Comments on the workshop (Shuji Hisano)

As a whole, the workshop was interesting and worthy of participation. It dealt with one of the most up-to-date and controversial subjects: risk analysis of GMOs. The selection of topics was well-balanced and comprehensive in comparison with other similar meetings. Given that the primary purpose of the workshop was to provide participants with legislative and scientific information relevant to GMO risk analysis, I believe that the workshop was successful. Above all, I was satisfied with the detailed input from some officials in charge of the regulatory policy on GMOs (e.g. DGs of European Commission [Madsen#, Gal#], European Food Safety Authority [Kuiper#], UNCTAD [Zarrilli#], etc). However, some questions came to my mind during the seminar and discussion sessions. Most of them were raised mainly because of my own specialty: political economy and sociology of biotechnology.

What should have been addressed and re-examined in this kind of unique workshop is, as has been discussed on several occasions by academics (social sciences) as well as civil society organisations, the long-standing and widely-prevailed dichotomy between science and society/ politics. I know that rhetorics of openness (i.e. transparency, participation, dialogue, etc) have become common in European policy debates over science and technology since the late 1990s, and risk assessment procedures now evaluate a broader range of potential effects than before and sometimes even mention scientific uncertainties. Exactly in this area Europe is going one step beyond the rest of the world. This current trend was also confirmed in some presentations at the workshop, such as the session of the various stakeholders' positions and several scientific inputs on "unintended effects" [Kuiper#, Noteborn#]. However, it seems to me that most regulatory bodies as well as the scientific community still stick to the (pre)conception that uncertainty is equated with unknown, or mere lack of precision, which is assumed to be solved technically in due course, and that public concerns are derived from their lack of scientific knowledge, or from their extra-scientific concerns, which are supposed to be dealt with as a matter of value-laden society/politics (and therefore should be discussed in the processes of risk management and communication).

1. Science/technology is embedded in social/economic/political contexts

The first point is that science is not free from practical interests. Of course, in the process of risk evaluation we may have to disentangle "scientific matters" from their surroundings (society/politics), but reality is not like that. A judgement of what aspects of the entire picture of the object are significant and should be incorporated into scientific reviews – we call it "agenda mapping" – is not independent of time and context, and is easily modified by the past and ongoing practises and institutions involved. Some critical differences between the US concept of risk assessment procedures ("substantial equivalence") and that of the EU have been revealed on several occasions as well as at the workshop [Kuiper#, Noteborn#]. But still, both sides of scientists and regulators continue to assure of their "scientific soundness". This example clearly shows that even scientific knowledge is based on context-specific understanding by a certain collectivity.

Technology is also an outcome of such processes of social choice, and reproduced and transformed by social activities. It might be needless to say that there have been a lot of claims that strong commercial interests are working behind the research and development of GMOs. Besides, many adverse effects on small family farmers in socio-economic terms are assumed to come about, since this technology is viewed as an important component of the intensive farming system, which many of those groups/individuals calling for stricter regulation of GMOs are opposing. Therefore, if the process of scientific evaluation (i.e. risk assessment) fails to take into consideration these

social aspects of technology, and confines its task to what can be handled as a technical, calculable matter, the results of allegedly "sound science"-based evaluation cannot meet the requirement imposed to regain public trust in science and administrations.

I'd like to refer to several reports on the close relationships between scientific community, private companies and administrations. The first is a themed edition of the British Medical Journal [volume 326, 31 May 2003], which questions the way pharmaceutical companies fund and publish research on products, the influence of their sales representatives on the prescribing practices of family doctors, and so forth. The second case is reported in some newspapers saying that the sugar industry in the US threatens the WHO by demanding that the US Congress end its funding unless the WHO removes its report in which guidelines on healthy eating – 10% limit of sugar intake – are recommended (based on "sound science", of course) [Guardian Weekly, 24-30 April 2003]. The third one is about a dossier revealing UK's Environment Ministers' worries over connections between science experts and leading drugs companies [The Observer, 13 July 2003]. The last example happens in an official GM science review panel set up by the UK government to advise it on the safety of GMOs. A news report says that: "an unnamed individual in a 'privileged academic or regulatory' position tried to get a risk evaluation expert dropped from a research project by approaching its funders and disparaging his work and professional standing" [AFP, 26 July 2003]. Additionally, nobody can deny the claim that a handful of agri-biotech transnationals have been exercising their lobbying power in local, national, and international political arenas.

