



# United Nations Environment Programme



Distr.  
GENERAL

UNEP/Bio.Div/SWGB.1/5/Rev.1  
28 November 1990

ORIGINAL: ENGLISH

## AD HOC WORKING GROUP OF EXPERTS ON BIOLOGICAL DIVERSITY

Sub-Working Group on Biotechnology  
Nairobi, 14-17 November 1990

### FINAL REPORT OF THE SUB-WORKING GROUP ON BIOTECHNOLOGY

#### I. INTRODUCTION

1. The Ad Hoc Working Group of Experts on Biological Diversity made considerable progress on a number of substantive issues and was able to agree on a large number of elements for consideration in the future progress of work towards a framework convention on biological diversity (see documents UNEP/Bio.Div.2/3 and 3/12). However, at its third session, it felt that the nature of biotechnology elements for possible inclusion in the convention, including the issues involved in biotechnology transfer, required further expert examination, assisted by a Sub-Working Group on Biotechnology, before the set of elements covering the issues could be agreed. The Sub-Working Group on Biotechnology met at UNEP Headquarters, Nairobi, from 14 to 17 November 1990, pursuant to the recommendation made by the Ad Hoc Working Group of Experts on Biological Diversity at its third session, held in Geneva from 9 to 13 July 1990.

#### II. ORGANIZATIONAL MATTERS

##### A. Opening of the meeting

2. The meeting was opened by Mr. R. Olembo, Deputy Assistant Executive Director of UNEP, on behalf of Dr. M.K. Tolba, Executive Director of UNEP. In his opening statement, Mr. Olembo highlighted the objective of the Sub-Working Group's meeting, namely, to focus on the biotechnological aspects within the context of negotiations on the proposed convention. He drew attention to the close link between the conservation of biological diversity and the development of environmentally sound biotechnologies. The application of biotechnology to biological diversity held tremendous potential and could make a valuable contribution to resource conservation and sustainable development. Biotechnology was a tool that could be used equitably or unequitably and it involved political issues that would have to be addressed in the proposed convention. He underlined the need for a precautionary approach in view of

biotechnology's potential for ecological disturbance. One of the main objectives of the proposed convention was to give countries rich in genetic resources a stronger voice in the development and application of biotechnology, therefore, one of the most important issues to be resolved was that of the transfer of biotechnology. After reviewing the main issues facing the Sub-Working Group, Mr. Olembo urged participants to concentrate on common ground so that they would be better prepared to face the challenges and opportunities ahead.

#### B. Attendance

3. The meeting was attended by delegates (experts) from the following 51 countries: Argentina, Australia, Bahamas, Brazil, Burkina Faso, Burundi, Canada, Chad, China, Colombia, Denmark, Egypt, France, Germany, Ghana, Greece, Guatemala, Guinea, India, Indonesia, Iraq, Japan, Kenya, Korea (Republic of), Lesotho, Malawi, Malaysia, Maldives, Mexico, Myanmar, Netherlands, Nigeria, Norway, Peru, Philippines, Portugal, Sao Tome and Principe, Senegal, Spain, Sweden, Syria, Tanzania, Thailand, Uganda, Union of Soviet Socialist Republics, United Kingdom, United States of America, Uruguay, Venezuela, Zambia and Zimbabwe.

4. Observers from the following United Nations bodies and specialized agencies were also present: Food and Agriculture Organization of the United Nations (FAO), United Nations Educational, Scientific and Cultural Organization (Unesco), United Nations Industrial Development Organization (UNIDO) and the World Intellectual Property Organization (WIPO).

5. In addition, the following non-governmental organizations sent delegations: International Board for Plant Genetic Resources (IBPGR), and Genetic Resources Action International (GRAIN).

6. The Kenya Agricultural Research Institute (KARI) was also represented.

#### C. Adoption of the agenda and organization of work

7. The meeting adopted the following agenda:

1. Opening of the meeting.

2. Organizational matters:

Adoption of the agenda;

Organization of work.

3. Consideration of biotechnology issues relevant to conservation and utilization of biological diversity.

4. Other matters.

5. Adoption of the report.

6. Closure of the meeting.

/...

8. In accordance with the conclusions reached by the Ad Hoc Working Group of Experts on Biological Diversity at its third session held in Geneva from 9 to 13 July 1990, the meeting was chaired by Mr. P. Chabeda (Kenya).

