies and books[12]. However, the experience of communicating other new technologies underlined the importance of introducing the public to them in a clear way, taking into account public needs and interest, preferably from the very beginning of this technology's development. Equally important is the inclusion of different stakeholders in the process, and the use of a "bottom-up" communication model, where different stakeholders are involved actively in a dialogue about the emerging technology which should cover also its potential risks.

These three aspects-clarity, inclusion and dialogue- were the basis of the first projects that the EC funded during the Framework Program number six (FP6), which provided funding between 2002 and 2006. During this time three main areas were identified for urgent communication: the application of nanotechnologies in medicine, energy & environment, and ICT. For each, different sub-disciplines were described and the potential benefits and potential risks for society identified. During this "first phase" of communication, the identification of the "hottest societal issues" became a central element in many initiatives: there was a need to identify what nanotechnology was, what benefits it could bring to society, and what risks it might pose.

[8] COM(2004)338
[9] A. Stirling (2008):'Opening Up and Closing Down: Power, Participation, and Pluralism in the Social Appraisal of Technology', Science, technology & Human Values, 2008, 33: 262.
[10] N. Slocum (2003): 'Participatory Methods Toolkit - A practitioner's manual', King Baudouin Foundation and the Flemish Institute for Science and Technology Assessment (viWTA) in collaboration with the United Nations University – Comparative Regional Integration Studies (UNU/CRIS) http://unu.edu/hq/library/Collection/PDF_files/CRIS/PMT.pdf
[11] For instance, there was a household product called "Magic Nano"
[12] One example is E. Drexler, 'Engines of Creation', 1986

Towards the end of FP6, the EC organized two workshops and one web-consultation on nanotechnology communication, involving 48 experts, among them policy makers, science communication experts, social scientists, and artists. This three-year long process resulted in a set of recommendations for shaping future communication activities[13]. At the end, a "strategy" for nanotechnology communication was outlined, and a "second phase" in nanotechnology communication begun, based on a number of "pillars of communication":

- There isn't one public, but many "**publics**", therefore any communication project must identify its target, and plan accordingly

- There are some **"multipliers"** that have a very important role in communicating with the large public, such as teachers and journalists. Students are multipliers for their parents: outreach in schools therefore can reach the designed target (i.e.,. pupils) but also be a great way to engage parents (i.e., general public). Outreach to schools is therefore very important.

- The **vehicle and message must be tailored to the target audience**, for instance youngsters use the Internet as a main source of information and prefer audio-visuals to reading documents, whereas elderly people are less likely to use Internet and prefer television and newspapers as a source of information. On the other hand some resources are useful for engaging different targets, like hands-on activities, **expressive languages and art**.

- The physical gap between researchers and the general public should be reduced by creating settings, such as science centres, where the public (including students) can **interact** with the researchers, and ask question.

- **Deliberative processes** must continue, reaching out to different audiences. In general, application-based discussions should be preferred as they help the audience in identifying with the issue being discussed. Deliberative platforms should be created to foster the dialogue.

- Deliberation processes should lead to recommendations on responsible nanotechnology development, and in the area of governance.

One of the key elements of this "second phase" in nanotechnology communication is the realization that there isn't one public, rather a number of "publics" whose interests, expectations, fears and opinions differ. Therefore the focus of the communication process shouldn't be the "public understanding of science" but rather on the "scientific understanding of the public". In this vision, the "citizens" are at the centre of the communication activities, as moral and legal entities, not only as consumers. For this reason, the inclusion of citizens in all communication activities becomes central: citizens have a right to be informed and to express their opinions, and their views should be used to shape policy making.

This "strategic planning" for nanotechnology communication was implemented in the second wave of projects that were funded in the FP7 program which started in 2007 and will last until 2013.

The following chapters will provide a map of EC-funded projects that have dealt with nanotechnology communication (mainly FP6, FP7), and will provide a qualitative assessment of

[13] The reports of this report can be found in the Nanotechnology CORDIS website: http://cordis.europa.eu/nanotechnology/src/public_debate.htm

the knowledge and/or dialogue materials that these projects have produced for the different stakeholders. The aim is to identify, and recommend, the best tools and materials which will form the base of the NANOPINION repository.

3. Outreach and dialogue- overview of EC-funded projects

This chapter provides an overview of European projects and other initiatives that have been conducted to disseminate nanotechnology and to engage different stakeholders in dialogue activities. To better analyse each project, these were clustered based on the **"project focus"**, as shown in Table 1.

Table 1 Colour code for the different "Project Focus"

Colour	Project Focus
GOV	Governance, legal, policy making
OUT	Outreach to general public & content provision
EDU	Education, skill development
RIS	Risk & Implications (health & environment, ethical, social)
DIAL	Multi-stakeholder Dialogue
PLAT	Platforms & working groups

To simplify the analysis, each project is allocated to one, maximum two, clusters.

The classification in the above table refers to the focus the project had in terms of content development:

- Governance, legal, policy making: the focus of the project is an analysis of laws, policies, etc., on nanotech; white papers on governance; creation of recommendations for further policies

- Outreach to general public & content provision: the focus of the project is to provide the public information on nanotech (including ELSA and EHS aspects), engage the public on learning more about nanotech; interest hard-to reach publics; provide content to stakeholders interested in nanotech

- **Education and skill development**: the focus of the project is to provide educational tools to teachers and students; curricula development, experiments for schools; teacher training; skill training (for graduate students); vocational training; professional development training; analysis of skill requirements

- **Risk & Implications**: the focus of the project is to analyse the risk and implications of nanotech, being ethical, social, or related to safety (for humans and environment); analyse the impact of nanotechnology, white papers and reviews, recommendations for future actions, recommendations for communication actions and dialogue initiatives

- **Multi-stakeholder dialogue**: the focus of the project is to foster communication and dialogue on nanotech among different stakeholders, or to allow one stakeholder group (e.g. NGOs) to provide recommendations for future actions on nanotech (research directions, policies, etc.). Results from debate platforms, live debate events, focus groups; Games for debates; "Position" papers.

- Platforms & working groups: the project is a platform that contains different things (content produced by other projects); permanent working groups on nanotech development; platforms for industrial collaboration; platforms for cross-university collaboration. Some content produced (but it is not the main activity).

The next part of the chapter is a general analysis of the projects developed during the two funding periods (i.e., FP6 and FP7), which are identified in two communication phases, "phase one" (FP6) and "phase 2" (FP7).

3.1 "First phase"

The first two projects that were funded in the FP6 program were NANODIALOGUE and NANOLOGUE. The NANODIALOGUE project focused on raising curiosity and stimulating debate on nanotechnologies and nanosciences. It did so through an interactive exhibition module, that was displayed in eight countries within science museums, as well as a survey of public perceptions and expectations, and multimedia polling stations in each location. The target of this project was mainly general public (families), students and young people (having a connection with university/industry). The NANOLOGUE project on the other hand brought together leading researchers on the social, ethical and legal implications of nanotechnologies to set up a common ground for public discussion on the potential benefits and risks associated with nanotechnologies. The project produced a Background Paper which served as a reference for future projects and developed a booklet which analysed three scenarios for the future development of nanotechnologies. Those two projects were meant to support each other.

A third project that became pivotal in the future of the EC communication actions and policies was NANOBIORAISE. This project developed a public dialogue on a set of nanotechnology applications and identified those areas where dialogue (and opinion-forming) was expected to play a very different role in social science acceptance or rejection. The aim was to identify, at an early stage, societal and ethical issues that are likely to arise as the field of nano-biotechnology progress, and to use lessons from the past (e.g., GMO debate) to plan the response to concerns the public is likely to have.

The above-mentioned projects provided insight in public understanding of nanotechnology, identified key ethical, social and legal aspects related to nanotechnologies, and pinpointed the application areas that were likely to generate public debate. Another goal that was pursued in the early years of nanotechnology communication and dialogue was the **creation of a deliberative process**, where citizens, experts and different stakeholders could share reflections, debate and express recommendations for future governance processes.

This first of these kind of projects was DEEPEN, so called because it aimed at deepening the understanding of the ethical challenges posed by emerging technologies in real world circumstances. The project organised, between 2006 and 2009, numerous deliberative forums in the form of workshops, conferences and meetings. During the same time frame the NANOCAP project allowed NGOs to work together with scientists to analyse the development of nanotechnologies in terms of safety (impact on human health and environment), workers' protection and regulations. The outcome of the project has been a series of "position papers" prepared by each participating NGO that identified priorities in terms of nanotechnology safety and governance.

During this first phase some important **knowledge platforms** were created, which allowed European researchers to share R&D information, but also needs for nanotechnology communication, development of curricula and student mobility programs (FRONTIERS, NANO2LIFE), as well as a "repository" of news and publications, some of which were written as a general reference document, also for a non-specialized audience (NANOFORUM).

In many ways these projects paved the way to the next wave of projects that were funded in the coming years under FP7 and other national funding schemes. These projects provided a key lesson in nanotechnology communication: **the need to identify, segment and characterize key audiences, vehicles and messages**. This resulted in a "second wave" of projects that used a much more targeted approach, where each communication channel, and method employed was developed to match the communication needs of selected targets (students, lay public, policy makers etc.).

Table 2 List of FP6 Projects that have dealt with nanotechnology communicayion & outreach

Name	Project Focus 1	Project Focus 2
Deepen	DIAL	RIS
ETHICSCHOOL	RIS	
FRONTIERS	PLAT	EDU
NANO ROAD SME	GOV	
NANO2LIFE	EDU	OUT
NANOBIORAISE	RIS	OUT
NanoCap	RIS	DIAL
NanoDialogue	OUT	RIS
Nanologue	RIS	
NANOSAFE2	RIS	OUT
WOMEN IN NANO	EDU	

In addition to the project listed above there is an important **FP5** project, NANOFORUM (Focus 1: PLAT; Focus 2: OUT).

3.2 "Second phase"

The analysis of European projects that ran during the "second phase" of communication shows an increase, both in number and in type, of projects funded to deal with nanotechnology outreach, education and dialogue (from 10 projects in "phase one" to 18 projects in "phase two", see Table 3). **During the "second phase" projects dealt with outreach, education, and risk analysis in a much more diversified way**. This is the result of the implementation of the "pillars of communication" described in the previous chapter, and which characterized this phase of communication. For instance whereas the "education" focus in the FP6 was on graduate and postgraduate students (FRONTIERS, NANO2LIFE, WOMEN IN NANO), the "education" focus in FP7 projects spanned from the secondary school level (NANOYOU, GLOBAL EXCURSION) to the graduate and postgraduate level (NANOTOES, ICPC NANONET), with some projects, like NANOTOTOUCH physically bridging the school students with the postgraduate students.

Similarly, whereas the "outreach" actions in FP6 projects were limited to a "niche" audience (those visiting a science exhibition in a science museum), in this second phase outreach

activities were implemented in different settings (museums, schools, etc.), using different channels (video, written, and including social media) and targeting different audiences (NANOTV, NANOCHANNELS, TIMEFORNANO).

The deliberative process which started in "phase one" was continued in "phase two" through platforms where different stakeholders could express their opinion and debate specific applications (NANOPLAT, MACOSPOL). Another distinctive feature of the "second phase" is the appearance of projects dedicated to the governance of nanotechnologies: the aim of these projects was either to review current regulation and provide recommendations for future policy making (FRAMINGNANO) or evaluate novel soft-regulation tools implemented by the EC (NANOCODE).

Finally, during this second phase it is apparent how **content provision** has become an extremely important activity, with entire projects, like OBSERVATORYNANO, dedicated to produce high-quality content for policy makers, potential investors and lay publics on nanotechnology, spanning from fundamentals, to applications, to market analysis. Similarly, the NANOYOU project focused on producing content for teachers (i.e., a teacher training kit) and for students.

Table 3 List of FP7 projects that have dealt with nanotechnology communication and outreach

Name	Project Focus 1	Project Focus 2
DECIDE	RIS	
Framing Nano	GOV	
GLOBAL EXCURSION	EDU	OUT
ICPC-NANONET	EDU	PLAT
MACOSPOL	RIS	
NANOCHANNELS	OUT	DIAL
Nanocode	GOV	
Nanofutures	PLAT	
NANOHOUSE	RIS	
NANOIMPCATNET	RIS	
NANOMEDROUNDTABLE	RIS	DIAL
NanoPlat	DIAL	RIS
NANOTOES	RIS	EDU
NanoToTouch	OUT	EDU
NanoTV	OUT	
NanoYou	EDU	OUT
Observatory Nano	GOV	RIS
Time for Nano	OUT	

Non FP projects

Although the majority of outreach and dialogue projects on nanotechnologies have been funded by the EC through FP schemes, there are few that were funded by national initiatives. The analysis done in this report therefore takes into account also these projects, listed in Table 4:

Table 4 List of non-FP projects that have dealt with nanotechnology communication and outreach

Name	Project Focus 1	Project Focus 2
Deepen	DIAL	RIS
ETHICSCHOOL	RIS	
FRONTIERS	PLAT	EDU
NANO ROAD SME	GOV	
NANO2LIFE	EDU	OUT
NANOBIORAISE	RIS	OUT
NanoCap	RIS	DIAL
NanoDialogue	OUT	RIS
Nanologue	RIS	
NANOSAFE2	RIS	OUT
WOMEN IN NANO	EDU	

Other:
In addition to projects (funded for a limited period of time with a set aim and scope) there are some **working groups, authorities, organizations, advisory boards and large clusters** that deal with nanotechnology, and provide content often in the form of white papers and opinion papers. These are:

- Science and Technology Options Assessment (STOA)
- ETP NANOMEDICINE (and other European Technology Platforms)
- NMP EXPERT GROUP
- OECD WORKING PARTY ON NANOTECHNOLOGY
- ENIAC
- European Food Safety Authority (EFSA)
- The European Consumer Organisation (BEUC)
- The European consumer voice in standardisation (ANEC)
- Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR)

The EC has also a dedicated **website** called CORDIS NANOTECHNOLOGY which comprises a series of resources, from booklets to audio-visuals, to action papers and some reports have been produced by specific Directorate General (DG) units.

4. Content mapping

This part of this report will analyse in details the type of content that was produced in those different projects, and the impact they had. The analysis is limited to European projects, OECD activities and few National ones. **However, in the last part of the report, in the section "Additional resources for the NANOPINION repository" we provide some additional resources, arising from the activities of key European scientific advisory boards, authorities and consumer organizations.**

The aim of the content analysis is to identify the different materials that have been produced in past projects on nanotechnology knowledge and to foster dialogue, and to perform a qualitative evaluation. To do so a **first list of projects[14] was made which was then restricted to a shorter list based on a series of criteria** defined in this chapter.

4.1 Selection criteria

Relevant projects were identified using the CORDIS search engine[15], EC reports[16] on funded EC projects and by consultation of all partners and of the project Advisory Board. Each project was screened for content developed based on these criteria:

- Nanotechnology had to be explicitly mentioned
- Projects should be approximately not older than 3 years (although older projects could be considered if content was particularly relevant to the NANOPINION repository)
- EC funded project (National projects will be considered where content is particularly relevant to NANOPINION)

The following "Knock out criteria" were set up:

- There are no resources available (written, video, website defunct, etc.)
- If website is defunct, the project will be considered only if relevant resources are available (e.g., through a DVD) and contact with project coordinator is possible

The analysis is limited to knowledge and/or dialogue material. A "material" in the present document is a tangible resource in a written, visual and audio form that can be downloaded, printed or heard. **It does not include events**, like NanoDays, focus groups, exhibitions (although, printed panels of an exhibition would be a "material" for the scope of this analysis if they are uploaded on a website or stored in a DVD and can be reprinted and reused by any user).

[14] See Appendix I for the list of all projects that was then reduced according to the set criteria
[15] http://cordis.europa.eu/search/index.cfm?fuseaction=search.simple
[16] 'Successful European Nanotechnology Research' edited by the European Commission Directorate General for Research and Innovation- Directorate Industrial Technologies (2011)

Appendix I is a list of all projects that were checked. The **projects that passed this set of criteria** are listed in Table 5:

Table 5 List of projects that passed the set of criteria defined for the content mapping

DEEPEN
ENHRHES
FRAMINGNANO
ICPC NANONET
MACOSPOL
NANO & ME
NANO2LIFE
NANOBIORAISE
NANOCAP
NANOCHANNELS
NANOCODE
NANOHOUSE
NANOIMPACTNET
NANOJURY
NANOLOGUE
NANOMEDROUNDTABLE
NANOPODIUM
NANOSAFE
NANOSAFE2
NANOSMILE
NANOTOTOUCH
NANOTRUST
NANO-TV
NANOYOU
OBSERVATORYNANO
SWISS NANOCUBE
OECD WORKING PARTY IN NANOTECHNOLOGY
TIME4NANO

4.2 Classification of content and assessment criteria

Projects were classified using the "project focus" clustering previously described (see Table 1).

For each project, the material(s) that the project had produced was classified based on its targeted audience.

Table 6 Classification and definition of target

1	**Student**	11-18 years school students
2	**Educator**	school teachers & science educators (science centres, museums)
3	**Lay public**	general lay public, consumers in particular
4	**Policy maker**	policy makers & individuals interested in governance
5	**NGOs and civil organizations**	
6	**Researcher**	6a. researcher- focus: governance and legal implications
		6b. researcher- focus environment, health and safety (EHS)
		6c. researcher- focus: ethics and societal impact
7	**Industry**	Individual from private company, SMEs, or entrepreneur, product developers, industry association
8	**Media or science communicators**	journalist, blogger, science writer

Each material was then classified based on its "type".

Table 7 Classification and definition of different content „types"

1	**Video**	
2	**Reading material**	Online; online & printable
3	**Hands-on activity kit**	Lab experiment or demonstration
4	**Teacher training material**	Reading document; online training content
5	**Power Point presentation**	
6	**Poster**	
7	**Game**	Card games
8	**Virtual games**	On-line games
9	**Informative Website**	
10	**Virtual Lab**	
11	**Dialogue activity kit**	Role play game, dialogue card game
12	**Online mapping tool**	Mapping knowledge, controversies, risk analysis tool, education
13	**Travelling Exhibition**	Content to replicate a travelling exhibition
14	**Podcast**	

The content was then further classified based on its "focus", i.e., what type of information does the content provide?

Table 8 Definition of the different „content focus“

Content Focus	Description
NT Knowledge	Basic information on NT, methods and applications; reviews on nanotechnology; overview of research activities and reviews of R&D activities
NT Risks & Implications	Safety of nanomaterials (for health and environment); societal impact; public opinions; recommendations for further research and actions to fill knowledge gaps
NT Communication	Requirements and recommendations for NT communication; teacher training (principles, methods on teaching NT etc.); methods to integrate NT in school curricula
NT Governance	Policy on nanotechnology; reviews of current policies and recommendations for future actions; requirements for policies; knowledge gaps and needs is nanotech regulation
NT Industry Development	Self-assess tools for industry; market reviews and economic analysis; reviews on industrial activities and investments; analysis of risks and opportunities for industries, SMEs and investors

For each set of material the following information was gathered:

- Content details: General description of the material
- Content URL: in some cases, the content is not available online, and this is indicated case-by-case
- Outcomes and impact: the outcome of using the specific material, and the impact it had. This information was inferred from final reports and evaluation deliverables of the relevant project.

An **assessment** was then performed based on

> Recommendations written within specific deliverables or specific EC documents or studies, such as: “Understanding Public Debate on Nanotechnologies: Options for Framing Public Policy”, edited by René von Schomberg and Sarah Davies

> Experts’ advice

> Personal judgment & experience of the authors of this report

The **content assessment criteria** used are described in the following table:

Table 9 Definition of the different criteria used to assess each material

Criteria	description
Clarity	How clear is the material in its structure and layout?
Comprehensibility	How understandable is the content?
Accuracy	How accurate and up-to-date is the content?
Relevance	Is this content useful for the Nanopinion repository?

Each criteria was then assessed using a scale 1 to 5 (indicated with a “+”, where each “+” equals 1). The score is then the average of the score of each “criteria” (see Table 10). In order to gather the best content produced, the **knock-out was set at 3.2**.

NOTE: It should be noted that the scoring is based on an assessment developed from the perspective and the needs of NANOPINION and does not reflect a general assessment of the projects.

At the end, an "Overall Assessment" is given, which is written with the aim and scope of the NANOPINION repository in mind. Below is an example of the table used to assess each item.

Table 10 An example of how a material was described, analysed and assessed

Content	NANO-TV Videos			
Date	2011			
Content Type	Videos			
Content Focus	NT Knowledge; NT Risks and Implications			
URL of Content	http://www.youris.com/Nano/NANOTV			
Target Audience	Lay public; educators; students			
Content details	The Nanotechnology Education Tree provides an introduction to nanotechnology and how it can be applied in different business and industry sectors. It also provides information on societal aspects, potential risks, the need for standards, some of the myths surrounding nanotechnology, a timeline of some of the key developments, and links to various EU-funded projects.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	+++	++++	+++++	++++
Outcomes and impact	The NanoEducation Tree was dapted and updated from the Nanoforum Education Tree as part of the activities of the NANO-TV project			
Overall Assessment	This resource could be useful for lay public wanting to have a first overview on nanotechnology, or by educators wanting to bring nanotechnology knowledge in class using a multimedia tool. The only limit of this tool is a predominance of long written text (no images or videos embedded).			

In the example in Table 10, The score for "clearness" is 3, the score for "Comprehensibility" is 4, the score fro „Accuracy" is 5, and the score for „Relevance" is 4. The average score is thus 4.

Appendix II reports the detailed analysis of each content that was checked and assessed

5. Evaluative findings

The following evaluating findings refer to the content produced by European projects, OECD working groups and National projects that were selected through the criteria detailed in Chapter 4. The aim of the content analysis is to (1) map the content developed in those projects (Why was the content produced, with what focus? Who was the content for? What impact did it have?); and (2) identify the best resources that have been developed for the different stakeholders, which will serve as the basis of the NANOPINION Repository. **Appendix III** provides the content map in the form of an Excel Sheet, with: content name, project, funding scheme, content type, content focus, target, audience, language and score. Additional information on each item is available in Appendix II (content summary, URL, impact). In this chapter a detailed analysis of the content map is provided.

