

World Commission
on the Ethics
of Scientific Knowledge
and Technology



COMEST

SUMMARY REPORT
**BIBLIOTHECA
ALEXANDRINA
MEETING**
18-19 OCTOBER 2002





Welcoming remarks by
Her Excellency Mrs Suzanne Mubarak, First Lady of Egypt, Vice-Chair of the Board of Trustees of the Bibliotheca Alexandrina and Vice-Chair of COMEST on the occasion of the opening of the COMEST Meeting at the Bibliotheca Alexandrina.

Professor Fenstad,
Colleagues,
Distinguished guests,

Allow me first to welcome you all to Egypt and to the new Library of Alexandria. The Bibliotheca Alexandrina, like its glorious namesake of ancient times, is much more than a library. As you will soon see for yourselves, it has museums, research centers, art galleries, conference facilities, and much more... But most important for all of us here, it is dedicated to the promotion of universal ethical values of tolerance and respect for human rights, rationality and dialogue. The areas of thematic concentration that we have chosen for this nascent organization include the ethics of science and technology, water, and other concerns that mirror many of the interests and concerns of COMEST.

It was no accident that we should be gathered here, in the very first activity that we undertake following the inauguration. Indeed, two years ago, I proposed to COMEST that the Bibliotheca Alexandrina should be a natural venue for deepening the reflections of COMEST, as well as for providing a worldwide forum for the dissemination and discussion of its documents and concerns. Today, I am pleased that this too is becoming reality.

In every COMEST meeting we have tried to have a public segment where beyond the closed-door discussions we could interact with a broader public. Here we have planned a full three-day conference on the Ethical and Social Responsibilities in Science and Technology to follow on from our small meeting where all are invited to participate, and where I am pleased to see that a number of those present here will be speakers.

I hope that this meeting will deepen the links between COMEST and the Bibliotheca Alexandrina, and that what is now a natural affinity will be cemented into a real partnership. I have no doubt that such a true partnership, founded on shared values, will be beneficial to both COMEST and the Library.

Beyond the Library, Egypt's commitment to the concerns of COMEST is both wide and deep. We will be hearing soon from our Minister of Water Resources on the advances made by Egypt in implementing a special RENEW node for water in Egypt. In the public conference, we will be hearing from our Minister for Higher Education and Scientific Research about Egypt's concerns for the ethics of science.

Ladies and gentlemen,

I salute the initiative of UNESCO that has brought us all here. The enormous revolution in science and technology in the world today has forced upon humanity questions where the guides for proper conduct are moral and cultural and not based only on scientific knowledge. Not all that is technically feasible is ethically desirable.

The issues addressed by COMEST range far and wide... as far and as wide as the challenges that science and technology are posing. Water and energy are areas where our behavior must be guided by our changing knowledge of what constitutes sustainable development. The revolution in Information and Communication Technology (ICT) is raising a whole host of complex issues about rights and regulation, about equity and opportunity, and so much more. Outer space is literally the ultimate frontier. New domains like nano-technology will also raise unfathomed questions. But despite their enormous range and variety, all these issues are connected by a common thread : the need for an ethical framework, a moral compass, to guide our steps in an increasingly uncertain world, where change is proceeding at a dizzying pace.

The broad ethical framework is fairly simple : to seek equity and fairness, to promote applications of knowledge that will promote well-being now and in the future, to include the excluded, reach the unreached and think of the unborn as we take actions today. Our challenge is not just to state the principles but to articulate their translation in certain codes of conduct and general recommendations for action in each of the various domains. I hope that the public Conference that will follow this meeting will help us take steps to involve the scientists of the world in the increasingly important quest that will help forge a new social contract between science and society. Thank you each and every one for being here to help make that happen.

“I have no doubt that such a true partnership, founded on shared values, will be beneficial to both COMEST and the Library.”

Suzanne Mubarak



Address by Mr Pierre Sané,
Assistant Director-General for Social and Human Sciences of UNESCO on the occasion of
the opening of the International Conference on the Ethical and Social Responsibilities in
Science and Technology.

Your Excellencies, Dear Dr Serageldin
Ladies, Gentlemen
Dear friends and colleagues

Allow me first to express my gratitude and thanks to Mrs Mubarak and Dr Serageldin for their kind invitation to host the meeting of the Bureau of COMEST at the Bibliotheca Alexandrina and for inviting us to join in this international conference.

