SESSION 6:
GENERAL DISCUSSION

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B. Le Gallic highlighted certain definition issues. He expressed surprise about the range of terms and concepts used (e.g. GMO, LMO, GMPs, Conventionally Modified Organism, GMO-free, etc.) and pointed out that this may increase difficulties in achieving a clear and transparent discussion on GMOs.
In particular he noted the difference between US and EU approaches, namely: product (US) vs. process (EU) as well as the related distinction between LMOs and GMOs, the first of which seems to exclude processed product from the analysis (e.g. milk, eggs or meat from animal fed on GMOs; cheese using GM enzymes). He concluded that while products may be similar (following the principle of "substantial equivalence"), it may nevertheless be important for the consumer to have access to information on the process used (e.g. see working conditions issues in the shoes sector; origin of energy; the US "dolphin-safe" label for tuna fishing in the fishery sector).

R. Holzinger stated that the USA position on Risk Management is very clear and sound science based exactly because it focus on the product and not on the process. Moreover, the term Genetically Engineered (GE), used in USA, is very appropriate because every plant is genetically modified. He further pointed out that "biotechnologically derived" would be probably a good term for consumers as it is not scary.

S. Hisano commented that 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 in this workshop. However, he continued, both scientists and regulators still continue to assure of their "scientific soundness". This clearly shows that even scientific knowledge is based on context-specific understanding by a certain collectivity. 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 issues such as those facing a lot of uncertainties, even if its activity is to be carried out on the basis of "sound science" approach. Even in natural science, there could be a wide range of opinions and perspectives toward the concept of risk. In this sense, we might have to refer to science plurally (i.e. sciences) all the time.

M. Inaba arose the issue of "*Risk perception*". He noted that there are various views on which principles or criteria can identify more than others "Risk Perception". He noted that the area of concern differs among people and asked how we can correctly understand the different views. Risk perception is also a key factor in determining "Public acceptance". However, we still don't predict or even understand much about public attitudes. More research will be needed in this field.

S. Hisano added that the concept of risk communication is drawn on the grounds that public concerns are considered to be based on misunderstanding or lack of scientific knowledge. He noted that the public is mostly equated with consumers in this kind of discourses and he expressed his doubts whether these two categories are a substitute for each other. He further stressed that 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. 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 (Public

Perceptions of Agricultural Biotechnology in Europe) 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 states 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.

B. Rudloff noted that from the presentations and discussions during this meeting it seems that that public perception on food and food safety is very different from the reality. She stressed that we all (scientists, policy makers, and media) have a role allowing the consumer to be aware that nothing is 100% risk free and that we all need to be open about uncertainties. Only through continuous communication among all stakeholders it is possible to come to a well-informed debate. In this context labelling can be a very important tool for communication purposes. However, labelling is not an alternative to public education, people do not know what is in their food or how agriculture works.

R. Holzinger highlighted that, though the new EU labelling rules should have as objectives to inform the consumer allowing free choice and to build his/her confidence, these goals won't be reached because these new rules are inconsequent (therefore will lead to loss of confidence) and one-sided (therefore do not allow a real choice and are misleading). For example the mentioned rules require a label for products containing or consisting of GMSs (wie bisher) and products produced from GMSs (ingredients, flavourings, additives) irrespectively of the detectability of GM DNA or Protein. On the other hand, no label is required GM processing aids (Chymosin) and products from animals fed on GMOs (milk, eggs, and meat). He stated that the lay public still wants to read black/white opinions/recommendations and the EU labels in his opinion do not help in this respect. He closed his intervention on this point asking why do we just label GMO as a breeding technique, while the other breeding techniques don't have to be labelled (e.g. irradiation and vegetative cloning).

A.D. Hartkamp noted that one of the speakers stated that there are no GMOs products on the market in the EU and that there is no demand for them. She pointed out that instead some supermarkets in the Netherlands are *voluntarily* labelling foods derived from GMOs (e.g., corn oil) and since they started to do so, sales of these products have not dropped.

Anonimous participant asked how can the European scepticism on GMOs can be overcome.

K.H. Madsen replied that certainly information and education campaigns (at the European, national and local level) are necessary. Moreover if GM products will prove to be not only 2% cheaper but approximately 10% cheaper than conventional products acceptance should grow.

M. Inaba commented that in his opinion labelling and acceptance are issues which influence each other substantially. He noted that that this will be the major issue in certain sectors.

Anonimous participant remarked that earlier in 2003, the U.S.A. initiated a case within the World Trade Organization (WTO), challenging the EU's de facto moratorium on the approval of genetically modified (GM) crops. He asked which could be the expected results of this dispute.

G. van Calster answered that he believes that the U.S.A., at the end, will drop the case. New legislation has come into force in the EU. Therefore, the U.S.A. may settle now and then later look at the (new) issues of labelling and traceability. This constitute also one of the EU defence point in the case. Though the U.S.A. might not like the new legislation it is certainly less stringent and more science based. Further it should facilitate the end of the de facto moratorium.

S. Hisano pointed out that Dr. Rudloff mentioned that "communication between assessors with different expertise, of assessors and politicians" is important. He stressed that 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 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.