Scientists and administrators should acknowledge such interwoven science/society relations, and reflect on why civil society is sceptical about the concept of "sound science", which is alleged to be independent of value-laden society.

2. How can we best communicate with the public?

A second concern is the way scientists and administrators are trying to communicate with the public. Throughout the workshop I had a strong impression that scientists/administrators still adhere to the one-way communication, by which they just attempt to provide public with relevant scientific information derived from "sound science"-based evaluation (the problem with this concept is already mentioned above). This concept of risk communication is drawn on the grounds that they regard public* concerns as being based on misunderstanding or lack of scientific knowledge. *Public is mostly equated with consumers in this kind of discourse. But I'm not sure whether these two categories are a substitute for each other.

However, what is required to be shown to the public is a lack of sufficient and non-ambiguous data/information and the problematic evaluation of long-term and synergetic effects [Rudloff#]. Once the public perceive that the scientific community admits such uncertainties, which nevertheless reflective scientists persistently struggle to solve, public concerns could become compatible with public understandings (not necessarily with public acceptance, though). Scientists and administrators are required to communicate with the public mutually and deliberately (and ideally to institutionalise public participation in the process somehow), about the process of scientific evaluation including its difficulties and uncertainties – as did the workshop to some extent –, not just about the results of allegedly "sound science"-based assessment.

In this regard, a report of the PABE* research project (funded by the Commission of European Communities) gives us a lot of implications. It reveals that: "Although ordinary citizens are largely ignorant of the scientific technicalities of genetic manipulation, and of developments in research, regulation and commercialisation related to GMOs, this lack of knowledge does not explain their response to agricultural biotechnologies". It also says that their concerns expressed in

the focus groups were mostly based on experience-based knowledge about the behaviour of insects, plants and animals, about human fallibility, and about the past behaviour of institutions responsible for the development and regulation of technological innovations and risks. These are only a tiny part of key findings of the research project. Such a deep gap between the kind of knowledge mobilised by the lay public to evaluate GMOs and the kind of knowledge assumed to be relevant by scientists, administrators and promoters of GMOs is an important input from sociology. *PABE stands for "Public Perceptions of Agricultural Biotechnology in Europe".

3. What expertise is taken into consideration?

A third concern is about the concept of expertise. The relationship to be intermediated by deliberate communication/discussion is not just between scientists/experts and lay public, but also between scientists/experts themselves. What is meant here is that science is never monolithic. It is not true that every scientific expertise can come to THE same conclusion on the issue such as those facing a lot of uncertainties, even if its activity is to be carried out based on the "sound science" approach. Even in natural science, there could be a wide range of opinions and perspectives toward the concept of risks. In this sense, we might have to refer to science plurally (i.e. sciences) all the time.

Scientific knowledge can be created and evaluated precisely by use of analytical devices inside laboratories (or under carefully controlled, pseudo-natural conditions). However, scientific knowledge cannot be free from uncertainties when applied to quite diverse human health conditions as well as eco-systems. Still, it is not impossible to imagine that molecular biologists, agronomists, entomologists and ecologists could have the same conclusion on the environmental safety of GMOs, while biochemists, food engineers, epidemiologists, nutritionists and medical scientists could agree on the food safety of GMOs. However, the reality is that even among the same expertise, their socio-political environment might influence their ways of mapping subjects, as seen in the difference between EU and the US, as well as in unfolding claims on the adverse effects of GMOs on human health and/or the environment (unfortunately, most of them have been relegated to "non-reviewed" unscientific perceptions).

Dr. Rudloff mentioned that "communication between assessors with different expertise, of assessors and politicians" is important. Ms. Mackenzie showed a list of different expertise required to be involved in risk assessment and management (though social sciences are not included). Nobody might be opposed to these ideas. However, when it comes to most of the existing regulatory bodies, including EFSA, it is not necessarily clear what kind of expertise is actually involved in the risk assessment and on what grounds. Moreover, as I emphasised above, relevant input from social sciences can improve the openness of the risk assessment process (not just management and communication processes). Although we're likely to consider that only economics (e.g. cost-benefit analysis), or ethics and psychology at most, can contribute to the risk assessment, other fields of (qualitative) social sciences are also useful and necessary especially for *the assessment of risk assessment*, given that science/technology is interwoven with social/economic/political interests and that public concerns are not just a matter of scientifically precise knowledge.

For this and other reasons, I strongly feel that the workshop could have made the issue more clear and constructive by bringing in comparative approaches from different fields of sciences, as well as discussing implications from sociology and political economy.

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