Due to the timing of the Executive Board of UNESCO and the Francophone Summit in Beirut, the Director-General is unable to personally join us. I have the privilege of representing him.

Let me begin by quoting the words of Mrs Mubarak :

“We open the doors of the new Bibliotheca Alexandrina on a world devastated by violence and war, the trampling of fundamental human rights amidst talk of the inevitability of the clash of civilizations and the proliferation of bigotry and intolerance. The new library rises on the shores of the Mediterranean in the city of Alexandria ; an international enterprise on Egyptian soil. Egypt’s gift to the world and the world’s gift to Egypt.”

In troubled times such as these, institutions that can bring people together in the pursuit of knowledge and understanding, that can encourage cultures to meet and connect, are invaluable.

Fifty years ago, UNESCO and other international organizations, such as the FAO, WHO, UNICEF, etc., were founded as the result of cooperation between nations on issues related to culture, education, and science. The ideals of democracy, peace, human rights and universal justice guided member countries to care for future generations.

What we know is that never have science and technology led to so much material improvement in the lives of humankind. But at the same time, never has a century – a short century (Eric Hobsbawm) led to so much death. Application of science and technology, use of science and technology played a large role in the production of weapons of mass destruction.

Where \$868 billion are applied annually to global military spending, we know that more than ever we need to place wisdom as a guard to the use of science and technology application. More than ever do we need to prioritize ethics and morality at the centre of human relations.

That is why at present the ethics of science and technology is no longer an option but a necessity. The importance of science and technology for the shaping of society, for the avoidance of environmental damage and for providing realistic options for policy and development is no longer arguable. Nowadays the changes brought about by the fast pace of scientific discoveries and technological progress raise crucial questions that open up new avenues for ethical reflection, to guarantee that humanity can benefit from these extraordinary achievements in a harmonious way.

Mindful of this, in 1998 UNESCO set up the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), whose main purpose is to highlight values permitting better and broader cooperation in the world, both in science and technology and in the social and cultural spheres, thus ensuring that the advancement and sharing of knowledge are fully consistent with respect for fundamental human rights and freedoms, encouraging the scientific community to examine subjects of prime importance and drawing up action-oriented recommendations for national or regional policy-makers. As an advisory body and forum of reflection, the COMEST has the task to formulate ethical principles that could provide decision-makers, in sensitive areas, with selection criteria other than purely economic.

That is why UNESCO and COMEST are privileged to be part of this international conference, the first international scientific conference organized after the formal inauguration of the new Library of Alexandria and cosponsored by the “Mouvement Universel de la Responsabilité Scientifique”. These international conferences are important in that they foster exchange between peoples, for if it is true that the world remains divided between rich and poor, between the haves and the have-nots, it is certainly not divided between intelligent and non-intelligent people. It is on this global intelligence that we rely to foster peace and human rights through educated dialogue between nations of the world.

I look forward to a strengthened cooperation between the Bibliotheca and UNESCO and wish all participants full success.

Thank you.

“In troubled times such as these, institutions that can bring people together in the pursuit of knowledge and understanding, that can encourage cultures to meet and connect, are invaluable.”

