Regional Consultation on Science Ethics and Scientists' Responsibility
11-12 May 2006
Palais des Nations, Geneva, Switzerland

Meeting Report

Objective and background of the meeting

This meeting was part of a series of regional and national consultations on scientists responsibilities and codes of conduct organized with the support of COMEST and the National Commissions for UNESCO in different regions worldwide with the aim to accomplish the mandate given to UNESCO by the General Conference at its 33rd Session to "pursue reflection on the question of science ethics". These consultations are organized to bring inputs to the reflection of COMEST in this area. The results will be presented by the Director-General in his report of the activities of COMEST to the Executive Board at its 175th Session in September 2006.

On the invitation of the Swiss Commission for UNESCO, this regional consultation meeting for Europe and North America was held at the Palais des Nations in Geneva, on 11-12 May 2006. The program, the list of participants, preparatory documents (1974 Recommendation on the Status of Scientific Researchers, respective guiding questions and Mr. Song can be found in the annex.

The two-day meeting was moderated by **Mr Jens Eric Fenstad**, former Chairperson of COMEST, and consisted of plenary sessions. The first day was used for statements by the invited speakers, experts, and representatives of international organizations and National Commissions for UNESCO; and the second day was devoted to a more general debate on the participants' views concerning the "Guiding Questions for the Consultations regarding the 1974 Recommendation on the Status of Scientific Researchers".

1st day of meeting

Welcome addresses

The President of the Swiss Commission for UNESCO, **Ms Francesca Gemnetti** opened the meeting by welcoming all participants and expressing her satisfaction for hosting a meeting that focused on the dialogue around such a fundamental value as ethics. The reasons for the engagement of the Swiss Commission for UNESCO in the organization of this consultation, she said, are multiple: ethics is among the main priorities of UNESCO and its questioning covers a vast field of application. It regards at the same time individual and universal values. The Swiss Commission for UNESCO expressly supports the on-going reflections because the ethical thought also refers to education for sustainable development, which is deemed a crucial matter by this country. The scientists of today and tomorrow are the target-public: they must be able to measure the nature of their responsibility, from a global, systemic and durable point of view, she said. The second reason that motivated the Swiss Commission for UNESCO to host the consultation and support this process lies in the conscience of the role of National Commissions for

UNESCO, as a guide for the work carried out by the Organization. According to Ms Gemnetti, the National Commissions exist to transmit the ideals of UNESCO, to facilitate the networking and to ensure the liaison with the civil society. This process of consultation is an excellent way of achieving these tasks, but also of sensitizing the participants concerning the role played by UNESCO as a forum for dialogue between the 191 Member States. The third element to explain the commitment of the Swiss Commission for UNESCO towards the consultation process refers to the substantial engagement of other national partners: the Swiss Ethics Committee on Non-Human Gene Technology, the Federal Office for Environment, the Federal Office of Public Health, and the Council of the Swiss Scientific Academies, all present in the meeting, as well as the Federal Department for Foreign Affairs. She expressed her hope that, after the debates, COMEST would have enough material to elaborate the report that was requested by the General Conference at its 33rd Session. Closing her intervention, Ms Gemnetti highly commended the participative and integrating process of consultations designed by the Division of Ethics of Science and Technology following the mandate that was given by the General Conference.

Mr Klaus Peter Rippe, President of the Swiss Ethics Committee on Non-Human Gene Technology, clarified the particular interests of Switzerland on the issue of scientific ethics and responsibility of scientists. He highlighted the moral and legal problems raised by the advancements of science nowadays as well as expressed concerns on how to govern scientific progress, to teach ethics challenges and to encourage the public debate. Referring especially to national codes of conduct, particularly in some professions, he suggested that it was time to review and to harmonize them. It is necessary to find a universal solution because scientific responsibility is universal. The public discussion exists but goes more and more slowly, he said. It is necessary to minimize risks and to think on the red lines not to cross. He also mentioned the need, in terms of public debate, to think about people who have rights and cannot directly advocate them, such as the sterilization of handicapped women, animal rights, and so forth. Mr Rippe also made reference to other aspects that should be taken into account, such as food safety and intellectual property, especially regarding patents on living beings. He concluded by stressing the importance of learning from the past to find solutions for the future.

After having thanked the Swiss Commission for UNESCO for its commitment and explained the programme and working methodology, **Mr Fenstad** recalled the creation of the Pugwash movement after the World War II and the venue of the World Conference on Science, jointly organized by UNESCO and ICSU in Budapest in June 1999 as milestones on this debate. At that latter occasion, the debates on the elaboration of an oath or pledge for scientists resulted in the adoption of the Declaration on Science and the document "Science Agenda – Framework for Action". These documents state that ethics and responsibility of science should be an integral part of the education and training of all scientists and they conferred special responsibility on COMEST, in cooperation with ICSU, to follow up on this issue. Mr Fenstad also recalled that at the opening session, Joseph Rotblat plainly stated his hopes that the scientific community would be finally convinced that modern science must take human values into account, and urged scientists to adopt an oath or a pledge. A need that the impact of 9/11 has reinforced, he said. However, warned Mr Fenstad, it turns out that when you move beyond the rhetoric and start to make concrete proposals about behaviours and practices the situation becomes more complex. COMEST is in a listening mood: COMEST is seeking to address how to move this issue further because science needs both freedom and responsibility, and how to translate values into concrete and responsible actions. He informed that the discussion paper "Some Thoughts

on the UNESCO Recommendation of 1974" was prepared by the COMEST Member, **Mr Song Sang-yong**, and distributed in advance to the participants. Concluding his introductory remarks, Mr Fenstad confirmed that the main aim of the meeting would be to hear the positions of the different National Commissions for UNESCO, relevant intergovernmental organizations as well as international and national scientific organizations and academies of science from the region in order to inform COMEST and UNESCO.