It should be noted that some resources in Appendix III are made of more than one item, for instance there are five different "NANOYOU posters", and this is indicated in the "items" column. Similarly, there are 12 different "OBSERVATORYNANO general sector reports" and 33 different "OBSERVATORYNANO Briefings". For this reason, **although the table indicates a total of 76 resources, these correspond to 276 different items**.

The first apparent finding of the content mapping work is the prevalence of reading documents in terms of **"type" of material developed**, as seen in Figure 1 (note that the scale of the figure is logarithmic):

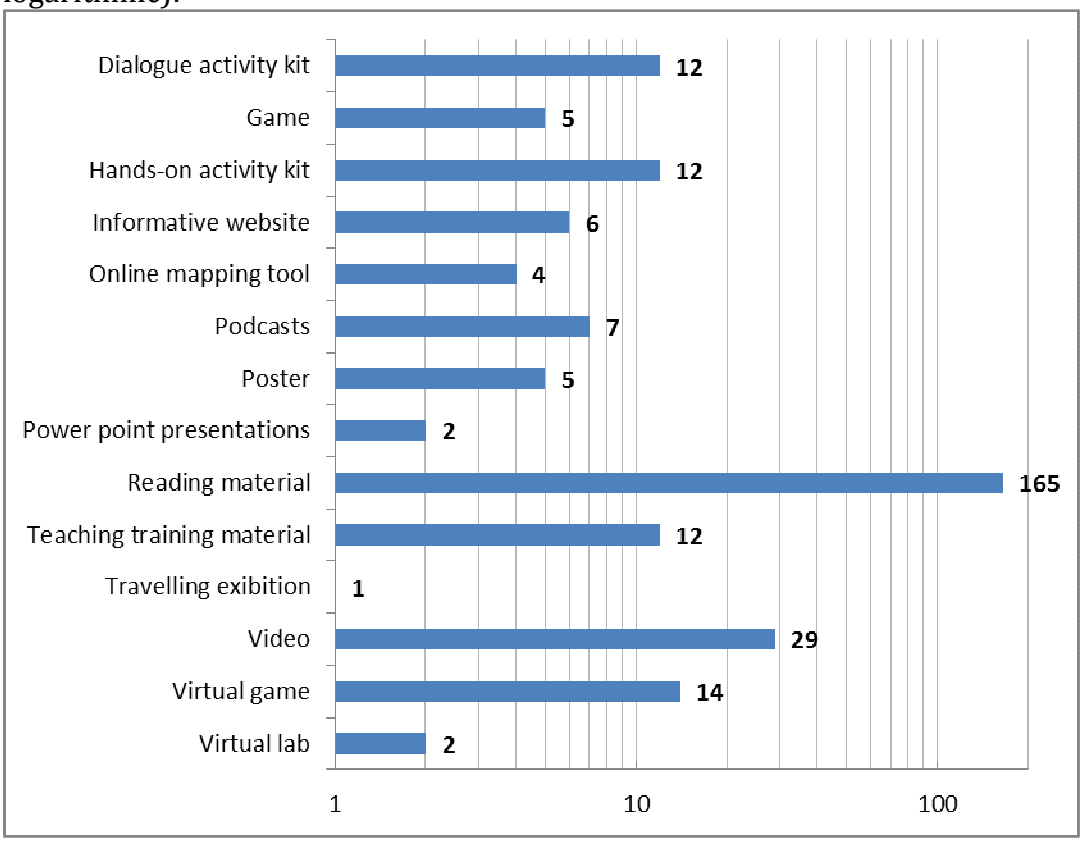

Figure 1 Graphic showing the occurrences of the different material types. Data refer to the materials listed in Appendix III. Scale is logarithmic.

Nearly 60% of the materials[17] produced have been in the form of written documents. Next come videos (about 10%), virtual games (about 5%), then teacher training material, hands-on activity kits, and dialogue activity kits (about 4.5 % each).

In the sections that follow we will see in detail what has been the focus of the materials produced and who has been the target audience.

5.1 What has been the focus?

Each project analysed produced a series of materials that had a different "focus" in terms of content produced, some were intended to disseminate "NT knowledge", others were intended to discuss "NT Risks and Implications", others were directed at policy makers and potential investors, therefore the focus was "NT Industry Development". To analyse this aspects, **five major "focus clusters"** were identified (see Table 11). However, in some cases, the material had more than one focus. Therefore for each "focus cluster" several "sub-clusters" are given, and the materials classified depending on their focus[18] (see also Appendix III):

Table 11 Occurrences of the different items in terms of focus.

Focus Cluster 1: NT Knowledge	
Sub-Cluster	**Occurrences (#Items)**
NT Knowledge	114
NT Knowledge and NT Risks & Implications	40
NT Knowledge & NT Communication	1
NT Knowledge & NT Industry Development	28
NT Knowledge & NT Risks Implications & NT Communication	9

Focus Cluster 2: NT Risks and Implications	
Sub-Cluster	**Occurrences (#Items)**
NT Risks and Implications	57
NT Risks and Implications & NT Knowledge	40
NT Risks and Implications & NT Knowledge & NT Communication	9
NT Risks and Implications & NT Communication	2
NT Risks and Implications & NT Industry Development	1
NT Risks and Implications & NT Governance	2

Focus Cluster 3: NT Communication	
Sub-Cluster	**Occurrences (#Items)**
NT Communication	2
NT Communication & NT Knowledge	1
NT Communication & NT Risks Implications & NT Knowledge	9

[17] As previously explained, a "material" here is "tangible resource in a written, visual and audio form that can be downloaded, printed or heard"

[18] It should be notated that some sub-clusters are identical ("NT Risks and Implications & NT Knowledge" is identical to "NT Knowledge and NT Risks & Implications") therefore the sum of the occurrences in Table 11 is greater than the actual total number of resources (which is 276).

Focus Cluster 4: NT Governance	
Sub-Cluster	**Occurrences (#Items)**
NT Governance	5
NT Governance & NT Risks and Implications	2
NT Governance & NT Industry Development	1

Focus Cluster 5 NT Industry Development	
Sub-Cluster	**Occurrences (#Items)**
NT Industry Development	14
NT Industry Development & NT Knowledge	28
NT Industry Development & NT Governance	1
NT Industry Development & NT Risks and Implications	1

Some of the data in Table 11 is graphically summarised in Figure 2 and Figure 3, respectively:

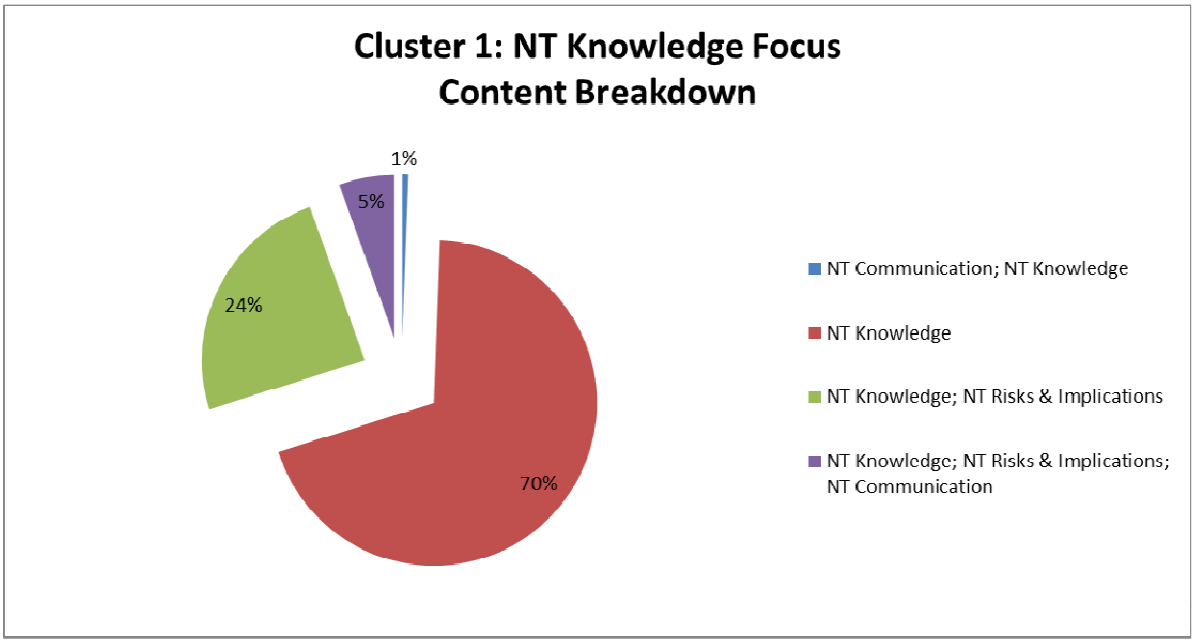

Figure 2 Content breakdown for the NT Knowledge focus

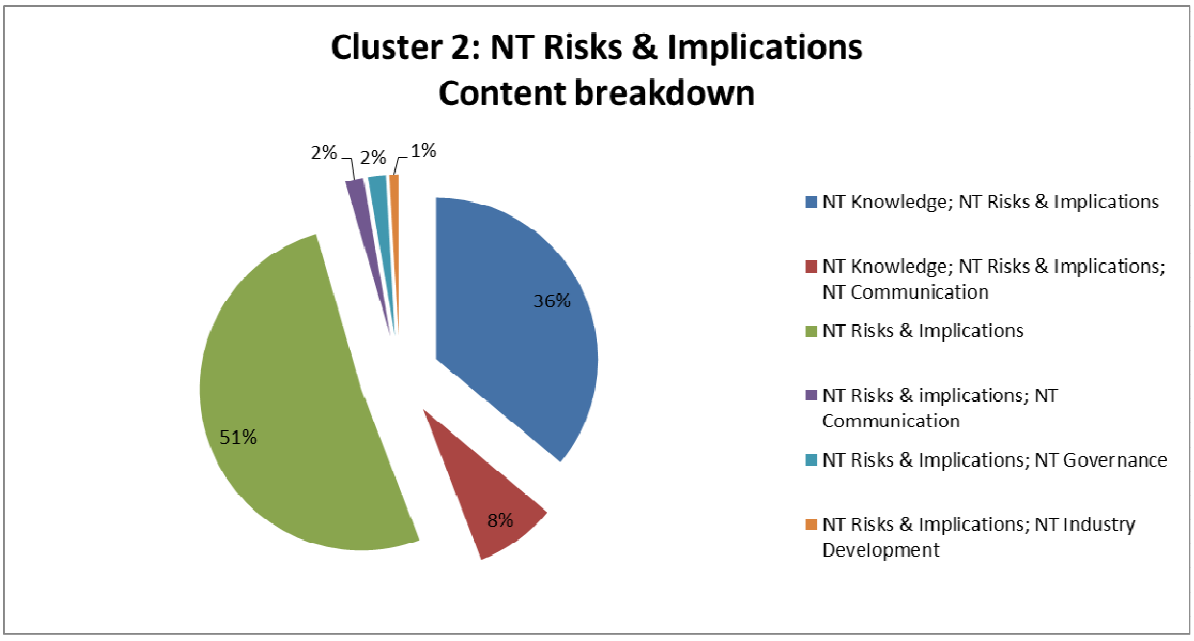

Figure 3 Content breakdown for the NT Risks and Implications

There are some evaluative findings that can be inferred from these charts and tables:

- **The majority of materials screened deal with NT knowledge** (114 out of 276), and in most cases, their focus is limited to providing factual information on nanotechnology (fundamentals, applications etc.). In a good number of cases (40 out of 276) the material covers both factual information on nanotechnology and its associated risks and implications (NT Knowledge & NT Risks and Implications sub-cluster). A third group of materials focuses on providing factual information on nanotechnology associated with information on its industrial implementation.

- **The second largest groups of materials focus on NT Risks and Implications** (57 out of 276). In this document "implications" means ethical and social impact, safety aspects, as well as public opinion (questions, expectations, etc.) and opinions from different stakeholders.

- **The third largest groups of materials deals with the industrial development of nanotechnologies**, meaning market and economic analyses, reviews of potential opportunities and risks for investors, and self-assessment tools. Numerous materials provide factual information on nanotechnologies and their potential for industries.

- Only **few resources have been created that specifically address the communication of nanotechnologies** (how to integrate them in school curricula, or how to meet public expectations in terms of communication).

5.2 What form of material? What for?

The materials that have been analysed were developed by different projects with different scopes. However, it is possible to gather some information on **how different material types were used with respect to different focuses**. Table 12 summarizes the findings:

Table 12 Occurances in percentage of the different materials types vs. focus

Items #	Type	Focus	Occurances (%)
12	Dialogue activity kit	NT Risks & Implications	100.0
5	Game	NT Knowledge	100.0
12	Hands-on activity kit	NT Knowledge	100.0
2	Informative website	NT Knowledge	33.3
4	Informative website	NT Knowledge; NT Risks & Implications	66.7
1	Online mapping tool	NT Governance	25.0
1	Online mapping tool	NT Industry Development	25.0
1	Online mapping tool	NT Knowledge	25.0
1	Online mapping tool	NT Risks & Implications	25.0
7	Podcasts	NT Knowledge; NT Risks & Implications	100.0
5	Poster	NT Knowledge	100.0
1	Power point presentations	NT Knowledge	50.0
1	Power point presentations	NT Risks & Implications	50.0
57	Reading material	NT Knowledge	34.5
28	Reading material	NT Knowledge; NT Industry Development	17.0
27	Reading material	NT Knowledge; NT Risks & Implications	16.4
24	Reading material	NT Risks & Implications	14.5
13	Reading material	NT Industry Development	7.9
4	Reading material	NT Governance	2.4
4	Reading material	NT Knowledge; NT Risks & Implications; NT Communication	2.4
2	Reading material	NT Communication	1.2
2	Reading material	NT Risks & implications; NT Communication	1.2
2	Reading material	NT Risks & Implications; NT Governance	1.2
1	Reading material	NT Communication & NT Knowledge	0.6
1	Reading material	NT Risks & Implications; NT Industry Development	0.6
7	Teaching training material	NT Knowledge	58.3
5	Teaching training material	NT Knowledge; NT Risks & Implications; NT Communication	41.7
1	Travelling exibition	NT Knowledge; NT Risks & Implications	100.0
21	Video	NT Knowledge	72.5
7	Video	NT Risks & Implications	24.1
1	Video	NT Governance; NT Industry Development	3.4
12	Virtual game	NT Risks & implications	85.7
1	Virtual game	NT Knowledge; NT Risks & implications	7.1
1	Virtual game	NT Knowledge	7.1
2	Virtual lab	NT Knowledge	100.0

- **Reading materials** have been widely used for all purposes, mainly for disseminating factual information on nanotechnologies, but also to address their risks and implications, and to analyse their industrial potential.

- **Videos** are the second most common type of materials developed (see also Figure 1); however, their focus has been so far primarily to **disseminate factual information on nanotechnology**. Only about 25% of videos that have been made focus on the risks and implications of nanotechnologies.

- **Hands-on activities** (lab experiments and demonstrations) so far have been used primarily as a vehicle to **disseminate nanotechnology knowledge**. In the future these activities could therefore be extended to cover aspects of safety and environmental impact

- There are quite few **informative websites**, but so far the focus has been mainly to disseminate factual information on nanotechnology, safety aspects (risk for human health and the environment) and social implications. Informative websites tend to have very limited information on regulatory aspects of nanotechnology

- Although there are only a few **online mapping tools**, these have been used to **cover several aspects of nanotechnologies**, from risks, to governance, to factual information. These tools have been developed by projects which are often concluded (e.g., NanoMeter by OBSERVATORYNANO).

5.3 For whom?

In this section we will highlight **what types of material have been developed for the different stakeholders**. This analysis is purely qualitative since there are numerous materials that were made, intentionally for more than one stakeholder group (e.g., for students and for educators). However, some general conclusions are possible.

Industry

Table 13 Type of resources developed with „industry“ as main target

# Items	Type	Focus
2	Online mapping tool	NT Industry Development
11	Reading material	NT Industry Development
1	Reading material	NT Governance
1	Video	NT Governance; NT Industry Development

Most resources for industry are in the form of reading documents that focus on NT Governance and/or NT Industry Development. These resources are quite specific for the targeted audience. The analysis reveals that there are also some self-assessing tools (mapping tools, like the NanoMeter).

Policy makers

Table 14 Type of resources developed with „policy makers“ as main target

# Items	Type	Focus
2	Reading material	NT Communication
4	Reading material	NT Governance
2	Reading material	NT Industry Development
50	Reading material	NT Knowledge
1	Reading material	NT Knowledge; NT Risks & Implications
4	Reading material	NT Risks & Implications
1	Reading material	NT Risks & implications; NT Communication
1	Reading material	NT Risks & Implications; NT Industry Development

All resources developed for policy makers are in the form of written documents. In many cases (see Appendix III) these documents were written also for the benefit of industry, product developers and potential investors. The majority of documents provide factual information on nanotechnology (this large number of documents is the result of a project, OBSERVATORYNANO which had precisely the aim of producing content for policy makers and product developers). As expected, some documents focus on NT Governance and NT Industry Development. Interestingly, two documents address specifically the issue of NT Communication, one of which was written by the OECD Working Party on Nanotechnology.

Lay Public

Table 15 Type of resources developed with „lay public“ as main target

# Items	Type	Focus
3	Informative website	NT Knowledge; NT Risks & Implications
7	Podcasts	NT Knowledge; NT Risks & Implications
5	Reading material	NT Knowledge
30	Reading material	NT Knowledge; NT Risks & Implications
1	Travelling exhibition	NT Knowledge; NT Risks & Implications
20	Video	NT Knowledge
1	Virtual game	NT Knowledge; NT Risks & Implications

From the analysis it is apparent that **different types of resources** have been used to communicate factual information on nanotechnology, and its risks and implications, to the lay public. Reading materials stand out as the type of resource mostly used, however it should be noted that 25 out of 30 documents were produced by a non-EC funded project called NANOTRUST (see Appendix III, entry # 74). Second to reading documents are videos, which have been used also to deliver factual information.

The focus of the materials produced has been primarily **factual information on nanotechnology** (NT Knowledge) and information about its related risks and social implications. This comes as no surprise since there is recent evidence that shows how the lay public is still uniformed on nanotechnology[19] and therefore any dissemination activity should

[19] See references 1 to 4

focus on providing basic information on this topic, new for many. Interestingly, the projects screened in this analysis have not produced resources for the lay public that provide information on the governance of nanotechnology (what has been done in terms of policy, what will be done, which are the outstanding issues, how is the EC reacting to public opinion on nanotechnology). However, the general public is also interested in knowing what actions policy makers are taking in ensuring the responsible development of nanotechnology, especially with regards to consumer products. There is therefore an opportunity for future projects, including NANOPINION, to provide this type of information, for instance in the form of videos or virtual tools (e.g., conceptual maps).

NGOs and Civil Organizations

Table 16 Type of resources developed with „NGOs and civil organizations“ as main target

# Items	Type	Focus
4	Reading material	NT Knowledge
12	Reading material	NT Risks & Implications
2	Informative website	NT Knowledge; NT Risks & Implications
3	Reading material	NT Knowledge; NT Risks & Implications
4	Reading material	NT Knowledge; NT Risks & Implications; NT Communication
1	Reading material	NT Knowledge; NT Risks & Implications

As for other stakeholders, reading materials stand out as the most recurrent resources that have been produced for NGOs. One project in particular (NANOCAP) has produced some “factsheet” specifically for this group of stakeholders, and their focus was NT Knowledge. Numerous other written resources are available that cover “NT Risks and Implications”, a topic that is particularly relevant for this group. Another tool that has been created with NGOs and Civil organizations in mind are some informative websites, which provide factual information but also allow comments and feedback from readers on the topics covered.

In addition to these, most resources produced by other projects intended for policy makers, industry and lay public can be considered also resources for the NGOs and Civil Organizations. As part of the NANOCAP project eight NGOs have prepared some position papers.

Students

Table 17 Type of resources developed with „students“ as main target

# Items	Type	Focus
12	Dialogue activity kit	NT Risks & Implications
5	Game	NT Knowledge
12	Hands-on activity kit	NT Knowledge
1	Informative website	NT Knowledge
1	Online mapping tool	NT Knowledge
1	Power point presentations	NT Risks & Implications
1	Power point presentations	NT Knowledge
1	Video	NT Knowledge
6	Video	NT Risks & Implications
12	Virtual game	NT Risks & implications
5	Virtual game	NT Knowledge
2	Virtual lab	NT Knowledge

Students (11-18 years) were addressed with a **great variety of tools**, ranging from dialogue activity kits, to virtual labs, to videos. Appendix III shows clearly also a **prevalence of hands-on** (games, experiments, tec.) **and multimedia tools** (videos, virtual tools). This is due to the fact that most resources were developed by the NANOYOU and TIMEFORNANO projects which were created precisely to engage youngsters in nanotechnology through resources that were made specifically for them: hence the preference for visual communication and hands-on activities.

It should be noted that, although the table doesn't show any "Reading material" for students, each dialogue and hands-on activity has an associated "reading sheet" which provides also background information on nanotechnology and on the specific activity within the kit.

Numerous resources that have been developed for the *lay public* are also suitable for students, particularly videos (out of the 20 videos reported in table 15[20], there are at least 11 which are suitable also for students, i.e., the 10 NANO-TV videos and the "NanoInLife" video produced by the DG Research).

Similarly, some resources that were developed for students can also be employed with the lay public; however, the selection of the types of material will depend on the age and interest of the public that needs to be addressed.

