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**EUROPEAN RESEARCH ADVISORY BOARD
FINAL REPORT**

Research and Societal Engagement

June 2007

Research and Societal Engagement

EURAB has established a Working Group to address the means for engagement and dialogue between societal actors and the research community. With public mistrust in certain research-based institutions on the rise, there is a growing concern to engage more at the societal level. While researchers are beginning to work well in communicating their work to wider publics, and cooperation with business improving, there is still little sustained interaction with non-economic societal actors. There has been significant support from EU programmes such as science weeks and festivals, consensus conferences and other science communication activities. This report will not touch on these activities. Nor will it focus on the importance of close interaction between academic researchers and those economic players who are to transform the research into innovations. Rather this report will focus on recommendations to the community of researchers to engage with other relevant segments of the public in order to take societal questions and concerns more into account. Successful innovation will require not only the cooperation of academia and business, but also a close engagement with societal actors. This will not only shape current innovations, but also help identify future needs.

Recommendations

- 1. Expose researchers to other perspectives of research and innovation by integrating engagement with societal actors into the university curriculum.** Universities should try to develop structures that promote a wider dialogue and plant seeds for more open interaction. By training research students to engage with societal actors and see other perspectives, the academe would be encouraging a multi-disciplinary outlook.
- 2. Encourage engagement as a factor influencing a researcher's career prospects.** Studies have shown that scientists tend to think that public engagement activities can be counterproductive for their careers. The European Commission should act to highlight the value of greater dialogue with societal actors and how this could advance research careers. This would include cataloguing good practices, emphasising the benefits of dialogue and career mobility, and holding a series of multi-disciplinary events to encourage stakeholder engagement.
- 3. Develop further mechanisms for societal actors to improve their research capacities.** EURAB encourages the development of mechanisms to bring societal actors to the table as partners in the dialogue on research and innovation. By enabling societal actors (eg, NGOs, Civil Society Organisations) to develop their own research capacities, the 2007 FP7 Science in Society Work Programme on Capacity Building pilot appears to be moving in the right direction.
- 4. Encourage societal actors to be more involved in European Technology Platforms.** The European Technology Platform's multi-stakeholder engagement approach has largely been limited to business, government and the academe. To engage societal actors, EU funding mechanisms like FP7 should provide vehicles that empower these actors to assess issues of concern to certain Technology Platforms. This approach may open the door to further engagement.

5. **Encourage structures for partnerships between researchers and societal actors in the research dialogue.** The Commission should assemble a series of good practices to concentrate the researchers' thinking on the overall value of dialogue with other actors. Empowering societal actors helps bring them into the dialogue as engaged and committed partners. These good practices will help generate fresh thinking on the means for further engagement.
6. **Integrate societal actors into the various stages of the research evaluation process.** The project evaluation, assessment and post-assessment processes can be strengthened by creating a structural role for societal actors where appropriate. Societal actors should play a larger role on impact assessments.

1. Introduction: Is research the answer or the problem?

Situation

Research and innovation are being promoted as the saviour of Europe, bringing anticipated benefits, increased competitiveness, prosperity and better jobs. European policy-makers stress the Lisbon strategy and their commitment to research and innovation as the future for European development. This view has been widely promoted by European policymakers (although increases in actual public research expenditures barely reflect this). However, the acceptance of the economic benefits of research does not go hand in hand with the acceptance of research as being solely beneficial for society in general. A recent RTD Info article suggests "People are not confident that the 'sound science' approach – a scientific assessment of risks and benefits with decisions made solely by the experts – is necessarily a guarantee of the best choice for society".¹

European publics are not questioning the scientific information as much as they are actually questioning the institutions generating it (a lost confidence in business, government and the academe). Research is seen to be good when it solves problems and is relevant to people's lives – when research is useful to society, and not just in an economic sense. Too often though, researchers are perceived to be addressing issues that the public may not necessarily consider as beneficial to society. Researchers work in systems that are rational and instrumental, and have a tendency to assume that society behaves likewise. But society does not always behave rationally, and in certain sensitive areas, researchers should keep in mind that their systems operate in a public context.²

Researchers are reacting to recent public concerns about the direction and potential outcomes of their work (eg, fears about biotechnology, medical research, food safety and nanotechnology) by increasing their efforts to communicate to non-specialists. While this is a necessary practice, such communication has often had limited success, and has, in some cases, even exacerbated public risk perception of research-based developments. Science communication has tended to involve

¹ Interview with George Gaskell, RTD Info, November 2005, p 5

² An often-used example has been the gulf between researchers and the public on the risks of agricultural biotechnology (GMOs). The economic, research and credibility fallout from this episode has been an impetus for researchers to take public concerns more seriously.

researchers talking at the public about what science is doing with the expectation that this would increase acceptance.

However, despite increasing communication there are indications of a disconnection between science and society. A recent study on the relation of researchers and policymakers concluded that: "researchers and politicians live in different worlds, speak different languages and have different perspectives".³ Declining university enrolments in the pure sciences in Western Europe is further evidence of a social disconnect. Research is not seen as an attractive field for young people to pursue as a career. While other factors are also involved here (salaries, career prospects, access in schools), the European research community may soon be facing potential skills shortages for certain fields. Fewer researchers with less available time to bridge the gap between science and public perception would not alleviate the situation.

