

Subject

As part of its definition, public science incorporates public policies and decision-making not only from experts, politicians and bureaucrats, but also from a wide range of social actors. This process is related to a kind of civil education which allows common citizens to recognize their rights and responsibilities in the decision-making processes related with science and technology. An important discussion is taking place regarding the type of social institutions and educational programs which could best promote this process of transforming the role of science and technology in society.

Rationale

This process requires:

1. A critique of standing educational and political programs and institutions, which aims to generate a fertile field for the development of institutions and practices that enable concerned citizens to understand and evaluate the scope and limits of different forms of participation and their participatory perspectives.
2. An understanding of risk and its relation to social responsibility, the varieties of public participation and the complex nature of such processes.
3. The incorporation in the decision-making and the issuing of ordinances and laws of different types of social actors (NGOs, local interests groups, etc.).
4. An education that actively promotes the kind of values that fosters such participation and that provides citizens with the tools for questioning/criticizing decisions which affect them.

Proposals

1. Convergent communities: a process that takes place in time (historically), in which different communities (not mere interests) can enter into a process of a mutual recognition of responsibility and their different perspectives and that involves the recognition of implicit social values of diverse actors (and not merely the settling of disputes about interests). Scientific and technological development has to be understood in a way that includes the promotion of such convergences. It also requires putting in place an educational system geared towards its promotion, and this involves a profound and revolutionary change in the way educational institutions are seen as part of society (not as preparation for a subsequent stage of more specialized knowledge, but as institutions forming a new sort of citizens).

2. It is not merely the presence of one or two institutions that matter (usually created *ad hoc*, as can be elicited from the examples in the table) but an environment (propitious for problem formulation) where institutions and practices foster the flexibility required for proposals to arise, be tested, developed and established.

This scenario of institutions and practices that mobilize, formulate and address problems is what supports the reference to applied ecology, an idea that has to be elaborated using the lessons learned from the examples.

Comparison of Case Studies

| | Norway | Aspen, Colorado | Denver, Colorado | Salitrales de San Ignacio, B.C.S. |
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| <i>Expert participation</i> | Provided support to the lay panel | Testified and gave their opinion; created an independent technical committee and a scientific jury | Communicated their opinions to authorities | Formed a commission which produced a document with recommendations |
| <i>Non-expert participation</i> | Coordinated conferences which included a jury as part of a scientific panel | Sought various actions and studies by authorities, as well as required expert participation and conducted manifestations | Participated in public meetings | Participated in public meetings; wrote letters to authorities and the media; conducted manifestations, etc. |
| <i>Expert and non-expert collaboration</i> | Coordinated conferences to clarify any doubts or questions | Participated in public discussions that analyzed alternative EPA proposals, but there was a greater participation by experts than non-experts | There was no direct collaboration between the two groups | The scientific committee interviewed the fishermen other habitants of the area |
| <i>Deliberation</i> | The panel produced a document for the authorities with recommendations and suggestions | The scientific jury reached the conclusion that soil removal should be avoided in contrast to the EPA proposal recommendations | Based on expert and non-expert recommendations, the authorities decided not to modify traffic controls nor parking lots | The then president Zedillo decided to cancel the expansion of the salt mine project, but it was unclear to what extent this was influenced by expert and non-expert opinion |

Analysis of Case Studies

From the comparative analysis of the four case studies it appears:

1. How the decision-making process was conceptualized and its implications towards democratic development. In the case of Mexico it is important to start the development of institutions or pertinent places (flexible but stable) that provide a space for discussion.
2. The importance of different kinds of institutions or forms of public participation which provide the environment where alternative proposals can be discussed.
3. The importance of the capacity to bring resources to the task of proposing a problem in such a way that the concerns of a given community are addressed.
4. The importance of generating the capacity of a community to conceptualize and address a problem(s) of their concern(s).
5. The formulation of problems is most successful when the community has the capacity to get involved in the different stages of a complex process.

The construction of convergent communities and democratization of the decision-making processes over topics related to S&T could be made possible when such institutions or places search for a process over time, that includes a change in education, a new role for the popularization of S&T, a certain idea of sustainable development, and the implementation of different methods of public participation (and not ad hoc practices). This would permit a truly democratic discussion over scientific and technological development which would be beneficial for society.

References

- Martínez, S., "Ciencia, Tecnología y Democracia" (to appear in) *Tópicos*, 2007, Mexico
 Norwegian case of study: <http://www.etikkom.no/English> "Fast Salmon and Technoburgers"
 Aspen case of study: <http://www.cato.org/pubs/regulation/reg18n2d.html>
 and also <http://www.epa.gov/region08/superfund/co/smuggler/>
 Denver case of study: <http://www.colorado.edu/journalism/cej/Brfings/Air.html#Top>