Educators

Table 18 Type of resources developed with „educators“ as main target

# Items	Type	Focus
1	Reading material	NT Communication; NT Knowledge
5	Teaching training material	NT Knowledge; NT Risks & Implications; NT Communication
7	Teaching training material	NT Knowledge

[20] The details (name, project etc.) of these 20 videos are reported in Appendix III

The term "educator" in this document includes school teachers (11-18 years old pupils) and science educators (working in science centres, museums, open labs etc.). As in the case of "lay public", the focus of resources developed for "educators" is factual information on nanotechnologies, from basics, to applications and risks. In the table above the "Teaching Training Materials"[21] include background information and experiments to be conducted with the class in a school laboratory or in a science centre. The "hands-on" activities that are indicated in the Students table (Table 16) are also suitable for educators. As a matter of fact, *all students' resources can be seen as resources for educators*, since they can be used by them to design some class lessons or science centre activities, and inter-linked them with other resources. Some resources (the NANOYOU Teachers training Kit on Nanotechnologies, which is made of 5 items) have also addressed the issue of integrating nanotechnology in the school curricula (how to bring this topic in class?) and more generally how to facilitate the communication between researchers and educators (see Appendix III, entry # 18).

On top of the resources listed in the table above, all resources that have been developed for the "lay public" are also suitable for educators.

Researchers

In this document "Researchers"[22] are those working in Academia (or research centres) with an interest on ELSA aspects of nanotechnologies (therefore social scientists, whose research focus on ethical aspects, social implication, regulations, policy making, etc.) and those with an interest in communicating nanotechnology (theory of communication, visual communications, curricula development, etc.). This group does not include researchers doing scientific research.

Table 19 Type of resources developed with „reserachers"as main target

# Items	Type	Focus	Who is it for?
1	Reading material	NT Knowledge	Researchers (6a & 6b)
1	Reading material	NT Risks & Implications; NT Governance	Researchers (6a & 6b)
1	Reading material	NT Knowledge	Researchers (6b)
1	Reading material	NT Risks & Implications	Researchers (6c)
1	Reading material	NT Risks & implications; NT Communication	Researchers (6c)
1	Reading material	NT Risks & Implications	Researchers (6c)
1	Video	NT Risks & Implications	Researchers (6c)
1	Reading material	NT Risks & Implications	Researchers (6c)
1	Informative website	NT Knowledge; NT Risks & Implications	Researchers (all)
1	Reading material	NT Knowledge	Researchers (all)
8	Reading material	NT Risks & Implications	Researchers (all)
1	Online mapping tool	NT Risks & Implications	Researchers (all)
28	Reading material	NT Knowledge; NT Industry Development	Researchers (all)

[21] The details (name, project etc.) of "Teaching Training Materials" are reported in Appendix III, entry # 18 and 27
[22] The classification is as follows: 6a. researcher- focus: governance and legal implications
6b. researcher- focus environment, health and safety (EHS)
6c. researcher- focus: ethics and societal impact

Table 19 shows a **predominance of "Reading material"** as the type of resource developed in previous projects for this stakeholder group. The focus of most resources is "NT Risks and Implications". However, several documents (28) cover also aspect of NT Industry Development: these documents were developed as part of an European project, called ICPC-NANONET, whose scope was to facilitate R&D collaboration between scientists of different countries (including African and Asian countries) and to facilitate industrial development.

Some documents were made for policy makers but also for researchers, in particular those dealing with NT Communication.

6. What are the best resources? Recommendations for the NANOPINION repository

This section provides content recommendation for the NANOPINION repository. For each stakeholder group a table is provided, with the name of the content, the type and the score[23]. In addition, some "extra" resources are provided.

6.1 Industry

Table 20 Recommended content for „industry" in the NANOPINION repository

Content	Project	Type	Score
Market reports	OBSERVATORYNANO	Reading material	4.25
NanoMeter	OBSERVATORYNANO	Online mapping tool	3.75
Guide to responsible nano-business	OBSERVATORYNANO	Reading material	3.75
CodeMeter	NANOCODE	Online mapping tool	3.5
Round table debate in Milan	NANOCHANNELS	Video	3.25

The **written documents** developed by the OBSERVATORYNANO project were assessed as the best for this stakeholder group, in particular the Market Reports stand out for their clearness, comprehensibility and quality of content. The **self-assessment tools** are also a valid resource. These resources allow SMEs, potential investors and product developers to assess their technology at an early stage, considering also EHS impact.

There are also some useful resources developed by **STOA**[24] (Science and Technology Options Assessment) as part of the activities of the DIRECTORATE GENERAL FOR INTERNAL POLICIES (Policy Department A: economic and scientific policy
Science and technology options assessment). Specifically

> "Nanotechnology in the Food Sector" (2009)
> "NanoSafety -Risk Governance of Manufactured Nanoparticles" (2012)

Most of the **materials made for the "Policy Makers"** (see next section) are also suitable for the "Industry" stakeholder group.

[23] The score is assigned according to the criteria set in Chapter 5.
[24] This is not a project, rather a permanent policy assessment activity of the EC, so it was not included in the content map. However these resources are also recommended for the NANOPINION repository.

6.2 Policy Makers

Table 21 Recommended content for „policy makers“ in the NANOPINION repository

Content	Project	Type	Score
Factsheets	OBSERVATORYNANO	Reading material	4.75
Briefings	OBSERVATORYNANO	Reading material	4.75
General sector reports	OBSERVATORYNANO	Reading material	4.75
NanoMed Final report	NANOMEDROUNDTABLE	Reading material	4.5
Developments in Nanotechnologies Regulations and Standards	OBSERVATORYNANO	Reading material	4.5
The European Nanotechnology Innovation Landscape	OBSERVATORYNANO	Reading material	4.25
Communicating Nanoethics (4th Annual Report)	OBSERVATORYNANO	Reading material	4.25
Environment, Health & Safety & Impacts Reports	OBSERVATORYNANO	Reading material	4.25
Planning Guide for Public Engagement and Outreach in Nanotechnology	OECD WORKING PARTY ON NANOTECHNOLOGY	Reading material	4.25
Governance Platform	FRAMINGNANO	Reading material	4
Mapping Study	FRAMINGNANO	Reading material	4
Ethical and Societal Aspects of Nanotechnology, ICT and Security (3rd Annual Report)	OBSERVATORYNANO	Reading material	4
Master Plan	NANOCODE	Reading material	3.75
Nanologue scenarios	NANOLOGUE	Reading material	3.75
The Impacts of Nanotechnology on Companies: Policy Insights from Case Studies	OECD WORKING PARTY ON NANOTECHNOLOGY	Reading material	3.75
NanoJury Recommendations	NANOJURY	Reading material	3.5
Nanotechnology-related resources by country	OECD WORKING PARTY ON NANOTECHNOLOGY	Informative website	3.5
Responsibly onwards with nanotechnology	NANOPODIUM	Reading material	3.5
Fostering Nanotechnology to Address Global Challenges: Water	OECD WORKING PARTY ON NANOTECHNOLOGY	Reading material	3.25
NANOSAFE Final Report	NANOSAFE	Reading material	3.25
Position papers	NANOCAP	Reading material	3.25

There are many extremely good resources for policy makers, most arising from the OBSERVATORYNANO project, the FRAMINGNANO project and from the OECD WORKING PARTY ON NANOTECHNOLOGY. Another project that provided some very useful insight into future policy actions is the NANOMEDROUNDTABLE project.

Two additional documents can also be recommended, which have been produced by the Directorate-General for Research, technology and Development

> "Understanding Public Debate on Nanotechnologies: Options for Framing Public Policy", edited by René von Schomberg and Sarah Davies

> "Communicating Nanotechnology: Why, to whom, saying what and how?" edited by Matteo Bonazzi (see ref 1)

The two STOA study documents cited for the "Industry" group are also very relevant for "Policy Makers"

6.3 Lay Public

Table 22 Recommended content for „lay public" in the NANOPINION repository

Content	Project	Type	Score
The Guardian Nanotechnology World microsite	NANOCHANNELS	Informative website	4.75
El Mundo Nanotechnology microsite	NANOCHANNELS	Informative website	4.75
Annual Report to the Public	OBSERVATORYNANO	Reading material	4.75
Briefing papers	NANOBIORAISE	Reading material	4.5
Moebius Scienza Podcasts	NANOCHANNELS	Podcasts	4.5
Dossiers	NANOTRUST	Reading material	4.25
NanoInLife	DG Research	Video	4
Nano and Me website	NANO & ME	Informative website	4
Factsheets	NANOCAP	Reading material	4
NanoEducation Tree	OBSERVATORYNANO	Virtual game	4
Dissemination reports	NANOHOUSE	Reading material	3.75
Nano-TV videos	NANO-TV	Video	3.75
All Connected!	NANOYOU	Travelling exhibition	3.75
NanoSMILE cartoons	NANOSMILE	Video	3.5

During the NANOCHANNELS project some **outstanding microsites** were create by two leading newspapers, The Guardian and El Mundo. Articles in these microsites cover many topics highly relevant to the general public (applications of nanotechnology, but also safety issues, workers protection, societal issues etc.) written in plain language.

There are **some very good videos** that explain nanotechnology: one is the NanoInLife video (made by DG Research); an additional one which is recommended, although it was originally created for "students" so it is not indicated in the table above, is the NANOYOU Film (see entry # 15 in Appendix III).

Some **short briefing papers and factsheets** provide easy-to-access information on nanotechnology, as well as some basic elements of ELSA (for instance, within the NANOBIORAISE briefing papers). However many of these are quite old (produced as part of FP6

projects). In addition to the document listed, some *other resources are suitable for the "lay public":*

- Isolated chapters or sections of the "NANOYOU Teachers Training Kit on Nanoscience and nanotechnologies" (entry # 18 in Appendix III). This document is packed with information, from fundamentals to applications of nanotech, as well as ELSA and EHS aspects.

- OBSERVATORYNANO Factsheets and Briefings (see entry # 32 and #33 in Appendix III)

In terms of **dialogue activities**, the best resource is PlayDecide, which has been adapted to cover nanotechnology by the TIMEFORNANO Project. Another resource that could be used by this stakeholder group is the NANOYOU Virtual Dialogue game. Although this tool was originally developed for students, it addresses ELSA and EHS issues associated with many applications which would be relevant also for adults, like "sunscreens".

The ethical, social and safety issues associated with nanotechnologies are not easy to communicate; an interesting and useful tool is therefore **online conceptual maps**, where different aspects are correlated. The project MACOSPOL has created such a map, called "RiskCartography" (see entry #3 in Appendix III) which can be useful for lay public (although elderly people, or people not used to using ICT tools, might find this tool hard to use).

6.4 Students

Table 23 Recommended content for „students" in the NANOPINION repository

Content	Project	Type	Score
Nanoyou Film	NANOYOU	Video	4.75
Nanoyou Lab Experiments	NANOYOU	Hands-on activity kit	4.75
Nanorama Loft	SWISS NANOCUBE	Online mapping tool	4.75
Website	SWISS NANOCUBE	Informative website	4.5
Nanoyou Posters	NANOYOU	Poster	4.25
Virtual Nano Lab	NANOYOU	Virtual lab	4.25
Nano Kit	TIME4NANO	Hands-on activity kit	4.25
Play decide for Time4Nano	TIME4NANO	Dialogue activity kit	4.25
Time machine	NANOYOU	Virtual game	4.25
Discover the nanoworld	NANOYOU	Power point presentations	4
Discover the benefits and risks for developed and developing countries	NANOYOU	Power point presentations	4
Jigsaw puzzle	NANOYOU	Game	4
NT Virtual dialogue	NANOYOU	Virtual game	4
Clips	NANOCHANNELS	Video	3.75
Interactive games	NANOCHANNELS	Virtual game	3.75
Titina Tag	TIME4NANO	Video	3.75
Memory game	NANOYOU	Game	3.5
Role play game	NANOYOU	Dialogue activity kit	3.5
Nanolife	TIME4NANO	Video	3.5

Three FP7 projects, NANOYOU, NANOCHANNELS and TIMEFORNANO, have produced **outstanding resources for students**, many of which in the form of videos or multimedia tools (games, virtual labs). An **additional video** which is perfect for students is the NanoInLife video (entry # 75 of Appendix III).

Some **excellent "hands-on activities"** are available: simple demonstrations and experiments that students can perform with the supervision of an adult.

Within the guidelines for the hands-on activities and experiments there are some reading resources for students that explain some basic concepts of nanotechnologies. In addition to this **reading material**, two other reading resources are deemed as suitable for this stakeholder group:

> The Guardian and El Mundo Microsites: many of the articles in these microsites are suitable for students (13 years+)

> Older students (15 years+) can use the content of the NANOYOU Teachers Training Kit on Nanoscience and Nanotechnologies" (entry # 18 in Appendix III).

Finally, there are some **excellent dialogue activity kits** for students to engage them in the dialogue on nanotechnology. In addition to these there are two good videos that were produced during the TIMEFORNANO project by some students to reflect on some ELSA issues ("Titina Tag" and "Nanolife").

6.5 Educators

Table 24 Recommended content for „educators" in the NANOPINION repository

Content	Project	Type	Score
Nanoyou teacher training kit	NANOYOU	Teaching training material	4.75
OpenLab Handbook	NANOTOTOUCH	Reading material	4.25
Discover the nanoworld	NANOYOU	PPT	4
Discover the benefits and risks for developed and developing countries	NANOYOU	PPT	4
Nano teach Box	SWISS NANOCUBE	Teaching training material	3.25

The analysis reveals that there aren't many resources that have been developed specifically for educators. Among the ones available, the NANOYOU Teachers Training Kit in Nanoscience and Nanotechnology is an **excellent teacher training kit**, packed with reading information (covering fundamental aspects of nanotechnologies, as well as ELSA and EHS aspects). The kit also addresses general issues of nanotechnology communication and ideas on how to integrate nanotechnology in school curricula. Experiments are also included. Another good resource is the NanoTeach Box, developed by the SWISS NANOCUBE initiative (non-FP).

Educators can find also a great deal of useful information in the NANOTOTOUCH OpenLab Handbook: this **handbook** provides some information on how to set up an OpenLab within a science museum, but covers also nanotech communication aspects, and has a good list of **consumer products** that can be used to show real-life applications of nanotechnology.

A "travelling exhibition" called "All Connected!" has created a "kit" where educators can find some very useful resources on the subject of "nanotechnology and ICT". There is a DVD that includes all the panels and software used in the exhibition.

In addition to these resources, **educators can refer to the materials developed for the "students" and for the "lay public".** In particular:

> Hands on Activity Kits developed by NANOYOU and TIMEFORNANO (see entry #17 and #28 of Appendix III)

> The Guardian and El Mundo Microsites: both have many articles that can be used as a starting point for a school lesson on nanotechnology
> Videos targeted to lay public and students

> SWISSNANOCUBE website and the online mapping tool "Nanorama Loft"

Educators can refer to some **excellent dialogue tools**, the same mentioned for the "Lay Public", i.e. PlayDecide. In addition they can use the NANOYOU role play game, and the **online conceptual maps** "RiskCartography" (MACOSPOL).

6.6 Media and science communicators

Table 25 Recommended content for „media and science communicators " in the NANOPINION repository

Content	Project	Type	Score
Nanosafety at the OECD: The First Five Years 2006-2010	OECD WORKING PARTY ON NANOTECHNOLOGY	Reading material	4.5
Ethical and social issues in nanobiotechnologies	NANO2LIFE	Reading material	4.25
OpenLab Handbook	NANOTOTOUCH	Reading material	4.25
Planning Guide for Public Engagement and Outreach in Nanotechnology	OECD WORKING PARTY ON NANOTECHNOLOGY	Reading material	4.25
Reconfiguring Responsibility	DEEPEN	Reading material	3.5
Toolkit for ethical reflection and communication	OBSERVATORYNANO	Reading material	3.25

This stakeholders group has not been the specific focus of any project; in one project (NANOCHANNELS) two media groups were partners of the project. This accounts for the limited resources developed specifically for this group, which are included in the table above. These resources focus on the issue of "communicating nanotechnology". In addition to these the previously mentioned DG book is recommended:

> "Communicating Nanotechnology: Why, to whom, saying what and how?" (see Ref. 1)

"Media and science communicators" can refer to **many excellent written resources** which have been produced with a different target in mind, but are definitively relevant:

> Most of the documents from the OBSERVATORYNANO project: "Briefings", "General Sector reports", "Developments in Nanotechnologies Regulations and Standards", "The European Nanotechnology Innovation Landscape", "Environment, Health & Safety & Impacts Reports", "Ethical and Societal Aspects of Nanotechnology, ICT and Security (3rd Annual Report)", "Communicating Nanoethics (4th Annual Report)" and "Market reports"

> Some documents written by the OECD WORKING PARTY ON NANOTECHNOLOGY: "Fostering Nanotechnology to Address Global Challenges: Water" and "The Impacts of Nanotechnology on Companies: Policy Insights from Case Studies";

> Different chapters of the NANOYOU Teachers Training Kit

> Some final reports of past projects: The NanoMed Final report (NANOMEDROUNDTABLE) and the ENHRHES Final Report

> The findings of the NANOPODIUM project ("Responsibly onwards with nanotechnology")

> The analysis of current nanotechnology regulatory status and future needs from the FRAMINGNANO project: The "Governance Platform" and the "Mapping Study"

> The NANO2LIFE review "Ethical and social issues in nano-biotechnologies"

Another useful resource is the previously mentioned **mapping tool** called RiskCartography tool, developed by the MACOSPOL project. Finally, the NANOCAP position papers provide information that can be very useful for media or science writers.

6.7 Researchers

Table 26 Recommended content for „researchers" in the NANOPINION repository

Content	Project	Type	Score
Ethical and social issues in nanobiotechnologies	NANO2LIFE	Reading material	4.25
NanoNet Reports	ICPC NANONET	Reading material	4.25
Nanosafety cluster overview	NANOIMPACTNET	Reading material	4
Deepening Dialogue: Debating Nanotechnology's Responsible Development	DEEPEN	Video	4
Nomenclature	NANOIMPACTNET	Reading material	4
Dissemination reports	NANOSAFE2	Reading material	4
Reconfiguring Responsibility	DEEPEN	Reading material	4
Glossary	NANOSAFE2	Reading material	3.75
NanoSMILE website	NANOSMILE	Informative website	3.75
ENHRHES Final Report	ENHRHES	Reading material	3.5
Nanobioethics (2nd Annual Report)	OBSERVATORYNANO	Reading material	3.5
Toolkit for ethical reflection and communication	OBSERVATORYNANO	Reading material	3.25
RiskCartography	MACOSPOL	Online mapping tool	3.25

In this document "researchers" include mostly social scientists, who study the ethical, social, legal implications of nanotechnologies. In addition to the resources indicated in the table above, depending on the focus of their study, researchers can refer to the materials developed for:

> "Media and science communicators", in particular the documents dealing with "communicating nanotechnology";

> "Policy makers", especially where the interest of the researcher is nanotechnology regulation

> "Industry"; when the focus of the research is business analysis and potential developments.

6.8 NGOs and Civil Organizations

Table 27 Recommended content for „NGOs and Civil Organizations" in the NANOPINION repository

Content	Project	Type	Score
The Guardian Nanotechnology World microsite	NANOCHANNELS	Informative website	4.75
El Mundo Nanotechnology microsite	NANOCHANNELS	Informative website	4.75
Briefing papers	NANOBIORAISE	Reading material	4.5
NanoMed Final report	NANOMEDROUNDTABLE	Reading material	4.5
Factsheets	NANOCAP	Reading material	4
Dissemination reports	NANOSAFE2	Reading material	4
Dissemination reports	NANOHOUSE	Reading material	3.75
Nanologue scenarios	NANOLOGUE	Reading material	3.75
NanoJury Recommendations	NANOJURY	Reading material	3.5
Responsibly onwards with nanotechnology	NANOPODIUM	Reading material	3.5
Nanobioethics (2nd Annual Report)	OBSERVATORYNANO	Reading material	3.5
Ethics Portfolio	NANOCAP	Reading material	3.25

The best resources for NGOs and civil society organizations include informative **websites** from the NANOCHANNELS project, which have been created with the intention to deliver factual information on nanotechnology but also to provide a space where to **foster a long-term debate** on its associated ELSA and EHS aspects. There are then numerous **reading resources** that provide information (see Table 27), as well as ethical and social reflections, and documents that summarize public opinions arising from past projects, like NANOPODIUM and NANOJURY.

Another document that could be useful for this stakeholder group is:

> "Ethical and social issues in nano-biotechnologies" (NANO2LIFE, see entry #71 of Appendix III)

As part of the NANOCAP project eighth NGOs have produced some **position papers** (entry # 6 in Appendix III), where they describe the opportunities and risks of nanotechnologies as seen from their prospective, and their recommendations for future policy and investment actions. These documents are relevant for other NGOs and civil society organizations.

6.9 Additional resources for the NANOPINION repository

The analysis so far has focused on content developed by previous European projects, and few National projects. However, in the last years, some important PLATFORMS have been created,

which cluster projects that focus on similar themes, such as the NANOSAFETY CLUSTER (FP projects dealing with nano-toxicology and eco-toxicology). Another important cluster is NANOFUTURES, the European Initiative for the sustainable development of nanotechnology integrating platform, which has the objective of connecting and establishing cooperation and representation of Technology Platforms that require nanotechnologies in their industrial sector and products. Another important platform is NANOFORUM, originally an FP project, now a long-term news and publication repository, with information on curricula and postgraduate opportunities in nanotechnologies.

In addition, **some scientific advisory boards, authorities and consumer organizations** have produced some important documents, specifically:

> The European Food Safety Authority (EFSA) has recently published a document which provides guidance for risk assessment, "Guidance on the risk assessment of the application of nanoscience and nanotechnologies in the food and feed chain". The document can be found here: http://www.efsa.europa.eu/en/efsajournal/pub/2140.htm

> The European Consumer Organization (BEUC) has compiled two consumer inventories which include all products "claiming to contain nanomaterials" and sold in Europe. Two inventories are available here (as xls files):
http://www.beuc.org/Content/default.asp?pageId=1120&searchString=nanotechnology

It is recommended that the NANOPINION repository has a link to these platforms and resources.

