OECD Global Science Forum

Improving the Dialogue with Society on Scientific Issues

Today, citizens are directly affected by science and technology but they don’t wish to simply be passive recipients of new products and technologies, however innovative they may be. Furthermore, the scientific enterprise is not automatically accepted as beneficial to society. What appears increasingly required is a true bi-directional dialogue between science and society, going beyond traditional science education or simply securing the acceptance by citizens of scientifically validated truths. The optimisation of this debate is a significant challenge for governments, and policymakers are searching for ways to respond to the new importance and assertiveness of the public.

Accordingly, the OECD Global Science Forum undertook an activity on Improving the Dialogue with Society on Scientific Issues.

This report analyses the shift from the traditional approach of “public understanding of science” to a multi-directional dialogue, involving society’s different stakeholders and the general public. It is focused on the practical aspect of the dialogue and provides recommendations for each step of such an undertaking:

- The rationale: objectives of and participants in a dialogue
- The methodology: organising and conducting a dialogue
- The results: formulating and using the output of a dialogue
1. **Background**

Dialogues and debates concerning scientific issues have a long history, but their importance is increasing due to the major role that science and technology play in the lives of citizens. Preserving and promoting the benefits of research is a shared responsibility of all stakeholders from government, industry, the research enterprise, and civil society. This requires monitoring the trends and developments that influence the relations between science and society, and an ongoing search for improved principles and methods through which science and society interact. This concerns issues in which science is itself at the forefront (for example, exploring the risks and benefits of advanced medical technologies) and those where it plays an informative and advisory role (for example, debating the merits of transitioning to renewable energy sources).

Science provides an understanding of matter, life, and societies, and can create tools of enormous power for transforming human activities. So it is the responsibility of science and scientists not only to create new knowledge, but to be aware of, and to critically assess, the consequences of new knowledge, and the actual real-life impacts on societies. Almost five centuries ago, the French author Rabelais wrote\(^1\): “Science

\(^{1}\) *Pantagruel*, 1524
without conscience is the ruin of the soul” and more recently, Isaac Asimov observed: “science gathers knowledge faster than society gathers wisdom. Isn’t it up to us to make sure they catch up with each other?”

Thus it is that the question of dialogue rises up with some regularity in the history of sciences, and has emerged again in the last years in many countries, especially with new knowledge and technologies in specific fields such as biology, physics or the computer sciences. Why has it emerged again so strongly in recent years? The main reason is probably the acceleration of public and private investment in science since WWII. Scientific systems, in universities, research institutions and private companies have become very productive; new knowledge is transforming society in all its components. Society and people in society feel the need to master this process of modernisation, and are wondering whether the products coming from scientific and technological spheres are always pertinent. The public debate about science has been transformed: science no longer only means progress, but progress and risks.

Because this topic represents a challenge for many governments, the Delegation of France presented at the 17th Meeting of the OECD Global Science Forum (October 2007) a preliminary proposal for a new activity on improving the dialogue with society on scientific issues. This new activity was adopted by the GSF delegations. A revised version of the proposal was then prepared by the Delegation of France and discussed within an international steering committee nominated by interested delegations, prior to its presentation at the 18th GSF meeting in March 2008. The revised proposal called for an international workshop to discuss and exchange information about processes involved in consulting society on scientific issues. In preparation for this workshop, a preliminary survey (available at www.oecd.org/sti/gsf) was commissioned from a consultant, Dr. Remy Lestienne, to identify and analyse existing practices in various countries.

Three main issues were analysed in detail:

- The rationale: objectives of and participants in a dialogue with society on scientific issues
- The methodology: organising and conducting a dialogue
- The results: formulating and using the output of a science/society dialogue

To further explore the above topics, a workshop was held on September 17/18, 2008 in Paris, at the CNRS Headquarters. It was attended by 37 participants from 18 countries and international organisations (annexe 1). The workshop, and the entire activity, was chaired by Dr. Jean-Pierre Alix of CNRS. This report examines some of the fundamental reasons behind a renewed need for dialogue, the kind of practices which could enhance the quality and efficiency of such a dialogue, and yet-unsolved issues that should be further examined at the international level.