Pierre Sané

Plenary Session 1: Opening of the Meeting

Welcome and introductory remarks

1. Her Excellency Mrs Suzanne Mubarak, First Lady of Egypt and Vice-Chair of COMEST, and Professor Jens Erik Fenstad, Chair of COMEST, stressed the need for promoting ethical values, dialogue and knowledge in the field of the Ethics of Science and Technology. These shared values should strengthen the links between the Bibliotheca Alexandrina, COMEST and UNESCO in their common efforts to guide the international community toward a broad ethical framework.
2. Mrs Mubarak expressed her interest in COMEST ongoing activities and opened the international conference on ethical and social responsibilities of Science and Technology, a worldwide forum that has become reality. She stressed the importance of the ethics of fresh water, in particular the launching of the RENEW node in Egypt. She also stressed the need for a code of conduct in each of COMEST's fields of competence. She stated that the Bibliotheca Alexandrina and COMEST should progress together in their work on the Ethics of Science and Technology.
3. Mr Fenstad stated that Science in the post-Second World War era had changed and the implicit social contract of science needed to be re-examined. He stressed the importance of trust in science, responsibility and accountability as well as the "New Contract between Science and Technology and Society". Public trust in science has been eroded and scientists now need to take responsibility. He recalled the main COMEST focal areas: fresh water, energy, outer space, information technology and sustainable development. In this new initiative, he expressed the wish and the need to have a plan of action on ethics of science and technology and sustainable development as the Director-General of UNESCO stated in his speech at Johannesburg. He asked Mr Sané, UNESCO's Assistant Director-General for Social and Human Sciences and Executive Secretary of COMEST, to say a few words on behalf of UNESCO.
4. Mr Sané attached great importance to the efforts of the Bibliotheca Alexandrina and COMEST in their work on the project on Ethics of Science and Technology. He reported on the results of the 165th session of the Executive Board of UNESCO, in which the Members of the Board endorsed Ethics of Science and Technology as one of the five top priorities of UNESCO for the next biennium (2004-2005), and adopted a decision on the recommendations of COMEST in the field of ethics of water, energy and outer space and on the creation of the Avicenna Prize for Ethics in Science for which the Director-General of UNESCO will select jurors from among COMEST members. On behalf of the Director-General of UNESCO, he stated that the visibility of COMEST should be enhanced and its ongoing cooperation with other international bodies, such as ICSU and COPUOS should be strengthened. He stated that he would report to the Director-General of UNESCO on the deliberations of the COMEST meeting and the decisions of the Bureau.
5. Mr Fenstad commented with a physical analogy, saying that when molecules are moving individually, colliding randomly, there is equilibrium. Only with unified direction can there be energy to cause phase change. This is true of ethics: no single thing or entity can change science and technology, but sustained efforts pushing in the same direction can make a difference. COMEST does not have the monopoly in ethics, rather, it needs to set the direction for local bodies to implement needed work. Such is the importance of the multidisciplinary work and broader interaction between the COMEST meeting and the international conference on ethical and social responsibilities of Science and Technology, organized by the Bibliotheca Alexandrina and sponsored by the French Mouvement Universel de la Responsabilité Scientifique (MURS). He requested Dr Serageldin to say a few words on MURS.
6. Dr Serageldin introduced MURS and the history of its foundation in the 1980s by eminent scientists such as Jean Dausset, Jean Marie Lehn and other Nobel laureates. They were able to foresee the challenges of the new Life and Information Sciences. Under their banner, "la

science et le devenir de l'homme" ("science and the future of humanity"), they launched the international dimension stressing the social responsibility of scientists to be participants in the public debate. MURS activities include public education, linking science and students, and a published newsletter. They have built relationships with other organizations, UCS, AFS, and expanded into Japan and Mexico. MURS has identified some issues that need to be discussed: new partnerships with the private sector, governments, and intellectual property rights. Dr Serageldin stated that there is a natural affinity between MURS, COMEST and the Bibliotheca Alexandrina and called for a partnership. He also stressed the importance of the private sector as an essential partner in this new paradigm as well as in the ongoing dialogue between NGOs, IGOs and governments.

7. Mr Fenstad informed the meeting about the activities of ICSU following the Budapest Conference in 1999 (Declaration and Framework for Action) on Ethics and Responsibility in Science. It challenged scientists and educators to develop a curriculum that can be used by developing countries so they can not only receive technical scientific training but also learn to formulate their own opinions and ideas on ethics.

Comments and discussion

8. In the development of education curricula or other policies for developing countries, it was stressed how important it is to use local expertise to ensure that local needs and customs are considered. Otherwise, the programmes would not necessarily be applicable.

9. There is often conflict between privately funded science for profit and science in the public domain. In the United Kingdom, past practice was to produce maximum profit so there was a tendency to transfer intellectual property to large multinational companies. How could this occur in an ethical way ?

“The Bibliotheca Alexandrina (...) is dedicated to the promotion of universal ethical values of tolerance and respect for human rights, rationality and dialogue.”

10. A dilemma exists of how to deal with education, knowledge and complexity in society to solve the real problems of science. Science should be serving the educational area and there is a need to draw together pieces of specialized information into intellectual constructions, instead of leaving them only as isolated bricks like books in a library. Only in this way can science be applied as a solution to the problems existing today.