7 Conclusions & Outlook

The content mapping has revealed that a large amount of excellent reading material has been produced that covers factual information on nanotechnology, risk for human and environment health, social and ethical implications, as well as reviews of regulatory status, prospects for potential investors, market analysis, and policy recommendations. These resources address all key stakeholders, with different materials available for each. However, many of those documents are fairly long to read, and at times use a language that is specific for the targeted audience. Therefore there is a need to continue the effort initiated in projects like NANOCHANNELS to disseminate nanotechnology knowledge using a simple language, to address those who are unlikely to read long documents (students, elderly people, etc.). The involvement of media in this context is very important, as well as the communication channel used (print media, online media), which should be diversified depending on the targeted audience.

With respect to resources different from "reading documents", some videos and other multimedia tools have been produced, which mainly address lay public and students, and focus predominantly on providing factual information on nanotechnology, sometimes in an over-enthusiastic way. There seems to be a lack of audio-visuals that address in a clear way ELSA questions like: "Are nanotech consumer products safe?"; "What regulation is in place to ensure consumer safety?" "How is "nanofood" different from GMOs?" Future projects (including NANOPINION) could therefore focus on creating this type of resources. Audio-visuals are known to be preferred by youngsters, as well as "elderly" people, who tend to rely still on TV as a main source of information.

The content map highlights a lack of innovative resources which are likely to become more relevant in the future, as the use of smartphones and tablets increase, like apps (for instance, with augmented reality interfaces), podcasts, vodcasts etc.

Several materials and tools have been created to foster dialogue among different stakeholders: websites with comments and social media interaction; virtual debate tools, card games (for face-to-face group discussion). However, there is a need for a platform that "brings together" these different views, that maps the diverse opinions of the different stakeholders and which provides some clear insight, mainly to policy makers , of the expectations and opinion of these groups. In addition, so far, it seems like each stakeholder has had a chance to express his/her views within a specific event (workshop, focus group, game etc.) , which most of the times resulted in a written report, without a long-term effect on the nanotechnology debate. There seems to be the need to create a space for long-term debate, perhaps using social media. It would be also very important to communicate to the different stakeholders how their opinions are used in policy making.

Numerous resources are available for students, from experiments, to virtual games, to videos. On the other hand, only few resources are available to teachers, who currently lack resources to clearly integrate nanotechnology in their science (or physics, chemistry, biology, etc.) curricula. There is therefore an opportunity in the future to fill this gap, providing curriculum content to teachers as well as additional experiments and demonstrations that can be performed in a school environment.

APPENDIX I

List of **all projects** (European and National), initiatives, clusters that were **checked for education, outreach and dialogue content on nanotechnology**. Many of these projects did not produce such content

BIONANONET
CELLNANOTOX
CIPAST
CO-NANOMET
CONTECS
DECIDE
DEEPEN
DEMOCS
DEMOS
DIPNA
EBA
ENPRA
ENREHS
ENSSAROX
ETHICSCHOOL
ETP NANOMEDICINE
EUROINDIANET
EURONANOBIO
EURONANOTOX
FRAMING NANO
FRONTIERS
GLOBAL EXCURSION
GOODNANOGUIDE
HINAMOX
ICPC-NANONET
INLIVETOX
INTEGRISK
INVOLVE
ISO
KNOWLEDGE NBIC
MACOSPOL
MEETING OF MINDS
MESSENGER
MIDIR
MIRA
NABIA
NANO AND ME
NANO ROAD SME
NANO WHAT
NANO2MARKET
NANOBIORAISE
NANOCAP
NANOCHANNELS
NANOCODE
NANODEVICE
NANODIALOGUE
NANOFATE
NANOFORCE
NANOFORMEULA
NANOFORUM
NANOFUTURES
NANOHOUSE
NANOIMPCATNET
NANOINTERACT
NANOJURY
NANOLOGUE
NANOMEDROUNDTABLE
NANOMMUNE
NANOPLAT
NANOPODIUM
NANOPOLIS
NANO-QUANTA
NANORETOX
NANOSAFE2
NANOSCI-E+
NANOSCIERA
NANOSH
NANOSMILE
NANO-STRAND
NANOTHER
NANOTOES
NANOTOTOUCH
NANOTRUCK
NANOTRUST
NANOTV
NANOVALID
NANOYOU
NEPHH
NEURONANO
NMP EXPERT GROUP
OBSERVATORY NANO
OECD WORKING PARTY ON NANO
PATH
PATH
PRIME
RESPONSIBLE CARE
RESPONSIBLE NANOFORUM
RISKBRIDGE
SANDIE
STOA
SWISSNANOCUBE
TIME FOR NANO
WOMEN IN NANO
ENIAC
EFSA
BEUC
ANEC
SCENIHR

APPENDIX II

NOTE: It should be noted that the scoring is based on an assessment developed from the perspective and the needs of NANOPINION and does not reflect a general assessment of the projects. The authors take no responsibility in this sense. The score is claculated as follow: + equals 1, therefore the total score is the average of the score for each criteria (e.g. clarity)

Project	**1. Framing Nano**
Funding Scheme	FP7
URL	http://www.framingnano.eu/
Project Focus	Governance, legal, policy making
Project Purpose	

Content	Governance Platform			
Date	February 2010			
Content Type	Reading material (online and printable)			
Content Focus	NT Governance			
URL of Content	http://www.framingnano.eu/images/stories/FinalConference/framingnano_complete_final_report.pdf			
Target Audience	Policy makers			
Content details	Document that describes a Governance model process for the regulation of nanotechnology			
Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	+++++	+++
Outcomes and impact	Produced a model for a Governance Platform to support the responsible development of nanotechnologies at European level and beyond. The Platform provided proposals and guidance at four different levels: 1. Technical and organisational: prioritising actions and research needs in relation to Environmental, Health and Safety (EHS) issues and Ethical Legal and Societal Aspects (ELSA), and defining the roles and responsibilities of the various stakeholders involved; 2. Communication and dialogue: proposing means of effectively disseminating trustworthy information and channelling stakeholder views into European policy actions; 3. Institutional: suggesting how to manage and sustain European policy for the responsible development of Nanoscience and Nanotechnologies (N&N), and indicating roles and responsibilities at the level of institutions; 4. International harmonisation: identifying transboundary issues to be addressed at both EU and international levels.			
Overall Assessment	The tool was further developed within NanoCode, where it was recognised that there needs to be some form of governance for all advanced and enabling technologies, not just nano specifically.			

Content	Mapping Study			
Date	January 2009			
Content Type	Reading material (online and printable)			
Content Focus	NT Governance			
URL of Content	http://www.framingnano.eu/images/stories/FramingNanoMappingStudyFinal.pdf			
Target Audience	Policy makers			
Content details	Review document on the status of nanotechnology regulation and governance			
Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	++++	+++
Outcomes and impact	Fed into policy			
Overall Assessment	The mapping study provides a clear overview of the regulatory status for nanotechnologies. This resource is relavant for policy makers, as well as potential investors in nanotechnology.			

Project	**2. MACOSPOL (Mapping Controversies in Science for Politics).**
Funding Scheme	FP7
URL	http://www.macospol.eu/
Project Focus	Risk and Implications
Project Purpose	MACOSPOL is a joint research enterprise that gathers scholars in science, technology and society across Europe. Its goal is to devise a collaborative platform to help students, professionals and citizens in mapping out scientific and technical controversies.

Content	Risk Cartography
Date	2008
Content Type	Online mapping tool
Content Focus	NT Risk and Implications
URL of Content	http://riskcart1.wzu.uni-augsburg.de/
Target Audience	6: Researchers (6a, 6b and 6c)
Content details	RiskCartography is an internet-based tool to map and visualize controversies. It has been developed by the Munich Institute for Social and Sustainability Research and the Environment Science Center of the Augsburg University in cooperation with the software company SouCon. The map is made of three sections: 1. “Protagonists” who are participating in the controversy with their own arguments and statements to different issues (e.g., NGOs, industry, and government); 2.”Things”: selected nanoscale substances or things that are discussed very intensely whether they are harmful or not. For some substances (nanosilver, titanium dioxide, carbon nano tubes, carbon black) there is further information as well as a so called "substance story"; 3.”Matters of concerns” that focus on specific issues, questions or problems that are still unresolved. Thus these matters of concern are discussed from different perspectives and they are characterized by plenty of different arguments and statements from many protagonists.

	In this overview there are shown the most prominent issues and matters of concern dealing with risks of nanoscale materials. All information are available in English and German			
Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.25	+++	+++	++	+++++
Outcomes and impact	The tool should be used for online discussions, but for "Nano", it is only used as visualisation tool. The tool was implemented in several workshops with stakeholders to give basic information and overview on nanotechnology risks. It is not open source, it can be applied for workshops, with our without moderation, with or without system administration.			
Overall Assessment	For students and lay persons it could be a good discussion basis, also for decision makers, but not for comprehensive discussions with persons with a broader knowledge basis.			

Project	**3. NANO AND ME**
Funding Scheme	UK Private funding
URL	http://www.nanoandme.org/
Project Focus	Outreach to general public and content provision; Risks and Implications
Project Purpose	The aim of the project was to provide a platform, mainly for consumers, with clear and updated information on nanotechnology (including risk and ELSA aspects), and to provide a forum for public discussion (this forum was never activated due to budget restrains)

Content	Nano and Me website			
Date	on-going, although funding for this tool stopped in 2011			
Content Type	Informative website			
Content Focus	NT Knowledge; NT Risk and Implications			
Content URL	http://www.nanoandme.org/home/			
Target Audience	Lay public/consumer; students; educators			
Content details	Website with various pages that cover general concepts of nanotechnology, applications, and ELSA			
Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	++++	++++
Outcomes and impact	This website was a pilot project which ended in 2009. Lack of further funding meant that it is no longer updated or maintained. Feedback was called during the length of the project, both online and through personal emails. Online feedback was very little (only 7 respondents). Overall the website was assessed very well especially by scientists and it generated interest from direct engagement groups (Science festivals, Sci-Bars etc.). However cosnumers that provided feedback said the website it too wordy, and should have more videos, images, and shorter articles.			
Overall Assessment	Friendly and informative website useful for providing basic knowledge on nanotechnology to anyone interested on the topic. However, the content should be provided using a mix of multimedia and short articles, rather than only text. External links where to find additional, in-depth information is also needed.			

Project	**4. NANOCAP**
Funding Scheme	FP6
URL	http://www.nanocap.eu
Project Focus	Analysis of Risk and Implications; Multi-stakeholder Dialogue
Project Purpose	This project enabled environmental NGOs and trade unions to participate in a debate on nanotechnology at European level. It improved their understanding of this new technological field, and it gave them the opportunity to formulate their positions within their actual policy context supported by scientific input, to inform their members and the general public and to discuss the issues.

Content	NGOs Position Statements			
Date	Between February 2008 and February 2009			
Content Type	Reading material (online and printable)			
Content Focus	NT Risks & Implications			
URL of Content	http://www.nanocap.eu/Flex/Site/Pageac40.html?SectionID=1797&Lang=UK			
Target Audience	Policy makers, NGOs and civil organization, media & science communication experts			
Content details	The outcome of the NANOCAP project has been several "position papers" of the NGOs involved. Each NGO compiled a paper in its native language and in English.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.25	+++	+++	+++	++++
Outcomes and impact	The Position statements were presented in April 2008 at the European Parliament. NANOCAP developed recommendations to enable public authorities to address the health, safety and environmental risk issues related to the rapid introduction of nanotechnology into society			
Overall Assessment	The NGOs Position Statements produced during the NANOCAP project were a useful tool for NGOs to communicate their concerns and expectations on nanotechnology to the public authorities. These documents could be useful for other NGOs and civil society groups.			

Content	NANOCAP Ethics Portfolio
Date	Between February 2008 and February 2009
Content Type	Reading material (online and printable)
Content Focus	NT Risks & Implications
URL of Content	http://www.nanocap.eu/Flex/Site/Pageac40.html?SectionID=1797&Lang=UK
Target Audience	Researchers (6c), media and science communication expert
Content details	A number of different factsheets that cover different aspects of nanoethics, such as Justice, Risk, Ethics and Morality, Code of Conduct, Nano Race, Justice and Nano, Soft Regulation, etc.

Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.25	++++	+++	+++	+++
Outcomes and impact	The Ethics Portfolio has been extended beyond the Nanocap project and is now hosted in the by the Nano Office at Technische Universität Darmstadt			
Overall Assessment	These documents are accuate and comprehensive, however in some part they are written with a language that could be difficult to understand for non-specialised audience.			

Content	Nanovirtualium			
Date	2009			
Content Type	Informative Website			
Content Focus	NT Knowledge; NT Risks & Implications			
URL of Content	http://www.mio-ecsde.org/_uploaded_files/nanovirtualium/			
Target Audience	Lay public; NGOs and civil organization			
Content details	NanoVirtualium is web based application produced by the NGO MIO-ECSDE (one of the NANOCAP partners) designed as a futuristic virtual reality dome, which invites you to enter into the developing world of Nanotechnologies. It provides both basic and advanced information on this new emerging technology and it sets out related implications on our health and safety (workers), society at large and the environment.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
2	+	++	+++	++
Outcomes and impact	Within the 3 years of the application's launch, the application has been viewed 2900 times (data: 20 September 2012). NanoVirtualium was MIO-ECSDE's first attempt to reach out to its membership as well as the wider public through an interactive web-application. MIO-ECSDE has received very positive feedback from its member NGOs and beyond. The application will be updated in the near future.			
Overall Assessment	The content of this website is good but the format is not, articles are too long, and graphics are too "science fiction"; in addition no external links are provided for further reading.			

Content	NANOCAP Fact Sheets			
Date	2008			
Content Type	Reading material (online and printable)			
Content Focus	NT Knowledge			
URL of Content	http://www.nanocap.eu/Flex/Site/Pagec5a5.html?SectionID=1798&Lang=UK#Nanotechnologies			
Target Audience	Lay public; NGOs and civil organization			
Content details	Factsheets that provide basic information on nanotechnology, and application in: energy, environment and health			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	++++	++++
Outcomes and impact	The factsheets were used by its author as the starting point for the writing of the NANOYOU Training Kit in			

	Nanoscience and nanotechnology which was then converted in the EC publication “Nanotechnologies: principles, applications, implications and hands-on activities” (to be published in 2013)
Overall Assessment	The factsheets have not been updated since their writing thus some recent developments of nanotechnology are not included. However they are useful reference documents written in a simple language and are relatively short (compared to other resources)

Project	**5. NANOJURY**
Funding Scheme	Mix of funding: Cambridge University Interdisciplinary Research Collaboration (IRC) in Nanotechnology; FRONTIERS Network of Excellence in Nanotechnology; Greenpeace UK; and PEALS.
URL	http://www.guardian.co.uk/life/nanojury/
Project Focus	Multistakeholder dialogue
Project Purpose	The NanoJury brought together 20 randomly-chosen people from different backgrounds who heard evidence about the role that nanotechnologies might play in their future. Over five weeks, the jurors heard from a variety of witnesses. At the end the jurors came up with a set of recommendations. Thus the aim of the project was to provide a potential vehicle for people's informed views on nanotechnologies to have an impact on policy.

Content	NanoJury Recommendations			
Date	2005			
Content Type	Reading material (online and printable)			
Content Focus	NT Risks & Implications			
URL of Content	http://www.greenpeace.org.uk/files/pdfs/migrated/MultimediaFiles/Live/FullReport/7249.pdf			
Target Audience	Policy makers; NGOs and civil organizations			
Content details	Document that provides a set of recommendations and deliberations on general aspects of nanotech, specific application areas (health, ICT, energy) and communication			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.5	++++	++++	+++	++++
Outcomes and impact	The NanoJury recommendations were presented to an audience of policy-makers, scientists, journalists, and social researchers at an event in London in September, 2005, which three jurors attended. Despite a promise, made in September 2005 by a senior official at the Department of Trade and Industry (DTI), to provide a response to the Nanojury's provisional recommendations "in the short term", this has neither been fulfilled, nor its absence explained.			
Overall Assessment	The NanoJury reccomedations summarize the opinion of lay public on nanotechnology. Although this is a fairly old project, the reccomendations are still valid and could be useful for future dialogue activities.			

Project	**6. NANOLOGUE**
Funding Scheme	FP6
URL	http://www.nanologue.net/
Project Focus	Multistakeholder dialogue
Project Purpose	The project wanted to facilitate a dialogue among researchers, business and civil society about the benefits and potential impacts of nanoscience and nanotechnology applications.

Content	Nanometer			
Date	2006			
Content Type	Online mapping tool			
Content Focus	NT Industry Development			
URL of Content	http://www.nanologue.net/index.php?seite=174			
Target Audience	Industry			
Content details	The Nanometer is a web-based tool that allows researchers and product developers (and others interested) to carry out a brief societal assessment of nanotechnology applications prior to market release. The Nanometer focuses on those topics that are dominating the societal discussion on nanotechnologies (NT), including health and environment, customer and societal benefits, product stewardship, or transparency.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.00	+++	+++	+++	+++
Outcomes and impact	The NanoMeter tool has subsequently been expanded in scope for the observatoryNANO project to cover other sectors and themes (new url: http://www.observatorynano.eu/project/questionnaire/nanometer?newid)..			
Overall Assessment	The NanoMeter developed by the OBSERVATORYNANO project is substantially more comprehensive and possibly useful for industry. Therefore the "old" version of the NanoMeter is no longer as useful as when originally introduced in 2006.			

Content	Nanologue Scenarios			
Date	2006			
Content Type	Reading document (online and printable)			
Content Focus	NT Risks & Implications			
URL of Content	http://www.nanologue.net/custom/user/Downloads/Nanologue_we-need-to-talk.pdf			
Target Audience	Lay public, policy makers, researchers (6a, 6b and 6c), NGOs and civil organizations			
Content details	Document presenting three scenarios of how nanotechnology could develop, and the regulatory, safety and social implications that each scenario could bring			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	++++	++++	+++	++++
Outcomes and impact	The Nanologue scenarios were among the first attempts to think on the long term implications of nanotechnology			

	from the point of view of regulation, societal benefits, human health and environment risk.
Overall Assessment	Although written back in 2006, the Nanologue Scenarios is a useful reference document to imagine the long term implications of nanotechnology. The scenarios had year 2015 as the "finish point" but similar scenarios could be created using this document as model.

Project	**7. NANOTOTOUCH**
Funding Scheme	FP7
URL	http://www.nanototouch.eu/
Project Focus	Outreach to the general public and content provision; Education & Skill development
Project Purpose	NANOTOTOUCH is a project aimed at communicating nanotechnology through a completely new methodology, which is aimed at pushing science communication to its extreme. In fact, the revolutionary concept behind this project stands in the re-collocation of science from the standard perspective of a top-down communication, to a more active involvement of the public; thus science will no longer exist as a separated apparatus from the rest of society.

Content	OpenLab Handbook			
Date	2010			
Content Type	Reading document (online and printable)			
Content Focus	NT Communication; NT Knowledge			
URL of Content	Not available online			
Target Audience	Educators			
Content details	This handbook and its appendices present professional guidelines on how to establish an Open Nano Lab or a Nano Researcher Live area in a science museum / science centre in cooperation with a local partner university. The construction of such areas requires individual planning depending on the local circumstances, and thus this work cannot be seen as a complete set of instructions, but far more as a guidance manual containing the experiences gathered in the 'Open Research Laboratory' of the Deutsches Museum in a condensed form. The handbook comprises an appendix with a list of "nano-products" and one with a list of "Nano-demonstrations"			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	+++++	++++	++++	++++
Outcomes and impact	The guide was effectively implemented in the other museums that were partners of the project.			
Overall Assessment	This handbook is very useful for establishing new "Open Nano Labs" in museum settings; it also provides general information on how to communicate nanotechnology effectively with lay public, and how to bring scientists closer to the wider public as well as improve their communication skills. The handbook also provides useful information for setting street labs, or other "open-air science shows" on nanotechnology, and could also be useful for teachers for setting small school nano-shows.			

Project	**8. NANOTV**
Funding Scheme	FP7
URL	http://www.youris.com/Nano/NANOTV
Project Focus	Outreach to the general public and content provision
Project Purpose	The project aim was the development of public awareness on European nano-research in all European countries through television media (in the form of video news releases) and the internet.

Content	NANO-TV Videos			
Date	2011			
Content Type	Videos			
Content Focus	NT Knowledge; NT Risks and Implications			
URL of Content	http://www.youris.com/Nano/NANOTV			
Target Audience	Lay public; educators; students			
Content details	The Nanotechnology Education Tree provides an introduction to nanotechnology and how it can be applied in different business and industry sectors. It also provides information on societal aspects, potential risks, the need for standards, some of the myths surrounding nanotechnology, a timeline of some of the key developments, and links to various EU-funded projects.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	+++	++++	+++++	++++
Outcomes and impact	The NanoEducation Tree was dapted and updated from the Nanoforum Education Tree as part of the activities of the NANO-TV project			
Overall Assessment	This resource could be useful for lay public wanting to have a first overview on nanotechnology, or by educators wanting to bring nanotechnology knowledge in class using a multimedia tool. The only limit of this tool is a predominance of long written text (no images or videos embedded).			

Content	NanoEducation Tree			
Date	2011			
Content Type	Online mapping tool			
Content Focus	NT Knowledge			
URL of Content	http://www.nano.org.uk/educationtree/			
Target Audience	Lay public; students, educators			
Content details	Fourteen different Videos covering different applications of nanotechnology, ranging from medicine, to energy, environment and ICT.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	++++	++++	+++	++++

Outcomes and impact	The videos were not widely disseminated during the project time and a dedicated project website was not created. At the end of the project the videos were combined in a DVD which was distributed at conferences like Euronanoforum 2011. Videos available at youris.com
Overall Assessment	The videos are a good source of basic information on nanotechnology applications, and cover topics that are interesting for the lay public as well as for teachers and students. Videos don't cover ELSA and EHS impact.

