A SUMMARY REPORT ON THE FIRST MEETING OF THE OPEN-ENDED AD HOC WORKING GROUP ON BIOSAFETY

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SUMMARY OF THE FIRST MEETING OF THE OPEN-ENDED AD HOC WORKING GROUP ON BIOSAFETY: 22 - 26 JULY 1996

The Open-ended *Ad Hoc* Working Group on Biosafety (BSWG) held its first meeting in Aarhus, Denmark, from 22-26 July 1996 to begin the elaboration of a global protocol on safety in biotechnology. More than 90 delegations, including scientific and technical experts, representing both Parties and non-Parties to the Convention on Biological Diversity (CBD) attended the meeting, as did observers representing intergovernmental organizations, NGOs and industry. BSWG-1 marked the first formal meeting to develop a protocol under the CBD and to operationalize one of its key — and most contentious — components.

Although the meeting produced little in the way of written results, it represented a forum for defining issues and articulating positions characteristic of the pre-negotiation process. The meeting revealed several interesting dichotomies, including a fracture in the G-77/China bloc over elements to be included in the protocol, first observed in Jakarta at the second Conference of the Parties (COP-2) to the CBD, as well as strikingly divergent perspectives on biotechnology. Nonetheless, governments listed elements for a future protocol, agreed to hold two meetings in 1997 and outlined the information required to guide their future work.

A BRIEF HISTORY OF THE BIOSAFETY ISSUE

Since the early 1970s, recombinant DNA technology — the ability to transfer genetic material through biochemical means — has enabled scientists to genetically modify plants, animals and micro-organisms rapidly. Modern biotechnology can also introduce a greater diversity of genes into organisms, including genes from unrelated species, than traditional methods of breeding and selection. Organisms genetically modified in this way are referred to as living modified organisms derived from modern biotechnology (LMOs).

Biotechnology has led to advances in medicine, and promises improved agricultural products and industrial processes as well. Agricultural biotechnology can be used to improve the resistance of plants to pests or to environmental stresses, or to increase the commercial value of agricultural products. Other uses for biotechnology include environmentally-friendly industrial processes which may reduce the use of harsh or toxic chemicals.

Although modern biotechnology has demonstrated its utility, there are concerns about the potential risks to biodiversity and human health posed by LMOs. Many countries with biotechnology industries already have domestic legislation in place intended to ensure the safe transfer, handling, use and disposal of LMOs and their products (these precautionary practices are collectively known as "biosafety"). However, there are no binding international agreements addressing situations where LMOs cross national borders.

Two categories of intended use of LMOs, contained use and field release, are recognized. LMOs intended for contained use are usually research material, and are subject to well-defined risk management techniques involving laboratory containment. LMOs developed for agricultural and, in some cases, industrial biotechnology, are intended for field release. Field testing of LMOs is a new undertaking, and the interaction of LMOs with various ecosystems continues to generate questions about safety. Some of the concerns about field release of LMOs include: unintended changes in the competitiveness, virulence or other characteristics of the target species; the possibility of adverse impacts on non-target species and ecosystems; the potential for weediness in genetically modified crops; and the stability of inserted genes.

IN THIS ISSUE

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BIOSAFETY UNDER THE BIODIVERSITY CONVENTION

The Convention on Biological Diversity (CBD), which was negotiated under the auspices of the United Nations Environment Programme (UNEP), was adopted in May 1992 and was opened for signature at the Earth Summit in Brazil on 5 June 1992. It entered into force on 29 December 1993. As of 1 July 1996, 152 countries had become Parties to the Convention.

Article 19.4 of the Convention provides for Parties to consider the need for and modalities of a protocol, including advance informed agreement in particular, to ensure the safe transfer, handling and use of living modified organisms derived from modern biotechnology that may have an adverse effect on biological diversity and its components.

MADRID MEETING: The first Conference of the Parties to the CBD, which was held from 28 November - 9 December 1994, established an Open-ended *Ad Hoc* Group of Experts on Biosafety. This Group met in Madrid from 24-28 July 1995. According to the report of the meeting (UNEP/CBD/COP.2/7), most delegations favored the development of an international framework on biosafety under the Convention. The proposed elements of such a framework, as drafted in Madrid, are divided into two categories — those favored unanimously and those favored by a subset of delegates representing primarily developing countries. In the Annex to the report, paragraph 18(a) lists the former elements, which include: all activities related to LMOs that may have adverse effects on biodiversity; transboundary movement of LMOs, including unintended movement; release of LMOs in centres of origin/genetic diversity; mechanisms for risk assessment and management (RAM); procedures for advance informed agreement (AIA); facilitated information exchange; capacity building; and implementation and definition of terms. Paragraph 18(b) lists the latter elements, including: socioeconomic considerations; liability and compensation; and financial issues.

UNEP GUIDELINES: In another meeting relevant to the biosafety process, the UNEP Panel of Experts on International Technical Guidelines for Biosafety met in Cairo, Egypt, from 11-14 December 1995 to adopt a set of international technical guidelines for biosafety under the aegis of UNEP (UNEP Guidelines). The UNEP Guidelines (UNEP/Global Consultations/Biosafety/4) are intended to provide a technical framework for risk management commensurate with risk assessment, without prejudice to the development of a biosafety protocol by the COP of the CBD.

COP-2: At the second meeting of the Conference of the Parties to the CBD (COP-2), which took place in Jakarta, Indonesia, from 6-17 November 1995, delegates met to consider the need for and modalities of a protocol on biosafety. From the outset it was clear that delegates intended to set in motion a negotiation process to develop a protocol on biosafety. While Northern delegations wanted to focus on "transboundary transfer of any LMO", Southern delegations preferred a "protocol on biosafety in the field of the safe transfer, handling and use of LMOs." The compromise language that was adopted by the COP calls for "a negotiation process to develop in the field of the safe transfer, handling and use of living modified organisms, a protocol on biosafety, specifically focusing on transboundary movement of any LMO that may have an adverse effect on biological diversity, setting out appropriate procedures for advanced informed agreement."

The decision also established an Open-ended *Ad Hoc* Working Group on Biosafety (BSWG) to meet to "elaborate, as a priority, the modalities and elements of a protocol based on appropriate elements from paragraph 18(a)" of the report of the Madrid meeting, and to "consider the inclusion of the elements from paragraph 18(b) as appropriate." Other terms of reference for BSWG (UNEP/CBD/BSWG/1/2) state that the Working Group shall:

- elaborate key terms and concepts;
- consider AIA procedures;
- identify relevant categories of LMOs;
- develop a protocol whose effective functioning requires that Parties establish national measures and that takes into account the precautionary principle;
- develop a protocol that provides for a review mechanism and seeks to minimize unnecessary negative impacts on biotechnology and does not hinder unduly access to and transfer of technology;
- take into account gaps in the existing legal framework;
- develop a protocol with a view to the largest possible number of ratifications; and
- use the best available scientific information.