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2 Isaac Asimov, Isaac Asimov’s Book of Science and Nature Quotations, 1988
2. Chairman’s Introduction

2a. A classical « Science in society » rationale

Strong traditions of disseminating science among lay persons\(^3\) were established in the 20\(^{th}\) century, primarily via mandatory primary education, and through the expanded educational opportunities at secondary and higher levels. The main objective was to ensure the transmission of knowledge from one generation to another, over the long term. In parallel, another form of science education was invented, the Science museums\(^4\), aimed at exhibiting the best of science, and based on the earlier model of the universal exhibition.

The underlying assumption of those actions was an inadequacy in the public’s understanding, and the necessity for a learning process between those who “know” and those who don’t. In this case, initiatives corresponded mostly to top-down decisions about science and communication, embedded in state policies, and implemented via a “one way only” communication process. This « Deficit Model », which affirms that filling the gap between scientists and non scientists by education is the best way to transfer knowledge (and, incidentally to alleviate any mistrust of the public towards science) has emerged as a tacit and dominant model. Today, it still represents the basis for action of many persons who are in charge of public dissemination of science.

2b. New and emerging trends

Today, citizens are constantly and deeply affected by science and technology – due to the success of science! One has merely to compare one’s life with that of one’s parents or grandparents to appreciate the huge transformations in the fields of medicine, transportation, communications, housing, etc. But there is a significant new trend: the changes are no longer accepted as automatically beneficial.

- Trust in science is decreasing in many industrialised countries, among young people and the public in general, as indicated by numerous surveys.
- An important fact has emerged, compared with periods where discussion about science was limited to a few experts: the public wants a say in science, as in a lot of others fields, or at least wishes to access information to build its own ideas. This trend is largely correlated with a higher level of education.
- The number of controversial issues involving science is increasing. GMOs, genetic testing, nanotechnologies, nuclear waste, science and religion, and global warming are just a few examples. Naturally there is a corresponding increase in the number of possible debates.
- In response to the growing concerns, numerous public debates have taken place, in many forms and in more or less institutional ways, but to date they do not seem to have had a major effect on the diminishing public trust in science.
- The development and dissemination of knowledge through the Internet is increasing quickly (as witnessed, for instance, in the emergence of the Wikipedia and similar resources) and may reinforce public curiosity or criticism. This is however complicated by the fact that a great deal of unreliable information is also present on Internet.

In many countries, science is no longer only associated with the progress of humanity, but also with risk or even danger. This ambivalent perception of science has necessarily become a shared concern for decision makers. What appears increasingly required is a true bi-directional dialogue, going beyond the “Deficit

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\(^3\) Persons who have not acquired specific specialised knowledge

\(^4\) Which replaced the « cabinet de curiosités » from the Renaissance period.
Model” and traditional science education. Policymakers as well as the other stakeholders involved are therefore searching for ways to respond to the new importance and assertiveness of the public. The hope is to establish a higher, well-deserved level of trust in science, and to generate more support for governmental decisions in the science policy domain, notably the choice of areas of research that are funded by the taxpayers, and the approval of technological solutions that will touch and affect the lives of ordinary citizens. A number of relevant, challenging questions were raised during the OECD workshop, linked to the rationale, process and outcomes of the science-society dialogue.

2c. Science in society: a mix of reciprocal expectations

Surveys consistently show that the public respects scientists more than other figures in society: they get more than 80% of positive opinions compared with doctors, artists or politicians. Figures like Einstein or Pasteur are still well known, contributing to a mythic perception of science. Other studies demonstrate the public’s expectation that scientists will develop solutions to the major problems confronting humanity: climate change, energy security, health hazards, etc. On the other hand, scientists are fully aware that new solutions have to be invented, and then applied by members of society who must depend on the pertinence, quality, originality and integrity of the scientists’ work.

However, the context in which these satisfactory reciprocal expectations operate has evolved in recent decades. The system of exchanges between science and society built after WWII was based on two pillars:

- state support, through public funding, for a large number of laboratories, composed of highly qualified men and women selected in the best universities, whatever the country;

- the exploitations of scientific discoveries by companies to increase their competitiveness, the pace of this phenomena having increased dramatically with the emergence, in years of strong economic growth, of large multinational firms, as well as of new countries in the international economic competition.