11. Using the example of ultrasound for abortion in India and its misuse from the gender point of view, we see that it is not only a problem of science but of values and behaviour. Corresponding laws must be adopted and enforced.

12. Public debate and the relationship between COMEST and the public at large is very important. Scientists need to learn to communicate with the community at their level and should be asked to translate the discussions of COMEST in very simple terms.

13. In concluding remarks, Mrs Mubarak stated that the partnership between COMEST and the Bibliotheca Alexandrina was a good beginning for the discussions that would follow at the international conference entitled “Ethical and Social Responsibilities in Science and Technology”. She added that messages must reach the public at large through all media and not just the written media.

Suzanne Mubarak

Plenary Session 2 : Environmental Ethics/Ethics of Sustainable Development

Report on the Ethics of Fresh Water by Lord Selborne

14. The Johannesburg Declaration ends with a section entitled "Making it Happen!". This has been the theme of the Sub-Commission on the Ethics of Fresh Water, since its meeting in Aswan in October 1999.

15. Based on the report of the working group on the Ethics of the Uses of Freshwater Resources, chaired by Professor Llamas, the Sub-Commission resolved that rather than continue the process of analysing the components of the Ethics of Fresh Water the time had come to "Make it Happen".

16. The decision was made at Aswan to put in place a pilot network, to be named RENEW, which would identify and promote best practice on a regional basis.

17. The components of best practice would refer to the obligations and responsibilities of all stakeholders, from international government agencies to national governments, water regulations, water management agencies, research and development agencies, extension services, education authorities, NGOs, nature reservation organizations and industry, including agriculture.

18. For each of these stakeholders ethical best practice would entail the successful implementation of the following tenets :

- Transparency – proceedings should be open to scrutiny, with data required for water management available to all.

- Accountability – all organizations must be able to identify the stakeholders to whom they are accountable and put in place appropriate procedures for reporting back.

- Accessibility – the ethical principles of equity require all stakeholders to have access to adequate clean drinking water, and water for food, health and development. Equity should also be achieved between geographical entities, between the industrialized and the developing world, between rural and urban populations, between generations.

- Inclusiveness and participation – best practice will ensure public participation in the determination of policy for the management of fresh water, with special regard for the role of women in managing domestic supplies and the interests of younger and future generations, as well as recognizing the water needs of other species and ecosystems.

19. The Sub-Commission had decided to promote the RENEW network as a means of advancing the identification and reproduction of best practices. Three nodes had now been established :

- For Australasia and the Pacific Islands, based in Canberra ;

- For Scandinavia and the Baltic States, based in Bergen ;

- For Egypt and the Arab world, based in Egypt.

20. Each of these centres would focus on the development and support of research, training and education, with the full involvement of industry and NGOs. The centres would seek to enhance the participation of the stakeholders in the planning and integrated management of water resources and would promote the development of an appropriate, readily accessible database.

21. It was expected that UNESCO-IHP would be more closely involved with the RENEW network and that meetings of the three nodes would be organized to help the members of each node to keep on track and to monitor progress.

22. The development of the third node in Egypt was the most appropriate one because of the historical importance of water management in the country.

Progress Report on RENEW in Egypt by Mr Abu-Zeid

23. In response to a call for action at the Aswan meeting, the following RENEW initiatives were launched in Egypt:

a. Training and information – Establishment of a Center for Water Ethics in Egypt and the Arab world that will

- focus on training and dissemination of information ;
- b.** Public awareness – The Ministry established a Communications Unit that will work with media to create materials and programmes to educate children and various sections of the general public ;
 - c.** Equity and participation – The Ministry is implementing a Water Policy Reform Program that is targeting irrigation system management, distribution of water among farmers, and increasing participation of users in the decision-making process ;
 - d.** Transfer of knowledge – Training courses are offered to all staff and affiliates of the Ministry ;
 - e.** Amendments to Law and Regulations – Strict enforcement of existing regulations concerning usage and distribution of water.

24. These actions were taken with international collaboration, both within the Arab world and with the international community.