The results of BSWG-1 will be reported back to the third meeting of the Conference of Parties (COP-3) of the CBD, which takes place in Buenos Aires, Argentina, from 4-15 November 1996. The Biosafety Working Group is expected to conclude its work in 1998.

REPORT OF THE WORKING GROUP

The First Meeting of the Open-ended *Ad Hoc* Working Group on Biosafety (BSWG-1) opened on Monday, 22 July 1996. Sarwono Kusmaatmadja, Indonesia's Minister of Environment, in his capacity as President of COP-2 to the CBD, underscored that this meeting was not only an important step in the evolution of the CBD, but also the first major effort by the international community to address biosafety through a negotiating process. He noted that the CBD represents the appropriate forum for advancing both international law and cooperation in biosafety.

Svend Auken, Minister for Environment and Energy of Denmark, underscored his government's long-standing commitment to the development of a biosafety protocol. He juxtaposed the positive potential with the uncertain risks of biotechnology in the areas of agriculture, health care and environment. Stating that "gene technology is not just an extension of traditional plant and animal breeding", he cautioned against "arrogant ignorance" resulting in irreversible harmful effects on the environment and loss of public confidence. He noted that a biosafety protocol will need to contain trade-related measures that should not be overridden by the WTO.

Jorge Illueca, Assistant Executive Director for Environmental Management of UNEP, outlined the evolution of international discussions on biosafety as well as UNEP's initiatives in this field, including: the development of International Technical Guidelines for Safety in Biotechnology; a series of regional meetings on the implementation of the guidelines and capacity building; an International Register on Biosafety; a UNEP/BioIndustry meeting as part of UNEP's outreach initiatives towards key stakeholders in the field of biodiversity; and joint training programmes on biosafety with the UN Industrial Development Organisation (UNIDO) and UNIDO's International Centres for Genetic Engineering and Biotechnology (ICGEB).

Calestous Juma, Executive Secretary of the CBD, provided a progress report on the establishment of the Secretariat in Montreal and expressed his appreciation to the Government of Canada for its support. He noted that this meeting of the BSWG indicated that the Secretariat was fully functioning, and pledged to mobilize the best scientific and technical competence. He outlined cooperative efforts with other international institutions and biodiversity-related conventions. Highlighting the enormity of the task of administering the CBD, he called on Parties to offer their support.

Peter Schei (Norway), Co-Chair of the COP's Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), summarized the recent Conference on Alien Species held in Trondheim, Norway, from 1-5 July 1996, in cooperation with UNESCO, UNEP and the IUCN. The Conference covered both accidental introduction of alien species (through international transport, trade and tourism) and deliberate introductions (through agriculture, forestry and fisheries), both of which were identified as serious global threats to biodiversity.

Kalemani Mulongoy of the International Academy for the Environment summarized a workshop held in Aarhus immediately prior to BSWG-1 from 19-20 July 1996 on "Transboundary Movement of LMOs Resulting from Biotechnology: Issues and Opportunities for Policy-Makers". The threefold purpose of this workshop was to: enhance awareness of the biosafety issue; share experiences and information to facilitate implementation of the UNEP International Guidelines for Biosafety; and share information for the work of BSWG-1.

ORGANIZATIONAL MATTERS

The Plenary then adopted the provisional agenda (UNEP/CBD/BSWG/1/1) and elected Veit Koester (Denmark) as the Chair of the meeting. In his opening statement, Koester called biotechnology "an object of considerable economic interest" and highlighted its potential for both environmental benefit and harm. He characterized BSWG-1 as the "pre-negotiation stage" and called for a non-confrontational atmosphere and for the participants to relax and listen to each other. He reminded the meeting that CBD Article 28.2 calls for adoption of protocols by the COP, that the rules of procedure call for consensus on all matters of substance, and that the terms of reference for the BSWG state that the largest number of Parties possible should ratify a biosafety protocol.

At its third session, delegates elected the remaining members of the Bureau, comprised of two officers for each of the five regions as follows: Sateeaved Seebaluck (Mauritius), Tewolde Egziabher (Ethiopia), Shin Gil Sou (Republic of Korea), Antonio La Vina (Philippines), Diego Malpede (Argentina), Sandra Wint (Jamaica), David Gamble (New Zealand), Ervin Balazs (Hungary), and Alexander Golikov (Russian Federation) as Rapporteur.

In its introduction of the documents for this session, the Secretariat explained that COP-2 had provided no guidance on the nature or content of the documentation for the meeting, and the pre-session documents had been produced after consultations with the COP-2 Bureau. The documents included:

- the BSWG-1 annotated agenda (UNEP/CBD/BSWG/1/Add.1);
- the terms of reference for the BSWG (UNEP/CBD/BSWG/1/2);
- a Secretariat note elaborating on the terms of reference (UNEP/CBD/BSWG/1/3), which was not intended to be used as a basis for negotiation of a protocol;
- the report of the Open-ended *Ad Hoc* Group of Experts on Biosafety (UNEP/CBD/COP.2/7); and
- the report of the Global Consultation of Government-designated Experts in International Technical Guidelines for Safety in Biotechnology (UNEP/Global Consultation/Biosafety/4).

OPENING COUNTRY STATEMENTS

On Monday afternoon, 22 July, the Chair called on countries to make formal opening statements.

MALAYSIA called for a global protocol based on the precautionary principle and for the establishment of minimum standards for national legislation. He supported a database on the release of LMOs and noted that risk assessment must include characteristics of organisms and interaction with the site of release. He called for a broad interpretation to include socioeconomic, liability and funding issues.

IRELAND, on behalf of the EU, expressed its continued support for a two-track process that consists of the development of a protocol while promoting the application of UNEP's Guidelines. He underscored several key points for a protocol, including: scientific risk assessment and management based on the precautionary principle; flexibility and non-duplication; a focused scope and clear definitions; provisions for AIA proportionate to the risks involved; and consistency with the WTO. The EU later expressed hope that BSWG-1 would arrive at the structure of a protocol comprised of two sections. The first section would cover the objective, scope and definition of a protocol, while the second would comprise operational elements such as AIA notification procedures and national focal points. He also called for guidance on future proceedings.