Mrs Simone Scholze introduced her presentation by clarifying that the meeting organized buy the Swiss Commission for UNESCO in Geneva is an important step in the process of regional consultations with relevant organizations and stakeholders in all Member States, in order to pursue reflections on how UNESCO and COMEST can contribute to the international debate on science ethics and scientists' responsibility. She also explained that, following the debate and resolution of the last session of the General Conference, it would not be possible for UNESCO to engage in developing a normative instrument. For this reason the activities carried out by COMEST and by the Division of Ethics of Science and Technology regarding this issue involve, among others: surveying the wider field of science ethics and topics that are specifically relevant from an international perspective; carrying out consultations with individual scientists, philosophers and policy-makers in all regions in order to identify and discuss ethical issues that merit further reflection; and undertake similar consultations with relevant organizations and stakeholders in Member States. Mrs Scholze underlined the changes in scientific context and the loss of absolute confidence in progress, asking for a dialogue between scientists and the public. Since 2004, many steps have been undertaken to identify the need to develop ethical codes of conduct and the values in the hart of the public debate that could be included in a standard-setting work. Mrs Scholze informed that the general framework for the debate in this meeting was the place and the role of the UNESCO Recommendation of 1974, considered as the document of reference for these consultations. She also mentioned that an analysis of existing codes is going-on in UNESCO and that the Global Ethics Observatory (GEObs) will host a database also including legislations linked with ethics of science and technology.

Session on Code of Conduct for Scientists: the state of the art

Regarding the state of the art on codes of ethics to scientists, **Mr. Alex Mauron**, from the Institute for biomedical ethics of the Geneva University Medical Center, presented reflections on a case related to a scientific collective misconduct that happened at the University of Geneva, which he was involved in investigating. This case opposed the principle of independence of research and economics interests, since some researchers participate in an economic conspiracy against public health. Based on that episode, resolved on basis of normative texts from Germany, United Kingdom and United States, Mr Mauron pointed out some interesting lessons, as follows: if fictive results are quickly discovered since the scientific community is very critical, some types of misbehaviour can be particularly disruptive of trust in science; investigating scientific misconduct is a prime responsibility of academic institutions themselves, which cannot be delegated to others, including the courts. It is both a right and a duty of academic institutions; law is only peripherally concerned by scientific misconduct. "Juridifying" scientific misconduct is unlikely to cover all cases and may even be counterproductive. Mr Mauron affirmed that codes of conduct are generally useful if: they are issued by really authoritative bodies; they hit at the "tender spot" of scientific fraud, such as the ability to receive grants or publish in

peer-reviewed journals; they include both content rules and procedural rules – content rules should define with sufficient precision what behaviours count as scientific misconduct, and procedural rules should define institutional responsibilities and delineate fair procedures, respecting the rights of whistle-blowers, the rights of the defence, the presumption of innocence, the proper preservation of evidence, etc.

The presentation delivered by **Mr James Revill**, from the Department of Peace Studies at the University of Bradford, focused on some of the concerns related to biotechnology and to dual use. He elaborated on the importance of awareness raising, also in the field of human sciences and among the public, and outlined the proposals made by the University of Bradford in relation to this issue. This proposal refers to a Hippocratic-style oath that would be a useful first step in raising awareness amongst life scientists, especially regarding bioterrorism by individuals or organizations, a problem, according to Mr Revill, exacerbated by the weakness of the Biological and Toxins Weapons Convention (BTWC). He pointed out that there are several means through which awareness levels can be developed, such as education, review committees of health and safety in conjunction with the assessment of BTWC and the development of codes of conduct. At the same time he brought up the difficulties of implementing such measures without scientists first engaging in the wider concerns related to this issues. Besides, Mr Revill pointed out, it is difficult to educate or review when the distinction between prohibited and outlawed research is not clearly defined at an applied level. He agreed with Mr. Mauron that a legal approach is not the most appropriate. A first step, he said, may be to develop a short ethical code possibly taken in the form of a Hippocratic Oath. Such a model could identify the underlying principles, raise the feeling of commitment and then may function to both raise awareness and initiate a process of further discussion amongst scientists leading to a clearer understanding of the problem. The process and outcome of discussions, for example through education modules, publishers sensitising, can encourage institutions to draft their own codes with added value. He finalized his presentation by underlining that such an approach has many advantages over other approaches to this issue for both scientists and States.

Before its own presentation, **Mr Matthias Kaiser**, Director of the Norwegian National Ethics Committee for Science and Technology (NENT) reacted to the previous speakers. He agreed that deontology should prevail on economic interests. According to him, scientists who accept to achieve research for any purpose just to get funds cannot be supported anymore. He also agreed that codes of conduct concern the society in general, also due to the structural changes in the field of science. UNESCO should provide a frame in that sense. The presentation of Mr. Kaiser was devoted to rights and responsibility of science, based on new ethical guidelines in Norway. Both internationally and in several States, there is an increasing attention to ethics of science, from the end of the 1980s and beginning of the 1990s, said Mr Kaiser. He then described the Norwegian situation. Norway has established three national committees: medical research (NEM), social science and humanities (NESH), and natural science and technology (NENT). Comprising both internal ethics (within the scientific community) and external ethics (co-responsibility for consequences), these institutions are observatories for new developments; stimulating public debate, informing the scientific community, advising the government. These initiatives in Norway were consistent with other contemporaneous international initiatives: the new social contract for science proposed by Jane Lubchenko (AAAS 1997); the ICSU/SCRES background document to the World Conference on Science (WCS) whose results have shown that most of the codes of conduct concern individual responsibilities

and qualities of scientists and that shared qualities are most significant (social, environmental responsibilities); and WCS in Budapest 1999, when ethics loomed large throughout the whole conference. In Norway, new ethical guidelines for research in science and technology were approved in December 2005, on the request of the government, aware of the importance to formulate policies on what is ethically acceptable or not. These guidelines are modeled upon comprehensive international discussions. The process was developed in two steps: first a consultation of a limited group of specialists, followed by a public hearing. They contain a specific chapter regarding on one hand global responsibilities, the focusing on human rights, sustainable development, peace, democracy, equity and fairness in wealth and information globally; and on the other hand good research practice, such as honesty; individual responsibility for subject matter, method, and quality; respect for fellow scientists contributions; informed consent; and the obeying of existing regulations. These guidelines also contain considerations regarding: the relationship between research and alternative knowledge; incorporation and respect of alternative knowledge sources; use of participatory methods; openness and conflicts of interests; maximum openness and transparency, but also respect for privacy; disclosure of possible conflicts of interests; and whistle-blowing. Chapters about animal wellfare, role of the committees and science popularization/valorization (public utility) are also included. According to Mr Kaiser, these ethical guidelines also contain a proposal for an Oath of Scientists (when the researcher attains a PhD level). The guidelines have been sent out for public hearing during 2006.