Research does not automatically lead to innovation, nor is its progression linear. Innovation is an outcome of complex transformation processes involving a wide range of actors. For research to make the transition to innovation, societal needs and interests should be accounted for. If researchers are not attuned to the public's concerns, expressed for example through stakeholders and societal actors, their results might not be sufficiently socially relevant, putting at risk any potential innovations that could be developed. For the European Union to meet its Lisbon targets, increasing research funding is but one aspect; researchers should also better integrate the societal dimension into their objectives, and target their work toward the public interests.

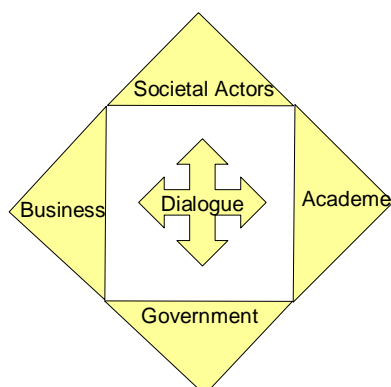
1.1: Objective of this report

This report will not be concerned with the call for researchers to better communicate their work to other actors, a need well-recognised and where progress is beginning to become evident. Nor will it focus on the relations between the academe and business. Rather, it intends to concentrate on the need for a more prolonged and sustained engagement between researchers and societal actors. Science communicators have been concentrating on finding ways for the public to 'accept' the research agenda, without sufficiently fostering a meaningful exchange. EURAB feels that effective dialogue on the value of research could entail a full mutual engagement between researchers and society. To this aim, researchers should try to view their work from the societal dimension, engage other stakeholders and take public concerns about their work seriously. Other actors, with non-scientific perspectives, may not have the same priorities and value systems as researchers, so merely communicating better what science is doing might not be sufficient and could even be antagonising.⁴

³ See Politics and Science in Sweden, VA Report, 2006:5, Vetenskap & Allmänhet, http://www.va.se/download/varapport2006_5_eng.pdf, p 9.

⁴ One of the problems science communicators face is the open-ended nature of research. The benefits are known and limited while the extent of the potential risks and uncertainties of any research is unknown, so any communication might invite more questions than answers. When, for example, the benefits of GMO technologies were initially communicated, societal actors opposed to human intervention in the food chain were able to highlight many areas the research had neglected, ranging from immunity risks from potatoes to threats to monarch butterflies, calling into question the sincerity of the scientific communication.

The Poles of Stakeholder Dialogue



EURAB shall highlight in this report that engaging more in social dialogue with other stakeholders and incorporating these views in some way into their research would be of benefit to researchers' work. In considering the problems the public faces today, the views expressed by societal actors can help stimulate researchers to understand these concerns. By translating and integrating the societal dimension into their analyses, researchers could be better positioned to guide science along routes that would be more relevant to solving the problems the public is concerned about. The bridge building process is based on dialogue, engagement and openness.

This report will build on recommendations made in previous EURAB reports on means to encourage researchers to interact more with civil society. EURAB has long recognised the need to involve 'society' at an early stage of new developments to build mutual trust.⁵ EURAB has also recommended developing and implementing a broader concept of 'technology' within the Seventh Framework Programme (FP7) in which *human actions, values and choices play an integral part*.⁶

Einstein once said: *Make things as simple as possible, but not simpler.*
 Researchers should never pretend that they could simplify things – if it took six years to learn something, then do not expect others to learn it easily.

Professor Paul Galand to the EURAB Working Group, December 2006
Cancer researcher, past president of WWF Belgium, host of environmental science TV programme

1.2 Public Concerns over Scientific Knowledge

⁵ "Science and Society": An agenda for a responsive and responsible European science in FP7 – EURAB 05:035: September 2005 - Recommendations 8, 9 and 10.

http://ec.europa.eu/research/eurab/pdf/eurab_05_035_wg6_final_report-rev_160905.pdf.

⁶ EURAB, *The Social Sciences and the Humanities in the 7th Framework Programme*, December 2005, p 12. http://ec.europa.eu/research/eurab/pdf/eurab2005_reprec_ssh_7fp_en.pdf.

This section will consider how societal actors' understanding differs from scientific knowledge and how their perspective could add value to the research and innovation process.

Societal actors

The use of the term 'public' in this report is meant to be very wide. Within the European science policy context, 'public' tends to refer to societal actors, which includes representatives from patients groups, consumer associations, non-profit and civil society organisations (NGOs and CSOs), media, representatives from industry trade associations and trade unions, and other special interest groups that may form in response to a particular research technique or political activity.⁷

In the past, the general population have not often been involved in scientific engagement (although this varies from country to country). They do expect science to help solve problems of their daily lives but have not had adequate means to participate. While governments tend to talk to organisations rather than directly to people, the European Commission itself is beginning to organise citizen's panels (deliberations) to dialogue directly with European publics on research issues.⁸

Within the research domain, not all organisations are the same or support common research objectives. There are scientific societal actors formed by researchers who have gone in other, more critical, directions than mainstream science, including *Fondation Sciences Citoyennes*⁹, the *Science Shop* network¹⁰, and the *International Society of Doctors for the Environment*¹¹.