SOUTH AFRICA highlighted existing biotechnology contributions in the areas of agriculture and health and noted that international trade in LMOs should not be unjustifiably restricted. Nonetheless, he stated that LMOs always represent a risk, especially to those countries and communities that depend on biodiversity for their livelihood. He called for minimum standards in national legislation, as well as definition of terms and categorization of LMOs so as to avoid undue polarity.

Referring to the "Spirit of Aarhus", the US stated that debate on procedure should not divert delegates from important issues of substance. He proposed that the meeting first consider the three priority items identified in the terms of reference to facilitate later elaboration of a protocol. He supported widespread information sharing and relevant risk assessments for countries lacking indigenous capacity, and called for agreement on a process for the future work of the BSWG.

JAPAN proposed a study on the transboundary movement of LMOs and noted that a scientifically sound protocol should start with an analysis of existing national and regional agreements so as to avoid both duplication and overriding. He noted that any protocol should be designed so that as many countries as possible could ratify it.

NORWAY underscored the importance of fulfilling the meeting's mandate in terms of both the substance and timing of negotiations. He noted that COP-2 Decision II/5 already stated that no existing international instrument adequately addressed transboundary movement of LMOs and called for a global biosafety protocol to be concluded by 1998.

COSTA RICA, on behalf of the G-77/CHINA, highlighted critical issues in the report of the Open-ended *Ad Hoc* Group of Experts (UNEP/CBD/COP.2/7). However, while it is important to consider the items agreed to in Madrid, additional items that some delegations consider to be important, such as socioeconomic considerations, liability and compensation, and financial issues, should be discussed here and at future meetings. He also highlighted training and capacity building.

CONSIDERATION OF THE PRIORITY CONSENSUS ELEMENTS OF THE MADRID MEETING

Delegates agreed with the Chair's proposal that discussion of the elements of a protocol should commence with the list of items identified in paragraph 18(a) of Annex I to the report of the Madrid meeting. From the paragraph of the terms of reference on priority items, the Chair identified three priorities for initial discussion: key concepts and terms; form and scope of AIA procedures; and relevant categories of LMOs. He then invited comments on the first priority issue, key concepts and terms.

KEY CONCEPTS AND TERMS: SWITZERLAND, supported by MALAYSIA, stated that defining the ultimate

purpose of the protocol is a priority. MALAYSIA identified key concepts as: LMOs are genetically modified organisms, including genetic material intended to produce LMOs and including subcellular particles such as DNA. He included the behavior of LMOs in the environment under the scope of transboundary movement.

The EU highlighted adverse effects of LMOs on biodiversity (Article 19.3), including consideration of human health, as a key issue. He noted existing EU legislation on biosafety. CHINA added the concept of release of LMOs into the environment. INDIA excluded fragments or parts of nucleic acids from the definition of LMOs, and included the use of gene products derived from LMOs. The PHILIPPINES underlined unintended movement of LMOs, and added release in centres of origin and genetic diversity to the list. He referred to the precautionary principle.

INDONESIA highlighted AIA, unintended release and liability and compensation. AUSTRALIA mentioned LMOs, transboundary movement, adverse effects and AIA. He called for careful definition of "centres of origin and genetic diversity."

SUDAN added LMOs produced domestically, for example in fermentation, to the definition of LMOs, as well as the concept of boundaries. NIGERIA suggested utilizing previous work, including UNEP's International Technical Guidelines for Biosafety. A coalition of biotechnology industry organizations known as the INDUSTRY GROUP, including the Biotechnology Industry Organization (BIO), the Japan Bioindustry Association (JBA), the Green Industry Biotechnology Platform (GIBIP) and the Senior Advisory Group on Biotechnology (SAGB), underlined the concept of AIA and the need to avoid undue barriers to technical cooperation and commercialization. He called for regulating the transboundary movement of only the LMOs agreed by the COP as having potentially adverse effects.

ARGENTINA suggesting using existing precedents for AIA procedures, especially Annex II of the UNEP Guidelines. ETHIOPIA noted that modern biotechnology is rapidly evolving. He stated that microbes extinct for millions of years can be resuscitated, and called for clear definitions of handling, use and disposal. He also highlighted the importance of risk assessment from an ecological point of view. NORWAY mentioned national regulations as a key concept, and suggested emphasizing those LMOs that may have adverse effects.

IRAN noted the need to classify LMOs in order to elaborate the risks of biotechnology. SOUTH AFRICA listed several concepts requiring clarification, including: biomaterial; information exchange; unjustifiable constraints to trade; and the precautionary principle as elaborated in both the UNEP Guidelines and the Rio Declaration and as distinct from the precautionary approach.

COSTA RICA disagreed with Ethiopia's contention that LMOs could realistically be resurrected from the past. NEW ZEALAND highlighted the following priority issues requiring clarification: LMOs resulting from biotechnology; transboundary movement; centres of origin and of genetic diversity; and AIA principles and procedures. KENYA noted the importance of defining both safe transfer and safety procedures in risk management, explaining that these terms were subjective, meaning different things to different countries and regions. MOROCCO underscored the need to clarify genetically modified organisms (GMOs) that lead to the creation of multicell organisms and the identification of behaviors and characteristics of LMOs. He supported Ethiopia's position regarding the need for a clearer definition of biotechnology, taking into account spiritual values espoused by many countries. SRI LANKA supported the EU's intervention regarding adverse effects on conservation and sustainable use of biodiversity, human health and welfare.

POLAND suggested adopting definitions already agreed to in OECD and EC directives. TUNISIA noted the need to first define biosafety, just as biodiversity is first defined in the CBD. The Chair noted that biosafety was merely an abbreviation of "safety in biotechnology", which was already defined in the CBD. He noted that the Working Group would benefit from a list of agreed definitions compiled from existing legal instruments or negotiated documents. He reported that the industry sector had already submitted a glossary of terms to the Secretariat and called on delegates to determine to what extent key concepts are already defined in other agreed or negotiated texts, legal instruments and soft law.

FORM AND SCOPE OF AIA PROCEDURES: The Working Group then addressed the form and scope of advance informed agreement procedures.

SWITZERLAND proposed to circulate a discussion paper that outlines how AIAs would apply to transboundary movement of LMOs, on the basis of clearly defined concepts. He noted that AIAs should be flexible, based on existing structures. Later supported by the US and NEW ZEALAND, he stated that AIAs should only apply to the initial transboundary movement of LMOs, while notification procedures could cover subsequent movements.

The PHILIPPINES noted the need to define the terms of AIA, which it considers to be interchangeable with PIC. These terms should specify: the timing and parties to the agreement; nature, source and target of information to be provided; and liability provision in case of agreement violation.