Mr Emilio Bossi, president of the working group on scientific integrity of the four Swiss Scientific Academies, explained the project on scientific integrity and scientific misconduct that is currently being developed in common by the Swiss scientific academies, observing that many institutions do not have an appropriate frame to deal with scientific fraud. Concerning the role that the academies can play in the field of scientific integrity and misconduct, there is a consensus that at institutional level they can be consultants for general questions on scientific integrity as moral authority, also acting as a link between science and policy. For the individual scientist, the academies can be counsellors when problems concerning scientific integrity arise; counsellors for the whistle-blower, as well as for a person accused. Such persons should have the possibility to ask for advice, and this as long as the internal assessments are going on, before the case has been handed over to the institution bearing the jurisdiction. The academies themselves should not carry out investigations and they should not assume the role of a court of appeal. They act as a focal point about an issue that shall be resolved through self-regulation. The working group is also elaborating a Memorandum that should exert a moral pressure on all research and teaching institutions, offering them a model for the elaboration of their own institutional rules since a too large diversity of codes, rules, guidelines can create confusion for media and policy-makers. It will contain an enumeration and description of some pillars of professional scientific conduct like veracity, openness, the responsibility linked to the freedom of research, and the moral obligation to maintain and further develop scientific competence. The second chapter deals with the impact of scientific integrity on planning and executing research projects. This item incorporates the statement that quality should trump quantity; it gives advice concerning financial transparency and conflicts of interests, the handling of primary data and the disclosure of contents of the research project. It further contains rules about authorship and describes different aspects of scientific misconduct that should be avoided (prophylaxis). A substantial part of the Memorandum proposes practical procedures in the case of accusations of scientific fraud. It will also provide practical proposals for integrity structure, evaluation and inquiry. However it will

not foresee sanctions. The aim of the memorandum is also to fight insecurity and mistrust of the politicians and the public, to show that unfairness is not accepted by the scientific community engaged to promote prevention. Mr Bossi concluded by affirming that science has no geographical or political boundaries and in this sense, on behalf of the four Swiss Scientific Academies, he was very grateful to UNESCO and to COMEST for putting so much emphasis on the ethics of science and for organizing meetings like this one.

Session on Ethics and Science in the Framework of Intergovernmental and International Organizations

Concluding the first part of the meeting, with presentations by invited experts on the state of the art, Mr. Fenstad started the discussion on the international context, inviting the representatives of international organizations, National Commissions for UNESCO and other participants to present their viewpoints.

The Director of the Division of Scientific Policies and of Sustainable Development of UNESCO, **Mr Bruno de Padirac**, who participated in the elaboration of the Recommendation on the Status of Scientific Researchers, approved by UNESCO in 1974, was then requested to say some words regarding this experience. He clarified that this Recommendation is addressed to governments and not to individual scientists, aiming at ensuring material and moral conditions allowing them to develop scientific activities. He called attention to a particularly important item of the Recommendation present in its Article 14, the so-called "clause of conscience". Mr de Padirac understands that before engaging in a process of modification of the Recommendation it would be important first to evaluate its application by Member States. He underlined that rather the employers of scientists, such as governments or private sector, scientists should be the main target. He pointed out that UNESCO never carried out a process of follow-up regarding its implementation.

Mrs Ariane Willemsen recalled the question of the relations between science and agents who are not subject to codes of conduct, as well as that of the difference between individual behaviour of scientists and behaviours adopted with regard to institutions and society.

It followed a discussion on the issue of commercialization of science. The participants agreed that this is one of main differences between the environment in 1974 and nowadays. Important discoveries and inventions give raise to strong intellectual property rights. It was mentioned that the enforcement of the Bayh-Dole Act in United States during the 80's establish a worldwide tendency that changed the face of the commercialization of scientific outcomes. It determined an important shifted from the public to private sector funding of science. La responsabilité des employeurs, le statut et les conditions professionnelles dans la recherche sont évoqués dans le contexte du développement unipolaire de l'économie de la connaissance et des risques liés à la compétitivité.

For **Mr. Weinstock**, ethics is transversal and science should not be compelled by an exterior ethics, it should be concerned with the planet's well being only. There are new social forces, and States do not invest in research anymore: it is up to universities to best manage its relations with the economic environment in order to assure science independence. Article 2 of the Recommendation calls States to watch over this partnership.

M. Mauron confirms that the private sector has a special role in scientific knowledge. But he also observes that public actors have also changed, since universities became, or are becoming, private actors as well. However, nothing can replace them as vectors of values. **Mr. Szawarzki** shows that this change has caused an institutional vacuum, which makes difficult to assure the enforcement of codes of conduct. For **Mr Fenstad**, UNESCO should play this role. Playing a role of clearing house, it could firstly clarify and strengthen initiatives, then try to give substance to the issue of liberty/responsibility. This was also affirmed by **Mr. Kaiser** who thinks that society requires accounts on what had been done, and also wonders about the ethics of the future. For **Mrs Scholze**, discussion should allow society to restore confidence in science and codes of conduct are tools for establishing dialogue.