Report on the Ethics of Sustainable Development by Mr J. Sarukhán

25. As an initiative discussed by the Chairperson, J.E. Fenstad, and COMEST members, J. Sarukhán and J. Kimmins, an exploratory meeting was conducted in conjunction with ICSU officials H. Mooney and C. Smith on 24 and 25 June 2002. The meeting took place at ICSU Headquarters in Paris, with the presence of COMEST members : J.E Fenstad, J. Sarukhán, J. Selborne and H. Curien, to explore the possibilities of a collaborative effort between the two organizations on the subject of Ethics of Sustainable Development. The Chair of COMEST was to report in detail the results of that meeting as well as further conversations with C. Smith and ICSU President Jane Lubchenko.

26. Discussions during the meeting gave detailed consideration to a number of approaches to the issue of Environmental Ethics. It was concluded that the best way to address the issue was through the concept of Sustainable Development. This is due to its holistic and integrative nature, since it considers not only the study of the ecological (biophysical) components but also the socio-economic elements which are essential to understand adequately the relations of societies and the environmental impacts that their human, economic and

social development entail.

27. Some of the questions suggested as possible foci of interest for a COMEST group working on the subject were :

- a.** How can the Science and Technology community contribute with other components of society to attaining Sustainable Development? The concept of a “New Contract between Science and Technology and Society” was considered.
- b.** How can Science and Technology help the efforts of societies to reach better standards of living (particularly those approximately 3 billion people in the world living below the poverty line) ?
- c.** How can Sustainable Development be elevated to a level of global ethics as has been proposed by different groups such as the Brundtland Commission ?
- d.** How can global ethics be practically implemented ?

28. It was clear that to embark on this kind of interdisciplinary study, a multidisciplinary team should be put together including natural scientists, economists, sociologists, anthropologists, social psychologists and philosophers, among other disciplines.

29. It was also strongly recommended that COMEST should seek collaboration with other similar bodies besides ICSU, which share interest in the subject such as UNEP, MURS, IHDP, DIVERSITAS and Pugwash.

30. Despite the bleak future envisaged by the present day trends of global problems, it was recognized that there are limited but encouraging developments in efforts towards reaching sustainability in development both in some developed nations (notably some Scandinavian countries) as well as in various ethnic groups in developing countries. These could serve as the basis for embarking on the study and could be used as examples of best practices to be adapted and repeated in different countries and regions of the world.

Plenary Session 3 : Ethics of Outer Space and Ethics of Energy

Report on the Ethics of Outer Space by Mr A. Pompidou

31. As an initiative of the Director-General of UNESCO and the Director-General of the European Space Agency (ESA), a joint Report on “The Ethics of Outer Space Policy” was published in June 2000, coordinated by A. Pompidou. This report states that the ethics of outer space policy should be founded on the principle of the benefit of mankind.

32. Scientific progress and technological innovation has created a real need for ethics in society. Ethics is the moral standard for action, and a reflection on risk and a public debate is a vital feature for democracy among specialists, decision-makers and civil society.

33. Since 2000, the ethics of space policy has been one of the major issues addressed by COMEST, in close cooperation with ESA and UNCOPUOS. The basis of this work is a common understanding that ethical principles should precede and guide law and be applied at every stage of the development of space technologies. In this field, the importance of a contradictory debate should be underlined.

34. With regard to orbital stations, biological production activities need to adjust precautionary measures and astronauts must follow ethical rules as on Earth (code of conduct, responsibility, confidentiality, mutual assistance). The principles proposed are, notably, those of non-appropriation, equity of access and benefit for mankind.

35. This joint ongoing work should take into account the rules embodied in International Law related to fair competition, reduction of debris and pollution, and also the principles of equity of access to scientific, environmental and commercial data and the protection of cultural identities and promotion of new identities. There is also a need for co-regulation at global level on electronic surveillance and for a broad public dialogue with Universities and Schools of journalists. The role of UNESCO, ESA and Space agencies is to improve the basis of a culture of space.

Report on the Ethics of Energy by Mr J.P. Kimmins

36. The following is a summary of the current state of the work of the Sub-Commission on the Ethics of Energy, after it was presented and discussed at the Berlin meeting of COMEST in December 2001. A published version of the report of this Sub-Commission was amply distributed during and after the Berlin meeting.

Definition of the ethics of energy, and the future of the Energy Sub-Commission

37. While there are basic principles relating to the ethics of energy – and these have been addressed by the Ethics of Energy Sub-Commission – progress beyond such principles requires an analysis of the complex social and environmental systems within which the energy issue exists. Ethical behaviour cannot be judged over short time periods and over large local geographical scales. The trade-off in ethics between our present and future generations, and between local, national and international considerations must be considered in deciding on ethical behaviour.