In these exchanges, the scientific contribution was largely based upon the quality of the research carried out in the best laboratories and a system of exchanges and decisions was set up between three players: the states (governments?), the scientists and the companies. However, despite its strength and productivity, as demonstrated by the fast evolution of the quality of life in developed countries, this system has generated a demand from society for a better control over the vast transformations that are taking place. This implies the involvement of new actors in the decision process, the first one being the citizen.

One should however look into what is usually called “society”. In its usual sense, this is meant to designate a fairly homogeneous group of people, organised around common values. But this very general definition is unsatisfactory if one wishes to analyse the role of science in more than general terms. A different understanding, discussed in this workshop, considers society as “the public” or “the public opinion”. This may however be too restrictive, as it reduces the relationship of science with society to its perception by the public, and eliminates a number of key actors. A better definition is therefore required, which:

- identifies the different components involved, which implies a scale more precise than that of the society as a whole, but

- avoids focusing on all the micro-actors, which would run the risk of losing touch with society.

To follow this approach, we observe that, in addition to the three “classical” actors of science policy indicated previously, those which play major roles in society, such as education, culture, communication, health, and security should be added. Each of these important functions is acknowledged as having a major stake in our society, and as being strongly influenced by scientific progress. Each involves specific relationships with science, which have evolved over long periods of time, with a more or less strong convergence of interests and cultures. Each evolves with society through a series of transformations as science and technologies themselves evolve, whenever progress allows them to address new societal issues.
or, conversely, when society requires new solutions. Dialogue, which consists in making questions reciprocal, is therefore indeed a multiple and two-way exchange.

The science/society interaction is vast and complex, still constituting a major repository of beliefs, opinions and expectations. To better describe this complex system, to understand how reciprocal influences are shaping the interactions, and how an optimal dialogue process can be implemented, a new model is necessary, which includes a comprehensive approach to the many partners and their relationships. The following scheme is proposed to visualize this complex system and the main partners (or stakeholders) to be considered in future dialogues:

![Science-society: from linear to interactive relation scheme](image)

A functional approach to science in society

2d. Modern scientific and technological issues require an enlargement of the democratic process

The huge success of science and technology is now global, and continuously creates new possibilities for transforming the main functions of human life. In this general trend (which should continue to grow in the coming decades) the scientific contribution is combined with others which have different roots in history. Thus, the number of possible interactions is itself growing, due to expectations from society towards science, and from the growing potential contribution of science and technology to many sectors of society.

In the industrialised democracies, societal governance has been transformed from traditional patterns (in which, it should be noted, science policy was defined and implemented by a small group of people/institutions). The prevalence of education, new forms of mass communication and expression, and the vast availability of goods and services, have resulted in societies composed of active, critical individuals who are eager to examine governmental policies and their consequences on daily life. Thus democratic changes have introduced a desire to openly discuss science issues, their potential, and their effects.

Science systems are subject to at least three strong kinds of pressures (the first two being traditional, the third quite new): to conduct original research and achieve peer recognition; to promote national competitiveness goals in a global economy or otherwise bring benefits to mankind; to win the respect and trust of society.
As a provisional conclusion, there is a continuum of requirements for future success in science policy, grounded in history (as described in Lestienne’s report):

- Research policy based on communication with the citizenry and its informed consent;
- The need for a bidirectional dialogue (or, more precisely, a series of coherent dialogues) going beyond traditional science education or classical science communication;
- A recognition that the process is complex, especially because of the interdependence of stakeholders (in education, in the economy, in research, in culture, in the media, among policy makers,...).

A worthwhile goal is to design a long term process leading to enhanced mutual understanding between the stakeholders, the objective being the reinforcement of reciprocal trust between science and society at large. To succeed, it is necessary to engage the researcher as a citizen, which means a profound cultural shift. There is a need to open up to new questions and alternative research trajectories. The new paradigm means moving away from models of prediction and control towards a broader discussion regarding the visions, goals and purposes of science. This, in turn, requires the creation of optimal conditions for constructive dialogue – a process that is outlined in the remainder of this report.