AUSTRALIA noted the need to categorize LMOs and identify risks related to each category. He called for differential treatment of LMOs commensurate with the degree of risk that triggers the AIA. He outlined several principles for AIA, including: full information for the importing country, which remains the final judge of risk assessment; efficiency to minimize costs and time delays; and consistency with the WTO. The EU underscored experience obtained from international instruments regarding chemicals, pesticides and wastes. He called for flexible and differentiated AIA and notification procedures proportional to the risks involved, dependent on the characteristics and intended use of LMOs and the circumstances of transboundary movement.

SOUTH AFRICA noted that existing mechanisms should facilitate rather than determine the formulation of AIA, which should be guided by environment, trade and human health issues. He proposed that country positions on AIA procedures should be systematically solicited for consideration at the next BSWG meeting.

MALAYSIA underlined AIA as a priority and, supported by the REPUBLIC OF KOREA, highlighted precedents on Prior Informed Consent (PIC), which he equated with AIA, under the Basel Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal. Intellectual property rights (IPR) should not run counter to objectives of CBD Article 16.5. NORWAY broadened the definition of movement to include accidental release or unintentional spread of LMOs. The MAHARISHI INTERNATIONAL COUNCIL OF NATURAL LAW PARTIES stated that development of risk categories of LMOs is unrealistic.

The REPUBLIC OF KOREA called for information sharing on safety and potential adverse effects as part of AIA. MOROCCO pointed out that the Basel Convention bans the export of certain hazardous material, and that many developing countries lack financial resources for risk assessment and management (RAM). IRAN highlighted monitoring and enforcement in a protocol, comparing biosafety to chemical safety. The M.S. SWAMINATHAN RESEARCH FOUNDATION, later supported by the GREEN INDUSTRY BIOTECHNOLOGY PLATFORM,

highlighted the balance between disclosure of information for biosafety evaluation, and protection of intellectual property rights. He called AIA a priority.

The US called for information sharing on organisms raising "reasonable concern" over risks to biodiversity, and for harmonization with the WTO. ZAIRE called for regulation of transshipment of LMOs. ARGENTINA stated that the Basel Convention may not be easily adapted to a biosafety protocol format. He cautioned against impeding technology transfer. BURKINA FASO stated that the exporting country should bear all liability for use of LMOs in importing countries that had complied with protocol regulations.

SRI LANKA called for shared liability, suggesting green labeling initiatives as models for import regulation. The SENIOR ADVISORY GROUP ON BIOTECHNOLGY (SAGB) proposed that nations identify focal points for notification and evaluation of LMOs to be imported. NEW ZEALAND emphasized flexibility and harmonization with existing regimes. JAMAICA, later supported by CAMEROON, called for clarification of the responsibility of countries used in transshipment of LMOs. INDONESIA stated that the "burden of proof" should lie with the exporter and highlighted liability and compensation.

The THIRD WORLD NETWORK highlighted a case-by-case assessment of all LMOs. She identified specific guidelines on Prior Informed Consent (PIC) in the Basel Convention as a guide for practical implementation of AIA under the protocol.

The EDMONDS INSTITUTE cautioned against unintended movement. He called for continuous monitoring of all LMOs to detect adverse effects.

RELEVANT CATEGORIES OF LMOS: The Chair then asked for comments on relevant categories of LMOs. This topic is relevant to risk assessment involving LMOs, as one approach to risk assessment management (RAM) is to elaborate risk categories based on the nature of the LMO in question. However, this approach to RAM is not unanimous. There were no responses to the Chair's call for comments on this topic.

OTHER CONSENSUS ELEMENTS OF THE MADRID MEETING: The meeting next addressed other consensus elements agreed on at the Madrid Meeting, identified in paragraph 18(a) of Annex I to the report. BRAZIL noted that the Madrid meeting agreed to items within the context of a biosafety framework rather than protocol. BRAZIL, later supported by ARGENTINA, objected to the reference to research and development in a biosafety protocol, noting that this is a matter for domestic competence. SWITZERLAND noted that a protocol should not try to elaborate details on risk assessment and management but, rather, develop general principles, which already had received support in international bodies such as the OECD.

The COUNCIL FOR RESPONSIBLE GENETICS noted that the effects of GMOs can be transboundary whether or not GMOs themselves move across borders. ARGENTINA noted that although risk assessments may be made by third parties, their adoption remains the prerogative of the recipient country. He noted the need for capacity building and training to develop mechanisms must not be imposed in a protocol. The PHILIPPINES stated that although RAM falls primarily within the competence of national authorities, international mechanisms for risk assessment and management were needed and should remain open for negotiation. He further proposed that the protocol should contain minimum standards for Environmental Impact Assessments of LMOs.

The EU stated that RAM should be based on sound scientific data and should include characteristics of LMOs and potential adverse effects on biodiversity, and characteristics of intended application and of the recipient environment. He noted that mutual acceptability of data and authorization procedures between Parties should be pursued. The US noted that the UNEP Guidelines provide a useful source of general principles regarding RAM. CANADA stated that the protocol should underscore national responsibility for RAM without specifying its methodology. COSTA RICA highlighted the need for local capacity to both conduct RAM and to benefit from biotechnology products.

AUSTRALIA stated that provision of information on LMO exports remains the responsibility of the exporting country, while final judgments based on RAM remain the responsibility of the importing country, even though the latter may require assistance. Explaining that since unintended movement could not be covered under AIA procedures, he suggested that it could be addressed outside a protocol but within an overall biosafety framework.

Regarding exchange of information, SWITZERLAND noted that the effective implementation of the protocol and AIA procedures in particular would require transparent information exchange and proposed that data on transboundary movements should be included in the CBD's Information Clearing-House Mechanism (CHM). In this connection, he proposed adopting language from CBD Article 19.4 on information exchange. INDIA noted that LMOs are knowledge-intensive and that while most research and development (R&D) arrangements focus on finished LMOs with application for society, we cannot belittle the importance of LMOs at the research stage. SRI LANKA, underscoring the importance of human health and welfare, called for social impact assessments in addition to EIAs.

The BIOTECHNOLOGY INDUSTRY ORGANIZATION underscored the experience of the industry community in successful research and development involving LMOs, and expressed its willingness to make available its findings on biosafety and its regulation. The PHILIPPINES emphasized the importance of providing full information to the general public and local communities. He noted the need to further develop CBD Article 19.4 for the purposes of a protocol. BULGARIA called for information sharing on LMOs to raise the "comfort level" of importing countries.