### III. SUBSTANTIVE MATTERS

9. Mr. L. Val Giddings introduced the report on Biotechnology and Biodiversity (UNEP/Bio.Div/SWGB.1/3). He outlined the following: (i) the potential contributions of biotechnology to both ex-situ and in-situ conservation of biological diversity. Although the importance of the former could not be denied, in-situ techniques represented the most effective method of conserving biodiversity; (ii) biotechnologies for sustainable utilization of biodiversity and the sustainable contribution of biodiversity to advances in crop production, forestry, livestock production and aquaculture; (iii) the socio-economic perspectives; (iv) possible mechanisms for co-operative development; (v) risks likely to be posed by biotechnology; and (vi) intellectual property rights and farmers' rights. With regard to intellectual property rights and biological safety, which were two important and potentially contentious aspects, in his view they did not present unsurmountable problems.

10. An in-depth discussion was held regarding the terms of reference of the Sub-Working Group and the relevance of certain parts of the Note by the Executive Director (UNEP/Bio.Div/SWGB.1/2, Annex II) and the consultants' report (UNEP/Bio.Div/SWGB.1/3) thereto, taking into consideration the reports of the Ad Hoc Working Group of Experts on Biological Diversity (UNEP/Bio.Div.1/3, 2/3 and 3/12).

11. There was general agreement that the consultants' report and the Note by the Executive Director should be used by the Sub-Working Group in addressing its terms of reference and they were subsequently used as background material for consideration of the different issues for possible elements additional to those reflected in the Working Group reports which could be formulated for a biotechnology component of the global framework convention on biological diversity. Some delegations stressed that they did not agree with the description of risks, which they felt was inaccurate. This criticism also applies to the conclusions.

12. With regard to the question of a description of biotechnology applicable to the conservation of biodiversity, most delegations advocated utilizing the definitions of biotechnology given in paragraph 1 of the consultants' report as a basis for work, although other delegations preferred a definition more closely related to modern biotechnology. Several delegations stressed the importance of traditional and conventional technologies for conserving, developing and sustainable utilization of biological diversity. Other delegations favoured a definition for the purpose of the convention that focused on the scope of biotechnologies applicable to conservation and sustainable utilization and development of biological diversity. One delegation emphasized that biotechnology to be addressed by the convention should be limited to those technologies that substantially contribute towards the conservation of biodiversity.

13. A number of delegations wished emphasis to be laid on in-situ conservation, while other delegates considered that both ex-situ and in-situ conservation measures should be given equal importance.

14. Some delegations emphasized the importance of biotechnological policy, which should be an integral part of a country's national development strategy.

15. With regard to training in basic biological sciences, one delegation expressed the view that additional burdens should not be laid on developing countries by giving priority to the establishment of training facilities that already existed in other countries. Another delegation, however, emphasized the importance of training in disciplines related to biological diversity, such as genetics, taxonomy and ecology in developing countries, pointing out that it could be given within the framework of existing programmes.

16. In reply to questions raised concerning the gaps in biotechnological expertise, both within international organizations and individual countries, Mr. Val Giddings drew attention to paragraph 83 of the consultants' report, which showed that many bodies were already making efforts to fill the gaps. As far as international organizations were concerned, strengthening and co-ordinating expertise would be a major topic at the 1992 United Nations Conference on Environment and Development. A number of delegations drew attention to the need to reinforce technical co-operation not only between North and South, but also among developing countries in the biotechnological field. Several delegations stressed the importance of including a satisfactory technical assistance component and additional financial provisions in the proposed convention for biotechnology issues. A number of delegations stressed the concept of regional co-operation.

17. Representatives of IBPGR, FAO and UNIDO explained the work being done by their organizations in the area of biotechnology. The representative of FAO indicated that the FAO Commission on Plant Genetic Resources had requested its Secretariat to draft a code of conduct for biotechnology as it affected conservation and use of plant genetic resources. Many delegations underlined the importance of using existing organizations, structures and expertise and avoiding duplication of work, although one delegation considered that new innovative mechanisms might be required. Another delegation said that it would have been useful to have received written presentations from those agencies already involved in such work that had not yet submitted documents.