Mr. André Jaeglé, President of the World Federation of scientific workers (FMTS), and **Mr. Frederico Carvalho**, vice-president of the Executive Board of FMTS, declared that, according to this organisation, articles 14 to 18 from the Recommendation, related to the civic aspect of the ethics of scientific research, define the problem and provide for all kind of situations. Nevertheless, it pertains to the intellectual and juridical patrimony of UNESCO and is a solid basis from which to move forward. He foresaw two major difficulties: the first one refers to the necessity of consulting Member States regarding the application of the Recommendation; the second one refers to new aspects that were not present at that time, especially social and economic pressures that concern also governments. According to him, in 1974, the Cold War was still being waged and ethics was a way for scientists to refuse to contribute through their knowledge to the aggravation of the consequences of an armed conflagration. At that time, the world was bipolar. It was difficult, even dangerous, for a scientist to express an opinion on the question of the arms race. Many movements and networks were constituted either regarding the right not to take part in this use of science (the so-called boycott) or the right to denounce this use (the collective action). The FMTS held many high-level meetings of scientists belonging to both of these groups. Since 1974 the "issue" of ethics has attained an extent that shows the visionary view of those who had written this text. Now, to geopolitical changes we should add the development of knowledge economies. M Jaeglé recalled that, even if the danger of war has not disappeared, we now question the use of scientific knowledge in all sectors: GMO, genetics, energy, nanotechnology and its use for weapons systems improvement. Some use scientific activity so as to improve production process in a context of economic growth, which has an impact over employment and consummation, in a perspective of sustainable development. Economy constraints and competition are in the mind of scientists, and this may lead to biased results. States are not able to interfere in the relation between economy and science, an international frame is necessary. It would be necessary to guarantee a "science rate" for the public sector – even if financed by the private sector – to raise awareness by the obligation of an oath - but this would cause problems to fundamental research – to not penalise les "lanceurs d'alerte" or whistle-blowers that denounce projects, to assure a monitoring/reporting to this issue – including NGOs and professional associations reporters. M. Jaeglé thinks that an oath would be valuable only if those who adopt it consider loyalty as important as professional quality, without which it would be impossible to believe in transparency. For **M. Carvalho**, employers are responsible of the impact of science and technologies on society, and scientists are employees. It would be useful to define the terms of professionalism in the area of research. Concerning this, **M. Fenstad** recalled that ILO is making a report on the working conditions of scientists, including, for example, the right of refusing to work on things that

are against their ethical principles. FMTS collected the answers to the questionnaire that was attached to the consultation documents.

On behalf of the German National Commission for UNESCO, **Mr Lutz Möller** said that he very much welcomed these consultations since they provide an excellent opportunity to obtain the views of a variety of experts on an issue which is in need of action. Many experts have explained why there is a need to re-express, to re-design or even to re-organize the relationship between science and society, between the rights and the responsibilities of scientists. The main questions from the German point of view are: To what degree of detail does this issue have to be re-expressed? Through which instrument? Addressing whom? By whom? Starting with the last question he re-emphasized the view of the German delegation during the deliberations of the draft decision on science ethics. The text of that draft decision has ultimately been changed, not mandating a feasibility study of a new normative instrument, but mandating only further consultations. He explained that the German delegation changed its position on the mandate since it was believed that the direction of the proposed feasibility study was not clear enough (the feasibility of what type of normative instrument, dealing with what issues). He also re-emphasized that the German Commission for UNESCO strongly supports UNESCO's function as a standard-setter. Defining normative instruments is part and parcel of the Organization's mission, he said. Still, there is wide consensus that the period of intensive norm-setting of recent years needs to be followed by a "normative pause", the length of which has not been defined. Anyhow, it is not sensible to demand a normative pause of an extended length. According to Mr Möller, any new process of norm-setting needs to be very well justified. A serious question in this context is the crucial concept of subsidiarity. Provided that new codes of conduct for scientists are needed, he asked whether UNESCO as a global intergovernmental organization in the right position to work out a new framework for such codes of conduct, or whether such work should be carried out at the level of academies, of research organizations, of universities, of funding agencies, of (international) scientific unions, at the national governmental level, at regional level? He informed that in Germany, there are examples of recommendations guiding research that have been a consequence of misconduct – but still such a self-regulating reaction from the scientific community is the ideal response from their point of view. *Are any further measures necessary*? he asked. The discussions during this meeting indicate plausible reasons and some preliminary arguments – but excellent justification is necessary, convincing arguments have to be presented to handle this issue at the global and intergovernmental level. In his view, this meeting could preliminarily sketch such arguments. Responding to the question of who will be the addressee of a potentially new instrument, he said it would certainly be those countries that do not possess the infrastructure (strong professional organizations, extensive opportunities for national debate, access to international best practice, strong sets of legal norms). An excellent way to support these countries in their efforts to introduce new infrastructure and define codes of conduct on the national level is to engage them in the consultative process of formulating a normative instrument. Such a process is participatory and is therefore a very good (and maybe necessary) complement to providing best practice on codes of conduct through databases etc. Responding to the question of which instrument could be used to re-express the rights and responsibilities, he pointed out that in the meeting the 1974 Recommendation on the Status of the Scientific Researchers was discussed. However it seems very unattractive to utilize it further or reformulate it. The recommendation may have been useful in some areas – they may contain surprisingly valid, contemporary ideas – but this document is almost entirely unknown in most countries and because of its age will convey first and foremost counter-productive

messages if we try to utilize it to trigger further discussions. According to him, national debates centred on the 1974 recommendations would not be taken seriously by key stakeholders. It has already been mentioned by UNESCO that instead of a code of conduct, it appears to be much more feasible to work out a framework for such codes of conduct. This is strongly encouraged – and the meeting today should give guidance to UNESCO regarding what steps should be taken and what areas could potentially be included. This meeting would miss an opportunity if it did not give guidance to UNESCO on this issue. Referring to the question of the degree to which the detail of any potential normative instrument should be worked out, he argued that quite general recommendations are preferable in contrast to detail-rich documents. General recommendations can be drafted much faster and thus the entire process can take place much faster. Fast, efficiently organized processes (as in the case of the Universal Declaration on Bioethics and Human Rights and in the case of the Convention on Cultural Diversity) are suitable tools to raise interest at national level – and intensive debates can be organized around them – which is one of the main aims of the entire process. In short, he said, following a suitably long, but not too long, normative pause, it might very well be sensible for UNESCO to work out a new normative instrument on science ethics – provided that the experts' consultations offer sufficiently convincing arguments to this end. He strongly encouraged further discussion on this issue.