3. Findings from the Workshop

The following findings and recommendations emerged from the discussions at the Paris workshop. They focus on the general process of a facilitated dialogue, and its different steps. It is important to keep in mind that:

- The word « dialogue » comes from ancient Greek, associating two words: dia (different) and logos (rationality). Dialogue means neither consensus nor communication; the associations in the word “dialogue” imply both a split between rationalities and the goal of bridging them. (This observation is not an endorsement of a relativist view of science, and is entirely consistent with the universal character of science).
- History has created multiple and complex links between science and society, and many forms of dialogue exist. Most of the current dialogues are defined by history, cultures and institutional frameworks. We need to consider “science in society” as a multidimensional question. There is no single dialogue, but many ongoing dialogues, with a broad array of partners.

3a. Rationale, objectives and participants

Abandoning the “society is stupid/scared/irrational” mindset

A dialogue with society over scientific issues is usually planned or initiated whenever a problem is anticipated or has already occurred. Such a problem often involves individuals or groups who may not have an in-depth knowledge of science, or an appreciation of its methods and culture. But, similarly, scientists (experts) themselves are very often specialised in narrow domains of science, and may not be aware, except in general terms, of what is going on in other fields. So differences in the science culture background should be accepted as a legitimate preliminary condition for establishing a fruitful dialogue. Public engagement also involves motivating scientists to reflect on the political, social and ethical dimensions of their work. The extreme idea that science is always perfectly rational, and that civil society is only driven by emotions is far too simple, and should be abandoned.
**Framing the scope of the dialogue. There are pitfalls in making the scope too narrow, or too broad.**

Two major issues should first be addressed when initiating a dialogue: the exact scope of the issues to be debated, and an understanding of the reasons behind the questions, expectations, beliefs, or fears of society. There are pitfalls in making the scope too narrow or too broad: this can result in either frustration in not being able to address important and pertinent questions, or in being diverted into the realm of diffuse philosophical or ideological issues that cannot possibly be resolved in the course of a finite exercise. A first step therefore consists in a correct identification of what is the exact problem to be addressed, an evaluation of the legitimacy of the question, its scale, the timeframe involved, the identity of the main stakeholders, the diverse social or cultural perspectives involved, etc. Identifying and understanding the needs and motivations of society is also essential to determine how they can be represented in the coming debate. Sometimes, the issues are so specific, or the situation is otherwise such that it might be counterproductive to engage in a dialogue at all. In such a case, other methods of resolution and interaction should be found (for example, expert groups, stakeholder workshops or scenario building), until new facts or conditions emerge.

**Choosing the right time to have a structured dialogue (too late is certainly bad, but is “never too early” correct?)**

The right time for launching a dialogue is also one of the main questions to consider when preparing a dialogue process. If the stakeholders do not know enough about the subject or do not perceive it as a potential problem, a first step, consisting of distributing information (as is often the case in the preliminary phase of participatory processes) may be more pertinent. In contrast, if the subject has already led to conflicts over a number of years, without any hope for a consensus, and involving strong opposed positions, a dialogue may be too difficult and costly, and it may be worth waiting for new facts to emerge, or to set up a truly innovative method of debate. So an objective appreciation of the maturity of the subject proposed for a dialogue, and what can be obtained from such a process, is important.

**Mapping the type of dialogue to the main features of the issue**

Different types of dialogue may be set up, as described in the CIPAST European project\(^5\). The type of dialogue has to be adapted to the issues described above, and framed into a practical process, corresponding to a precise objective.

**Avoid yes/no questions, and do not strive for an artificial forced consensus (i.e. leave room for various options in the recommendations, scenarios being useful tools for describing such options)**

The objective of the dialogue should be clearly defined from the start. Dialogue is a constructive process, which should leave room for various options in the outcomes and recommendations. Obviously, a dialogue should not be carried out simply to validate one option or decision, as this will always lead to frustration and the questioning of the fairness and the utility of the process. Participants should not be used as tools to validate a predetermined outcome.