Project	**9. NANOYOU**			
Funding Scheme	FP7			
URL	www.nanoyou.eu			
Project Focus	Outreach to the general public and content provision; Education and skill development			
Project Purpose	aims to increase young people's basic understanding on nanotechnologies (NT) and to engage in the dialogue about its ethical, legal and social aspects (ELSA) through a strong school program for students aged 11-18 and a wide range of activities in Science Centres for those aged 18-25			
Content	NANOYOU Posters			
Date	2011			
Content Type	Poster			
Content Focus	NT Knowledge			
URL of Content	http://nanoyou.eu/en/component/content/article/77-posters-and-presentationsx/297-nanoyou-posters-nanotechnology-resources-education.html?directory=160&Itemid=160			
Target Audience	Students;educators; lay public			
Content details	Five A5 posters that cover fundamental aspects of nanoscience, and application of nanotechnology in medicine, energy, environment and ICT.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	+++++	++++	++++
Outcomes and impact	Posters are licences as Creative Commons Non-Commercial Share Alike 3.0 so they can be adapted by the user. Posters are translated in 13 languages and have been used in many schools that participated in the project. Teachers reported keeping them in the classroom as a tool for reminding students' basic concepts of nanotechnology. Students tend to find posters too informative and not enough engaging (they tend to prefer multimedia tools)			
Overall Assessment	Good tool for student and teachers, also useful for other settings where dissemination of nanotechnology to the general public is implemented (focus groups, café' scientific, outreach events in street or indoor, etc.). The posters don't cover ELSA and EHS.			

Content	Discover the nanoworld

Date	2010			
Content Type	Power Point Presentations			
Content focus	NT Knowledge			
URL of Content	http://nanoyou.eu/en/component/content/article/77-posters-and-presentationsx/298-nanoyou-power-point-presentations-nanotechnology-resources-education.html?directory=160&Itemid=160			
Target Audience	Students (secondary); Educators; lay public			
Content details	This power point presentation describes basic concepts of nanotechnology, methods of fabrication and characterization, as well as applications.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	+++	++++	++++	+++++
Outcomes and impact	The Nanoyou power point presentations were used by most teachers that participated in the Nanoyou project. The PPTs are available only in English but they are licences as Creative Commons Share Alike 3.0 so they can be adapted by the user or translated.			
Overall Assessment	The power point presentations are a useful resource for teachers, educators or communicators to deliver basic information on nanotechnology.			

Content	Discover the benefits and risks for developed and developing countries			
Date	2010			
Content Type	Power Point Presentations			
Content focus	NT Risks & Implications			
URL of Content	http://nanoyou.eu/en/component/content/article/77-posters-and-presentationsx/298-nanoyou-power-point-presentations-nanotechnology-resources-education.html?directory=160&Itemid=160			
Target Audience	Students (secondary);Educators; lay public			
Content details	The PPT describes the opportunities and risks of nanotechnologies for developing countries and investigates issues like the “nano-divide”			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	+++	++++	++++	+++++
Outcomes and impact	The Nanoyou power point presentations were used by most teachers that participated in the Nanoyou project. The PPTs are available only in English but they are licences as Creative Commons Share Alike 3.0 so they can be adapted by the user or translated.			
Overall Assessment	This power point presentation is a useful resource for teachers, educators or communicators to deliver basic information on risks of nanotechnology.			

Content	NANOYOU Film
Date	2010
Content Type	Video

Content Focus	NT Knowledge			
URL of Content	http://nanoyou.eu/en/component/content/article/3-audiovisual-materials/79-nanoyou-film.html?directory=83&Itemid=83			
Target Audience	Students (secondary); Educators; lay public			
Content details	The NANOYOU film is an overview of nanoscience and nanotechnology applications. It was shot by Nanoscience Centre at Cambridge University involving young scientists who explain nanoscience in a simple and enjoyable way.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.75	+++++	+++++	++++	+++++
Outcomes and impact	The video won the Best Short Film SCINEMA 2010 award. It has been viewed thousands of times through YouTube, Athena Web and the EU Cordis website and is currently subtitled in Danish and Hungarian. The video is licenced as Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License therefore it can be subtitled in different languages upon permission.			
Overall Assessment	Excellent tool for a large number of stakeholders, especially young people who rated it full of information, interesting, funny and dynamic and with great images. The video focuses mainly on the beneficial applications of nanotechnology, and only marginally mentions ELSA issues. Because of this, its message is not balanced.			

Content	Virtual Nano Lab			
Date	2010			
Content Type	Virtual lab			
Content Focus	NT Knowledge			
URL of Content	http://nanoyou.eu/en/component/content/article/45-virtual-experiments/74-virtual-nano-lab-construct-an-electronic-nose.html?directory=4&Itemid=4			
Target Audience	Students;educators; lay public			
Content details	A virtual lab showing a “real life” experiment: the construction of an electronic nose for sensoring chemicals. The user enters a Virtual Nano Lab and has to construct the sensor and can test it at the end. Two versions are available: beginner level and advanced level			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	+++++	+++	++++	+++++
Outcomes and impact	The virtual tools are highly accepted by students and most of the teachers. Implementing virtual tools is highly related to teachers’ habits and availabilities of infrastructure at schools and at students’ homes. the students appreciate the computer game approach, but the usability and the challenge of the experiments have to be appropriate (according to age, internet connectivity and virtual experiences in general). The Nano Virtual Lab is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License.			
Overall Assessment	The Virtual Nano Lab is a useful multimedia tool for engaging young people and teachers in learning nanotechnology.			

Content	NANOYOU Lab Experiments			
Date	2010			
Content Type	Hands-on activity kit			
Content Focus	NT Knowledge			
URL of Content	http://nanoyou.eu/en/virtual-lab/hands-on-activities.html?view=alphacontent			
Target Audience	Students;Educators; Lay public			
Content details	Four different lab experiments that can be performed in a school or in science museum/centre. The experiments have different levels of difficulty and come in two versions: one set for the 11-13 age group and one set for the 14-18 age group. The experiments cover fundamental concepts of nanoscience and some concrete examples of applications, like nano-textiles. The four experiments come with short videos that exemplify their realization and provide useful images. Teacher background reading, student reading and laboratory factsheets are provided.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.75	++++	+++++	+++++	+++++
Outcomes and impact	Experiments were evaluated as the most successful instruments by teachers and students that participated to the NANOYOU project. Those experiments that are experienced during teacher training sessions are implemented more often. The interactivity and the possibility for trying and observing effects were appreciated. Experiments that use or are connected to a "real life" application are very successful. Short videos demonstrating the experiments are very helpful for the teachers. Student material is translated in 13 languages. The NANOYOU Lab Experiments are licensed under a Creative Commons Attribution-Non Commercial Share Alike 3.0 Unported License, therefore the documents can be adapted. One of the NANOYOU Laboratory experiment was adapted by some teachers to kindergarten level.			
Overall Assessment	Hands-on activities such as lab experiments are very successful with teachers and students. They are also a useful tool to engage lay public in testing nanotechnology if "real life" nanotechnology products are used.			

Content	NANOYOU Teacher training kit
Date	2010
Content Type	Reading material (online and printable)
Content Focus	NT Communication; NT Knowledge; NT Risks & Implications
URL of Content	http://nanoyou.eu/en/nano-educators/teacher-training-kits.html?view=alphacontent
Target Audience	Educators
Content details	The training kit is a document that covers fundamental concepts of nanoscience and applications of nanotechnologies. It is divided in 11 chapters. Cross-references are in place to connect the different parts of the kit and to connect it to the NANOYOU Lab Experiments. ELSA and EHS topics are covered, as well as ideas for teachers on how to introduce nanoscience to class. The kit includes references to the other knowledge and dialogue tools developed by the NANOYOU project.

Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.75	++++	+++++	+++++	+++++
Outcomes and impact	The NANOYOU teacher training kit is licensed under a Creative Commons Attribution-NonCommercial Share Alike 3.0 Unported License, therefore the content can be adapted. The kit is only available in English. The kit originally written during the NANOYOU project was further expanded to include references to the TIMEFORNANO project content. The kit was combined in one large EC Publication and renamed "Nanotechnologies: Fundamentals, Applications, Implications and Hands-On Activities". The electronic version of the EC publication is expected to be published in late 2012, and the printed version possibly in 2013.			
Overall Assessment	The NANOYOU teachers training kit is a comprehensive and up-to date document that covers fundamental aspects of nanotechnology and applications in areas of public interest like medicine and environment. It is an excellent source of information, not only for teachers, but for anyone interested in nanotechnology.			

Content	Memory game			
Date	2010			
Content Type	Game			
Content Focus	NT Knowledge			
URL of Content	http://nanoyou.eu/en/component/content/article/14-nano-memory-game/77-nanoyou-memory-game-nanotechnology-education-resources.html?directory=6&Itemid=6			
Target Audience	Students; Lay public			
Content details	This is a card game where participants work as singles or groups. The game follows he format of a conventional memory game with the difference that to an image corresponds a definition. The aim of the game is to experience and study NT in the three sub-areas (medicine, energy and the environment, and ICT) in an interactive an engaging way. The card game is available in 13 languages.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.5	++++	++	++++	++++
Outcomes and impact	This resource is licensed under a Creative Commons Attribution-NonCommercial Share Alike 3.0 Unported License therefore the content can be adapted and translated. The memory game was assessed by the students and teachers that participated to the NANOYOU project as too difficult. However, the tool as such was assessed positively. An electronic version would have been appreciated, as well as a FAQ sheet to provide extra information on the content of each card.			
Overall Assessment	The NANOYOU memory game is a useful knowledge tool however is mostly suitable for students of secondary schools since its content is too technical for youger students. This tool can also be used with general public.			

Content	Jigsaw puzzle
Date	2010
Content Type	Game

Content Focus	NT Knowledge			
URL of Content	http://nanoyou.eu/en/component/content/article/13-jigsaw-puzzle/76-nanoyou-jigsaw-puzzle-nanotechnology-education-resources.html?directory=6&Itemid=6			
Target Audience	Students; Lay Public			
Content details	The Jigsaw puzzle is a card game to facilitate learning some aspects of nanotechnology, particularly some applications like the area of textiles. The game is available in 13 different languages.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	++++	++++
Outcomes and impact	The jigsaw puzzle was seen as useful by the teachers and students that test it during the NANOYOU project. An electronic version would have been successful as students prefere interactive tools. This resource is licensed under a Creative Commons Attribution-NonCommercial Share Alike 3.0 Unported License therefore the content can be adapted and translated.			
Overall Assessment	This card game is simple and can be adapted to suit different needs. It is not interactive so students might find it a bit boring.			

Content	Role play game			
Date	2010			
Content Type	Dialogue activity kit			
Content Focus	NT Risks & Implications			
URL of Content	http://nanoyou.eu/en/component/content/article/12-role-play/90-nanoyou-role-play-nanotechnology-education-resources.html?directory=5&Itemid=5			
Target Audience	Students; Lay public			
Content details	This is a card game workshop in which participants work in groups presenting different stakeholders' opinions with regards to a selection of nanotechnology applications that carry a "dilemma" with them. The dilemma covers a legal, social, safety or ethical aspect. The applications discussed in the game relate to energy, environment, ICT or medicine. The game is available in 13 different languages.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.5	+++	+++	++++	++++
Outcomes and impact	Teachers assess it as being more useful than students. It is more suitable for elder students and it needs time and additional information to prepare for the roles. Some dilemmas were assessed as being hard to understand. Teachers from other disciplines could support the discussions, making it an interdisciplinary activity. This resource is licensed under a Creative Commons Attribution-NonCommercial Share Alike 3.0 Unported License therefore the content can be adapted and translated.			
Overall Assessment	The role play game is a useful tool to bring initiate ELSA discussions in class and helps students to consider different stakeholder opinions, although some additional information (besides the one provided in the game itself) is needed to use the tool.			

Content	Time Machine			
Date	2010			
Content Type	Virtual game			
Content Focus	NT Knowledge			
URL of Content	http://nanoyou.eu/en/component/content/article/6-nt-time-machine/96-nanoyou-nt-time-machine.html?directory=6&Itemid=6			
Target Audience	Students			
Content details	The time machine is a tool for showing with concrete examples how nanotechnology can implement existing tools, like the light bulbs and mobile phone we now use. After choosing a need, the student will first "travel" back to points in the past and see solutions for different needs that were formerly used 50, 100 or more years. Then the student will "travel" to the present and explore a current or planned NT solution for the same need. They will be asked to compare the different solutions they've seen.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	++++	++++	+++++
Outcomes and impact	Students especially enjoyed the first part of the time machine, in particular the younger ones. For the quiz, some students had difficulties. It was seen positively that no previous knowledge about nanotechnologies was needed for doing it. Many of the teachers used it for English classes, especially because it was not directly related to nanotechnologies. Only 37 % of the online questionnaire respondents stated that they have experienced doing the time machine. But those who experienced it assessed it very good generally (around 85 % in all categories). Boys assessed this tool as more interesting and fun than girls. Internet speed can be an issue in the performance (and reported appreciation) of this tool.			
Overall Assessment	The time machine has the potential to embed nanotechnologies into wider contexts like technology development in general and also show daily life applications, meaningful for the youngsters. The advantage of this virtual tool is immediate interactivity and responsiveness of the tool and it's usage for self-studying. It is a tool well suited for youngsters and schools.			

Content	NT Virtual Dialogue
Date	2010
Content Type	Virtual game
Content Focus	NT Risks & Implications
URL of Content	http://nanoyou.eu/en/component/content/article/12-role-play/90-nanoyou-role-play-nanotechnology-education-resources.html?directory=5&Itemid=5
Target Audience	Students; Educators; Lay public
Content details	Six different computer animated stories which describes a problem, a solution enabled by nanotechnology, and the effects. For each story a dilemma is presented. The students are asked to offer their opinion and justify it. The NT

	Virtual Dialogue tool is available for two age groups: 11-13 and 14-18. The tool is only available in English.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	++++	++++
Outcomes and impact	Real life examples worked best, e.g. nanosocks were chosen mostly. The NT virtual dilemmas support ELSA discussions and are attractive in terms of animations and illustrations. They are aslo seen useful for gaining knowledge on nanotechnology. In general it is more appropriate for elder students above 14 years. More applications especially relevant for the daily life of the young target group and examples of different fields of applications could be given. The NT Virtual Dialogue is a licensed with a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.			
Overall Assessment	Although originally developed for students, this tool can be used by anyone online. This is a useful tool and its interactivity is well appreciated by youngsters. Its usefulness could be even more improved if users could discuss through an online platform. Internet speed can be an issue in the performance (and reported appreciation) of this tool.			

Content	All Connected!			
Date	2011			
Content Type	Travelling Exhibition			
Content Focus	NT Knowledge; NT Risks & Implications			
URL of Content	Not available online, only DVD			
Target Audience	Lay public; Educators			
Content details	The travelling exhibition was designed for science centers and museums, to engage young people (mainly in the 18-30 age group) in nanotechnology. The subject of this exhibition is 'ELSA issues related to nano & ICT'. To communicate this concept to the wide audience this was translated to 'ubiquitous computing', which is summarized in the catchy phrase “All connected!”. The idea is to link information about the various domains of nano-informatics and nano-electronics through an overview of the variety of “ubicomp” applications and services introduced on the consumers market, and the ELSA issues that relate to such applications and services. Vision of innovation and future research are also presented and discussed. The exhibition is structured in 5 parts, and in each the visitor is confronted with concrete examples of devices or technologies on the market, with innovations under research and with some ELSA issues connected with these. The exhibition is available as a DVD which containsthe text to replicate the panels, and the videos and software used in the exhibition.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	++++	+++	++++	++++
Outcomes and impact	The travelling exhibition was assessed in a positive way by the visitors, especially positively by those visitors that spent longer time in it (for those who spent 45 minutes or more, the appreciation score was 8/10). Some vistors thought it was too technical, and for this reason not appropriate for young children (it should be noted that the target audience of the exhibition is people aged 18-30 years). Although ELSA issues are covered in the exhibition,			

	some visitors would have liked ELSA topics to be discussed in a more explicit way. The travelling exhibition was displayed in Grenoble (La Casemate, CCSTI Centre)and is currently hosted at the Universcience (Paris).
Overall Assessment	The travelling exhibition could be re-presented in different locations, in full or in parts, and used also in other settings (besides a science museum), like monitoring station, street labs etc.

Project	**10. SWISS NANO CUBE**
Funding Scheme	The Innovation Society; Swiss Federal Institute for Vocational Education and Training (SFIVET); The Swiss Federal Office for Professional Education and Technology (OPET)
URL	http://www.swissnanocube.ch/en/platform-for-nanotechnology-knowledge-education/
Project Focus	Outreach to the general public and content provision; Education and skill development
Project Purpose	Swiss Nano-Cube is the Swiss education platform for micro and nanotechnology. The aim of the platform is to arouse interest for micro and nanotechnologies among students and young professionals and to provide comprehensive yet understandable information to teachers within the vocational education setting.

Content	Website			
Date	2010- ongoing			
Content Type	Informative website			
Content Focus	NT Knowledge			
URL of Content	http://www.swissnanocube.ch/en/nano-basics/			
Target Audience	Lay public; Educators; students			
Content details	Website with general information on nanotechnology, applications, consumer products, occupational safety, risk research, governance. Pages with additional information on each topics are available only in German.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.5	++++	++++	+++++	+++++
Outcomes and impact	The platform "Swiss Nano-Cube" was awarded a "Best of 2012" certificate in the category "e-learning" (Innovation Prize IT 2012 at the CeBIT exposition)			
Overall Assessment	The website provides accurate information on nanotechnology. However, the format used is the conventional one: fairly long written articles and no multimedia content.			

Content	Nanorama Loft
Date	2012
Content Type	Online mapping tool
Content Focus	NT Knowledge
URL of Content	http://www.swissnanocube.ch/nanorama/?L=3
Target Audience	Lay public; Educators; Students
Content details	The Nanoroma Loft is a virtual loft with 42 hidden everyday products containing nanomaterials or being enhanced

	by nanotechnology. The user can find the products by moving themouse on the different objects. Every product comes up with a question: the user can answer and see his/her knowledge score. After answering the question the user has the possibility to click and open a "further information" box on the item selected.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.75	+++++	+++++	++++	+++++
Outcomes and impact	This multimedia tool is excellent to engage the lay public, especially young people, on nanotechnology. Its interactivity makes learning also fun.			
Overall Assessment	Excellent tool for communicating nanotechnology and raising curiosity about its concrete applications. ELSA and EHS are not covered so it is not balanced (only beneficial aspects are presented).			

Content	Nano Teach Box			
Date	2010			
Content Type	Teacher training material			
	NT Knowledge			
URL of Content	http://www.swissnanocube.ch/en/nanoteachbox/#c2709			
Target Audience	Educators			
Content details	The Nano Teach Box is made of teaching modules on nanoscience and nanotechnology (comprising power point slides and videos), reading resources and teacher training activities (all content is only in German). There are seven teaching modules available that cover numerous aspects (from nano-chemistry to applications).			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.25	+++	+++	+++	++++
Outcomes and impact	The experiments offered in the training kit require a full-operational chemistry laboratory so cannot be performed in any school (the Nano Teach Box is intended for vocational school). The experiments don't cover applications of nanotechnology.			
Overall Assessment	The Nano Teach Box has good content for teachers, especially vocational teachers. The modules offered cover fundamental aspects of nanoscience and explain well some laboratory experiments (synthesis of nanomaterials). Nanotechnology ELSA and EHS is not covered therefore the content of the teacher kit is not balanced.			

Project	**11. TIME FOR NANO**
Funding Scheme	FP7
URL	http://www.timefornano.eu/
Project Focus	Outreach to the general public and content provision; Education and skill development
Project Purpose	The purpose was to engage young people and students in learning about nanotechnologies' benefits and to raise awareness of the risks and the critical issues which surround the development of nanotechnology.

Content	Nano Kit			
Date	2010			
Content Type	Hands-on activity kit			
Content Focus	NT Knowledge			
URL of Content	http://www.timefornano.eu/nanokit			
Target Audience	Students; Educators; Lay public			
Content details	This kit is designed to introduce students and lay public to the world of nanotechnology and nanoscience through entertaining and interactive activities. The kit is based on the inquiry-based learning approach, specifically developed in science centres and science museums, and is constituted of hands-on and interactive activities in which the public is not passive but can understand through experimenting things. There are a total of 9 activities, translated in 9 languages..			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	++++	++++	+++++
Outcomes and impact	The kit was distributed as a physical box to 200 science centres and museums and to 20 NANOYOU schools and received a great success. The kit is currently only available in its online and printable form.			
Overall Assessment	Hands-on activities are great at engaging lay public and young people in particular in learning about nanotechnology. The Nano Kit is based on an enquiry-based learning approach and this is a good added value as it increases curiosity of the public.			

Content	Play Decide for Time for Nano			
Date	2010			
Content Type	Dialogue activity kit			
Content Focus	NT Risks & Implications			
URL of Content	http://www.timefornano.eu/nanokit			
Target Audience	Lay public; Students; Educators			
Content details	This card board game is a variant of the game 'Decide' (www.playdecide.com). This version was made especially for the Time for Nano kit. 'Decide' is a discussion game intended for young people in which the ethical and social issues arising from nanotechnologies are discussed. It works best when played by 4 to 8 people and it takes about an hour and a half to play. Two versions are available, senior and junior. In the junior version the back of the cards has pictures that can be used to tell a story where nanotechnologies are involved. The players are free to choose as many cards as they wish and put them in a line so as to tell a story, like in a comic book. They can tell their story to their friends or write it down. This game is available only in English.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	++++	++++	+++++
Outcomes and impact	Playdecide is a card game that is being used to encourage discussion among lay public on various scientific topics, including nanotechnology. On the project page it is possible to see the results of the players' views on			

	nanotechnology: http://www.playdecide.eu/view_the_results/results/376/all. The Time for Nano version, especially the one dedicated to juniors, should help students and
Overall Assessment	The Playdecide card game is a useful tool to encourage the debate among people with different views on nanotechnology. The version dedicated to juniors should help them focus the discussion and consider viewpoints of the other players.