Mr Richard Lennane, from the Political Affairs Office, Biological Weapons Convention, UN Department for Disarmament Affairs, Geneva Branch, informed that as part of their intersessional work programme leading up to the Sixth Review Conference in June 2005, the States Parties to the Biological Weapons Convention (BWC) held a meeting of experts to consider codes of conduct for scientists. He described the stage of discussion in that forum and highlighted that many scientific, academic and professional organizations participated in the meeting to give their perspectives on science and biological weapons, including several which were present at this regional consultation – ICSU, the Islamic World Academy of Sciences, UNESCO and others. He deemed it important to have this interaction between the two fora, because BWC meetings tend to focus on non-proliferation, security and enforcement issues, and most national delegations to these meetings consist mainly of officials from foreign and defence ministries. The participation of representatives of scientific organizations helped to ensure that the discussion was not about controlling or restricting science, but rather about the positive role that scientists can play in helping to reduce the risks of biological weapons being developed and used, whether by States or by terrorist groups. The results were very encouraging, said Mr Lennane. The discussion revealed a considerable convergence of views on the utility of codes of conduct, in combination with other measures, in strengthening barriers against biological weapons. Following the meeting of experts, the InterAcademy Panel on International Issues issued a "Statement on Biosecurity" embodying some important principles, and in December 2005 the annual meeting of States Parties to the BWC formally recognized both the importance of codes of conduct for scientists, and that the scientists themselves should be involved in the development and promulgation of such codes. According to Mr Lennane, the meeting also agreed on the value of a number of principles and ideas underlying codes which also reflect parts of the 1974 UNESCO Recommendation on the Status of Scientific Researchers. He recalled that while the BWC contains a very clear and strict prohibition of biological weapons, it also contains provisions encouraging the peaceful uses of biological science and technology. The involvement of the world's scientific community in the work of the BWC is therefore

doubly welcome. He urged scientific bodies to continue to contribute to the work of the States Parties in improving the implementation of the Convention.

Mr. Carthage Smith mentioned the report on ICSU scientists' rights and responsibilities. He underlined that universal and pure academic research tends to disappear and give place to the development of new products touching economic and politic areas. He quoted Internet as an example of locus where there is a confrontation between free access to information and biologic security, as an example of the question of the international governance of research. For M. Carthage Smith, scientists should be more committed to social issues. He underlined that ICSU chose to merge its committee on liberty of science application and its committee on ethics of science, because it is now impossible to separate rights from duties. Concerning 1974 Recommendation, he underlined that it targets Governments above all, requesting them to implement clear and transparent research policies. The general goal of this text is good, but lacks visibility. M. Carthage Smith remained sceptic about the feasibility of a universal oath. The scientific community is responsible for diffusing its activities and governments for raising awareness – he mentioned the elaboration of guidelines for scientist in the United Kingdom governmental service. UNESCO should foster the development of codes of conduct at national level, promote education for ethics and assure the independence of research. UNESCO should also adhere to initiatives concerning "integrity" within international organisations, as OCDE for example. Which mechanism is the best? A system of peer evaluation, as Hippocratic oath, is bypassed. Is it necessary to create a profession of scientists? What are the costs? For what added value?, he asked.

Mr. Moneef Zou'bi, Director General of the Islamic World Academy of Sciences (IWAS), mentioned the ethics of science from the point of view of developing countries. He underlineds that the development of a "culture of science" represents full of hope in a social point of view, thanks to the reduction of certain difficulties, but it also gives power to people that are not always well intentioned. He recalls the lack of political governance (lack of will) as the main element that breaks scientific progress application to solve world problems like the environmental one. A lack that also stimulates reducing dogmas in scientific world. M. Zou'bi recalled the necessity of a global ethics of human solidarity and considers ethics as a hope for the future. He also underlined the necessity of a common view between scientists and religious in order to avoid conflicts with other human knowledge. Concerning 1974 Recommendation, M. Zou'bi thinks that it would be useful to write another draft where the role of academies would be underlined. According to him, the 1974 Recommendations on the Status of Scientific Researchers have tremendous value, and are mostly still valid in 2006, although the document needs a thorough editorial review. He mentioned that he tried to detect if national efforts in the domain of ethics were linked to efforts carried out internationally especially those pioneered by the UNESCO and other agencies. What role do academies of sciences have in developing/promoting Codes of Conduct on Ethics within their catchment's areas? Clearly the four Swiss academies are exercising such a role. In reviewing the 1974 Recommendations we have to bear in mind if the objective of scientific endeavours has/has not changed in 2006. For still, science has not really been able to resolve the problems of humanity. This represents another way of looking at the ethics of scientific activity. The establishment of national commissions on science ethics is one way of truly gauging what is happening in this domain at the national level in each country. He underlined that the effort led by UNESCO in developing the Global Ethics Observatory has to be commended.

M. John Williams emphasized the new procedures for AMM recommendations updating : firstly, new procedure of updating by decennial cycles (20 cancelled, 40 being revised). Education and the elaboration of oaths aims at assuring the honesty of scientists' actions. Nevertheless, the profession of "scientist" should be legally recognised, and a structure of control built up. M. Williams thinks that the auto-regulation system used by physicians would be more advisable than legal rules, and more efficient. Of course there is a cost, this system requires the establishment of rules and criteria for practise. It may question scientific freedom. UNESCO should propose a framework for each Member State. A soft law should be privileged in certain areas. Scientific projects, as well as industrial, should be submitted to academic councils. The evaluation system of projects should also include criteria of other areas (ex. social value), because they impact on society as a whole. The question of professionalisation is not a panacea, but it would allow to define the minima qualifications required.

M. Millet thinks that the fact that Physicians' education programmes, after World War II, do not provide for oaths illustrates the importance of codes of conduct. He mentioned the model developed by the United Kingdom, where the Biological Society grant licences assuring the ethical sensibility and ethical application in the activities of those who have received such licence. This licence is not obligatory, and people do not need to join the biological society. Nevertheless, 4 or 5 millions of professionals have already applied for it.

Mr. Weinstock believes that 1974 Recommendation should be kept, especially because it is addressed to States that have political responsibilities with regard to science. He pondered that there are some present questions linked to the economic system that should be taken into account: commercial pressures – since medical research doesn't follow illnesses evolution but development of medicine industries; publication pressures – undisclosure of bad results of a research, etc. However as explained during Mrs. Scholze's presentation, UNESCO is living a normative pause and a new declaration is not feasible, which does not prevent other activities. A viable solution would be to develop a new set of recommendations by COMEST; another is the presentation of a report to Member States that emphasizes aspect still relevant of the 1974 Recommendation and urging them to implement it**.**

Mr. Jean Martin emphasized that agents, research professionals, academic institutions, professional associations, and public power carry out responsibilities. Auto-regulation, as those used by physicians, has its advantages, but also its disadvantages, since it may act as a protection, and limit transparency. In Switzerland, professionals, as well as academic institutions, are subject to public authorities. This is a balanced and necessary controlling mechanism.