38. Consequently, it was recommended that the future of the Energy Sub-Commission be the promotion of a global assessment of the implications of energy policy. This should be far broader than simply an assessment of the energy implications of alternative energy policies. It should encompass the role of energy in all aspects of human endeavour, and the interacting effects between different sectors of the economy and society in general. This assessment will require global, top-down meta-models linked to bottom-up, local models. Once such tools are developed, a basis for determining what is ethical with respect to energy in any particular situation will have been provided.

Energy and complexity

39. Because of the intimacy of the connections between energy and all aspects of life, the ethics of energy cannot be evaluated without explicit examination of these complex interactions. For example, while it is urgent that we move towards economies based on renewable sources of energy, consideration must be given to how – and how rapidly – this transition will be accomplished. As this inevitable and desirable transition is undertaken, both the negative and beneficial consequences must be carefully evaluated in order to identify the least negative method by which to accomplish the transition. Negative effects on economies generally result in a reduced ability to fund environmental programmes. Where this occurs, it can more than eliminate the benefits of the switch from fossil fuels.

40. To evaluate the ethics of behaviour involved in such complex systems – beyond very broad principles – will require tools that can link bottom-up, local considerations to national and global assessments. These should also evaluate potential consequences of alternative interpretations of what is ethical over appropriate time scales, covering many human life spans, which are very short in terms of the time scales of the world's life support systems.

41. How can COMEST, in this respect, make a difference over a short time period, since it has few people and resources? What is the unique contribution that COMEST can make that will justify its continued existence ?

42. In answer to these questions, the chairman of the Sub-Commission recommends that the future of COMEST be: 1) to work to develop the basic principles for Sustainable Development and the Environment; 2) to build on the extensive work already undertaken by other organizations; and 3) to apply its limited energy and resources to the promotion of a new world assessment activity – a modern version of the Club of Rome World Model activity.

43. The work of the Energy Sub-Commission is essentially completed, since a set of Principles has been presented. To go beyond this will require the development of analytical tools that can address the complexity of energy interactions with all key aspects of human endeavour at all relevant levels. A definition of ethical behaviour with reference to energy can be assessed only when this is accomplished. Because of this, COMEST should move expeditiously to claim its role as the promoter of an integrated assessment of the global system. This involves facilitating the integration of the many excellent sectoral assessments already under way. To use a baseball metaphor – to act as the “catcher's mitt” for all the tools and predictions they produce, and to facilitate the development of their integration into a truly global assessment. The Bibliotheca Alexandrina was pointed to as being an excellent location – a home - for this activity.

“The broad ethical framework is fairly simple : to seek equity and fairness, to promote applications of knowledge that will promote well-being now and in the future, to include the excluded, reach the unreached and think of the unborn as we take actions today.”

Suzanne Mubarak

Closed Session 4 : COMEST New Bureau Meeting

Report on COMEST activities

44. Mr Fenstad underlined the importance of the new COMEST initiative on Sustainable Development, presented in the report by Mr Sarukhán. COMEST had been requested to prepare an input for PREPCOM III, New York (March-April 2002) and the documents that were distributed summarize the outcome of this work: The Declaration of the World Summit on Sustainable Development and the contribution of COMEST to the UNESCO/UNEP Round Table on Cultural Diversity, Biodiversity, and Sustainable Development.

45. Mr Fenstad and Mr Sané presented the documents submitted to the Executive Board of UNESCO relating to COMEST: 165 EX/13 (COMEST II Recommendations and Concise Report as well as new initiatives and activities) and 165 EX/24 Rev. (Avicenna Prize for Ethics in Science). COMEST received strong support from the Members of the Executive Board. However, implementation means that new resources must be made available for COMEST. For the next Executive Board session, COMEST documents need to be translated into the 6 languages of UNESCO.

46. As to the follow-up of the COMEST Recommendations submitted to the Director-General, the Executive Board has been informed by the Director-General and he should proceed to an in-depth study in conformity with UNESCO priorities. A report of the Director-General on the results of COMEST work should be submitted to the Executive Board and to the General Conference in 2003.