True dialogue is based on an authentic exchange involving diverse values, cultures, representations, interests and past experiences. This is a potential source of conflict, especially when no previous dialogue has taken place. The anticipation of disagreement should not lead those designing the process to deliberately exclude certain stakeholders, or the expression of contentious points of view. The existence of biases and pre-conceived notions should not be hidden or disguised but rather recognised and acknowledged. This can reassure the various partners of the dialogue about the sincerity, seriousness and pertinence of the process, and can even be promoted as a condition for reaching new or reasonable solutions later. This is also why yes/no-type questions should be avoided, as they often lead to radical confrontations,

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unsuited to the real world of complex policy decisions, which should be based on analyses from multiple points of view.

Explicitly including the stakeholders in the framing and preparation

The more stakeholders are associated in the preparatory phase, the more the questions to be treated in the actual dialogue will reflect the real diversity of existing points of view. Although it seems easier to start with smaller groups to build a preliminary consensus, experience shows that new players in the dialogue process need the time and opportunity to learn about the terms of reference and background of the process, to understand how the questions to be debated were chosen, and to acquire a sense of ownership and commitment to a successful outcome. If possible, these steps should be achieved by the main stakeholders during the preparations, before the dialogue itself begins.

Doing more to educate scientists in dialoguing with the public and the media

A special recommendation concerns scientists, who may have little difficulty in debating and communicating with their peers, but find themselves quite unprepared for discussions with non-specialists, notably the public and the media. Researchers should learn to present current scientific knowledge without hiding its limits or uncertainties, and to be open to a different understanding of theories and facts by non-specialists. Training and experience in these areas would be useful, and could be incorporated into the curricula of graduate schools, or the professional development programmes of research institutions. Participating in dialogues with the public should be rewarded in performance management exercises. It is equally important that the various stakeholders involved in such dialogue be given the opportunity to acquire a level of understanding of science and technology, through adequate training.

The concept of the Public has to be clear

There is no single recognised definition of “the Public”, although the concept is clearly a critical one for formulating concepts and theories in the political sciences. Regarding the subject of this report, a key question can be formulated very explicitly: who represents the public in a science/society dialogue? This question is directly linked to the level and breadth of society involved: all citizens (lay-persons), the various stakeholders who may have a vested interest in the issue; opinion leaders… It may be argued that, in a correctly functioning democracy, the population is represented by its elected officials, but it is rather clear that, in practice, other choices must be made if the full spectrum of public interests and opinions is to be represented. There is, of course, no shortage of non-governmental organisations, ranging from small ad-hoc associations concerned with a single narrow issue, to large, long-standing and well-funded organisations with elaborate hierarchical structures. For want of a better solution, and out of necessity, the latter are often recruited (or impose themselves) as the representatives of “society”, the “public”, “ordinary citizens”, or “civil society”. Usually, empirical evidence of representativeness is not sought, nor is it usually clear how these entities are governed or how they come to adopt the positions that they do. Moreover, science has many possible “publics”, which can vary according to a scientific field, geographic area, cultural background etc. This difficult and sensitive issue deserves further study.

3b. Methodology: organising and conducting a dialogue

Following two core principles: transparency of the process and unbiased moderation

Dialogue should be conducted according to recognised, fair rules, which should be explicitly stated. The question of neutrality of process is key. Should the process attempt to provide pure neutrality - which requires general agreement on a neutral starting point, and on external procedures for establishing and maintaining neutrality - or, rather, should a set of rules be determined that simply ensure a fair and unbiased procedure which will not influence the results?
Although pure neutrality seems, in theory, seductive, it may be difficult to implement as it requires an initial consensus among the various stakeholders. One must not get bogged down in the structure of a given dialogue (which should be tailored to the question at hand), but, rather, maintain two core principles: transparency of process and unbiased moderator(s).

The procedure chosen must have a built-in goal of fairness towards all participants, and must allow for open expression (i.e., the possibility for all participants to express their views freely, and agreement from them to listen to all other participants).

Explicitly distinguishing Risk (calculable) from Uncertainty (linked to scientific ignorance)

Risk and uncertainty are two entirely different concepts, which are often poorly understood by the public. Risk can be calculated (or estimated) and expressed as a probability. Uncertainty, by contrast, is a natural situation for science, and stems from the lack of data, information or theory on a given topic, and from the natural complexity of research and technology; it can only be expressed by plausible hypotheses based on current knowledge. Uncertainty may, of course, be reduced or eliminated by further research.