TUNISIA highlighted RAM in a protocol. SWITZERLAND stated that capacity building should precede implementation. KENYA linked information exchange with capacity building, and called for public education. AUSTRALIA underlined responsibility of all Parties to ensure safe transfer. The INTERNATIONAL SERVICE FOR THE ACQUISITION OF AGRI-BIOTECH APPLICATIONS (ISAAA), supported by SUDAN and ETHIOPIA, suggested developing regional focal points in Africa for capacity building and technology acquisition, stating that the former requires the latter.

The REPUBLIC OF KOREA called for a multilateral cooperative network for information exchange and human capacity building. MOROCCO linked RAM to information exchange. CÔTE D'IVOIRE called for a regional approach to implementing a protocol, to be complemented by national and local measures. The RUSSIAN FEDERATION stated that existing channels for information exchange are sufficient, and called for capacity building for better utilization of these mechanisms.

NIGERIA recommended that the GEF should provide financial resources for the capacity building provisions of the UNEP Guidelines. The Secretariat reported that the SBSTTA-2 agenda includes capacity building for biosafety and the COP-3 agenda includes the UNEP Guidelines. He noted that COP-3 might recommend that the GEF support national implementation of the Guidelines.

ETHIOPIA, on behalf of the African Group, called for the creation of national biosafety committees and international multidisciplinary bodies as well as for public participation in decision-making. He noted the need for arbitration and emergency

global response plans. The DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA cautioned against complicated communication and coordination procedures that waste time and money. JAPAN stated its policy to avoid the establishment of any new international institutions for biosafety and underscored each country's primary responsibility for implementation, while encouraging regional cooperation. SRI LANKA called for: an independent international authority with competence on biosafety; evaluation guidelines and a certification process for biosafety; and legal procedures and insurance schemes for liability and compensation.

NEW ZEALAND emphasized the importance of: flexibility through the full use of annexes; capacity building for national focal points and strengthening of regional capacities; community consultation; existing institutions such as the CBD Secretariat and the CHM as well as existing funding arrangements. CHINA called for a timetable and plan of work to guide future meetings of the BSWG. He underscored capacity building in biotechnology particularly to meet food needs in light of predicted population growth. VIETNAM stated that the protocol should be based on the precautionary principle and a case-by-case approach.

MAURITIUS distinguished capacity building in biosafety from capacity building in biotechnology, and called for reporting mechanisms on the export of LMOs and for CBD Article 14 (environmental impact assessment) to be included in a protocol. The EU cautioned against creating new structures and recommended that the administration and financing of the protocol take place within existing CBD institutions. The UK underscored the need to mobilize appropriate assistance for capacity building as essential to the urgent implementation of the UNEP Guidelines during the development of the protocol. He noted the Secretariat's suggestion that the COP might recommend that the GEF fund capacity building for biosafety but encouraged "casting a wider net" by taking into account national, bilateral and multilateral resources as well as organizations such as UNEP, UNDP and UNIDO who are active in this area.

INDIA called for provisions on liability and insurance as well as RAM and AIA. She discouraged the proliferation of new institutions and mechanisms. MALAWI underscored the importance of public awareness and personnel training for implementation. The PHILIPPINES called for a thorough capacity building process to be instituted according to a specified timeframe. Explaining that the pace of LMO development exceeds developing countries' ability to control them, SUDAN highlighted capacity building as critical to implementation. CAMEROON stated that information exchange requires the capacity to understand biosafety issues.

NON-CONSENSUS ELEMENTS OF THE MADRID MEETING

The Working Group then turned to paragraph 18(b) of Annex I to the report of the Madrid meeting, which identified three non-consensus issues: socioeconomic considerations; liability and compensation; and financial issues.

JAPAN recorded its objection to including these issues in a protocol, recalling the terms of reference of the Group to negotiate a protocol with as many ratifications as possible. He suggested another forum for these issues. The Chair emphasized that this was a discussion, not a negotiation.

SOCIOECONOMIC CONSIDERATIONS: MALAYSIA underscored the socioeconomic impacts of biotechnology, including genetic erosion as well as religion and culture. His call for a Secretariat paper on this topic was supported by GHANA, MAURITIUS, SRI LANKA, the THIRD WORLD NETWORK and INDONESIA. GREENPEACE INTERNATIONAL noted that Bovine Growth Hormone, a biotechnology-derived product, had been rejected by the EU on socioeconomic grounds, emphasizing sovereign rights to reject GMOs with potential adverse effects. SWITZERLAND, supported by CANADA, stated that socioeconomic considerations are important, but called them national issues that are inappropriate for this forum.

GHANA stated that many developing countries lack biotechnology capacity and the ability to assess risk. Including socioeconomic considerations, liability and compensation will help to remove the element of fear over the unpredictability of LMOs. CANADA requested clarification from other delegations on socioeconomic considerations. ETHIOPIA emphasized societal issues in addition to health and environment.

MAURITIUS called the BSWG the right forum for addressing socioeconomic issues. POLAND stated that the socioeconomic effects should be the topic of separate negotiations. NIGERIA supported discussion of socioeconomic issues, public participation and contingency planning. The THIRD WORLD NETWORK stated that socioeconomic factors must be incorporated into risk assessment, which can be accomplished in a timely manner. INDIA highlighted socioeconomic issues as well as risk management utilizing insufficient data on long-term effects. AUSTRALIA and the EU acknowledged concern over socioeconomic effects, but underlined the limited mandate of BSWG-1 to focus on transboundary movement.

BURKINA FASO proposed inviting experts on socioeconomic considerations to attend BSWG-2. INDONESIA highlighted socioeconomic issues in biotechnology regulation. VIETNAM emphasized socioeconomic considerations and proposed two categories of RAM for LMOs with direct and indirect or long-term potential adverse effects.

MOROCCO underlined the right to refuse imports of LMOs perceived as socioeconomic risks. KENYA recalled Article 14.2 (liability and compensation) of the CBD, stating that the COP had provided a mandate to examine liability and compensation. The G-77/CHINA emphasized that socioeconomic considerations are a concern of many developing countries, and announced that a committee of technical experts drawn from members of the G-77 would be tabling specific proposals for inclusion in a protocol. The DEMOCRATIC PEOPLES' REPUBLIC OF KOREA agreed that socioeconomic considerations should be included in a protocol.

LIABILITY AND COMPENSATION: In introducing the subject of liability and compensation, the Chair noted that it was clear that delegations were divided as to its inclusion in the protocol. The GERMAN WORKING GROUP ON BIOSAFETY outlined the key conclusions of a German Parliament report on biotechnology and genetic engineering, which found that only large farming operations might stand to benefit from GMOs, while 75% of the developing world's farmers, who are smallholders, would not. The report also stated that substitution of agricultural products in the North could lead to a substantial loss of income in the South, with a particular impact on women. IRAN highlighted the direct relationship between liability and implementation of the protocol, in particular RAM and AIA.