Other 'knowledges'

Often deemed as disruptive or misinformed, researchers tend ignore certain activist societal actors, whose views, however, are often well-communicated to a wider public and influential in the decision-making process. Disagreement between researchers and societal actors is usually related to the value of scientific knowledge in relation to other cognitive frameworks (what is commonly called 'other forms of knowledge'). Researchers tend to assume that other actors need to accept their knowledge.¹² This knowledge is based on deductive, analytical, factual and empirical reasoning. But other cognitive frameworks do exist. A folk or common sense understanding, one that can be interpretive, intuitive or spiritual, should not be entirely shunned by researchers.

⁷ The European Commission's White Paper on European Governance provides a list of civil societies. (Working Group 2a, Consultation and Participation of Civil Society, June 2001, http://ec.europa.eu/governance/areas/group3/report_en.pdf).

⁸ See the citizen deliberations on advances in brain science at www.meetingmindseurope.org.

⁹ <http://sciencescitoyennes.org/>

¹⁰ www.scienceshops.org

¹¹ www.isde.org

¹² A recent DG Research report cited research institutions' unwillingness to accept other forms of knowledge as one of the leading sources of disconnect with societal actors: "... *significant obstacle to public engagement often lies in the prevailing attitudes of senior figures ... in the institutions concerned with the governance of science and technology. In particular, there is in some such quarters a persistent scepticism over the status of public knowledge and understanding. There are tensions between institutional priorities and more widespread public values and interests. There is a reluctance to commit to open self-reflection and the sharing of power and influence.*" From *Science and Society to Science in Society: Towards a Framework for 'Co-operative Research'*, February, 2006, http://ec.europa.eu/research/science-society/pdf/goverscience_final_report_en.pdf.

Different ways of thinking between researchers and societal actors on similar situations should not be perceived as radical extremes, but rather as different approaches which could be complementary. Cases where researchers and practitioners have been working together, sharing their diverse knowledge include farmers contributing their seed practices to biodiversity studies, medical relief workers learning from local customary homeopathic practices, or surgeons recognising the importance of faith in a patient's recovery process. Patients groups can and do provide valuable information (via their observations) about living with diseases. The value of acupuncture, the know-how of midwives, the list goes on, suggest that this complementary relationship could enrich research if dialogue and mutual understanding could be further developed.

Knowledge can be produced in three ways: 1) the researcher giving his truth to the public (with the public being passive); 2) a public consultation and debate over whether to accept the knowledge (not yet participatory); and 3) the **co-production of knowledge**, where the stakeholders affected are brought into the research (AIDS victims, farmers who know how certain plants react in certain situations).

Claudia Neubauer to the EURAB Working Group, December 2006

Director and founder of Fondation Sciences Citoyennes, Member of EU Expert Group on governance in science

Publics hold different views emerging from different reasoning approaches. What we perceive as knowledge (and how we perceive it) depends on our social, cultural, geographical and temporal situation. Human nature is stubbornly subjective and often resistant to rational ordering. Societal actors can take different perspectives and follow different paths to knowledge than researchers. Understanding this can be helpful for researchers in understanding the concerns of non-specialists.

Expert perceptions

Researchers spend years, often lifetimes, developing their expertise and are justifiably uncomfortable sharing the title 'expert' with activists and critics who may have only a superficial understanding. But following from different cognitive frameworks, expertise takes many forms (scientific, social, political, moral ...) and weaving these different perspectives into a coherent position is part of the political process. In a chemical impact assessment, researchers, for example, would provide information in the form of a risk assessment (including exposure scenarios), producers and downstream users would conduct socio-economic assessments which include data on business and job impacts, regulators on issues of emissions into the environment and NGOs or medical groups on the potential threats to human health if the chemical were not properly regulated or banned. Determining which expertise has the most influence on the policymaker is part of the political process.

The scientific information made available in this process may seem clear (black and white) to the researcher, but the wider decision-making process is often dealing with many shades of grey. Researchers, although in uncomfortable territory, should try to articulate their work within the context of these shades of grey and be prepared to understand how the other societal concerns can affect the public's perception of the issue. Ensuring that the researcher is involved in the societal dialogue is an important means to prevent the information from becoming too 'grey'.

As there is a wide array of expertise available to decision-makers, it is not uncommon for advice to conflict. Restoring trust to the expertise used in policy-making is an important element for credible governance, and the 2001 European Commission White Paper on Governance recommended a more democratic, participatory line of action. A participatory approach implies opening up the research policy debate to other actors with other perspectives.

Public risk perceptions

An expert is able to integrate the myriad of elements into a bigger picture, while a non-expert has limitations that may force his or her perception to be selective. On nanotech questions, for example, the specialist is able to understand the value of all parts of the development chain and how they feed into the potential benefits. If a non-expert fails to appreciate any one element in the chain, the risk perception could outweigh the benefits to the point where no corrective communication could alleviate the mistrust or restore confidence in the need for this type of research. On certain issues like nuclear waste, pesticide use or GMO technology, the societal actors' opinions have hardened, the benefits appear less clear, and trust in research developments remain suspect. But for emerging technologies, like nanotechnology, experts still have an opportunity, if they are able to adapt the big picture (their knowledge) towards a public with selective understanding (a practical knowledge which determines the risk perception).