Content	Nanolife			
Date	2011			
Content Type	Video			
Content Focus	NT Risks & Implications			
URL of Content	http://www.youtube.com/watch?v=gFLsowmBCMs&list=PL7CF448195F8640AB&index=4&feature=plcp			
Target Audience	Students; Lay public			
Content details	The video was produced by students as a result of an open competition that asked them to illustrate through a video benefits and possible risks of nanotechnology. Students could use a variety of formats and could imagine various products (real or imaginary). In this video the risk of over-using nanotechnology is illustrated and the social implications it might have. Video is in French with English subtitles.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.5	+++	++++	+++	++++
Outcomes and impact	This video is one of the nine videos that were selected as winners of the 2011 Time for Nano Video Competition.			
Overall Assessment	This video shows with a simple example the possible implications of over-using nanotechnology.			

Content	Titina Tag			
Date	2010			
Content Type	Video			
Content Focus	NT Risks & Implications			
URL of Content	http://www.youtube.com/watch?v=9sngsNmOl9E&list=PL51C925FDBAE8B91C&index=1&feature=plpp_video			
Target Audience	Students; Lay public			
Content details	The video was produced by students as a result of an open competition that asked them to illustrate through a video benefits and possible risks of nanotechnology. Students could use a variety of formats and could imagine various products (real or imaginary). In this video the risk of losing a person personal safety is illustrated.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	++++	++++	+++	++++
Outcomes and impact	This video is the winner of the 2010 Time for Nano Video contest and it received a special mention for social implications. It is well done in its simplicity and well illustrates the risk of over-monitoring food using nanotechnology.			

Overall Assessment	This video shows with a simple example the possible implications of an improper use of nanotechnology to monitor peoples' life.

Project	**12. OBSERVATORY NANO**
Funding Scheme	FP7
URL	http://www.observatorynano.eu
Project Focus	Governance, legal, policy making; Risks and Implications
Project Purpose	The aim of the project was to support policy makers through the provision of wide-ranging scientific and economic analysis of nanoscience and nanotechnology developments, together with the assessment of ethical and societal aspects, impacts on environment, health and safety, as well as developments in regulation and standardization. The project focused on 10 technology sectors: Aerospace, Automotive & Transport; Agrifood; Chemistry and Materials; Construction; Energy; Environment; Healthcare; Information and Communication Technology; Security; Textiles

Content	Factsheets			
Date	2011			
Content Type	Reading material (online & printable)			
Content Focus	NT Knowledge			
URL of Content	http://www.observatorynano.eu/project/filesystem/files/ObservatoryNANO%20Factsheets%202012.pdf			
Target Audience	Policy makers; Industry			
Content details	Factsheets are a one-stop shop providing highly concise information on the most exciting nanotechnology developments in each of the ten technology sectors together with patent & publication data visualisations and EHS and societal analysis summaries: Aerospace, Automotive & Transport; Agrifood; Chemistry and Materials; Construction; Energy; Environment; Healthcare; Information and Communication Technology; Security; Textiles. There is one factsheet for each sector.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.75	++++	+++++	+++++	+++++
Outcomes and impact	The factsheets are comprehensive, accurate and very relevant for policy makers and all those interested in the development of nanotech products. They were cited by a number of different organisations and used by the EC for the review of the Action Plan.			
Overall Assessment	Although the factsheets are intended for policy makers and industry, they could be useful also for teachers, students (secondary school) and media			

Content	Briefings
Date	2010
Content Type	Reading material (online & printable)

	NT Knowledge			
URL of Content	http://www.observatorynano.eu/project/catalogue/B/			
Target Audience	Policy makers; Industry			
Content details	The Briefings focus on topics of particular interests in terms of economic potential, scientific breakthroughs, or impact on the European citizen. These four page reports offer wide ranging analysis in an easily accessible format. The topics covered include: Biodegradable Food Packaging; Automotive Plastic Glass; Photocatalysts for Water Treatment; Sensors for Explosives Detection; Insulation; Protection Textiles; Next Generation Sequencing; Thermoelectricity; Universal Memory; Protection Textiles. 33 Briefings are available.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.75	+++++	+++++	++++	+++++
Outcomes and impact	The briefings are comprehensive, accurate and very relevant for policy makers and all those interested in the development of nanotech products. They were cited by a number of different organisations and used by the EC for the review of the Action Plan.			
Overall Assessment	Although the briefings are intended for policy makers and industry, they could be useful also for teachers, students (secondary school) and media			

Content	General sector reports			
Date	2012			
Content Type	Reading material (online & printable)			
Content Focus	NT Knowledge			
URL of Content	http://www.observatorynano.eu/project/catalogue/2/			
Target Audience	Policy makers; Industry; Media and communication experts			
Content details	The general sector reports provide more detailed scientific and technological analysis for each of the ten technology sectors: Aerospace, Automotive & Transport; Agrifood; Chemistry and Materials; Construction; Energy; Environment; Healthcare; Information and Communication Technology; Security; Textiles. There is one report for each sector. These reports have been through three stages. Firstly, an interim document was drawn up by the responsible project partner, using a combination of desk research and interviews. At this point comments and input from the nanotechnology expert community were gathered (through interviews, workshops, and a questionnaire), in addition to feedback from other members of the project consortium. Finally, this data was utilised to produce a final version of the report.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.75	+++++	++++	+++++	+++++
Outcomes and impact	The general sector reports are comprehensive, accurate and very relevant for policy makers and all those interested in the development of nanotech products. These were not updated after the first year in response to identified needs of the target audience (the reports were too long for policymakers who preferred the format of factsheets and briefings).			

Overall Assessment	Although the general sector reports are intended for policy makers and industry, they could be useful also for teachers, students (secondary school) and media

Content	Developments in Nanotechnologies Regulations and Standards			
Date	2012			
Content Type	Reading material (online & printable)			
Content Focus	NT Governance			
URL of Content	http://www.observatorynano.eu/project/filesystem/files/ObservatoryNano_Nanotechnologies_RegulationAndStandards_2012.pdf			
Target Audience	Policy makers; Industry			
Content details	The document reports the changes in the regulatory landscape (and governance more broadly) of nanotechnologies. It covers: regulatory actions in the most relevant application areas of nanotechnologies; activities on nanoregulation in more than 20 countries worldwide; initiatives related to voluntary measures; and standards and international cooperation. This report includes also a Commentary about the overall evolution of nanotechnologies governance during the project time			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.5	+++++	++++	+++++	++++
Outcomes and impact	These annually updated reports were well received by those in the community, specifically NANOfutures network.			
Overall Assessment	The report is an excellent overview of the regulatory landscape for nanotechnologies. In addition to its declared target audience (policy makers and industry) it is an useful document for both media and for those of the general public interested to know what actions, both at National and European level, are being undertaken to regulate nanotechnologies and nanomaterials.			

Content	Market reports			
Date	2011			
Content Type	Reading document (online & printable)			
Content Focus	NT Industry Development			
URL of Content	http://www.observatorynano.eu/project/catalogue/3MR/			
Target Audience	Industry			
Content details	The reports are an economic analysis of ten technology sectors: Aerospace, Automotive & Transport; Agrifood; Chemistry and Materials; Construction; Energy; Environment; Healthcare; Information and Communication Technology; Security; Textiles. There is one report for each sector. There are 10 different market reports. The URL provided points to the ten documents.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	+++++	++++	++++
Outcomes and impact	Work eventually led to the landscaping activity – producing a map of EU industrial capability in nanotechnology			

	which was identified as lacking by the EC.
Overall Assessment	The reports are accurate and comprehensive, and are specifically for people with an interest in commercialization of nanotech.

Content	The European Nanotechnology Innovation Landscape			
Date	2011			
Content Type	Reading document (online & printable)			
Content Focus	NT Industry Development			
URL of Content	http://www.observatorynano.eu/project/filesystem/files/European_Nanotechnology_Landscape_Report.pdf			
Target Audience	Policy makers; Industry			
Content details	The report offers an overview of the nanotechnology landscape in Europe targeted at policy makers on all levels (local, regional, national and European). It furthermore examines how nanotechnology developments, and the solutions they enable, can help address some of the Grand Challenges that Europe is facing today such as: An ageing population, New energy economy, Sustainable food & environment, Intelligent, safe & connected world, Improved resource efficiency of industrial production. European nanotechnology companies' patent, publication and funding data is analyzed to provide a clearer picture of the European landscape. More than 100 European companies involved in nanotechnology have also been surveyed to examine what factors are of major concern to them, and how they perceive policy instruments influence their performance in a global business world			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	+++++	++++	++++
Outcomes and impact	Well receieved by the EC and used by other initiaitives in this space, including NANOfutures.			
Overall Assessment	Very exhaustive report on nanotechnology developments and their impact on industry and policy.			

Content	Nanobioethics (2nd Annual Report)			
Date	2010			
Content Type	Reading material (online & printable)			
Content Focus	NT Risks & Implications			
URL of Content	http://www.observatorynano.eu/project/filesystem/files/NanobioethicsApril2010.pdf			
Target Audience	Researchers (6c); Policy makers; NGOS and civil organizations			
Content details	The document is the 2nd Annual Report on Ethical and Societal Aspects of Nanotechnology. The report focuses on current discussions closely related to current developments of nanotechnology for biomedical, biological and agrifood applications.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.5	+++	+++	++++	++++
Outcomes and impact	The findings of the report are expected to be useful for reflections on choices by the scientific community and policy makers in science and technology policy dealing with nanotechnology.			

Overall Assessment	The document is somehow "dense" in some parts so it is not suitable for the lay public: however its topic is of sure interest for all those involved in the nanoethics debates.

Content	Ethical and Societal Aspects of Nanotechnology, ICT and Security (3rd Annual Report)			
Date	2011			
Content Type	Reading material			
Content Focus	NT Risks & Implications			
URL of Content	http://www.observatorynano.eu/project/filesystem/files/Nanoelectronics%20ICT%20securityreportfinal.pdf			
Target Audience	Policy makers; Researchers (6c)			
Content details	The reports summarises the ethical discussions that are connected to nanoelectronics and their ICT applications. The report is also the summary of a number of interviews that were conducted with experts in the field.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	+++	++++	+++++	++++
Outcomes and impact	The report highlights the existing distance between ICT research and development and ethical/social debates that are arising on the topic. The report notes how this gap should be addressed by integrating ELSA in ICT research (as it is now done in nanomedicine, for example)			
Overall Assessment	This report could be useful for media and science communicators, as ell as for teachers and secondary stipend looking for content on the topic			

Content	Communicating Nanoethics (4th Annual Report)			
Date	2012			
Content Type	Reading material (online & printable)			
Content Focus	NT Communication			
URL of Content	http://www.observatorynano.eu/project/filesystem/files/Communicatingnanoethicsreportfinal.pdf			
Target Audience	Policy makers; Researchers (6c)			
Content details	The Annual Report is an account of the activities being conducted in Europe to foster dialogue among different stakeholders (lay public, industry, scientists etc.). It also reviews communication to the public initiatives, and policy options. The Annual report also contains evaluation results for the "Toolkit for ethical reflection and communication" (see next entry)			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	++++	+++++	++++
Outcomes and impact	The Annual Report is an accurate account of communication and dialogue activities on nanotechnology. It is a good reference document for researchers interested in this topic (although it is "too dense" for the lay public)			
Overall Assessment	Media and science communicators; Researchers (6b and 6c)			

Content	Toolkit for ethical reflection and communication

Date	2010			
Content Type	Reading material (online & printable)			
Content Focus	NT Risks & Implications; NT Communication			
URL of Content	http://www.observatorynano.eu/project/filesystem/files/Toolkit%20full%20final%2022Jun2010.pdf			
Target Audience	Researchers (6c)			
Content details	This Toolkit for ethical reflection and communication does not claim to provide a definitive picture of all options in the ethical debate on nanotechnology. Its aim is to provide the reader with means to frame his/her own vision of the debate and to sharpen ethical awareness of the parties involved in the development of nanosciences and nanotechnologies. The kit aims at helping the dialogue between philosophy, science, industry, and society.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.25	+++	+++	++++	+++
Outcomes and impact	The toolkit has been tested in a number of workshops with large, medium and small groups of scientists. It has been generally assessed positively and have reached its goal to raise interest and curiosity in ethical reflections related to nanotechnologies. Some ideas for its improvement are reported in the "Communicating Nanoethics" document.			
Overall Assessment	Parts of the toolkit can be useful also for media and science communicators, as well as teachers and secondary school students.			

Content	Environment, Health & Safety & Impacts Reports			
Date	2010			
Content Type	Reading document (online & printable)			
Content Focus	NT Risks & Implications			
URL of Content	http://www.observatorynano.eu/project/catalogue/6/			
Target Audience	Policy makers; Researchers (6b)			
Content details	The reports are an analysis on the environment, health and safety impact of a number of technology sectors. Four documents are available: Environment EHS Analysis, Construction EHS Analysis, Agrifood EHS Analysis, and Automotive & Aeropsace EHS Analysis. The URL indicated points many documents.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	++++	+++++	++++
Outcomes and impact	The documents review the potential EHS impact of nanomaterial and then provide a good table (for each sector) that identifies the EHS impact of a number of specific applications. The table is an usefu tool that could be used by anyone interested in communicating EHS of nanotechnology			
Overall Assessment	The reports are accurate and provide tables that are easy to read and could be useful for media, science communicators, teachers and even secondary students.			

Content	Guide to responsible nano-business			
Date	2012			
Content Type	Reading material (online & printable)			
Content Focus	NT Industry Development			
URL of Content	http://www.observatorynano.eu/project/filesystem/files/GuideResponsibleNano_120307.pdf			
Target Audience	Industry			
Content details	The aim of the guide is to make small and medium size companies aware of the challenges and responsibilities in doing business with nanotechnologies. It provides some clear indications on actions to be taken to implement "responsible innovation", and some examples of "good practices"			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	++++	++++	++++	+++
Outcomes and impact	Feedback from the businesses taking part in the development was positive.			
Overall Assessment	The guide seems very practical and useful for anybody involved in the production and commercialization of nanomaterials and nano products.			

Content	Annual Report to the Public			
Date	2012			
Content Type	Reading material (online & printable)			
Content Focus	NT Knowledge			
URL of Content	http://www.observatorynano.eu/project/filesystem/files/Annual%20report%20for%20the%20public%202011-2012.pdf			
Target Audience	Lay Public			
Content details	This document is a summary of all the activities that have been undertaken by the ObservatoryNano project. It also offers short summaries of the different content that the project has produces: technical briefings, economic analysis, regulatory recommendations, EHS analysis etc.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.75	+++++	+++++	++++	+++++
Outcomes and impact	This document is an useful snapshot of the activities run by the project and is easy to read.			
Overall Assessment	This annual report is intended for the lay public and it could be also useful to teachers, students and media			

Content	NanoMeter
Date	2011
Content Type	Online mapping tool
Content Focus	NT Industry Development
URL of Content	http://www.observatorynano.eu/project/questionnaire/nanometer
Target Audience	Industry

Content details	The NanoMeter is a tool for the assessment of applications that are enabled by nanotechnologies. It covers aspects such as health, environment, ethics, and societal issues beyond standard product assessment.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	+++++	++++	++++
Outcomes and impact	This built upon the NanoMeter tool developed within the Nanologue project. Selected feedback was positive.			
Overall Assessment	The NanoMeter is very comprehensive and useful for small or large industries wanting to perform a preliminary assessment of their technology and the impact it might have.			

Project	**13. DEEPEN PROJECT**
Funding Scheme	FP6
URL	http://www.geography.dur.ac.uk/projects/deepen/NewsandEvents/tabid/2903/Default.aspx
Project Focus	Multistakeholder dialogue; risk and implications
Project Purpose	The DEEPEN project aimed at understanding the ethical challenges posed by emerging nanotechnologies in real world circumstances, and their implications for civil society, for governance, and for scientific practice. The

Content	Reconfiguring Responsibility			
Date	2009			
Content Type	Reading material			
Content Focus	NT Risks & Implications			
URL of Content	http://www.geography.dur.ac.uk/Projects/Portals/88/Publications/Reconfiguring%20Responsibility%20September%202009.pdf			
Target Audience	Policy makers; researchers (6c)			
Content details	The report is a summary of finding of the DEEPEN project which derive from a number of focus groups that were held during its duration. The workshops involved representatives from industry, policy makers, scientists, and general public.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.0	++++	++++	++++	++++
Outcomes and impact	The DEEPEN project threw light on the complexity of "public attitudes" or perceptions- leading to a need for matching sophistication in the ways social scientists and policymakers seek to map views of laypeople and engage practices of public deliberation and participation. The project also identified some "narratives" that are predominant during discussions on nanotech impact.			
Overall Assessment	The report is quite lengthy yet it provides some clear indications and recommendations to policy makers and social scientist on nanotechnology communication.			

Content	Deepening Dialogue: Debating Nanotechnology's Responsible Development

Date	2008			
Content Type	Video			
Content Focus	NT Risks & Implications			
URL of Content	http://www.youtube.com/watch?v=2AKUBwCWhiA&feature=plcp			
Target Audience	Policy makers; researchers (6c); lay public			
Content details	The video is a summary of the focus groups that were conducted during the DEEPEN project. The video shows original shooting and comments of participants to the workshops, which involved representatives from industry, policy makers, scientists, and general public.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	++++	++++
Outcomes and impact	The DEEPEN project threw light on the complexity of "public attitudes" or perceptions- leading to a need for matching sophistication in the ways social scientists and policymakers seek to map views of laypeople and engage practices of public deliberation and participation.			
Overall Assessment	The video is an excellent summary of the main issues that were discussed during the DEEPEN project, the questions and issues that were raised, the different positions that the stakeholders had.			

Project	**14. NANOCODE**
Funding Scheme	FP7
URL	http://www.nanocode.eu/mos/Frontpage/Itemid,1/
Project Focus	Risk and implications; multistakeholder dialogue
Project Purpose	This was a multistakeholder dialogue project providing inputs to implement the European Code of Conduct for Responsible Nanosciences & Nanotechnologies Research commenced in January 2010. The objective of NanoCode was to define and develop a framework aimed at supporting the successful integration and implementation, at European level and beyond, of the Code of Conduct (CoC) for nanosciences and nanotechnologies (N&N) research as developed by the European Commission.

Content	CodeMeter
Date	2011
Content Type	Online Mapping tool
Content Focus	NT Governance
URL of Content	http://www.nanocode.eu/content/view/245/117/ (file must be downloaded as xls)
Target Audience	Industry; Researchers (6a and 6b)
Content details	The CodeMeter is a self-assessment and learning tool to support stakeholders engaging with the principles and values of the EC Code of Conduct (voluntary regulatory scheme for stakeholders dealing with nanotechnology). The tool breaks down the EU-Code of Conduct's general principles and guidelines in form of questions with multiple option answers. Depending on responses given a scoring profile shows up at the end of the CodeMeter

	enabling the assessment of individual stakeholders' performance in relation to the EU-CoC principles and guidelines for action.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.5	++++	+++	++++	+++
Outcomes and impact	The CodeMeter allows companies or research institutions dealing with nanotechnology to verify their compliance with the voluntary EC Code of Conduct set up by the EC in January 2010.			
Overall Assessment	The CodeMeter is a good tool; however its usefulness is related to the perceived usefulness of the EC Code of Conduct itself, which right now is quite low both in academia and in industry.			

Content	Master Plan			
Date	2011			
Content Type	Reading document			
Content Focus	NT Governance			
URL of Content	http://www.nanocode.eu/files/NanoCode-MasterPlan.pdf			
Target Audience	Policy makers; Industry			
Content details	The MasterPlan is the result of the analysis and consultation activities carried out by the project. It relies on some clear outcomes unveiled by the consultation. In particular a number of positive and negative aspects (strengths / weaknesses) of the current EU-CoC as well as the need for a fundamental revision of it and the development of an implementation strategy in order to foster its future use and application.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	++++	++++	++++	+++
Outcomes and impact	The Master Plan provides some very clear recommendations on strengths and weakenesses of the EC Code of Consuct on Nanotechnologies and how this should be changed and adapted in the future. Discussion at the final project workshop revealed enthusiasm for such a tools, but a requirement for it to be broader than just nano, encompassing other KETs. The audience consisted of senior individuals from government, industry, academia and NGOs from across the globe.			
Overall Assessment	Although this tool should be implemented in the future, right now is a good resource for policy makers and industry.			

Project	**15. OECD WORKING PARTY ON NANOTECHNOLOGY**
Funding Scheme	Funded by Member Countries
URL	http://www.oecd.org/sti/nano/oecdworkingpartyonnanotechnologywpnvisionstatement.htm
Project Focus	Platforms and working groups; Governance, legal, policy making
Project Purpose	The mission of the Organisation for Economic Co-operation and Development (OECD) is to promote policies that will improve the economic and social well-being of people around the world. The OECD provides a forum in which governments can work together to share experiences and seek solutions to common problems. The OECD Working

	Party on Nanotechnology. was established in March 2007 to advise upon emerging policy issues of science, technology and innovation related to the responsible development of nanotechnology. It is a subsidiary group of, and receives its mandate from, the Committee for Scientific and Technological Policy (CSTP). in undertaking its work, the work of the WPN complements the activities of other OECD committees and other organisations. The OECD Chemicals Committee Working Party on Manufactured Nanomaterials (established in 2006) is working on international co-operation in health-related and environmental safety-related aspects of manufactured nanomaterials.

Content	Nanotechnology-related resources by country			
Date	N/A			
Content Type	Informative website			
Content Focus	NT Knowledge			
URL of Content	http://www.oecd.org/sti/nano/nanotechnology-relatedresourcesportalsnetworksandresearchfacilitiesbycountry.htm			
Target Audience	Researchers; Policy makers			
Content details	A webpage that summarizes all the Nanotechnology-related resources (portals, networks and research facilities) by country			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.5	+++	++++	+++	++++
Outcomes and impact	The format is traditional in the sense that is a simple list divided by country. There is no filter search.			
Overall Assessment	A simple directory where to find resources on nanotechnology in all the different countries, including knowledge portals. It is not complete (e.g., China is missing). This directory could be useful for teachers wanting to have access to research infrastructures in their region.			