When participating in dialogues, scientists must clarify what is proven or widely accepted knowledge, and what is plausible or inferred but unproven, so that partners are not led to believe that every field has already been fully deciphered or analysed.

Including as many stakeholders as possible, within reasonable limits

As many stakeholders as possible should be invited to take part, without attempting exhaustive representation of every fine shade of opinion. When citizens are involved, they should also be able to take an active part in formulating questions and recommendations. All participants should be on equal footing from the start. Since organisational constraints may dictate that getting all potential partners involved from the beginning is impossible, a process for gathering additional input at later stages must be implemented.

Promoting and establishing trust among the participants

Trust allows people to discuss issues without constantly questioning the motives and validity of the other participants. This is especially important in a dialogue over scientific issues, as participants debate complex issues in which they may not all be experts. As Max Weber suggested, one need not know all of the science and techniques involved in a tramway to use it. One of the major goals of dialogues over science and society should be the enhancement of trust, which may create and/or strengthen a positive attitude towards research.

Because the dialogue process may bring together stakeholders with very divergent opinions, some distrust among them is to be expected. However, no useful dialogue can proceed without an element of trust, so measures to promote it must be given great attention. Transparency, the smooth flow of information and communication, and similar procedures can be used to build trust gradually during the course of dialogue.

Involving policymakers reinforces credibility

Nothing is more discouraging to a group of stakeholders who have gone through a lengthy, perhaps painful, dialogue process, than to find their work ignored. The value of the overall exercise depends on the usefulness of the outcomes. Since policy makers are expected to use the results of a dialogue, they should be involved in it. The credibility of the process can be publicly reinforced if policy makers are known to participate fully. And because policy makers can help shape the dialogue by asking the questions necessary

\[^6\] in Le Savant et le Politique, 1917-1919
for making informed decisions afterwards, they help assure that pertinent information is discussed by the stakeholders, thus increasing the efficiency and usefulness of the dialogue.

**Conducting dialogues requires special skills and training**

Conducting dialogues on scientific issues requires special skills: organisational skills gained through experience in the dialogue process; the ability to understand the various stakeholders’ modes of discourse, jargon and expressions of priorities; knowledge of potential difficulties that might arise in specific contexts, etc. Interpreting dialogues involves recognising differences and gaps of understanding that are due to the different cultures and experiences of the stakeholders.

A dialogue’s duration should be carefully considered. It is useful to have a clear deadline, but plenty of time should be allowed to tackle the main problems, and also to build trust among the participants. Cost and resources should also be evaluated carefully beforehand. Managing dialogues also means monitoring progress: timeliness, quality of deliverables, etc.

Organisers should have sufficient experience, including explicit knowledge in the field of dialogue organisation when launching a scientific dialogue.

**3c. Formulating and using the output**

**Being clear from the beginning about the outcomes desired**

A dialogue process demands a real investment from all participants. It is usually (or should be) part of a broader ongoing action which may include overlapping and sometimes very fragmented processes over a long period of time, involving many different channels. A variety of different types of outcomes are possible. To avoid confusion (and so that trust can emerge or be reinforced) it should be made clear from the beginning (as part of Framing) what type of outcomes are expected, and how they might be used (for example, in government policy-making).

**Recognising that the goals can be totally or partially achieved**

Sometimes, achieving a global consensus (which may involve radical changes in the opinions of some participants during the dialogue itself) may not be a realistic goal, even if such consensus was the original target. A more modest achievement may still be considered a success, given the conditions, the time available and the configuration of partners in the dialogue. For instance, concurring on selected facts may be considered, in a given case, as progress, as, one could also argue, would be agreeing on what to disagree about.

A well-conducted dialogue may lead to long-lasting trust between stakeholders, even in the absence of consensus. This trust in itself may bear the fruits of further successes.