Innovation is a risk-taking endeavour intended to provide benefits which the public would normally balance favourably against any potential risks incurred. When innovations entail decisions on acceptable risk concerning environmental-health issues, non-experts do not weigh the benefits in the same manner as researchers. A perception of risk suggests a knowledge gap (which lies at the source of an uncertainty). But the existence of different cognitive frameworks on emerging research suggests that knowledge gaps are built into the underlying perspectives, carrying with them different normative significance between researchers and publics. To toxicologists, for example, a 99% certainty that a certain level of exposure to a synthetic chemical under assumed conditions is sufficient to accept a risk given the experience and training they have had. To a non-specialist societal actor, the question of any exposure to a potentially toxic, non-natural substance is perceived as a risk not worth taking, regardless of the benefits. For a risk to be acceptable, researchers also need to gauge what is deemed as public acceptability. As also seen with debates over human cloning or the use of embryonic stem cells, researchers need to understand how societal actors think in order to bridge any knowledge gaps that could pose unanticipated interference with their research. At times, researchers may overlook knowledge gaps which societal actors are able to recognise from a different vantage point.

Legitimizing versus integrating

In situations where the public has voiced concern or distrust of research programmes, researchers have increased communication and, where possible, tried to attract other actors to participate in order to legitimise the process. These stakeholders are often only nominally involved, and intended to be there just to add credibility in the attempt to gain acceptance for a certain research. The purpose of societal actors on multi-stakeholder boards is to merely say 'Yes'. As agents of change, such positions frustrate societal actors who want to be in a position to act.

Many societal actors are abandoning the present process which uses their expertise only to legitimise research. The research community should move from merely using societal actors to a point of respecting their knowledge, as partners, engaging with them in dialogue and then integrating any learning into a wider understanding. There is a need for institutional change – the regulatory courage to develop new dialogue structures in the development and evaluation of science policy. From these structures, societal actors should be given a more active mediating role in evaluating the direction of research.

One element the European Commission should continue to encourage is mobility. Researchers should be encouraged to cross-fertilise not only with other researchers from other regions, but also with societal actors, creating experiences that will better support dialogue endeavours among all parties and further the integration process.

What is the value of societal actors in the research process?

This report is not suggesting that societal actors enter the lab and work side-by-side with researchers (although this is happening in certain situations). Societal actors would not be adding value to the research process by attempting to participate in the scientific methodologies being used. They have a meta-research role to help researchers place their work within a larger context, namely:

- Societal actors can bring their outlook into the problem definition. Other cognitive frameworks are able to identify problems or isolate research issues that researchers may have overlooked;
- In the ex-post evaluation process, other stakeholders can identify the practical risks and benefits of further developments of the research;
- For researchers to have the public accept their activities, societal actors are able to provide clear guidance on what is socially acceptable.

Although societal actors are not expected to work in the lab or attempt to guide the researchers in their occupation, outside of the lab, the value of their perspectives provides researchers with another, wider picture of the uses of research.

Why should researchers engage with societal actors? What is the motivation for dialogue?

- Societal actors can raise questions that open up new fields of research.
- By listening to the concerns, researchers can get early-warning signals of rising public concerns.¹³
- Engaging with societal actors gives research added legitimacy – if the public understands the benefits and recognizes the need, their embrace would give the research further support. The outcry for researchers to find a cure for AIDS in the late 1980s was the public will that policymakers needed to support and encourage research.
- Societal actors are able to enrich the researchers' discipline, bringing in other perspectives that deepen and broaden the researchers' approach. Even if they do not agree, they can still better understand why they disagree and where they would need to go to find common ground.
- In understanding where the common ground lies, the fruits of the research can be better targeted and better received.

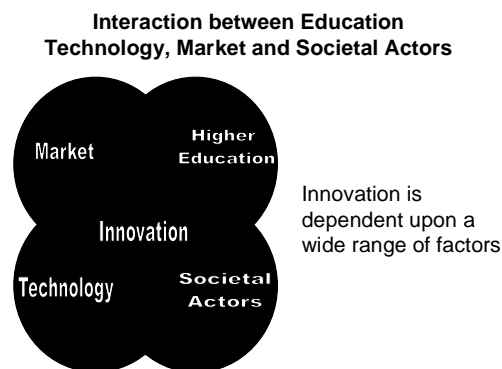
¹³ The increasing public attention on nanotech issues indicates that researchers and societal actors need to enter into a constructive dialogue (otherwise, nanotech research may become the next GMO science: great research results with little public support and an industry shying away from being associated with a potential public backlash).

In New Orleans, young students organise half-day sessions to present information to lay people. It boosts public confidence and trust in researchers and provides an important link for the researcher with the population.
 Professor Paul Galand to the EURAB Working Group, December 2006
Cancer researcher, past president of WWF Belgium, host of environmental science TV programme

2. Research and Innovation: the Societal Link

Research is a key element in the innovation process, but it is not the only one. Innovation is a combination of research, financial investment, a responsive education system, industrial and governmental commitment, positive regulation, public engagement, social impetus and a readiness in the population to take a certain degree of risks.