18. A number of comments were made concerning the need for environmental impact assessments on biotechnological applications. It was considered that national impact assessments should be selective, related in particular to biotechnological risks. A few delegations stressed the need for risk assessments prior to the planned release of genetically engineered organisms into the environment in developing countries. One delegation suggested that field trials in developing countries should be subject to surveillance of the release of genetically engineered organisms. The same delegation emphasized the need to monitor the effects of new genes in new environments in order to study the long-term effects of such release.

19. Many delegations stressed the need for development of institutional and human resources, in order to take care of the special needs of developing countries in addressing their priorities and developing relevant technologies.

20. The representative of WIPO described his organization's activities in the field of biotechnology. There was general agreement that the question of intellectual property rights should be reflected in the convention, taking into consideration the problems of developing countries. Some delegations stressed that resolution of the issues should be left to those forums already dealing with the matter. Some delegations stressed that GATT should be requested not to terminate its work on intellectual property rights until inter alia environmental and socio-economic aspects related to biotechnology, indigenous knowledge and traditional innovation had been thoroughly examined. One delegation stated that it did not find socio-economic aspects to be relevant in this connection. It was reiterated that the convention should have an important role to play in the transfer of environmentally sound technologies to developing countries on a co-operative and fair basis, including the possibility of most favourable and concessional terms. One delegation considered that it would be useful to draw up a list of the major organizations already studying intellectual property rights related to biotechnology at the international level.

21. Some delegations stressed that the issue of biotechnology, specifically the aspects of transfer of such technology among countries, must form a crucial element in the proposed convention, not only because it is an issue of great importance in itself, but also because it is very closely linked to the crucial subject of access to biomaterial, and sharing of the benefits which accrue from the use of this biomaterial through biotechnology.

22. Turning to the question of risks associated with biotechnology, the Sub-Working Group noted that other bodies were already dealing with this issue. Some delegations were of the opinion that the question of risks should be reflected in the convention, while other delegations felt that the possibility of linking the results of the work carried out by other bodies (e.g. UNIDO/WHO/UNEP Working Group on Biotechnology Safety, OECD and UNCED) to the convention at some future stage should be left open. In this context, some delegations proposed the elaboration of a code of conduct for the safe use of biotechnology. Some delegations felt that irresponsible use of biotechnology should be repaired by compensation to those parties affected, as well as by the carrying out of corrective measures.

23. The meeting agreed that the matter of whether or not biotechnology issues should be reflected in the proposed convention should not have been within its terms of reference, since inclusion of biotechnology had already been decided in decisions adopted by the Governing Council, as well as in a recommendation by the Ad Hoc Working Group of Experts on Biological Diversity.

24. In conclusion, in considering the list of possible additional elements annexed to this report, it was noted that the list was not exhaustive, nor did it necessarily represent views common to all delegations. As the Sub-Working Group was not a negotiating group, possible elements put forward by delegations have been included with no attempt to reconcile different views, nor to reflect priorities to be accorded to various elements.

#### IV. ADOPTION OF THE REPORT AND CLOSURE OF THE MEETING

##### A. Adoption of the Report

25. The Sub-Working Group adopted its report at its last meeting held on 17 November 1990.

**B. Closure of the session**

**26. The Chairman thanked participants for their hard work and expressed gratitude to the secretariat for its tireless co-operation.**

ANNEX

Possible Additional Elements for a Biotechnology  
Component in a Global Framework Legal Instrument  
on Biological Diversity

I. General Issues

1. Recognition of the link and reinforcing relationship between conservation of biological diversity, biotechnology and rational utilization of biodiversity.
2. Recognition that States shall co-operate with each other in the development and transfer of biotechnology relevant to conservation and sustainable utilization of biodiversity, including exchange of knowledge, equitable sharing of the benefits of biotechnology development and transfer.
3. Recognition of the role of biotechnologies, including traditional ones, in conservation and sustainable utilization of biodiversity.
4. Contribution of biotechnologies to agriculture, forestry, health, food security, industry and other areas, and their impact on conservation and utilization of biodiversity.
5. Need for the maintenance of a wide genetic base for the future of biotechnology and sustainable development.
6. Recognition that it is in the interests of all nations to monitor current trends in biotechnology and the use of genetic resources with due respect for the sovereign rights of States.
7. Recognition of the need to direct the development of biotechnology and biological diversity conservation and utilization to the problems of developing countries.
8. Need for mechanisms to secure equitable socio-economic benefits from biotechnology and the need for assessment and financial adjustment to balance the international displacement of some crops currently grown by the developing countries.
9. Recognition by States of the importance of access to, as well as the need to reward and sustain, information and informal innovation in the field of biotechnology by local people; recognition of the importance of continuing such innovation and that it is a part of the socio-economic framework of States.
10. Equitable sharing of the economic benefits derived from biotechnology with the country of origin of the biomaterials used.