Content	Planning Guide for Public Engagement and Outreach in Nanotechnology			
Date	2012			
Content Type	Reading material (online & printable)			
Content Focus	NT Communication			
URL of Content	http://www.oecd.org/sti/biotechnologypolicies/49961768.pdf			
Target Audience	Policy makers; Media or Science communicator			
Content details	The guide is the result of several workshops and surveys done to assess what strategies have been implemented in the different Member State to communicate and disseminate nanotechnology. Evaluations of best practices are provided, as well as lessons that should be learned by policy makers and practitioners dealing with communicating nanotechnologies. A series of recommendations are provided.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	++++	++++	+++++

Outcomes and impact	The guide is an excellent compendium of best practices, as well as recommendations for future actions on nanotechnology communication.			
Overall Assessment	The guide is a key reference document for anyone interested in communicating nanotechnologies to large public as well as to selected key stakeholders			
Content	Fostering Nanotechnology to Address Global Challenges: Water			
Date	2010			
Content Type	Reading material (online & printable)			
Content Focus	NT Knowledge			
URL of Content	http://www.oecd.org/sti/nano/47601818.pdf			
Target Audience	Policy makers; Industry			
Content details	This document reports on the key issues of water access; some important technologies for water purification and resource management; nanotechnology, water and industry; and key challenges and findings from discussions with stakeholders. It is intended to address policy issues faced by both developed and developing countries. The document also identifies policy recommendations for consideration and adoption.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.25	+++	+++	++++	+++
Outcomes and impact	This document is intended to help policy makers and industry representatives identifying key opportunities and challenges in using nanotechnology for water access.			
Overall Assessment	This is a useful document for policy makers and industry representatives, however it is too specialised for the general public.			

Content	The Impacts of Nanotechnology on Companies: Policy Insights from Case Studies
Date	2010
Content Type	Reading material (online & printable)
Content Focus	NT Industry Development
URL of Content	http://www.oecd.org/sti/biotechnologypolicies/46620081.pdf
Target Audience	Industry; Policy makers
Content details	The document compares international information on how different types of companies are affected by nanotechnology, how they use it in their innovative activities, how they acquire or develop relevant competences, as well as on the specific commercialisation challenges they face. It also looks at the different role that new and small as well as larger companies will play in the commercialisation of nanotechnology. This report, based on 51 company case studies, seeks to to add to previous studies and to suggest areas for future work. The case studies are drawn from 17 countries and cover a range of company sizes, nanotechnology sub-areas and fields of application. They provide qualitative insights into the commercialisation of nanotechnology from the viewpoint of companies and thus complement studies which have relied primarily on publication and patent data or statistical surveys. NB: only the Executive Summary is freely available; the full report is available here (at a cost):

	http://www.oecd.org/sti/theimpactsofnanotechnologyoncompaniespolicyinsightsfromcasestudies.htm			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	+++	++++	++++	++++
Outcomes and impact	This document should be very useful for industry and policy makers.			
Overall Assessment	Only a short summary is freely available, so this limits the access to the document significantly. However, the summary is fairy comprehensive and should be useful for industry representatives and policy makers.			

Project	**16. OECD WORKING PARTY ON MANUFACTURED NANOMATERIALS**
Funding Scheme	Funded by Member Countries
URL	http://www.oecd.org/env/chemicalsafetyandbiosafety/safetyofmanufacturednanomaterials/sponsorshipprogrammeforthetestingofmanufacturednanomaterials.htm
Project Focus	Platforms and working groups; Governance, legal, policy making
Project Purpose	OECD's Working Party on Manufactured Nanomaterials (WPMN) launched a Sponsorship Programme in November 2007. The programme involves OECD member countries, as well as some non-member economies and other stakeholders to pool expertise and to fund the safety testing of specific Manufactured Nanomaterials (MNs). In launching this Sponsorship Programme, the WPMN agreed on a priority list of 14 MNs for testing (based on materials which are in, or close to, commerce). They also agreed a list of endpoints for which they should be tested. Much valuable information on the safety of MNs can be derived by testing a representative set for human health and environmental safety.

Content	Nanosafety at the OECD: The First Five Years 2006-2010			
Date	2011			
Content Type	Reading material (online & printable)			
Content Focus	NT Risks & Implications; NT Governance			
URL of Content	http://www.oecd.org/env/chemicalsafetyandbiosafety/safetyofmanufacturednanomaterials/47104296.pdf			
Target Audience	Media and science communicators; Lay public			
Content details	The document is a review of five years of activities of the WPMN and highlights processes put in place for monitoring the safety of nanomaterials and fill several knowledge gaps.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.5	+++++	++++	++++	+++++
Outcomes and impact	N/A			
Overall Assessment	The review is a good snapshot of the activities carried out by the WPMN and is written in a way general public can access it and get information on a subject of public interest, i.e. safety.			
Project	**17. NANOSMILE**			
Funding Scheme	Commissariat à l'Energie Atomique (CEA)			
URL	www.nanosmile.org			

Project Focus	Risk and Implications; Governance, legal, policy making
Project Purpose	The project aims to prepare and host training activities, and communicate information about the potential risks of nanomaterials.

Content	NanoSMILE Website			
Date	2008			
Content Type	Informative website			
Content Focus	NT Knowledge; NT Risks & Implications			
URL of Content	www.nanosmile.org			
Target Audience	Researchers; Teachers; Lay public			
Content details	The website gives a very good overview of the risk of nanotechnologies, from fundamental concepts of the assessment of rink in science, to specific information on nanomaterials.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	+++	++++	++++	++++
Outcomes and impact	The website is packed of useful information. However, it is quite full text which has not been proofread by an English speaker and has several language mistakes which make the reading difficult. The animations and videos would benefit from a voice explaining the process illustrated.			
Overall Assessment	The Nanosmile website is a good source of information on risk and safe handling of nanomaterials. It is a resource that could also be used by general public interested in learning more about this topic. The layout could be improved			

Content	NanoSMILE cartoons			
Date	2008			
Content Type	Video			
Content Focus	NT Knowledge			
URL of Content	The nine episodes of Nanosmile Show are designed to be understandable by public at large. The cartoos cover the most important information relating to nine basic nanotechnology issues in 4minutes			
Target Audience	Teachers; Lay public; Students			
Content details	http://www.nanosmile.org/index.php?option=com_content&view=article&id=406&Itemid=297&lang=en			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.5	+++	++++	+++	++++
Outcomes and impact	The videos are quite simple and illustrate well some fundamental aspects of nanotechnology, including risk of nanoparticles and questions about safety of consumer products. The graphics are not particularly appealing. The cartoons are designed for the general public so the language is appropriate.			
Overall Assessment	Good tool to disseminate some fundamental aspects of nanotechnology, including ESA and EHS, suitable in particular for a young audience			

Project	**18. NANOCHANNELS**
Funding Scheme	FP7
URL	http://www.nanochannelsfp7.eu/
Project Focus	Outreach to the general public and content provision; Multistakeholder dialogue; Risks and implications
Project Purpose	The project used different communication channels (media, radio, social media etc.) to inform and engage the general public and different key stakeholders (like NGOs and industry) in the debating about the risks and social implications of nanotechnologies. Students were also involved both in the product of content and in debate through several school debates that were conducted in various locations around Europe.

Content	Clips			
Date	2011			
Content Type	Video			
Content Focus	NT Risks & Implications			
URL of Content	http://www.youtube.com/user/NanochannelsEU?feature=watch			
Target Audience	Students; Lay public			
Content details	The clips are short movies presenting youth opinion and attitudes on different "nanotechnology dilemmas": at the end of each the viewer is encourage to engage in an opinion poll. Each clip refers to a specific application of nanotechnology that influence young people's daily life. There are 4 short clips.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	++++	++++	+++	++++
Outcomes and impact	The clips were viewed online (though YouTube) on average by about 600 viewers. The clips are short and simple to understand			
Overall Assessment	Multimedia tools in general are useful for engaging young public.			

Content	The Guardian Nanotechnology World microsite
Date	2011
Content Type	Informative website
Content Focus	NT Knowledge; NT Risks & Implications
URL of Content	http://www.guardian.co.uk/nanotechnology-world
Target Audience	Lay public, NGOs and civil society groups, industry; students
Content details	The site was launched in May 2011 and has been a great success. On the microsite there are articles on applications of nanotechnology and ELSA questions; The reader can take a poll regarding challenging questions like the one published on 30 May 2012: Should nanotechnology be used to further advances in areas such as stem cell research? The Guardian microsite offers rederas the opportunity to learn more oabout nanotechnology, express opinions on its development, raise questions and share the content through Facebook and Twitter.

Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.75	+++++	+++++	++++	+++++
Outcomes and impact	Since the launch the site has had 55,956 unique users creating 98,202 page impressions. Although every article in the site allows the reader to leave comments, this feature has not been used much, confirming that social media is not an easy platform for engaging debate among different stakeholders.			
Overall Assessment	The website is a great repository of articles written for the lay public about topics of public interest.			

Content	El Mundo Nanotechnology microsite			
Date	2011			
Content Type	Informative website			
Content Focus	NT Knowledge; NT Risks and Implications			
URL of Content	http://www.elmundo.es/elmundo/nanotecnologia.html			
Target Audience	Lay public, NGOs and civil society groups, industry; students			
Content details	The website comprises numerous articles (in Spanish) on nanotech applications; some of these articles have been translated are available at The Guardian Microsite. The El Mundo microsite has also articles about nanotech research being conducted in Spain. Every month, El Mundo has developed opinion polls, to engage the readers in the debate about nanotechnology and ELSA issues. Since March 2012, 2,860 people have participated in these polls.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.75	+++++	+++++	++++	+++++
Outcomes and impact	The success of the microsite has been significant, with 500,000 page views in the first 9 months (June 2011 – March 2012). The readers of this microsite spanned the globe, and attracted readers beyond Europe, including Mexico, Argentina and the United States. On 15 April 2012 EL Mundo published an article titled Graphen, the supermaterial, which quickly became El Mundo's most viewed articled of all-time (http://www.elmundo.es/elmundo/2012/04/13/nanotecnologia/1334331314.html).			
Overall Assessment	The website is a great repository of articles written for the lay public about topics of public interest.			
Content	Moebius Scienza Podcasts			
Date	2011-2012			
Content Type	Podcasts			
Content Focus	NT Knowledge; NT Risks and Implications			
URL of Content	http://www.moebiusonline.eu/fuorionda/nanochannels/Nanochannels_index.shtml			
Target Audience	Lay public			
Content details	Moebius Scienza radio program (aired in Italy by Radio24) made various programs on nanotechnology, ranging from nanotechnology in sports, food, and issues like labelling of consumer products. Programs are available as Podcasts (and a written summary is also provided). In Italian.			

Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.5	++++	+++++	++++	+++++
Outcomes and impact	Listeners of the Moebius Science program were engaged using a so called "circular format" of communication. After listening to the program (live or through the podcasts) they were prompted to reply to a survey on the topic that was discussed (e.g. labelling of nanotechnology products). Facebook and Twitter were also used to engage the public in the debate, and reply to the survey. By following this format, a fairly high number of responses were collected (about 150 for each survey)			
Overall Assessment	Radio program remain a valid form of science communication, and can reach public not necessarily experts in science (occasional listeners) as well as interested listeners. If this communication channel is matched with a wise use of social media, it can be a successful way of engaging the public in expressing their views on nanotechnology.			

Content	Round table debate in Milan
Date	2012
Content Type	Video
Content Focus	NT Governance; NT Industry development
URL of Content	http://www.triwu.it/sommario-nanotecnologie/-/asset_publisher/5Mct/content/le-aziende-e-i-prodotti-nanotecnologici-ma-le-regole?p_r_p_564233524_categoryId=28030
Target Audience	Lay public; Policy makers; Industry; Researchers
Content details	On the 2nd of April different stakeholders met to discuss the gap of regulation on nanotechnologies and the impact this has on industries. The attendees discussed the issue of corporate responsibility, voluntary schemes, and communication requirements, both for researchers for academia and for industry.

Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.25	+++	+++	++++	+++
Outcomes and impact	The rand table debate lasted about one hour and participants at the end reported that it was a useful experience and that more of such events should take place. The video is fairly long and it was not edited, so a shorted version could be useful.			
Overall Assessment	The roundtable event was useful for its participants and the video is an accurate reflection of what was discussed on that day.			

Project	**19. NANOIMPACTNET**
Funding Scheme	FP7
URL	http://www.nanoimpactnet.eu/
Project Focus	Risk and Implications
Project Purpose	NanoImpactNet is a multidisciplinary European network on the health and environmental impact of nanomaterials. NanoImpactNet aims at creating a scientific basis to ensure the safe and responsible development of engineered nanoparticles and nanotechnology-based materials and products, and support the definition of

	regulatory measures and implementationof legislation in Europe.

Content	Nomenclature			
Date	2010			
Content Type	Reading document			
Content Focus	NT Knowledge			
URL of Content	http://www.nanoimpactnet.eu/uploads/Cluster/NIN%20Nomenclature%20-%20Version%203%20-%20final.pdf			
Target Audience	Researchers; Policy makers			
Content details	Nomenclature document that was used by all the partners during the project to set common definitions. This is an Open Access document, distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0/)			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	+++++	
Outcomes and impact	The document was used as a reference document during the NanoImpactNat project, however it remains an useful resource for policy makers, industry and researchers			
Overall Assessment	Clear and comprehensive overview of nanotechnology nomenclature. It is more suitable for interested stakeholders (policy makers, industry) than general public as it is pretty technical			

Content	Nanosafety cluster overview			
Date	2010			
Content Type	Reading document (online & printable)			
Content Focus	NT Knowledge			
URL of Content	http://www.nanoimpactnet.eu/uploads/file/NanoSafetyCluster/Compendium2012_u2_web.pdf			
Target Audience	Researchers (6a & 6b); Policy makers			
Content details	Compendium of European projects focusing on nanotechnology & safety (for the environment and for humans). There is a description of each project and summary of results. At the beginning of the project there is a useful matrix that matches “research themes” with “NanoSafety projects”.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	+++++	+++
Outcomes and impact	The document is a good review of NanoSafety Projects and it is a valid reference document for interested stakeholders.			
Overall Assessment	Useful for interested stakeholders; however it is not suitable for general public as it is very specific.			

Project	**20. ENRHES**
Funding Scheme	FP7

URL	deceased
Project Focus	Risk and Implications
Project Purpose	The ENRHES project (ENRHES = Engineered Nanoparticles - Review of Health and Environmental Safety) performed a comprehensive and critical scientific review of the health and environmental safety of fullerenes, carbon nanotubes (CNTs), metals and metal oxide nanomaterials.

Content	ENRHES Final Report			
Date	2009			
Content Type	Reading material (online & printable)			
Content Focus	NT Risks and Implications; NT Governance			
URL of Content	http://ihcp.jrc.ec.europa.eu/whats-new/enhres-final-report			
Target Audience	Policy makers; Researchers (6a & 6b)			
Content details	The document is a comprehensive review of the health and environmental safety of four classes of nanomaterials: fullerenes, carbon nanotubes (CNTs), metals and metal oxide nanomaterials. The review considers sources, pathways of exposure, the health and environmental outcomes of concern, followed by a risk assessment based on this information. The report includes an illustration of state-of-the-art as well as on-going work, while identifying knowledge gaps in the field. Prioritized recommendations have been developed and set in the context of informing policy makers in the development of methods to address exposure as it relates to the potential hazards posed by engineered nanoparticles, and in the development of appropriate regulations.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.5	+++	++++	++++	+++
Outcomes and impact	The final report of the ENHRHSE project is a comprehensive review of state-of-the art EHS data for four important types of nanomaterials. It is a key document for interested stakeholders			
Overall Assessment	Very good review for stakeholders interested in EHS of nanomaterials, particularly policy makers. The document is not intended for the lay public.			

Project	**21. NANOSAFE**
Funding Scheme	Competitive and sustainable growth program (EC)
URL	deceased
Project Focus	Risk and Implications
Project Purpose	The aim of the project was to perform a risk assessment in production and use of nanoparticles with development of preventive measures and practice codes.

Content	NANOSAFE Final Report
Date	2004
Content Type	Reading document (online & printable)

Content Focus	NT Risks and Implications; NT Industry Development			
URL of Content	http://www.nanosafe.org/home/liblocal/docs/Nanosafe1_final_report.pdf			
Target Audience	Policy makers; Industry; Researchers			
Content details	The report is a technology analysis of the industrial applications of nanomaterials (chances and risks)			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.25	+++	++++	+++	+++
Outcomes and impact	Although the report is relatively old, it is a very good overview of nanomaterials and their production technologies; characterization and detection techniques; and risk assessment.			
Overall Assessment	This is a good reference document for policy makers and people interested in having an overview of nanomaterials (how they are produced and characterized) and their risk assessment. The document should be used together with more recent ones.			

Project	**22. NANOSAFE2**			
Funding Scheme	FP6			
URL	www.nanosafe.org			
Project Focus	Risk and Implications			
Project Purpose	The aim of NANOSAFE2 is to develop risk assessment and management for secure industrial production of nanoparticles. In NANOSAFE2 two different types of risks will be assessed: exposure during manufacturing processes (occupational exposure) and human health due to nanomaterial exposure. The risk assessments in the project will estimate whether and/or how much damage or injury can be expected from exposures to a given risk agent, and to assist in determining whether these effects are significant enough to require action (modification of production systems, regulations, etc.).			
Content	Dissemination reports			
Date	2008			
Content Type	Reading material (online & printable)			
Content Focus	NT Risks and Implications			
URL of Content	http://www.nanosafe.org/scripts/home/publigen/content/templates/show.asp?P=63&L=EN&ITEMID=13			
Target Audience	Researchers; NGOs and civil organizations; lay public			
Content details	The reports address some key question of nanomaterials safety like: “what is nanotoxicology?”, “are current protective measures adequate for nanomaterials?”, “have nanopowders have a higher explosion risk?”. There are eight reports available.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	++++	++++
Outcomes and impact	The reports are short and easy to understand even by a non-specialised audience.			
Overall Assessment	Good reference documents in nanosafety also for lay public.			

Content	Glossary			
Date	2008			
Content Type	Informative website (online & printable)			
Content Focus	NT Knowledge			
URL of Content	http://www.nanosafe.org/scripts/home/publigen/content/templates/show.asp?P=64&L=EN&ITEMID=14			
Target Audience	Researchers (6b); Lay public: NGOs and civil society groups			
Content details	A simple glossary covering some fundamental definitions (nanoscale, nanomaterial, nanotechnology, quantum dot, etc.) and several instrument acronym (NMR, AFM etc.)			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	++++	++++	+++	++++
Outcomes and impact	Simple glossary, useful for, lay public, NGOs and civil society groups.			
Overall Assessment	Useful resource although it is not comprehensive (terms like "nano-layer" is missing)			

Project	**23. NANOHOUSE**
Funding Scheme	FP7
URL	http://www-nanohouse.cea.fr
Project Focus	Risks and Implications
Project Purpose	This project aims at promoting a responsible and sustainable development of nanomaterials in building industry through a Life Cycle Thinking approach. The nine partners involved in NanoHouse project are generating missing data on the potential exposure levels and the hazard due to this chronic exposure for 2 nanoparticle types: nano silver and nano titanium dioxide contained in indoor and outdoor coatings and paints. Both direct and indirect exposures (through the environment to human: vegetables, drinking water) are considered.

Content	Dissemination reports			
Date	2012			
Content Type	Reading material (online & printable)			
Content Focus	NT Knowledge; NT Risks and Implications			
URL of Content	http://www-nanohouse.cea.fr/scripts/home/publigen/content/templates/show.asp?P=60&L=EN&ITEMID=8			
Target Audience	Lay public; NGOs and civil organizations			
Content details	Dissemination reports from NanoHouse project are designed to highlight and present in a simplified way the main results obtained in the studies carried out during this project. These reports mainly deal with one question which is of general concern for those interested: the Cycle of Nanoparticles-based Products used in House Coating.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.75	++++	++++	+++	++++
Outcomes and impact	At the time of writing one report was available titled: "Why and how to identify source emissions?". The topic is of interest to many stakeholders and these reports are expected to be very useful.			

Overall Assessment	These dissemination reports are very useful as they address questions that are a concern to many stakeholders, including lay public and NGOs.

Project	**24. NANOMEDROUNDTABLE**
Funding Scheme	FP7
URL	deceased
Project Focus	Risks and Implications; Multi-stakeholder dialogue
Project Purpose	The Nanomed Round Table's main purpose is to provide to European stakeholders a set of recommendations to support decision making regarding nanomedical innovations. The project focused of four main aspects: patient needs; ethical and societal aspects; economic impact; regulation; and communication.

Content	NanoMed Final report			
Date	2010			
Content Type	Reading material (online & printable)			
Content Focus	NT Risks and Implications; NT Communication			
URL of Content	http://www.philosophie.tu-darmstadt.de/media/institut_fuer_philosophie/diesunddas/nordmann/nanomed.pdf			
Target Audience	Policy makers; NGOs and civil organizations			
Content details	Report that summarises the project findings and recommendations with regards to patient needs; ethical and societal aspects; economic impact; regulation; communication.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.5	++++	+++++	++++	+++++
Outcomes and impact	The project produced a very clear set of recommendations that could be implemented in the by future projects and activities (for instance, move communication activities from science museums, where already interested public is reached, to patient organizations)			
Overall Assessment	This document is a well done report of the activities and recommendations from the project. It could be useful also to media and science communicators.			

Project	**25. NANOBIORAISE**
Funding Scheme	FP6
URL	http://nanobio-raise.org/
Project Focus	Risks and Implications
Project Purpose	NanoBio-RAISE combined ethics research in nanobiotechnology with science communication. This interdisciplinary project brought together nanobiotechnologists, ethicists and communication specialists with the aims to anticipate the societal and ethical issues likely to arise as nanobiotechnologies develop and to use the lessons from the GM debate to respond to the probable public concerns.