For research to make the transition to innovation, societal needs and interests should be involved. If researchers are not attuned to the public's concerns, expressed through societal actors, their results might not be sufficiently socially relevant, putting at risk any potential innovations to be developed. For the European Union to meet its innovation targets, it will not suffice to increase research funding; one of the ways should be for researchers to engage in a dialogue with societal actors.



The diagram shows how innovation is the product of available or emerging technology, an educated research base, a capacity to fund and market the developments and a realization of a societal need or concern that the innovation will meet. If any of these elements are lacking or misrepresented, then the innovative venture will be limited. In Europe, GMOs, nuclear energy and crop protection science are examples where all research elements were in place but the societal concerns were misrepresented or not adequately considered, leading to a loss of public trust that has been detrimental to the innovation process.

Innovation and research are bound by man's pioneering spirit: his capacity to take risks. A further challenge is to promote innovation in an increasingly risk-averse population, where precaution is favoured over new technologies.¹⁴ During the last decade, certain publics have gone through significant environmental health risk crises (Mad Cow Disease, GMO uncertainties, dioxin in the food chain and drug

¹⁴ See the British House of Lords 2006 report on the threats of a risk-averse population:
<http://www.publications.parliament.uk/pa/ld200506/ldselect/ldconaf/183/183i.pdf>.

safety). In the last 15 years British, Belgian and French governments had fallen, in part, due to their handling of such crises, making governments reluctant to rush to support new research and rather quick to invoke the precautionary principle.

Fostering an innovation culture

The Aho Group report, published in January 2006, urged the EU to take radical action on research and innovation, provide a *new vision* to address Europe's productivity and social challenges, and close the gap between the political rhetoric about the knowledge society and the financial. It proposed a four-pronged strategy focusing on the creation of innovation-friendly markets, on strengthening R&D resources, on increasing structural mobility as well as fostering a culture which celebrates innovation.¹⁵

The Aho recommendations implicitly acknowledge the societal challenges of research and innovation. At present, European culture does not adequately celebrate innovation and could at times be considered as suspicious and even hostile to some new technologies. The need to develop innovation-friendly markets implies that researchers are presently not 'selling what the public wants to buy' and had better get to know their customers and market. They should examine, through better interaction and dialogue, what innovations society would be friendly towards. This would help develop public support for the underlying research.

Innovation needs to be socialized. The FutuRIS project from the French national association for technical research (ANRT) has challenged research to "*socialise innovation, ie, to place society, its expectations, its dynamics, its interrogations, at the heart of the innovation system and consider this strategy to be much more profitable than aiming to confine society in a passive consumption function.*"¹⁶ This has been the case with the recent upswing in research into more environmentally sustainable alternatives.

The 'green revolution' has sparked a new public interest in developing research into sustainable solutions to clean up what is perceived to be man's acts of environmental destruction.

- Mitigating climate change has become a major global concern. Research into alternative energy sources is gathering momentum, garnering great public support and media attention;
- The proponents for a stronger REACH (the EU chemicals regulation) argued that mandatory substitution would trigger a 'flowering' of research into alternatives;
- The perceived threat to our planet's biodiversity and the size of man's ecological footprint has inspired researchers to search for new solutions, and impose what could be called 'precautionary research'.

Sustainability innovation is a good example of how researchers can benefit when understanding the public's concerns and incorporating different knowledge streams into the context of their research. 'Green research' enjoys popular support allowing policy-makers to impose 'green taxes' to help fund further research.

Societal actors have an important role to play in the innovation process, providing perspectives which can motivate, inform and legitimise research. The innovation

¹⁵ http://ec.europa.eu/invest-in-research/action/2006_ahogroup_en.htm

¹⁶ Socialiser l'innovation: Un pari pour demain, ANRT Working Group 3, chaired by Bernard Chevassus-au-Louis, [Le Défi de la citoyenneté: socialiser l'innovation](#), April 2004, translation Claudia Neubauer.

process is foremost a learning process, and the views of societal actors contain a wealth of valuable information.

3: Integrating Societal actors in Dialogue: Some Good Practices

This report has made the case for the need for better dialogue between researchers and societal actors, not only to avoid societal conflicts or interruptions in the research agenda, but also because these other perspectives can play a vital role in the transition from research to innovation. Societal actors are capable of having a positive impact on research agendas. The report has also acknowledged historical frictions between these actors. There are though certain good practices where researchers and societal actors are engaged and working successfully toward common ends. This report will acknowledge several cases, fully aware that they may be successful in certain situations and regions, but not others. EURAB is cognisant of the need for more fresh thinking on how research can further engage societal actors.

Consensus Workshops

Within the DG Research Fifth Framework Programme, the European Consumer Organisation, BEUC, was charged with running an accompanying measure entitled "Consensus Workshops", intended to bridge the gap between consumers and scientists on food issues.¹⁷ The societal actor organised three workshops on: Food Safety, Novel Food and Nutrition, which better defined the areas where there was common ground, where stakeholders could find some degree of agreement, and the no-go areas, where they were deadlocked in disagreement. This 'red-light / green-light' exercise was able to provide decision-makers with the necessary guidance to determine effective short-term policies and longer term strategies.