The EU cautioned against prejudging the COP's consideration of this issue, but indicated its willingness to engage in an open exchange on domestic legislation. The PHILIPPINES stated that liability should be addressed under both national and international law, and called for penalties and sanctions to be imposed in cases of violation. INDONESIA recommended that the Secretariat prepare a paper on liability and compensation, drawing on existing conventions, to be submitted to the BSWG. Explaining that many companies in both importing and exporting countries do not "pay up" when liability claims are made against them, he underscored the importance of insurance schemes.

FINANCIAL ISSUES: JAPAN stated that there was no need to establish any new financial mechanisms for the implementation of the protocol, given existing multilateral mechanisms such as the GEF. GHANA stated that the protocol needs guarantees on liability, socioeconomic and finance issues. He called for common ground between the fears of developing countries (biodiversity loss) and industrialized countries (financial loss). MAURITIUS questioned the appropriateness of the EU's earlier intervention given the terms of reference of the BSWG to address all issues in Annex 2 of the Madrid document. Liability is the foundation of justice and legality, which are the basis of any protocol.

TUNISIA noted that a financial mechanism already exists but that additional resources were required for capacity building. Recalling Article 8(g) of the CBD (risks associated with LMOs), he stated that the protocol must be considered an instrument for implementation of the Convention. The EU stated that Article 20 of the CBD (financial provisions) also applies to the protocol. IRAN called for new financial resources to address new dimensions introduced by the issue of biosafety.

STRUCTURE OF A FUTURE PROTOCOL

On Wednesday, 24 July, the Chair introduced the issue of the structure of a future protocol by indicating that this was not a negotiation but a discussion on structure to determine whether all relevant aspects have been addressed.

PROPOSALS: Several delegations tabled proposals on the structure of a protocol, which are summarized below.

Vietnam: Vietnam proposed the following structure: Preamble; Scope; Definitions of key concepts and terms; General obligations; Designation of focal points and competent authorities; Transboundary movement of LMOs between Parties; Transboundary movement from a Party through States which are not Parties; Duty to re-import; Illegal traffic; International cooperation; Bilateral, regional and multilateral agreements; AIA; Consultations on liability and compensation; Arbitration; Financing aspects; Review of implementation by the COP; Amendments and annexes; Verification, ratification, and acceptance, formal confirmation or approval; Dispute settlements; Signature; Accession by non-Parties; Voting rights; Entry into force; Reservations and declarations; Withdrawal; Depository; and Authentic texts. The proposal also provides for the following annexes: Identification of relevant categories of LMOs; Categories of LMOs; Information for notification; Information on the transboundary document; and RAM.

EU: The EU proposed the following structure. Under Objectives: transboundary movement of LMOs (intended and unintended); transboundary movement for the purposes of contained use or deliberate release; and scope, including adverse effects on conservation and sustainable use of biodiversity. Under Operational Provisions: focal points and competent bodies; RAM; provisions for information exchange, notification and AIA; monitoring and compliance; dispute settlement procedures; and mechanisms for bilateral agreements. Under Other Provisions: review, amendments and adaptation; relationship to multilateral agreements; and final clauses.

US: The US outlined a protocol structure, including the following basic elements: Preamble; Use of terms; Jurisdictional scope; Information sharing; AIA; Considerations for RAM; Capacity building; Institutional framework; Relationship with other international agreements; Dispute resolution; and Final clauses. He stated that countries should have the opportunity to make submissions addressing information sharing, AIA, RAM, capacity building and the institutional framework before the next meeting, and that it is premature to develop the preamble and definitions until the substantive elements have been negotiated.

Norway: Norway outlined the following structure and main elements of a protocol: Preamble; Objectives; Scope; Use of terms; AIA; Notification procedure; Risk assessment; Risk management; Emergency procedures; Minimal national standards on biosafety, suggesting the UNEP Guidelines; Designation of competent authorities and national focal points; Capacity building; Transport and packaging for transfer of LMOs; Technical information clearing-house; Liability; Monitoring and compliance; Financial issues; Relationship to other agreements; Subsidiary bodies under the protocol; Dispute settlement; Review, amendment and adaptation; and Final provisions.

Switzerland: Switzerland submitted a working paper on AIA procedures, which the Chair suggested be taken up at a later point by the Working Group.

Industry Group: The Biotechnology Industry Organization (BIO), the Japan Bioindustry Association (JBA), the Green Industry Biotechnology Platform (GIBIP), and the Senior Advisory Group On Biotechnology (SAGB) outlined a combined industry perspective on a protocol. A protocol should be: science-based; directed to the product not the process; sector-based; one that fully integrates mutual recognition of data; and one that accepts the concept of substantial equivalence, meaning that the safety of biotechnology-derived products should be evaluated based on their properties, not on the process that produced them. He outlined the following structure: scope and definition; RAM; AIA; capacity building; mechanism for review; and relationship with other international agreements.

On Thursday, 25 July, COSTA RICA, on behalf of the G-77/China, stated that the Group could not reach consensus during a long morning meeting to attempt to develop a proposal on the structure of a protocol. Two regional groups submitted separate proposals instead.

GRULAC: The Latin America and Caribbean Group tabled the following proposal on the structure of a protocol: Preamble; Objectives/Scope; Definitions and use of terms; Designation of national competent authority and national focal point; Capacity building; Procedures for information, notification and AIA; Mechanisms for risk assessment; Mechanisms for risk management; Handling, transport and transit requirements for LMOs; Public awareness; Technical information network; Monitoring and compliance; Settlement of disputes; Financial mechanism; Relationship with other international agreements; Institutional mechanism; and Final clauses.

Other Developing Countries: A group of 36 delegations comprised mainly of African countries and India, China, Malaysia, Indonesia and the Philippines, among others, tabled a proposal on the structure of a protocol that was identical to the GRULAC proposal, with the addition of sections on Socioeconomic considerations and Liability and compensation, placed after the section on Procedures for information, notification and AIA.

CONDENSED WORKING PAPER ON THE STRUCTURE OF A FUTURE PROTOCOL: At the Chair's suggestion, the Working Group established a small Contact Group comprised of two members of each group of delegations that had submitted proposals on the structure of a protocol. GREENPEACE INTERNATIONAL appealed to the Contact Group, which was chaired by Rapporteur Alexander Golikov (Russian Federation), to include the concept of public participation, as an essential element of policy-making, in the structure of a future protocol.