Mr. Moneef Zou'bi indicated the difficulty to apply the Recommendation as such in the South. Many developing countries have not technological resources and depend on exportations. There are very few students in science in the South although some countries are trying to foster vocations through an ethical discourse ("you can help for the development"). Poverty in the context of developing countries doesn't speak for codes of conduct. Strong academies could nonetheless play a mediator role. In the field of biotechnologies, the gap North-South is going to be reduced, as mentioned Mr. Millet. According to him, an evidence is that the number of patents in developing countries improved from 400 to 1000%.

For **M. Mauron**, a universal model, for scientific community as a whole, would not be advisable. In the case of Medicine, one should raise the question of non-authorized research and that of the scientific status of those who have not finished their studies. A model of professionalization would be better, and academies could create complementary codes. However, research and knowledge must be accessible for all.

Mr. Szawarzki fears that a professionalization of scientists would limit scientific creativity, especially in the framework of Universities.

Mme Kollarova recalls that ethics and bioethics are already included in most Medicine and Natural Science curricula.

Mr Fenstad noted that he was in Budapest in 1999 when the Declaration and Framework for Action was adopted. Even the secretariat had forgotten to include a reference to the 1974 Recommendation in the preamble. However he believes that it could be revitalized. In the global environment, the international organizations are taking ethics into account; they have perceived the need for action from ICSU and UNESCO. At the Ministerial meetings during COMEST sessions, guidance from UNESCO and ICSU is requested regarding redefining the role of scientists in society. Rights and responsibilities should also be analyzed.

2nd day of meeting

Discussions on the "Guiding Questions for the Consultations regarding the 1974 *Recommendation on the Status of Scientific Researchers*"

Mr James Lankford, Special Assistant to the Health Attaché, from the US Mission to the UN and other international agencies in Geneva, asked for the floor to make the following statement, on behalf of the US National Delegation to UNESCO: "At the 33rd General Conference held last October, the Member States of UNESCO chose not to support a feasibility study for a 'Declaration' on Science Ethics. Instead, in 33 C/Resolution 39, the General Conference instructed the Director-General to 'pursue reflection on basic ethical questions raised by scientific and technological progress….' The UNESCO Social and Human Science Sector can play an important role in fostering rigorous consideration of the ethical implications of scientific and technical research and progress. Nevertheless, some have expressed the desire to engage in activities for which UNESCO, in our view, has no mandate. In opposition to the expressed will of Member States, there is some advocacy for a normative instrument on science ethics. The documents written in preparation for this consultation also presume that UNESCO will move toward a normative instrument on science ethics at some point in the future. For example, page 1 of the 'Overview of UNESCO's Activities' paper, prepared by the Secretariat, states that, 'it will not be possible *at the present time* for UNESCO to *immediately* engage in activities that will aim at developing a normative instrument.' The United States is concerned that this kind of language in the preparatory documents moves in a direction that is not consistent with either the terms or the spirit of the General Conference Resolution. As the United States said at the General Conference, we do not believe it is in the best interests of UNESCO to try to develop additional normative instruments. Such an effort can be divisive, and diverts UNESCO resources—in time, money, and effort—from critical activities that help people in their daily lives. UNESCO should not attempt to pursue further normative instruments

at this time, as the Director-General stated at the General Conference. In order to carry out the directive of the General Conference, as we move forward we should focus on the ethical questions presented by scientific and technical research and progress, the potentially beneficial and detrimental consequences, and the programmes and activities that could foster benefits for developing states."

Mr Fenstad clarified that, as explained by the UNESCO representative in her presentation the day before, the meeting in Geneva is an important step in the process of regional consultations with relevant organizations and stakeholders in all Member States, in order to pursue reflections on how UNESCO and COMEST can contribute to the international debate on science ethics and scientists' responsibility. Emphasizing the listening mood of the consultation cycle, he recalled Mrs Scholze's presentation making clear that following the debate and resolution of the last session of the General Conference, it would not be possible for UNESCO to engage in developing a normative instrument. For this reason, the place and the role of the UNESCO Recommendation of 1974 should be considered for these consultations. Mr Fenstad also explained that COMEST is an independent body that was created to advise UNESCO concerning the ethics of scientific knowledge and technology, and that in spite of not being a Member of the Commission anymore, but a former Chair that was invited to moderate this consultation meeting, he could ensure that the statement made by the US delegate would be taken into due account. He also highlighted the need for some countries to implement regulations, in a positive way, as in a negative way through sanctions. It is the role of COMEST to analyze in a broad sense the argumentation and to contribute to the debate, for example on the question of the precautionary principle.

The discussion moved on to the document containing the "Guiding Questions for the Consultations regarding the 1974 Recommendation on the Status of Scientific Researchers". **Mr Fenstad** then invited all participants to present their view. The participants agreed not to discuss question by question, nor to follow the general and specific questions, but rather to offer general comments on the document, while addressing the different aspects raised by the "Guiding Questions".

Responding to **M. Cartage-Smith** about the present status of the Recommendation, **Mrs. Scholze** mentioned that it is still valid, but that no monitoring or assessment initiative has been achieved so far. It is not binding for Member States, but some NGO have used it in the past in order to mobilize governments. The Recommendation is now useful to UNESCO to accomplish the mandate of the General Conference on pursue reflections on scientists' responsibility. The normative pause offers an opportunity to examine the instruments already adopted as well as its implementation.

Mr Eero Vuorio, Chancellor of the University of Turku, Finland, mentioned his surprise at the extreme modernity and relevance of the Recommendation. He nonetheless noted that some important current issues are missing, such as gender and animal rights. However, he argued that, at least at the European level, there is no need for an international declaration to re-emphasize what national laws and European instruments already contemplate.The question is how to give a new life to this Recommendation and to raise awareness of Member States on it.

Mrs Krizikova, from the Slovakia Commission for UNESCO, noted that it was necessary to work on the basis of what already exists. She referred to the difficult negotiations

regarding the recently adopted Convention on the Protection and Promotion of the Diversity of Cultural Expressions and stated that for the time being it is not necessary to mention the setting up of a new normative instrument. The 1974 Recommendation is an instrument legally in force, it needs to be given media coverage and to be rejuvenated. UNESCO should monitor its application through regular reports from Member States. It would be appropriate to launch a process of formal request for information from Member States about the implementation of the 1974 Recommendation to list the various issues not included in the Recommendation and which appeared after its adoption. She also stressed that it would be useful to prepare the scientific community in each country to the launch of such process of periodic report.