The BEUC accompanying measure brought the different stakeholders together, ensuring that their voices were heard and taking responsibility for establishing areas of common ground. By empowering the societal actor, it ensured their commitment to the process and transformed any critical, outsider mode into a more participatory position. The success of the Consensus Workshops suggests that the best way for societal actors to be involved is to empower them in the process (rather than having them engaged merely as legitimising forces).¹⁸

Science Cities (the Magdeburg Declaration)

The European Commission is developing the concept of Science Cities as a means to integrate science within society. These are regions and populations promoting cooperation between research and public, fostering "*a science culture whereby citizens are involved in decision making*". A science city creates "*a climate of tolerance and respect of cultural differences*" promoting "*an intense and lasting connection of science, economy and culture within our cities and to work with all parties concerned*".¹⁹ Examples of science cities today include Grenoble and

¹⁷ See <http://www.consensusworkshops.org/>

¹⁸ It should be noted that the European Food Safety Authority (EFSA) has created a Consultative Platform along similar lines. Its role is to report to EFSA's general Director on EFSA's work, particularly as it applies to the different stakeholders. It is chaired by an NGO representative from BEUC (see press release on the appointment: http://www.efsa.europa.eu/en/press_room/press_release/2005/1227.html).

¹⁹ Italics taken from points in the Magdeburg Declaration, made in November, 2006 http://www.sciencecities.eu/fileadmin/dokumente/Declaration_of_Magdeburg_-_final_version.pdf. See <http://www.sciencecities.eu> for further information on the Commission's efforts to promote science cities.

Barcelona, which have set up dialogue workshops, neighbourhood committees and communications with every stakeholder group. With populations more predisposed to the benefits of research and technology, science cities create a favourable environment for researchers to integrate societal concerns into their work.

Science Shops

From its origins in the late 1960s, science shops have helped provide research information to civil society and develop community-based research. Science Shops have evolved into a participatory network promoting cross-fertilisation between researchers and society. Mediating between societal actors and research institutions, they provide an equitable, cooperative dialogue with society, in what they refer to as interactive communication.²⁰ Often university-based, science shops provide an important opportunity for young researchers to identify with societal concerns during their studies. The European Commission has supported the development of a European-wide science shop network in FP6.²¹

Other good practices of engaging researchers and societal actors in an atmosphere of openness and dialogue certainly do exist, and EURAB proposes that the European Commission catalogues such cases to help foster fresh thinking on further cooperation.

EURAB Recommendations

This report has highlighted the difficulties in the present situation between researchers and societal actors. The stakeholders have different perspectives and cognitive outlooks, do not speak similar languages and at times work against each other.

The present strategies of increasing the level of science communication to get the public to accept what researchers are doing, and putting NGOs on panels to legitimise the research in the eyes of policymakers, have failed to bear sufficient fruit (and may, at times, have even exacerbated the situation). The issue is not only to get society to accept the value of the research, but also, as this report has focussed, to get the researcher to understand the value of the views of the greater society. Were that to be done, research could be more widely embraced, innovation could follow more efficiently from research and the public perception of research institutions may improve. EURAB is providing several recommendations on how the research community would be able to improve dialogue and develop in a more engaging interactive manner with societal actors.

Recommendation 1: Expose researchers to other perspectives by integrating engagement with societal actors into the university curriculum.

Researchers should try to be better understood by societal actors. Their work does not end with the hard facts, but rather, begins there and attention needs to be given to how science is used. This implies that from early in the researchers' education,

²⁰ See www.scienceshops.org

²¹ See http://ec.europa.eu/research/science-society/pdf/science_shop_en.pdf

they should have other perspectives opened up to them. This type of exposure should be built into the students' curriculum stressing a multi-disciplinary approach.

A problem in academia is that expertise outside of one's field is rarely acknowledged. Researchers have to frame their work in ways that their colleagues can understand. Working in closed circles, researchers are rarely exposed to other perspectives or societal actors. Universities should try to develop structures to square these circles, encourage dialogue and plant seeds for more open interaction, as the science shops in certain universities have established. It is during these formative years that researchers could be able to understand how the public perceives their work, not as clear black and white answers, but as shades of grey shaped by other concerns. Education is not just to fertilise the next generation, but to cross-fertilise them.

EURAB recommends that universities provide the structure to train and expose research students to different societal perspectives, encouraging engagement and a multi-disciplinary outlook. This dialogue perspective will take a considerable time (generations) to develop.

Recommendation 2: Encourage dialogue as a factor influencing a researcher's career prospects

If researchers try to communicate more so that the public will accept their activities, they risk losing credibility.²² This is the communicators' dilemma: *the more you push someone to accept something (a food safety risk, a chemical, a used car ...) the more suspicious they become and the less credible the communication.* Many scientists have concluded that it is better to abandon any contact with a wider audience. A Royal Society, Research Councils UK and the Wellcome Trust funded study, entitled "*Factors affecting science communication*", argues that, in a 'research driven' culture, the pressure to publish research, to attract funding to their departments and build careers on 'hard research' are key barriers to scientists communicating their work with the public. The study suggests that scientists think public engagement activities have a negative effect on their careers.²³

Shifting this perception is a long-term process needing multiple approaches. One route would be a multi-stakeholder approach. Representatives from business, government and NGOs have benefited from putting themselves in the others' positions. They tend to see each other from very different perspectives, often held in contempt or suspicion. The exchange of roles, enabling the actors to learn from each other, has provided a fruitful process of dialogue and consultation. By embracing societal actors, businesses are better able to understand their markets, recognise the potential for innovations and protect their brand reputation. However, the research community to date has been less willing to embrace societal actors, particularly NGOs.