The mandate for the Contact Group was to organize existing elements into a logical order, distinguishing items of consensus from those of contention. Noting that this was not a drafting or negotiating group, delegates agreed there was no need for regional representation. Nonetheless, the Eastern and Central European Group requested and was granted observer status.

The Contact Group met Thursday afternoon and into the evening. The results of the Contact Group, which condensed the six proposals from delegations into one overall working paper, were presented to the Working Group during the Closing Plenary on Friday morning, 26 July. The Working Paper on the structure of a future protocol is comprised of three sections as follows:

Items included in all proposals: Title; Preamble; Use of terms/Definitions; AIA; Information sharing; Relationship with other international agreements; Institutional Framework for the functioning of a Protocol; Settlement of disputes; Amendment; and Final clauses.

Items included in some but not all proposals: Objectives; Scope; Jurisdictional scope; General obligations; Criteria to determine the use of AIA and/or notification procedures; Notification procedure; Considerations for RAM; Mechanisms for risk assessment; Mechanisms for risk management; Emergency procedures; Minimum national standards on biosafety; Designation of competent authority and national focal point; Capacity building; Transport and packaging requirements for the transfer of LMOs; Handling, transport and transit requirements for LMOS; Transboundary movement between Parties; Transboundary movement from a Party through States which are not Parties; Illegal traffic; Duty to re-import; Technical information network; Public awareness; Clearing-house; Mechanisms for bilateral agreements; Liability/Liability and compensation; Consultations on liability; Monitoring and compliance; Financial issues; Socioeconomic considerations; Review and adaptation; Signature; Accession; Right to vote; Entry into force; Reservations and declarations; Withdrawal; Depository; Authentic texts; and Annexes.

Terms proposed for definition: Living modified organisms; Transboundary movement; Transfer; Safe transfer; Competent authority; Familiarity; Adverse effects; Contained use; Intended/deliberate release; Unintended release; Focal point; Risk assessment; Risk management; Modern biotechnology; Advance informed agreement/Prior informed consent; Minimum national standards; Liability; Biosafety; Limited field trial; Handling of LMOs; Use of LMOs; Centres of origin; Centres of genetic diversity; Compensation; Accidental release; Open environment; Open field trial; and Accidental.

ANTIGUA AND BARBUDA, on behalf of GRULAC, noted the difficulty of developing the structure of a protocol, and he accepted the Working Paper. MAURITIUS, supported by MOROCCO, underscored the need for clarity and transparency. In response to the suggestion of BELARUS that the original proponents be specified alongside each item and the suggestion of BURKINA FASO for an overall title for the document, the Chair noted that the meeting had already agreed to accept the outcome of the Contact Group's work and appealed to delegates not to reopen discussion. ETHIOPIA stated that the document was of limited value but was better than nothing. The Working Paper was then formally adopted.

A coalition of NGOs, including ECOROPA, the EDMONDS INSTITUTE, THIRD WORLD NETWORK, INSTITUTE FOR AGRICULTURE AND TRADE POLICY, GERMAN WORKING GROUP ON BIOSAFETY, GREENPEACE INTERNATIONAL, US BIOSAFETY WORKING GROUP and the US NATIONAL BIOSAFETY COUNCIL, stated that the Working Paper represented a "move back" from the Madrid meeting's consensus on key elements and concerns. The NGO coalition also "deplored" the Working Paper's omission of the precautionary principle and approach, and called for a moratorium on the release and marketing of genetically modified organisms until a strong biosafety protocol was in place. This intervention was later supported by MAURITIUS.

ADDITIONAL COMMENTS

The Chair asked for additional comments before turning to the adoption of the Report of the Working Group.

AUSTRALIA asked for information on the existing international framework of agreements related to biosafety, and on how the protocol would interact with these. He suggested that the Secretariat undertake a study of this, and offered to share the results of a study his government is currently undertaking.

The EU reiterated that the definition of transboundary movement and of LMOs resulting from modern biotechnology that may have adverse effects on biodiversity are important elements of a protocol. He also called for classification of LMOs into risk categories with varying levels of risk management, and suggested these categories be elaborated in an annex to the protocol. While no scientific assessment has shown that LMOs will behave identically in all environments, risk can be estimated based on categories of environments and intended uses. He emphasized that the protocol should only cover risks to the environment, taking human health into account.

The FAO elaborated on several biosafety documents prepared or under preparation and related to use or modification of genetic resources. He offered FAO's collaboration with the CBD Secretariat on biosafety.

The EUROPEAN COMMUNITY elaborated upon: transboundary movement, which he classified into intended and unintended movement; contained use of LMOs, which does not require additional administrative requirements; the definition of LMOs, which should reflect existing international definitions such as the UNEP or EU Guidelines; human health and the environment; and RAM, which requires access to information.

MALAYSIA outlined a request for a paper on socioeconomic considerations for a protocol. The paper should: classify LMOs and their products; examine the impact on developing countries of substitution of agricultural products through biotechnology; examine the impact of biotechnology and IPR on access to landraces by farmers and on the flow of royalties and other income; assess environmental impacts of release of LMOs, particularly in centres of origin/diversity; and examine the relationship between these considerations and liability and compensation.

RECOMMENDATIONS TO COP-3

After some debate, the Working Group agreed to "focus the attention of COP-3" on the following recommendations:

BUREAU: HUNGARY, on behalf of the Eastern and Central European Group, proposed the establishment of a permanent Bureau for BSWG comprised of ten members. JAPAN, TUNISIA and MOROCCO objected to a permanent Bureau and asked that their views be recorded in the report of this meeting. The Chair proposed that COP-3 consider whether to establish a permanent Bureau for BSWG, given the importance of this issue to some delegations, and that it be comprised of ten officers. This was accepted by the Working Group.

FUTURE MEETINGS OF THE WORKING GROUP: Pending sufficient funds and Secretariat assistance, delegates agreed to hold two five-day meetings in 1997, tentatively scheduled for 12-16 May and 13-17 October. MAURITIUS proposed holding the second meeting back-to-back with the SBSTTA or the COP to minimize costs. COP-3 will determine the budget for 1997.

REQUESTED BACKGROUND DOCUMENTATION

As a basis for their future work, the Working Group requested that the Secretariat compile the three sets of background documents:

- Content of a Protocol: A document containing the views of governments and the EC on the content of a future protocol,

which would serve as the basis for the second meeting of the BSWG. Delegates agreed on a 31 December 1996 deadline for government submissions and an early March 1997 date for distribution of the document. Delegates also agreed that the Secretariat should prepare a document on agreed definitions of key concepts identified at BSWG-1.