**Developing an effective communications strategy can benefit (and, potentially, convince) those who did not take part in the process**

A communications strategy (through documents, meetings, exchange of arguments) should be implemented so that those who did not, or could, not take part in the process can access its formal results and discuss them. Additional trust thus created among new partners can reinforce the recommendations, or at least let them be more widely known among the public.
Planning for a feedback process, to monitor results

As mentioned above, the dialogue process is undermined if its outcomes are not made use of – or, even worse, if they are ignored. Although policy-makers may decide to act differently from the recommendations resulting from a dialogue process (for instance, if the planned outcome was explicitly intended only as advice), this should be done in full transparency. As a general rule, the authorities who sponsor a dialogue process should be obliged to respond to the conclusions and recommendations of the participants, and should indicate how they will take them into account.

A feedback process based on monitoring and collection of data, organised independently of the dialogue stakeholders, should communicate the actual impacts of the process, which may also improve the chance for the success of future initiatives.

4. Conclusions

Given the ever-accelerating impact of science in society, the need for two-way dialogues has become necessary to foster coherence between science policy and other critical mainstream policy domains (i.e., policies in the domains of economics, health and social welfare, environmental protection, defence, etc.). However, conducting such dialogues presents major challenges due to the diversity of the multiple stakeholders, each having distinct interests, expectations, opinions, cultures, experiences, and vocabularies. This report is not intended to provide a “one size fits all” recipe for conducting such a dialogue, but is intended to be a kind of checklist that can be useful for representatives of governments or institutions. In each individual case, creative and constructive solutions will have to be devised in all of the areas that are enumerated in this report. In addition to identifying and elaborating on these areas, the OECD workshop participants identified a series of additional questions which should be analysed in more detail:

- Who represents “the public” and the public interest? The representativeness of the various stakeholders is a difficult question, but which needs to be addressed since an effective dialogue process can only take place if the public is correctly involved. This question also has to be tackled in a context of an internationalisation of such dialogues.

- What are the foundations of such dialogue? Researchers in social sciences should probably be more involved in looking into the theory and tools needed to understand science-society dialogue or to build metrics and a taxonomy of science-society relationships.

- How should research institutions be involved in such dialogues? Although they have a key role to play, they are still often involved only on an ad hoc basis, and they rarely evaluate or reward the involvement of their scientists in such dialogues.

- What are the optimal tools for an efficient dialogue? Beyond the principles described in this report, additional aspects should be considered such as the use and impact of internet, the relationships with the media and journalists, the professionalization of dialogue mediators.

Workshop participants encourage the Global Science Forum to look at these additional issues in more depth during the course of a possible follow up activity.
Annexe 1

Workshop on Improving the Dialogue with Society on Scientific Issues

September 17-18, 2008
Paris, France

List of Participants

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<tr>
<th>Country</th>
<th>Name</th>
<th>Affiliation</th>
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<td>Belgium</td>
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<td>Martine Carisey</td>
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<td><strong>OECD</strong></td>
<td>Katsuyuki Kudo</td>
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<td>Charles Kleiber (keynote speaker)</td>
<td>former Secretary of State</td>
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<td>Çiğdem Atakuman</td>
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<td>John Boright$^7$</td>
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$^7$ Via telephone
OECD Global Science Forum

Improving the Dialogue with Society on Scientific Issues

Today, citizens are directly affected by science and technology but they don’t wish to simply be passive recipients of new products and technologies, however innovative they may be. Furthermore, the scientific enterprise is not automatically accepted as beneficial to society. What appears increasingly required is a true bi-directional dialogue between science and society, going beyond traditional science education or simply securing the acceptance by citizens of scientifically validated truths. The optimisation of this debate is a significant challenge for governments, and policymakers are searching for ways to respond to the new importance and assertiveness of the public.

Accordingly, the OECD Global Science Forum undertook an activity on Improving the Dialogue with Society on Scientific Issues.

This report analyses the shift from the traditional approach of “public understanding of science” to a multi-directional dialogue, involving society’s different stakeholders and the general public. It is focused on the practical aspect of the dialogue and provides recommendations for each step of such an undertaking:

- The rationale: objectives of and participants in a dialogue
- The methodology: organising and conducting a dialogue
- The results: formulating and using the output of a dialogue