Mr. Gérald Hess agreed that there are several aspects of the Recommendation that are still relevant and adequate today. And others deeply changed, such as the internationalisation, the pressure for publication, the context in which the research is made today and even the man's representation about himself. Therefore it is necessary to reconsider the Recommendation because its intention is not adapted to the present and doesn't consider the future.

Mr Weinstock supported the general view that the 1974 Recommendation is still relevant and pertinent. It speaks to the States about the activities of scientists. It does not refer to the ethics of scientists themselves, the way they should ethically behave, but rather deals with policy of ethics of science. Today the relations are more complex and it is necessary that these issues be emphasized and assessed. Maybe COMEST could treat both separately.

Mr Matthias Kaiser considers that the use of non-biding tool (soft-law) were more suitable to the evolution of science and its potential risks. He expressed his surprise at the absence of European Union representatives in the meeting. He underlined the reasons to go beyond the 1974 Recommendation, mainly the fact that there are important areas that are not addressed such as risk and uncertainty; there are fields that are not expressed, as mentioned in Professor Song's paper. It is necessary to take into account the "clients" of science, the public but also science itself. Science is nowadays an international adviser, an important tool for political negotiations, e.g. climate change and biodiversity. Besides, more clarification of the principles might be needed. Regarding professionalization, he believes that it deserves to be clear and simple (having criteria), offering a label of minimum reliance for the "client" and allowing its assessment.

Mrs. Scholze clarified that the European Union was actually invited by the organizers to send a representative. She also notice that it is true that European and North American countries have a quite advanced frame of ethical regulations to guide scientific research. However, this is not the case of other parts of the world, that still need to set up their own standards regarding ethics of science and technology and this is why UNESCO is undertaking this effort.

Mrs Hagit Messer-Yaron, Vice-President for Research and Development of the Tel Aviv University, said that in her viewpoint the answer to the first guiding question is no. This is because science has brought significant changes that make it necessary to update the Recommendation. Some of these changes refer to the relations of the scientific community and the public, the relations between science and government, the pressures for publication, the growing importance of the gender issue. Science is used at many levels. There is another important question that should also be addressed: Would science be different if it

were performed by actors of different cultures? However, in this kind of document, there are some basic elements that are independent of any external cultural aspect.

Mr Emilio Bossi alleged that it is better to implement than modify the 1974 Recommendation. However, it is not valid without some updating. In this sense, UNESCO should list, in a working document, elements for such revitalization. Estimated the need of UNESCO take into account the necessities of the developing countries. Agreeing with this comment, **Mr. Fenstad** underlined that ICSU and COMEST are aware of this problem which is also expressed in the Budapest Declaration on Science and on the Use of Scientific Knowledge.

According to **Mr Zbigniew Szawarzki**, it is not feasible to "exhume" the document. It does not work and did not work for more than 30 years so there is no point in its "resuscitation". An entirely new document should be developed in ethics of science and technology policy, including questions as conflict of interest.

Mrs Geneviève Jourdan, representing the Association of World Citizens, agreed that it is necessary to elaborate a new document; renew its spirit and raise ideas regarding creativity and imagination.

Mr Daniel Weinstock proposed that there were some present issues that should indeed be taken into account: commercial pressures, publication pressures, etc. However, as explained during Mrs Scholze's presentation, UNESCO is living a normative pause and a new declaration is not feasible, which nevertheless does not prevent other activities. One viable solution would be to develop a new set of recommendations by COMEST; another is the presentation of a report to Member States that emphasizes aspects of the 1974 Recommendation that are still relevant and urges them to implement it.

Mr Lutz Möller recalled that it is imperative to redesign traditional roles of science towards society. He endorses the decision taken by the General Conference regarding the feasibility study on a new declaration. However, it is not because he is not in favour of a long normative pause at UNESCO, but because he does not believe that an intergovernmental organization is the right place to develop global codes of conduct, neither of which, as explained before, is the present purpose of UNESCO. The right fora for action are to be determined by experts. The principle of subsidiarity is important and new rules on international level should only be adopted if they represent an added-value for scientists comparing to national efforts. Concerning the 1974 Recommendation, implementation is a task of National Commission for UNESCO of Member States, but it is a complex issue to guide the scientific community in a process of implementation. Furthermore, such a detailed document as the 1974 Recommendation is not adequate nowadays. A more general document would be more appropriate and in that way it would be better to start a new process such as the Declaration on Bioethics. The framework should nonetheless be better defined specially regarding the role of governments.

Mr Szawarski noted that it is important to examine why the Recommendation did not work before. A practical example on how to implement it is to introduce the discipline "ethics" in all high schools. Education of young scientists concerning ethics of science is crucial. He supports the idea of a completely new instrument because, as a professor, he would like to have this kind of ethics reference in his teaching activities.

Mr Moneef Zou'bi considers that the 1974 Recommendation is as valid and relevant as it was at that time. There was a problem of communication of States with society. However, other aspects should be taken into account nowadays, such as the gap between rich and poor countries and the advent of information and communication technologies (ICTs). The status of science declines worldwide and the purposes of the 1974 Recommendation have not come about. UNESCO should evaluate what was done in terms of implementation, which is the role of the National Commissions, and the progress accomplished in these 32 years. The Recommendation still makes sense today and to evaluate what has been done would already be a step forward.