EURAB recommends that the European Commission produces a series of actions to highlight the value of greater engagement with societal actors and how this could advance research careers. This would include producing a catalogue of good practices emphasising the benefits of dialogue and holding a series of multi-disciplinary events to encourage stakeholder engagement. Greater

²² See the STAKEHOLDERS IN RISK COMMUNICATION (STAR) Report, David Wright ed., European Commission, 2006, p 128, <http://mahbsrv4.jrc.it/star/download/wp4/STAR-final-report.zip>.

²³ See <http://www.royalsoc.ac.uk/page.asp?id=3180>.

emphasis on mobility (not only across regions and research fields but also concerning exchanges with other actors) would help in the cross-fertilisation process that is so crucial to dialogue. All publicly-funded research should entail an outreach aspect, including engagement with schools, dialogue with societal actors and communication to the general public.

Recommendation 3: Develop further mechanisms for societal actors to improve their research capacities

Empowering societal actors is the first step to having them motivated to dialogue on research and innovation. Keeping them involved in the process entails providing the means for societal actors to identify themselves as contributing positively to the dialogue in some way – as partners. In other words, societal actors like patients groups should be given the opportunity to develop their own research capacities.

Within the FP7 2007 Work Programme on Capacities (Part 5: Science in Society) numerous actions are proposed to enable societal actors to build capacities for research. The work programme proposes to bring societal actors closer to the researchers, proposing certain roles, in particular:

- *"Identifying and discussing topics and opportunities for future research initiatives.*
- *Mapping and assessing previous research activities in relation to CSOs' needs and interests.*
- *Exploration of possible forms of cooperation with research centres and other research stakeholders."*²⁴

This action would indicate that the European Commission appears to be heading in the right direction.

To allow societal actors the means to develop and strengthen their scientific participation would promote a stronger involvement and commitment. They would be playing more than a legitimising role and given their different perspectives, their research contributions would likely complement ongoing research.

The FP7 2007 Work Programme on Capacities also introduces the idea of cooperative research mechanisms, where different actors are drawn together to assess complex scientific and social issues. This mechanism provides a structure for dialogue among the stakeholders.

EURAB encourages the expansion of mechanisms to bring societal actors to the table as partners in the dialogue on research and innovation where relevant. If societal actors are not involved in a dialogue process on some form of equal footing, then they will rightly abandon the process. **The Commission's efforts to help develop societal actor's research capacities is a step in the right direction** and EURAB will be monitoring the progress of this pilot in the 2007 Work Programme.

Recommendation 4: Expand the role of societal actors in the European Technology Platforms

²⁴ 2007 Work Programme on Capacities (Part 5: Science in Society), page 13 – ftp://ftp.cordis.lu/pub/fp7/docs/wp/capacities/sis/s_wp_200701_en_pdf.zip The Work Programme also proposes CSO involvement in assessing the social and ethical implications of certain research activities, including nanotechnology.

European Technology Platforms (ETPs) bring together stakeholders to identify the innovation challenges, needs and costs of long-term research. They are meant to be definitional (defining the problems and issues – examining where the research should go) by working with different stakeholders in an attempt to make research more open and transparent.²⁵ There are presently over 30 Technology Platforms, covering innovation fields from nanotechnologies to steel, from space technology to rail transport. The European Commission's role, as a catalyst, is to provide links to EU bodies developing legislation, identify funding sources, and improve coordination of various investments with other elements in the innovation process.²⁶

But the ETP multi-stakeholder engagement approach has largely been limited to business, government and academia. The NGO concern of being merely a token legitimising factor has affected their participation in several ETPs, to the point that in the June, 2005 Commission staff working document, the Commission marked a shift, by considering the platforms as joint public-private R&D initiatives and putting less stress on the point of stakeholder involvement.²⁷

This could be considered a misstep. Recalling earlier remarks on the societal impact on innovation, the ETPs need to find ways to broaden their social engagement, opening up to more societal actors, including parties that may be critical of the research programmes. Their inclusion of societal actors should not be as merely legitimisers, but as actors playing an important role in the research analysis and assessment processes.

How then could Technology Platforms bring in wider perspectives, become more inclusive and attract societal actors to participate more regularly and not only as a party to legitimise the process? To address these questions, attention should be given to the *Consensus Workshops* considered earlier in this report. As a good practice in encouraging dialogue by empowering the societal actor, this approach could give guidance for ETPs. Further thinking is needed to develop new approaches for researchers to engage with societal actors.