A.D. Hartkamp noted that in her presentation Beate Kettlitz referred to the Eurobarometer 2001: 71% of the consumers don't want biotech food, while 86% indicate that they do not feel sufficiently informed about the technology. She pointed out that she think this is logical, why would you be in favour of something you don't know enough about? The speaker suggests that the public should be involved in the risk analysis process. She pleads to include public concerns (such as ethics, social) and to not dismiss them as irrational. Although *A.D. Hartkamp* expressed her agreement with this principle, she stressed that the public concerns are only legitimate if the public is 'sufficiently' informed. If the public is not sufficiently informed on the technology and the issues at hand the concerns are not always relevant (e.g., for example the concern 'I don't want genes in my food' is not relevant as genes are present in all food, not only GMOs food).

B. Le Gallic highlighted that it was agreed during the workshop that, for risk management and communication purposes, transparency, communication with all stakeholders, trust in institutions, etc. would require new specialised agencies, new regulations, and new forum. Such additional needs have a cost, which should be taken into account in the analysis (whichever should be the social group that will be charged for it), and compared with potential benefits.

R. Rudauskaite noted that as she is working for the Ministry's National Nutrition Centre, her interest was pretty specific and narrow at the beginning of this workshop. After these three days she pointed out that she is completely aware that broad and multidisciplinary work is absolutely necessary at the institutional level though certainly the costs involved might be huge barrier especially for small and not so resourceful countries such as Lithuania.

M. Miraglia stressed that coexistence is certainly one of the crucial issues in the current days. The EU legislation on organic farming (Regulation 2092/91) does not allow the use of GMOs. However seeds with a level of GMOs lower than the threshold do not need to be labelled. Therefore, these might be used even if unwillingly by the farmer. The organic farming regulation does mention the setting of thresholds for unavoidable presence of GMOs and no threshold has been set afterwards. Therefore, it may be advisable that the a EU wide legal binding threshold of GM content in organic products should be established in order to have clear rules for potential legal disputes. Further, she expressed doubts on the current situation where no GMOs (0%) can be used in organic farming while 5% of conventional products (which contain fertilizers and pesticides) is accepted. She concluded asking if consumers are

unaware of the presence of conventional products in organic farming or if they instead internalised and accepted this fact.

R. Holzinger commented that 5% tolerance would solve the problem of coexistence. He posed the open question: " Why do bio-Farmers accept 5% contamination with conventionally grown plants, but not with GMOs?". He continued that GMOs farmers should pay when organic farmers have income loss. But do organic farmer pay, when conventional farmer have a contamination (with pests grown on organic fields or with organic plants)? He concluded on this point stating that, according to him, an organic farmer only looses his business, if he agrees with unrealistic production standards, such as 0 % tolerance of GM products.

A. Hozzank replied that consumers expect organic products to be absolutely GM free and they would be disappointed if they discover any GM content. She stated that, in her opinion, this would destroy the market of organic farming.

S. de Vries commented that possibly the times are ripe to concentrate on what we want to achieve (e.g.: reduced use of pesticides, reduced fossil fuel consumption) rather than the methods used to achieve it.

S. Hisano insisted that 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.

H. Valve expressed her concerns on how risks can be made governable. In her opinion the conceptual separation of risk assessment and risk management and the request to keep risk assessment pure from "human influence" seems unrealistic and even dangerous. She observed that the linked issue of science-politics interface in the trade conflict between EU and the US and in the international treaties should be further explored.

B. Le Gallic noted that the workshop showed different views regarding risk assessment, in particular regarding costs associated with the risk of contamination. He continued stating that in absence of historical data, it may be difficult, if not impossible, to provide a definitive answer to this question (which requires to estimate the potential social costs and their probabilities). However, information presented during the workshop may serve as a baseline for scenarios on which policy makers could build upon. He noted that more research and work at the local, national and international level on the economic/social costs/opportunities is needed (e.g. through a comprehensive Costs-Benefits analysis). While such a method, that offers the most comprehensive economic assessment, may be difficult to be applied to every phase of the risk evaluation process (an "ortodox" Cost/Benefit analysis may be often difficult if not unrealistic with risk assessment due to strong uncertainty). On the other hand, economic analysis may at least be conducted for the risk management phase of regulatory impact assessment, and for the risk communication phase.

B. Rudloff stressed that from these 3 days of extremely enriching presentations and discussion she has the feeling that there will be an increasing focus on risk assessment in the coming years. In Europe the major

role on this issue should be played by the newly established EFSA. On the other hand, those involved in defining risk assessment are facing enormous problems in their work. Firstly there are immanent scientific problems, for instance a lack of data for next generation of functional food makes risk assessment extremely problematic. When it comes to risk communication it has to be taken into consideration that public "perception" may differ enormously from experts assessment communication. Thus even though experts may see risk as low, the potential risk for GMOs can be perceived as quite high. Perception can be a very large barrier. In addition it is also not easy to find consensus on the definitions on what is a consumer or the public and data can very substantially depending on the reference used.

In closing the workshop *B.Rudloff* expressed her thanks to all the speakers for their valuable presentations as well as the participants for their contribution to the discussion. She also thanked the OECD Co-operative Research Programme: Biological Resource Management for Sustainable Agricultural Systems, for its support as well as the team of local organisers for their indispensable input.

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