11. The possibility of access to biological diversity should be based on agreements among the interested parties in conformity with the sovereign right of States over the natural resources under their jurisdiction. Access to the best available environmentally sound biotechnologies for developing countries should be guaranteed. They should be transferred expeditiously and on a fair and most favourable basis.\* 1/

12. Access to genetic resources and to biotechnology know-how will not necessarily be free-of-charge and availability should be based on mutual agreement.\*

13. Recognition of the unlimited potential of biological diversity for the development and application of biotechnologies in areas such as health, agriculture and industry.\*

14. Recognition of the need to facilitate the development of biotechnology for the conservation and rational utilization of biodiversity in helping to solve the relevant problems of developing countries.\*

15. Recognition of the important role of biotechnology in restoration of environmental quality, development of bio-sensors, waste recovery and treatment and the substitution of non-renewable resource bases by renewable resource bases.\*

16. Recognition of the primary importance of in-situ conservation of biological diversity. Recognition that the following technologies for conserving biodiversity are non-limitative.\*

## II. Biotechnologies for the conservation of biological diversity

1. Recognition of the current and potential contribution of new and traditional biotechnology to both in-situ and ex-situ conservation of biological diversity.

2. Recognition of the fact that the scope of future germplasm needs will increase with time.

3. Urgent need to increase the numbers of botanical gardens, seed banks and other ex-situ conservation facilities in various areas throughout the world, particularly in tropical areas, and to broaden the coverage of existing ones.

4. Recognition of the urgent need for nationally conducted systematic surveys of plants, animals and microbes, especially those found in threatened ecosystems, as a requisite for biodiversity conservation.

5. Recognition that potential application of genetic mapping such as RFLP and application of agricultural diagnostics could enhance conservation of biological diversity.

---

1/ Any asterisk denotes new elements proposed by representatives during the meeting.

**III. Biotechnologies for sustainable utilization  
and development of biodiversity**

1. ~~Role of biotechnology applications in reducing pressures on ecosystems rich in biological diversity.~~
2. Role of biotechnology in speeding up the development and use of genetic resources.
3. Recognition of the role of biotechnology in crop production through development of new plant varieties and that biotechnology could have a substantial positive impact in areas such as forestry, livestock and aquaculture.
4. Need to promote development of genetically engineered crop varieties that are major food crops of the tropical countries.
5. For the purpose of sustainable use of biodiversity, modalities for access to biodiversity and associated technologies such as biotechnology should be developed without prejudice to owners, users and developers.
6. Recognition of the important role of biotechnology in restoring environmental quality, developing bioresources, waste recovery and treatment and the substitution of non-renewable resource bases by renewable resource bases.
7. Recognition of the responsibility of industrialized countries in guaranteeing the transfer of technology to developing countries.\*
8. Recognition that traditional technology that meets the social, cultural and nutritional needs of local communities and often simultaneously contributes to in-situ conservation of biodiversity should not necessarily be replaced by new biotechnology.\*
9. Recognition that some new plant varieties, for example, herbicide resistant plants, may conflict with the sustainable use of biotechnology.\*

**IV. Risk assessment and management**

1. Recognition that the application of biotechnology may involve risks to human health and environment and that reference to these risks, including the possibilities of a code of conduct, guidelines and appropriate national and international regulatory measures that anticipate and deal with possible negative impacts of biotechnology need to be reflected in the convention, noting that these extremely complex issues are dealt with by other competent organizations and frameworks.
2. Need to ensure that field testing of genetically modified organisms takes place with the full knowledge and approval of Governments.
3. Recognition of the desirability of mechanisms to cater for socio-economic impacts of biotechnologies, including questions of safety for environmental and agricultural applications.