EURAB recommends that FP7 provides vehicles for societal actor empowerment projects, to assess issues running parallel to the concerns of certain Technology Platforms. The information generated from participatory processes, fed into the Technology Platforms, is not only useful for identifying stakeholder 'red-light / green-light' consensus positions to guide research directions, but it could eventually encourage a more balanced interaction of societal actors onto the platforms. Like any trust-building exercise, this approach would undoubtedly take a considerable time (the ETPs have been established to be long-term initiatives).

Recommendation 5: Encourage structures for partnerships between researchers and societal actors in the research dialogue

²⁵ http://cordis.europa.eu/technology-platforms/home_en.html

²⁶ EURAB Report on European Technology Platforms, 2004: <http://ec.europa.eu/research/eurab/pdf/recommendations9.pdf>.

²⁷ Report on European Technology Platforms and Joint Technology Initiatives: Fostering Public-Private R&D Partnerships to Boost Europe's Industrial Competitiveness, 2005: https://www.hfpeurope.org/uploads/822/tp_report_council_2005.pdf.

Research and innovation are not somebody else's responsibility; innovation develops favourably when all of society has the ability to participate in the process – this is the motivation behind the *Science Cities* project the Commission is developing and this report has promoted it as a good practice. The Consensus Workshops are another example of how empowering societal actors helps bring them into the dialogue as engaged and committed partners. **EURAB recommends that the Commission assemble a series of good practices to concentrate the researchers' thinking on the overall value of societal engagement.** Researchers should be able to follow and learn from these examples.

Recommendation 6: Integrate societal actors into the various stages of the research evaluation process

The question remains: if not in the lab, where would societal actors best participate in the research process? Attention should be drawn to a report written by Manfred Horvat.²⁸ Horvat evaluated around 100 FP6 research projects from the perspective of their inclusion of social sciences. His conclusions were that the integration of these soft sciences into the research programmes had to be further developed and strengthened. To complement this, Horvat offered a multi-dimensional interpretation of technology (including social values like functionality, competitiveness, prosperity, economic efficiency, security and safety, health, and human and societal factors). In essence, Horvat's interpretation refers to social evaluative and assessment aspects. In this line, EURAB feels that societal actors could make a very positive contribution to the European research programmes through their involvement in the evaluation and assessment stages.

EURAB recommends a strengthening of the project evaluation, assessment and post-assessment processes by involving societal actors where appropriate. This would entail first benchmarking the present involvement of societal actors in the assessment processes, and evaluating the trends in their participation level. Societal actors could make valuable contributions to impact assessment teams. Having societal actors in the position of judge and jury could also motivate the researchers to increase their dialogue and integrate other views during their research.

Conclusion

These recommendations are a modest effort to encourage the research community to open up more, engage in dialogue and develop a more interactive approach with societal actors. It is clear that the recommendations refer to long-term evolutions in the researcher-societal actor relationship. EURAB feels it is necessary to promote the societal engagement in order to transform a larger percentage of research into innovation, and attract more stakeholder involvement in the research process.

Good practices of researchers in dialogue with societal actors already do exist, but the Commission should do more to benchmark them. EURAB has been impressed with some recent efforts to engage and empower societal actors in the research

²⁸ *Mid-term report on the integration of socio-economic and foresight dimensions (SED) in FP6*, Manfred Horvat, 2005: http://europe.ish-lyon.cnrs.fr/Documents/fp6/sed_report.pdf. Some of its recommendations are picked up in a 2005 EURAB report: *The Social Sciences and the Humanities in the 7th Framework Programme*. See: http://ec.europa.eu/research/eurab/pdf/eurab2005_reprec_ssh_7fp_en.pdf.

process, and will be monitoring the work programmes to evaluate their evolution. The EURAB working group feels that the European Technology Platforms are the best means presently available to develop deeper dialogue with societal actors and would like to see some good social engagement practices integrated into the platforms.

Researchers should remain cognisant of how the actions of the past have generated negative public perceptions of research today (as in issues arising from nuclear energy, GMOs, pesticides) and that better dialogue with the public either directly or via the societal actors could have prevented much of the friction and lost potential innovative developments in these research fields. This hindsight could be helpful in our present risk averse, precautionary social arena where new research developments are often scrutinised under suspicion. For emerging research fields, like nanotechnology or therapeutic food additives, to continue to develop and innovate, social engagement and open dialogue should be a necessary corollary to communicating the research.

These elements comprise researchers' societal engagement.

Postscript: Recommendations for further EURAB studies

This report is only an initial assessment and has merely scratched the surface of a wider social issue. By focusing on the question of promoting more dialogue between the research community and societal actors, it raised many associated questions to which the next EURAB should appoint working groups.

In light of this report, the next EURAB should revisit the science education issue by examining how to develop an educational system that would foster more dialogue between researchers and society, and how it can attract more potential research students.

EURAB should consider the development of a body that could define and sanction good research practice from a societal perspective. It could become a forum for debate on proper research behaviour, giving recommendations and guarding the reputation of researchers. This body could also serve as a focal point promoting dialogue, mobility and cross-fertilisation.

EURAB should recommend that a study be undertaken to consider how other, non-research based forms of knowledge are related to scientific knowledge and how researchers could adapt and use these perspectives in their work.

Finally, EURAB is advised to consider the societal dimension of research by looking into the interlink between research and regulation (whether more regulation inspires further innovation).