47. As to procedure, before the 166th session of the Executive Board (31 March 2003), the review and in-depth study of the recommendations shall begin in November 2002, as will consultations with the UNESCO Sectors concerned and the UNESCO Legal Adviser. An outline of the study shall be prepared by a consultant or research team in collaboration with UNESCO and COMEST and then submitted to the Executive Board.

48. After the 166th session of the Executive Board, a consultation process should be engaged with UNESCO Member States and national and international bodies between April and June 2003, including consultations with COMEST. The Report by the Director-General on the results of the work of COMEST should be ready in July 2003 to be submitted by the Director-General to the Executive Board and to the General Conference in September/October 2003.

49. Regarding the ethical aspects of outer space, there is a need for COMEST to acquaint itself with the legal work of UNCOPUOS. It has been decided that the concerted action COMEST-UNCOPUOS and the review of the recommendations of COMEST on the Ethics of Outer Space by UNESCO-COMEST should be congruent.

50. As to the recommendations, each area must identify ethical objectives. Concerning fresh water, it has been decided to engage discussions with IHP.

51. As to the field of energy, considered as a commercial and political enterprise, there is a need for a wider assessment. In the view of the COMEST Rapporteur, the recommendations on energy did not fully reflect the discussion and the points of view and thoughts expressed during the Berlin meeting and he expressed some concerns on the final text.

Plans and actions to be foreseen

52. Ethics of Outer Space

- Pursue cooperation between COMEST, UNCOPUOS and ESA on ethical, legal and technical approaches within the Group of Experts on the Ethics of Space Activities to prepare a report to be presented at the Legal Subcommittee of UNCOPUOS (24 March - 4 April 2003).
 - Preparatory meeting (12 November 2002) between COMEST, ESA and UNCOPUOS
 - Meeting of the Group of Experts of UNCOPUOS at ESA

headquarters (4 December 2002)

- Parallel work between COMEST and UNCOPUOS to prepare the legal subcommittee of COPUOS (24 March - 4 April 2003)
- Report presented to the UNESCO General Conference in 2003
- Initiatives to converge in October/November 2003 with a view to preparing for the UN General Assembly in 2004
- Cooperation with IAF, COSPAR and UNISPAR
- Participation of COMEST in the IAF Congress (Bremen, 2003)

53. Ethics of Fresh Water

- RENEW needs to ensure that they have the opportunity to compare nodes
- Need to have a regional model for the nodes (e.g. the Egyptian node has a great deal of experience)
- Because of the recognition by UNESCO, the RENEW nodes are receiving extra-budgetary resources and investments (transparency, accountability and participation issues)
- Need for support by IHP: to send the recommendations on fresh water to IHP for comments and foresee a meeting with COMEST and IHP on RENEW in November 2002 at the next visit of the Chair with Lord Selborne and the Executive Secretariat of COMEST
- No launching of new nodes until a report is prepared. The question to be asked: Has the ethical content been promoted?
- Plan the participation of COMEST in the World Water Forum, promoting a panel with IHP and one member of COMEST's Sub-Commission on the Ethics of Fresh Water

54. Ethics of Energy

- Energy will be a part of the new initiative on sustainable development.

General exchange of views on administrative, procedural and budgetary questions

55. The Chair invited the ADG/SHS and the Chief of the COMEST Executive Secretariat to introduce this item. The members of the Bureau had an open discussion and exchanged views on different questions.

56. As to the review of the Statutes of the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) and given the time constraints, the Chair requested the members of COMEST to send him their comments on the possible review of the Statutes. It has been decided that the Chair will forward their comments to ADG/SHS to study the issue with the Executive Secretariat of COMEST and to engage in consultations with the Legal Adviser of UNESCO.

57. As to the resources needed to ensure the operation of the COMEST Secretariat, the Director-General made the commitment to the Chair to provide the necessary staff resources (discussion on Article 7). A new process of recruitment for a professional post specialist in natural sciences and a new assistant is ongoing to increase the staff of the Section of Ethics of Science and Technology, which will have three professional and two general service positions. Also, the links and cooperation with other sectors of UNESCO are continuing with strong support from ADG/SC and ADG/CI for the work of COMEST.

58. As to the advisory role of COMEST, the members of the Bureau expressed their interest for increasing this role on important issues in the fields of competence of COMEST.

59. The members of the Bureau agreed on the need to foresee all COMEST meetings as official UNESCO meetings and to consider the "informal" meetings as "extraordinary" meetings.