Content	Briefing Papers			
Date	2009			
Content Type	Reading material (online & printable)			
Content Focus	NT Knowledge; NT Risks and Implications			
URL of Content	http://files.nanobio-raise.org/Downloads/NanoPublicFINAL.pdf (change url, this is for one doc specifically)			
Target Audience	Lay public; NGOs and civil organizations; Teachers; Students			
Content details	The briefing papers provide a comprehensive overview of some key topics related to nanotechnology communication, specifically: Public Perception and Communication about NanoBiotechnology; Societal and Ethical issues in Nanobiotechnolog; Nanotechnology and Food; Nanomedicine			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.5	+++++	+++++	+++	+++++
Outcomes and impact	These briefing papers were on of the first comprehensive documents written in a simple language, covering both fundamental aspects of nanotechnologies, and risk, governance etc. They were pivotal in nanoscience communication.			
Overall Assessment	Although a bit old, these briefing papers are concise and accurate and cover topics of interest to many stakeholders. They are presented in a simple layout and written in plain English which makes them useful for lay public, teachers and student.			

Project	**26. NANO2LIFE**
Funding Scheme	FP6
URL	deceased
Project Focus	Education and skill development
Project Purpose	The aim of the project was to build a nano-biotech and nanomedicine community through the development of roadmaps and foresight studies, and nano-biotechnology curriculum. It was the first project to have an ELSA Committee in Nanobiotechnologies.

Content	Scientific Schools Videos
Date	2007-2008
Content Type	Video
Content Focus	NT Knowledge
URL of Content	http://n2lvip.tau.ac.il/index.php?option=com_content&view=section&id=5&Itemid=55
Target Audience	Graduate students and Postdocs
Content details	Nano2Life Scientific Schools were part of the Nano2Life integrated curriculum which intended to provide a training for last year graduate students and postdoctoral scientists in the field of nanobiotechnology. The videos are a recording of lessons that experts gave to the students during the Scientific Schools.

Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
2.25	++	++	++++	+
Outcomes and impact	The Scientific Schools were an innovative concept developed by the Nano2Life project and were very successful. The videos were made simply by recording the lectures, which were done using PPT slides therefore at times the content on the slides is not clearly visible. Professional editing of the videos would have been a plus.			
Overall Assessment	The videos could be a good resource for graduate students or postgraduate students but they are very technical for the target audience of the Nanopinion (NODE) platform. The video recording quality is also inadequate. However this content might be useful in a platform dedicated to graduate/postgraduate studies in nanotechnologies.			

Content	Ethical and social issues in nanobiotechnologies
Date	2006
Content Type	Reading material (online & printable)
Content Focus	NT Risks and Implications
URL of Content	http://www.nature.com/embor/journal/v7/n8/full/7400762.html
Target Audience	Researchers (6c); Media and science communicators;
Content details	This EMBO report was one of the first publications on the matter of bioethics. It is a very comprehensive article on the main ethical questions that nanobiotechnology raises, but in the context of technology development and research as progress for society.

Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	++++	+++	++++
Outcomes and impact	This article is a benchmark for anybody interested in nanobioethics, it “set the scene” when the conceptof ELSA & nanotechnology had emerged.			
Overall Assessment	This article is written in plain English, so it is accessible for a wide audience, including lay public with an interest in bioethics.			

Project	**27. ICPC NANONET**
Funding Scheme	FP7
URL	http://www.icpc-nanonet.org/index.php
Project Focus	Platforms & working groups
Project Purpose	The project brings together partners from the EU, China, India, Russia and Africa and aims to provide wider access to published nanoscience research, and opportunities for collaboration between scientists in the EU and International Cooperation Partner Countries (ICPC). This is achieved through an open access electronic archive of nanoscience publications (Nano Archive) and tools to facilitate networking between scientists in different world regions.

Content	NanoNet Reports			
Date	2009-2012			
Content Type	Reading material (online & printable)			
Content Focus	NT Knowledge; NT Industry Development			
URL of Content	http://www.icpc-nanonet.org/content/category/7/20/46/			
Target Audience	Researchers (all); policy makers; industry			
Content details	The NanoNet reports are regional reports that describe the research and development infrastructures and activities in different regions, namely: Africa, Asia (East), Asia (West), Caribbean, Latin America, Eastern Europe & Central Asia Countries, Mediterranean Countries. Reports are available for year 2009, 2010, 2011, 2012			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	+++++	++++	++++
Outcomes and impact	Four sets of reports are available, the last one (year 2012) being an updated version of the previous ones. In addition, in the last version, N&N R&D in the following areas where applicable for each country is described: 1. Energy storage, production and conversion; 2. Agricultural productivity enhancement; 3. Water treatment and remediation; 4. Nanomedicine and Nano Biotechnology; 5. Food processing and storage; 6. Air pollution control and remediation; 7. Construction; 8. Vector and pest detection and control; 9. Communication technologies; 10. Transport; 11. Security; 12. Fundamental Research			
Overall Assessment	The NanoNet reports are a useful resource for comparing and analysing the development of Nanotechnology R&D in various regions around the world.			

Project	**28. NANOPODIUM**
Funding Scheme	Dutch Government
URL	http://www.nanopodium.nl/CieMDN/
Project Focus	Multistakeholder dialogue
Project Purpose	Nanopodium is a platform for exchanging thoughts, ideas, opinions and best practices on nanotechnology. The aim is to stimulate a public dialogue about the opportunities and threats of nanotechnology and resulting applications with regard to individuals and society as a whole. Nanopodium is an initiative of the independent Committee for the Societal Dialogue on Nanotechnology in the Netherlands (CMDN).

Content	Responsibly onwards with nanotechnology
Date	2011
Content Type	Reading document (online & printable)
Content Focus	NT Knowledge; NT Risks and Implications
URL of Content	http://www.nanopodium.nl/CieMDN/content/Webversie_Verantwoord_Verder_260111_DEF_compleet.pdf
Target Audience	Policy makers
Content details	This document summerises the findings of activities carried out between March 2009 and January 2011. The

	document is in Dutch only.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
3.5	+++	+++	++++	++++
Outcomes and impact	The concept of the Nanopodium was to invite all the stakeholders - academia, companies, media, NGOs etc. - to realize broad range of activities to stimulate societal dialogue on nano S&T in Netherlands. The initiative led to 35 projects (out of 140 proposed) that comprised 16 publications, TV programmes, YouTube projects, teaching materials for secondary schools development; 3 exhibitions or artists impressions; and 16 debates. Majority of the activities took place within 6 month period in 2010. The majority of these resources are in Dutch and could not be fully reviewd in this mapping work due to language barrier and lack of translation busget.			
Overall Assessment	Content relevant to policy makers, NGOS and civil organizations, media and science communicators, and perhaps educators.			

NOTE ON NANOPODIUM PROJECT: Several additional resources were made, including videos, etc. However these resources are mainly in German. Due to budget restrain, it was not possible to translate these resources and assess them.

Project	**29. NANOTRUST**
Funding Scheme	Austrian Federal Ministry for Transport, Innovation and Technology
URL	http://nanotrust.ac.at/nano.ita.en/index.html
Project Focus	Risk and Implications; Outreach to general public & content provision
Project Purpose	The aim of the project is to continually survey, analyze and summarize the state of knowledge on the potential health and environmental risks of nanotechnology. At the same time, research gaps will be identified and differing assessments made transparent.

Content	Dossiers			
Date	2011			
Content Type	Reading material (online & printable)			
Content Focus	NT Knowledge; NT Risks and Implications			
URL of Content	http://www.nanotrust.ac.at/collected_dossiers_E.pdf			
Target Audience	Lay public			
Content details	The document is a compilation of short dossiers that cover numerous topics that relate to nanotechnology research, applications, EHS and regulation. A total of 25 dossiers are available in English (More in German)			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4.25	++++	++++	++++	+++++
Outcomes and impact	There are additional dossiers available only in German			
Overall Assessment	The dossiers are easy to read and cover numerous EHS aspects that would be of interest to the lay public; the resource can be useful also for media and science communicators, as well as teachers and students			

Project	**30. CORDIS NANOTECHNOLOGY**
Funding Scheme	European Commission
URL	http://cordis.europa.eu/nanotechnology/home.html
Project Focus	Platforms & working groups
Project Purpose	Nanotechnology homepage of the European commission

Content	NanoinLife			
Date	2010			
Content Type	Video			
Content Focus	NT Knowledge			
URL of Content	http://ec.europa.eu/research/industrial_technologies/nanoinlife_en.html			
Target Audience	Lay Public; Students; Teachers			
Content details	NanoInLife is a documentary produced by the European Union's Directorate General for Research and presented by Nobel Prize winner, Sir Harry Kroto. We follow Alice through the real world of nano to discover how nanotechnologies could completely revolutionise our lives.			
Tool Assessment	Clarity	Comprehensibility	Accuracy	Relevance
4	++++	++++	++++	++++
Outcomes and impact	The video is very clear and presents in a clear way the many applications of nanotechnology. It was widely distributed at major events, like EuroNanoForum 2011, and through various outreach projects, like NANOYOU.			
Overall Assessment	The video provides factual information on nanotechnology, and it is definitively very useful for delivering basic information to general public, students, educators. However ELSA topics are only marginally covered, it tends to present mostly beneficial aspects of nanotechnology, at times with an over-enthusiastic tone, so the message is unbalanced. Nevertheless this tool can be used in combination with other dialogue tools for a more balanced message.			

							Target 1		Additional audience			
Entry #	**Content**	**Project**	**Funding**	**#items**	**Type**	**Content Focus**	**Target 1**	**Target 2**	**Audience 1**	**Audience 2**	**Language**	**Score**
1	Governance Platform	FRAMINGNANO	FP7	1	Reading material	NT Governance	Policy makers		Media and science communicators		EN	4
2	Mapping Study	FRAMINGNANO	FP7	1	Reading material	NT Governance	Policy makers		Media and science communicators		EN	4
3	RiskCartography	MACOSPOL	FP7	1	Online mapping tool	NT Risks & Implications	Researchers (all)	Lay Public	Policy makers	Media and science communicators	EN, GE	3,25
4	Nano and Me website	NANO & ME	non-FP	1	Informative website	NT Knowledge; NT Risks & Implications	Lay public	Students	Educators		EN	4
5	Factsheets	NANOCAP	FP6	4	Reading material	NT Knowledge	Lay public	NGOs and civil organizations			EN	4
6	Position papers	NANOCAP	FP6	8	Reading material	NT Risks & Implications	Policy makers		NGOs and civil organizations		many	3,25
7	NanoJury Recommendations	NANOJURY		1	Reading material	NT Risks & Implications	Policy makers	NGOs and civil organizations	Lay public		EN	3,5
8	NanoMeter	OBSERVATORYNANO	FP7	1	Online mapping tool	NT Industry Development	Industry				EN	3,75
9	Nanologue scenarios	NANOLOGUE	FP6	1	Reading material	NT Risks & Implications	Policy makers	NGOs and civil organizations	Lay public	Researchers	EN	3,75
10	OpenLab Handbook	NANOTOTOUCH	FP7	1	Reading material	NT Communication; NT Knowledge	Educators	Media or science communicator			EN	4,25
11	Nano-TV videos	NANO-TV	FP7	10	Video	NT Knowledge	Lay public	Students	Educators		EN	3,75
12	Nanoyou Posters	NANOYOU	FP7	5	Poster	NT Knowledge	Students	Educators	Lay public		many	4,25
13	Discover the nanoworld	NANOYOU	FP7	1	Power point presentations	NT Knowledge	Educators	Students	Lay public		EN	4
14	Discover the benefits and risks for developed and developing countries	NANOYOU	FP7	1	Power point presentations	NT Risks & Implications	Educators	Students			EN	4
15	Nanoyou Film	NANOYOU	FP7	1	Video	NT Knowledge	Students	Educators	Lay public		EN	4,75
16	Virtual Nano Lab	NANOYOU	FP7	2	Virtual lab	NT Knowledge	Students	Educators	Lay public		EN	4,25
17	Nanoyou Lab Experiments	NANOYOU	FP7	4	Hands-on activity kit	NT Knowledge	Students	Educators			many	4,75
18	Nanoyou teacher training kit	NANOYOU	FP7	5	Teaching training material	NT Knowledge; NT Risks & Implications; NT Communication	Educators	Lay public	Media and science communicators		EN	4,75
19	Memory game	NANOYOU	FP7	4	Game	NT Knowledge	Students	Lay public			many	3,5
20	Jigsaw puzzle	NANOYOU	FP7	1	Game	NT Knowledge	Students	Lay public			many	4
21	Role play game	NANOYOU	FP7	10	Dialogue activity kit	NT Risks & Implications	Students	Lay public			many	3,5
22	Time machine	NANOYOU	FP7	1	Virtual game	NT Knowledge	Students				EN	4,25
23	NT Virtual dialogue	NANOYOU	FP7	12	Virtual game	NT Risks & implications	Students	Educators	Lay public		EN	4
24	All Connected!	NANOYOU	FP7	1	Travelling exibition	NT Knowledge; NT Risks & Implications	Lay public	Educators			FR, EN	3,75
25	Website	SWISS NANOCUBE	non-FP	1	Informative website	NT Knowledge	Students	Educators	Lay public		EN, GE	4,5
26	Nanorama Loft	SWISS NANOCUBE	non-FP	1	Online mapping tool	NT Knowledge	Students	Educators	Lay public		EN, GE	4,75
27	Nano teach Box	SWISS NANOCUBE	non-FP	7	Teaching training material	NT Knowledge	Educators				GE	3,25
28	Nano Kit	TIME4NANO	FP7	8	Hands-on activity kit	NT Knowledge	Students	Educators	Lay public		EN	4,25
29	Play decide for Time4Nano	TIME4NANO	FP7	2	Dialogue activity kit	NT Risks & Implications	Students	Educators	Lay public	Media and science communicators	EN	4,25
30	Nanolife	TIME4NANO	FP7	1	Video	NT Risks & Implications	Students	Lay public			FR	3,5
31	Titina Tag	TIME4NANO	FP7	1	Video	NT Risks & Implications	Students	Lay public			IT	3,75
32	Factsheets	OBSERVATORYNANO	FP7	3	Reading material	NT Knowledge	Policy makers	Industry		Educators	EN	4,75
33	Briefings	OBSERVATORYNANO	FP7	33	Reading material	NT Knowledge	Policy makers	Industry	Media and science communicators	Educators	EN	4,75
34	General sector reports	OBSERVATORYNANO	FP7	12	Reading material	NT Knowledge	Policy makers	Industry	Media and science communicators	Educators	EN	4,75

35	Developments in Nanotechnologies Regulations and Standards	OBSERVATORYNANO	FP7	1	Reading material	NT Governance	Policy makers	Industry	Media and science communicators	Educators	EN	4,5
36	Market reports	OBSERVATORYNANO	FP7	10	Reading material	NT Industry Development	Industry		Media and science communicators	Educators	EN	4,25
37	The European Nanotechnology Innovation Landscape	OBSERVATORYNANO	FP7	1	Reading material	NT Industry Development	Policy makers	Industry	Media and science communicators		EN	4,25
38	Nanobioethics (2nd Annual Report)	OBSERVATORYNANO	FP7	1	Reading material	NT Risks & Implications	Researchers (6c)	NGOs and civil organizations	Policy makers		EN	3,5
39	Ethical and Societal Aspects of Nanotechnology, ICT and Security (3rd Annual Report)	OBSERVATORYNANO	FP7	1	Reading material	NT Risks & Implications	Policy makers	Researchers (6c)	Media and science communicators	Educators	EN	4
40	Communicating Nanoethics (4th Annual Report)	OBSERVATORYNANO	FP7	1	Reading material	NT Communication	Policy makers	Researchers (6c)	Media and science communicators	Educators	EN	4,25
41	Toolkit for ethical reflection and communication	OBSERVATORYNANO	FP7	1	Reading material	NT Risks & implications; NT Communication	Researchers (6c)	Media and science communicators	Educators		EN	3,25
42	Environment, Health & Safety & Impacts Reports	OBSERVATORYNANO	FP7	1	Reading material	NT Risks & Implications	Policy makers	Researchers (6b)	Media and science communicators		EN	4,25
43	Guide to responsible nano-business	OBSERVATORYNANO	FP7	1	Reading material	NT Industry Development	Industry				EN	3,75
44	Annual Report to the Public	OBSERVATORYNANO	FP7	1	Reading material	NT Knowledge	Lay public	Educators			EN	4,75
45	Reconfiguring Responsibility	DEEPEN	FP6	1	Reading material	NT Risks & Implications	Researchers (6c)	Media and science communicators			EN	4
46	Deepening Dialogue: Debating Nanotechnology's Responsible Development	DEEPEN	FP6	1	Video	NT Risks & Implications	Researchers (6c)	Lay public	Policy makers	Media and science communicators	EN	4
47	CodeMeter	NANOCODE	FP7	1	Online mapping tool	NT Governance	Industry	Researchers (6a & 6b)			EN	3,5
48	Master Plan	NANOCODE	FP7	1	Reading material	NT Governance	Policy makers	Industry			EN	3,75
49	Nanotechnology-related resources by country	OECD WORKING PARTY ON NANOTECHNOLOGY	non-FP	1	Informative website	NT Knowledge	Policy makers	Researchers			EN	3,5
50	Planning Guide for Public Engagement and Outreach in Nanotechnology	OECD WORKING PARTY ON NANOTECHNOLOGY	non-FP	1	Reading material	NT Communication	Policy makers	Media or science communicator	Researchers (all)			4,25
51	Fostering Nanotechnology to Address Global Challenges: Water	OECD WORKING PARTY ON NANOTECHNOLOGY	non-FP	1	Reading material	NT Knowledge	Policy makers	Industry	Media and science communicators		EN	3,25
52	The Impacts of Nanotechnology on Companies: Policy Insights from Case Studies	OECD WORKING PARTY ON NANOTECHNOLOGY	non-FP	1	Reading material	NT Industry Development	Policy makers	Industry	Media and science communicators		EN	3,75
53	Nanosafety at the OECD: The First Five Years 2006-2010	OECD WORKING PARTY ON NANOTECHNOLOGY	non-FP	1	Reading material	NT Risks & Implications; NT Governance	Media and science communicators	Lay public	Policy makers		EN	4,5
54	NanoSMILE website	NANOSMILE	non-FP	1	Informative website	NT Knowledge; NT Risks & Implications	Researchers (all)	Educators	Lay public		EN	3,75
55	NanoSMILE cartoons	NANOSMILE	non-FP	9	Video	NT Knowledge	Lay public	Students			EN	3,5
56	Clips	NANOCHANNELS	FP7	4	Video	NT Risks & Implications	Students	Lay public			EN	3,75
57	NanoEducation Tree	OBSERVATORYNANO	FP7	1	Virtual game	NT Knowledge; NT Risks & Implications	Lay public	Educators	Students		EN	4
58	The Guardian Nanotechnology World microsite	NANOCHANNELS	FP7	1	Informative website	NT Knowledge; NT Risks & Implications	Lay public	NGOs and civil organizations	Industry	Students	EN	4,75
59	El Mundo Nanotechnology microsite	NANOCHANNELS	FP7	1	Informative website	NT Knowledge; NT Risks & Implications	Lay public	NGOs and civil organizations	Industry	Students	ES	4,75

60	Moebius Scienza Podcasts	NANOCHANNELS	FP7	7	Podcasts	NT Knowledge; NT Risks & Implications	Lay public	Educators			IT	4,5
61	Round table debate in Milan	NANOCHANNELS	FP7	1	Video	NT Governance; NT Industry Development	Industry	Lay public	Researchers	Policy makers	EN, IT	3,25
62	Nomenclature	NANOIMPACTNET	FP7	1	Reading material	NT Knowledge	Researchers (all)	Policy makers			EN	4
63	Nanosafety cluster overview	NANOIMPACTNET	FP7	1	Reading material	NT Knowledge	Researchers (6a & 6b)	Policy makers			EN	4
64	ENHRHES Final Report	ENHRHES	FP7	1	Reading material	NT Risks & Implications; NT Governance	Researchers (6a & 6b)	Policy makers	Media and science communicators		EN	3,5
65	NANOSAFE Final Report	NANOSAFE	non-FP	1	Reading material	NT Risks & Implications; NT Industry Development	Policy makers	Industry	Researchers	Media and science communicators	EN	3,25
66	Dissemination reports	NANOSAFE2	FP6	8	Reading material	NT Risks & Implications	Researchers (all)	NGOs and civil organizations	Lay public		EN	4
67	Glossary	NANOSAFE2	FP6	1	Reading material	NT Knowledge	Researchers (6b)	Lay public	NGOs and civil organizations		EN	3,75
68	Dissemination reports	NANOHOUSE	FP7	1	Reading material	NT Knowledge; NT Risks & Implications	Lay public	NGOs and civil organizations			EN	3,75
69	NanoMed Final report	NANOMEDROUNDTABLE	FP7	1	Reading material	NT Risks & implications; NT Communication	Policy makers	NGOs and civil organizations	Media and science communicators		EN	4,5
70	Briefing papers	NANOBIORAISE	FP6	4	Reading material	NT Knowledge; NT Risks & Implications; NT Communication	Lay public	NGOs and civil organizations	Educators	Students	EN	4,5
71	Ethical and social issues in nanobiotechnologies	NANO2LIFE	FP6	1	Reading material	NT Risks & Implications	Researchers (6c)	Media and science communicators	NGOs and civil organizations		EN	4,25
72	NanoNet Reports	ICPC NANONET	FP7	28	Reading material	NT Knowledge; NT Industry Development	Researchers (all)	Policy makers			EN	4,25
73	Responsibly onwards with nanotechnology	NANOPODIUM	non-FP	1	Reading material	NT Knowledge; NT Risks & Implications	Policy makers	NGOs and civil organizations	Media and science communicators		EN	3,5
74	Dossiers	NANOTRUST	non-FP	25	Reading material	NT Knowledge; NT Risks & Implications	Lay public	Educators			EN, GE	4,25
75	NanoInLife	DG for Research	non-FP	1	Video	NT Knowledge	Lay public	Educators	Students		many	4,25
76	Ethics Portfolio	NANOCAP	FP6	1	Reading material	NT Risks & Implications	NGOs and civil organizations	Researchers (6c)	Educators		EN	3,25

Total Number of Resources: **76** **276**