Mr John Williams suggested that there are two ways of working. The first way is to consider that States will implement the Recommendation, or have already done so, in which case it is not necessary to re-emphasize it. The second is to survey the state of the art in the different countries concerning the States' obligations towards scientists. If the conclusion is that more substantive changes are needed, it will be necessary to go back to the Member States. The options are to leave the instrument exactly as it is or to reopen the debate regarding what has changed over these 32 years. What should UNESCO do? With respect to moral values, in 1974 there were more consensuses between scientists and governments and among scientists themselves than today. Currently the interests around science are more complex and there is more disagreement. Besides, governments do not want to impose new obligations upon themselves. UNESCO and COMEST must take into account the different aspects at stake. Mr Williams also pointed out the need for science, and scientist, to become a recognized profession. The movement to develop a code of conduct (or code of ethics) for scientists can profit from the experience of professions for which codes of ethics have long been an integral part of their identity. Physicians, nurses, dentists, and pharmacists, to mention only some of the health professions, have codes of ethics to guide their decision-making and behaviour. Moreover, these professions have largely self-governing organizations to develop and enforce the ethical standards required of their members. This arrangement has benefited everyone: members of the public, who can have confidence that the health professionals will act in the best interests of patients; governments, who can delegate the development and enforcement of ethical standards to the professional organizations; and the professionals themselves, who enjoy the autonomy to regulate themselves and to be judged by their peers when accused of wrongdoing. Professional self-regulation is not without its challenges and occasional failures but it is arguably superior to other forms of professional regulation. Furthermore, it is flexible and constantly evolving to deal with changes in the environment of professional practice. Scientists already share many features of the recognized professions, as is clear in UNESCO's 1974 Recommendation on the Status of Scientific Researchers. Scientists are also susceptible to unethical behaviour and misconduct (cf., among many other sources, Transparency International's Global Corruption Report 2006). Dealing with such breaches of ethics and responsible conduct of research is much more difficult in the case of scientists than for members of the recognized health professions, since scientists are accountable primarily to their employers who often are either unwilling or unable (or both) to investigate accusations of wrongdoing. Moreover, reliance on unenforceable codes of conduct and/or educational programmes is likely to be insufficient to ensure satisfactory ethical behaviour by scientists, given the tremendous academic and commercial pressures on them to produce important results. One possible response to this problem is for science to become a recognized profession, with a legal framework, a licensing/regulatory body and educational and ethical standards. As with the health professions, such an initiative would preserve the academic freedom of scientists while ensuring the protection of the

public against unethical behaviour. A licence would be required for a scientist to be hired in an academic institution, to be eligible for research grants, and for other activities to be determined. Since the legal framework already exists in most, if not all, countries for the health professions, among others, it should be relatively easy to adapt it for scientists. Some of the challenges to be faced in making this move would be the cost of professionalization, which is considerable but not insurmountable and the definition of 'scientist' (i.e., who should be subject to the regulatory regime). Here again, the health professions have considerable relevant experience that can be shared, he pointed out. Those who consider that the implementation of this proposal would pose a serious threat to academic and scientific freedom and autonomy, he said, should be aware that the principal alternative to self-regulation is government regulation, which is likely to be much less sympathetic to the concerns of scientists. He considers that UNESCO could play an important role in the examination of this proposal by (a) making it the subject of discussion at meetings and consultations; and (b) developing a model regulatory framework for consideration by interested organizations and Member States.

Mrs Julia Hasler, from the Division of Basic and Engineering Sciences, UNESCO Natural Science Sector, mentioned that it is important to recall the corporate memory of UNESCO. The 1974 Recommendation was prepared by scientists for scientists and it happened in another international context. She mentioned an important initiative of the Canadian Programme, "DNA for Peace", related to biosecurity, in which her Division is involved. This activity allows observing the tensions of cultural and political environment where science is developed.

Mr Carvalho noted that UNESCO National Commissions could be instrumental in the process of evaluation of the implementation of the 1974 Recommendation and should serve as a channel for a broad consultation, together with other actors in science and technology.

Mr Weinstock suggested that COMEST could take notice of the 1974 Recommendation without changing it, since all the participants agree that it is still valid and relevant in terms of content. It should not be only "un constat de l'oubli" and it is necessary to call attention to its existence, underlining its current relevance vis-à-vis the concerns that affect science and technology today, even if complementing aspects are missing. The Commission might recontextualize it with a memorandum. But COMEST should address issues regarding ethics for scientists as individuals through another document, since it is important to not include the two aspects in the same process.

Mr Carthage-Smith expressed his support to the suggestion made by Mr. Carvalho and Mr Weinstock.

Mr Moneef Zou'bi proposed that UNESCO develop a questionnaire to be addressed to the National Commissions and through them to all national and regional relevant institutions, in order to assess the effective implementation of the 1974 Recommendation.

Mrs Kollarova mentioned that COMEST's role in education and ethics should be emphasized in this process. She added that it is not surprising that the advance of technology and manipulations of the fundamental life processes stimulate new problems in ethics and bioethics. The topics within ethics are wide –environmental ethics, ethics of new and emerging technology, ethics teaching, etc. – and also cover science in general, not only life sciences. It is very important to discuss these problems and include them in ethics

teaching at the university level. At present time the problems of ethics and bioethics are included in most study curricula for medicine and the natural sciences at Comenius University in Slovakia. In her opinion, it is necessary, in cooperation with national ethics commissions, to implement all relevant international ethical instruments, such as the Declaration on Science resulting of Budapest Conference. On the other hand, it is important not to forget that responsibility of the researchers must be compatible with freedom of research and the maintaining of scientific development. She expressed her satisfaction regarding COMEST's decisive role in fostering dialogue on education and ethics of science.

Mr Matthias Kaiser suggested that UNESCO and COMEST should leave the 1974 Recommendation untouched but should also provide a "readable" document, i.e. one that does not use legal wording, which reflects current terminology and thought, and which explains certain areas. As said many times in this meeting, COMEST is in a "listening mood" and UNESCO is living a temporary "normative pause". Nevertheless COMEST should consider carrying out studies on certain issues. One such possible issue would be the new challenges that have emerged since 1974 and that are not properly dealt with by the Recommendation, such as science and policy-making; science and society as a whole; the changing context of S&T production (commercialization, IPRs, etc). On the basis of the state-of-art, the final document would answer questions such as: "What are the status and the impact of any normative effort?" and "What should be a possible instrument useful and effective for different regions in a normative sense?"

Mr Jaeglé called attention to the role played by NGOs, not only the scientific ones. He said that the UNESCO liaison committee with accredited NGOs already has extensive experience in this regard and would also be an appropriate channel to facilitate this dialogue.

Mr Fenstad closed the meeting by thanking all participants for sharing UNESCO's endeavour towards ethics of science and technology, giving rise to a scientific responsibility that concerns all nations. He stressed the importance that different perspectives be taken into account. The task of COMEST, he said, is to act as a forum where all stakeholders can meet and discuss. Developing recommendations, as the Statutes of COMEST state, helps to build bridges among all constituents. If all partners could be involved in a unique one the better it is. To this end, the inputs of this meeting will be very helpful. He thanked the Swiss Commission for UNESCO to have organized this meeting.