60. The members of the COMEST Bureau discussed budgetary issues in relation to the preparation of the next programme and budget of UNESCO (2004-2005) and agreed that new activities and new budgetary lines should be discussed during the December meeting. They agreed that COMEST should be allowed to have some flexibility in the budget for allocating funds to new initiatives.

61. As to the new line of COMEST publications, the members agreed to have a presentation and a discussion to reach decisions on this important issue during the December meeting, including a new website for COMEST. They also decided that COMEST/UNESCO documents should address different communities – decision-makers, scientists, public at large, young people, women and children.

62. The Chair informed the Bureau that Thailand accepted in principle to host the Third statutory (ordinary) Session of COMEST in 2003 and that the month of November has been proposed. Brazil may be interested but has not yet confirmed.

63. The members of the Bureau were informed of the schedule for preparation of UNESCO's Programme and Budget for the 2004-2005 biennium (document 32 C/5): before the end of January 2003 for approval by the Executive Board in April 2003. The programme should focus on the Ethics of Science and Technology, which remains one of the five top priorities of UNESCO and remains the priority of the SHS Sector for the 2004-2005 biennium , as approved by the Director-General.

The Director-General has informed the Executive Board on the preliminary proposals, with special emphasis on implementation at national level. There is a need to know from Bureau members which COMEST activities should be worked on and focused on, and in which areas. They agreed on the need for allocation of budgetary resources for the work of the existing Sub-Commissions on Outer Space and Fresh Water, a new Sub-Commission or special working group on Sustainable Development and the new working group on Ethics and Education. The members of the Bureau agreed to discuss the preparation of the programme and budget for COMEST in November 2002 with the Chairperson and during the December 2002 informal meeting.

“The issues addressed by COMEST range far and wide... as far and as wide as the challenges that science and technology are posing. (...) But despite their enormous range and variety, all these issues are connected by a common thread : the need for an ethical framework, a moral compass, to guide our steps in an increasingly uncertain world, where change is proceeding at a dizzying pace.

Suzanne Mubarak

“Nowadays, the changes brought about by the fast pace of scientific discoveries and technological progress raise crucial questions that open up new avenues for ethical reflection, to guarantee that humanity can benefit from these extraordinary achievements in a harmonious way.”

Pierre Sané

List of Participants

Suzanne Mubarak Jens Erik Fenstad Pierre Sané	First Lady, Vice-Chairperson Chairperson Assistant Director-General for Social and Human Sciences of UNESCO and Executive Secretary of COMEST	Egypt Norway Senegal
Leila Seth Jose Sarukhán Kermez The Earl of Selborne	Vice-Chairperson Rapporteur Chairperson of the Sub-Commission on the Ethics of Fresh Water	India Mexico United Kingdom Canada
James Peter Kimmins Pilar Armanet Armanet Alain Pompidou Moufid Shehab Mahmoud Abu Zeid Ismail Serageldin Tarek Shawki Farouk El Baz Mohamed El Kassas Fathi Saleh Mohamed El Faham Teresa Fuentes Camacho	Chairperson of the Sub-Commission on the Ethics of Energy Rapporteur, Sub-Commission on the Ethics of the Information Society Rapporteur, Sub-Commission on the Ethics of Outer Space Minister of Higher Education and Scientific Research Minister of Irrigation and Land Reclamation Director, Bibliotheca Alexandrina Director, UNESCO Cairo Director, Remote Sensing Lab, Boston University Environmentalist Director, CULTNAT Advisor, Bibliotheca Alexandrina Chief of COMEST Executive Secretariat, Section of Ethics of Science and Technology, UNESCO	France Egypt Egypt Egypt USA Egypt Egypt Egypt Spain
Nicole Lorin Sharon Leu Hanan Mounir Rania Hadad	Assistant Secretary, COMEST, UNESCO Research Assistant, Bibliotheca Alexandrina Secretary, Bibliotheca Alexandrina Secretary, Bibliotheca Alexandrina	France Egypt Egypt Egypt



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The World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) is mandated to :

- be an advisory body of UNESCO ;
- be an intellectual forum for the exchange of ideas and experience ;
- detect on that basis the early signs of risk situations ;
- promote dialogue between scientific communities, decision-makers and the public at large.

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