4. A practical system of monitoring release of genetically modified organisms should be developed and made available to public sector institutions in developing countries.\*
5. Recognition that the world community still knows little about the long-term consequences of using genetically engineered organisms.\*
6. Recognition that the environmental risks may be both direct and indirect in their consequences.\*
7. Recognition of the need to harmonize laws and regulations on biotechnology within a country and among countries.\*
8. Need for a system of surveillance of the release of genetically modified organisms, to which field trials of herbicide resistance crops by multinational corporations must be subject.\*
9. Recognition of the need for risk assessments, which include genetic and environmental assessments, before planned release of genetically engineered organisms into the environment in developing countries.\*
10. Need for post-release monitoring of effects of new genes in new environments in order to study the long-term effects of such release.\*
11. Need to share biotechnology information necessary for risk analysis and management between multinational corporations and environment agencies of developing countries.\*

#### V. Mechanisms for co-operation

1. Recognition of the role of local communities in promoting biotechnology development and the need for mechanisms incorporating such knowledge in promoting rational and sustainable use of genetic resources.
2. Recognition of the role of the private sector in biotechnology development and transfer.
3. Recognition of the need to co-ordinate and strengthen co-operation, exchange of information in respect of activities of governmental and non-governmental organizations relevant to biotechnology development, and to create new institutions, as appropriate.
4. Acknowledgement that special provisions are required to meet the needs of developing countries, including the provision of new and additional financial resources.
5. Acknowledgement that special provisions are required to meet the needs of private and public sectors in developing countries.
6. Need of developing countries to develop their own capabilities to address their special needs, including policies on biotechnology development.
7. Concept of the need to promote regional co-operation.

8. Need to support preparation of national biotechnology policies, plans and strategies.
9. Encouragement and development of methods for co-operation in the development and use of biotechnologies that will aid conservation and rational use of biodiversity through co-operative agreements, information flow, technical training and other arrangements.
10. Importance of training in conservation techniques and use of biodiversity, together with well-planned programmes related to the needs with the aim of achieving technological co-operation.
11. Recognition of the need for equitable sharing of benefits between owners and developers of biological diversity.
12. Recognition of the fact that developing countries require sustained public sector investments by national Governments, bilateral donors and international organizations in order to benefit from biotechnology and to mitigate its negative impact.
13. Recognition of the need for favourable access to scientific information, know-how, patents and biotechnology by developing countries for the sustainable utilization of biological diversity on a concessional, low-profit or non-profit basis.
14. Need for the establishment of a clearing-house as a source of impartial advice, information and know-how for individual countries.
15. Provision of necessary services to developing countries to explore the acquisition of biotechnology and to the private sector to explore potential markets for biotechnology applications.
16. Need for innovative mechanism(s) of co-operation that will lead to the establishment of joint ventures for biotechnology development.
17. Need to use part of the fund under the convention on biodiversity to facilitate transfer of biotechnology to developing countries.
18. Desirability of developed countries with large biotechnology sectors providing greater financial resources for the proposed fund under the convention on biodiversity.
19. Recognition of the responsibility of industrialized countries to guarantee the transfer of biotechnology to developing countries.
20. Need for increased participation by multinational corporations in transferring biotechnology and information to their local staff at branch offices in developing countries.\*
21. Need to support training of personnel in developing countries in the fields of research, regulation and monitoring.\*
22. Need to support the establishment of gene banks in selected developing countries whose biodiversity-rich areas are under threat of habitat destruction.\*

23. Need for effective co-operation at the regional and international levels in training, sharing of skills and techniques.\*

#### VI. Intellectual Property Rights

1. Need for and recognition of the importance of facilitating negotiations on access to germplasm and new technologies in relation to patents for discoveries resulting therefrom.
2. Reflection of the concerns and the need to remove constraints limiting flow of information on biotechnology due to proprietary considerations.
3. Need to recognize and reward innovation and traditional knowledge on biological diversity by local people.
4. Recognition that the patent systems conserving genes and living organisms may have unwanted socio-economic effects both for the developing countries in general and for small farmers throughout the world.\*
5. Recognition that there are more appropriate forums to deal with the question of intellectual property rights, including GATT and WIPO.\*
6. Promotion of the development of strong national intellectual property regimes to assist in the flow and development of technology.\*