- International Instruments: A survey of international instruments addressing aspects of biosafety, to which governments would be invited to submit contributions. The additional resources required to undertake this work will be reflected in the proposed Secretariat budget submitted to COP-3.
- Socioeconomic Considerations: A bibliography of relevant literature regarding both positive and negative potential socioeconomic effects of biotechnology. Delegates also agreed that governments would be invited to provide the Secretariat with information on existing studies on this matter.

CLOSING PLENARY

The Working Group then adopted the report of the meeting (UNEP/CBD/BSWG/1/L.1 and Add.1 and Add.2), a compilation of views expressed at BSWG-1 as well as the two recommendations to COP-3. The report also identifies information required to guide future deliberations of the Working Group.

Delegates then listened to brief closing statements. A statement by Svend Auken, Danish Minister of Environment and Energy, was read out by the Deputy Minister, stating that the main objective of the Aarhus meeting — to contribute to a good start of a very important but difficult negotiation process — had been carried out in a constructive atmosphere.

The Chair of the Working Group, Veit Koester, thanked all delegations for heeding his advice to relax and work together in a cooperative spirit. He stated that his task had not been too difficult, and thanked everyone for helping to create a non-confrontational atmosphere. Koester then adjourned BSWG-1 at 1:30 pm on Friday, 26 July 1996.

A BRIEF ANALYSIS OF THE MEETING

The first meeting of the *Ad Hoc* Working Group on Biosafety (BSWG-1) marks the beginning of a process to develop a protocol under the Convention on Biological Diversity (CBD) and to operationalize one of its key — and most contentious — components. BSWG-1 got off to a cautious if predictable start in Aarhus. While unproductive in terms of written documentation, the meeting did reveal several interesting dichotomies, including strikingly divergent perspectives on biotechnology and a fracture in the G-77/China bloc, over elements to be included in the protocol. The meeting firmly established the CBD among the roster of environmental treaties that straddle the realms of environment and trade. It set a precedent for transparency, welcoming NGOs into its deliberations. Finally, the meeting highlighted the issue of liability, which some called the crux of the biosafety issue.

PRE-NEGOTIATION AND A CAUTIOUS START: Reflecting on his experience chairing many CBD negotiations, BSWG-1 Chair Veit Koester (Denmark), stated in his opening remarks, "Every meeting which starts a process is as important as a meeting which completes it." Cognizant that compromises will later be conditioned on positions developed during this early phase in the elaboration of a biosafety protocol, the Chair exercised flexibility in entertaining a broad range of views. Indeed, the pre-negotiation phase consists mainly of identifying and defining issues as well as formulating positions. It can be argued that issue identification took place within the CBD itself, as Article 19.3 calls specifically for a biosafety protocol. Therefore, BSWG-1 primarily represented a forum for articulating country and bloc positions.

At BSWG-1, governments identified the range of issues that the future biosafety protocol might address. The shopping-list quality of the Working Paper on the structure of a future protocol did not contain the compromises characteristic of a bargaining process but rather reflected the airing of views.

The Chair's frequent requests for input on matters of substance were often met with silence. Several delegates admitted privately that they had come to Aarhus primarily to learn about the issue, and were not prepared to formally put forward their position. Indeed, many delegations did not have a negotiating mandate. It seemed that most regional and political blocs required additional time to coordinate as caucuses met constantly throughout the meeting.

Nevertheless, when it did come time for delegates to put words to paper, the Contact Group whose job it was to combine proposals for the structure of a protocol spent an afternoon and part of an evening juxtaposing words for a non-negotiated working paper. The working paper amounted to no more than three short sections, organized into ten items identified as included in all proposals, 38 items identified as included in some but not all proposals, and 28 terms proposed for definition. Clearly, governments were not willing to be cavalier over even these preliminary moves.

A FRACTURE IN THE BLOC: If the pace of pre-negotiations proved predictable, even plodding, the split in the G-77/China position in Aarhus was surprising. As an engine for economic development, biotechnology is particularly attractive to some countries, but a threat to others lacking the technical capacity to utilize it. Although it is clear that biotechnology is an issue that does not unite developing countries, the puzzling result of BSWG-1 is why certain delegations allowed these differences to fracture the bloc in the preliminary phase of this Working Group.

The biosafety issue potentiates the growing split between the middle income developing countries (primarily in Latin America) and the least developed countries (primarily in Africa). In this sense, it is another example of the gradual dissolution of the G-77 as a monolithic coalition, comprising over 130 countries with vastly different economic conditions. With GRULAC now openly disagreeing with the rest of the G-77 over the need to include socioeconomic considerations and liability and compensation in a protocol, the question on the minds of some leaving Aarhus is how this will affect the dynamics of future CBD meetings.

THE PROMISE, THE FEAR, AND THE SOCIOECONOMICS: Another striking dichotomy (actually a trichotomy) in Aarhus was the manner in which the technology was perceived by delegates and observers. Many predictably touted the benefits of biotechnology in such fields as medicine, environmentally-benign industrial processes and agriculture. Yet the perception that biotechnology involves uncontrolled experimentation with dangerous LMOs remains powerful in the public psyche.

This wariness was plainly manifested during opening comments on the definition of Living Modified Organisms (LMOs). One African delegate, representing a country without a biotechnology industry, cautioned that modern biotechnology was capable of reviving ancient bacteria extinct for millions of years. This prompted a correction from a Latin American molecular biologist, who reminded the delegate that such feats are only accomplished in Hollywood movies.

Listening to interventions on LMOs and their safe handling, transfer, use and disposal, it was not clear whether delegates and observers had come to regulate an already complex and fecund activity, or to turn the meeting into a referendum on biotechnology. African delegations in particular emphasized repeatedly the dangers of biotechnology. Additionally, on the last day of the meeting a coalition of eight environmental NGOs, including Greenpeace International, called for a moratorium on the release and marketing

of all genetically modified organisms and products until a biosafety protocol was in place.

Reacting to this, one EU delegate stated privately that the call for a moratorium was too strong, pointing out that, had such a moratorium existed thirteen years ago when scientists first discovered the Human Immunodeficiency Virus, the world would not now have a series of multiple drug therapies just recently approved for treatment of Acquired Immune Deficiency Syndrome (AIDS). The new treatments, which some have labeled a potential AIDS cure, would not have been possible without the commercial production of LMOs and their products sold as research tools for biotechnology.

Amid the yeas and the nays, some delegates came with a third perception of the new technology, worrying about its socioeconomic impacts through agricultural substitution. This is probably the toughest issue of all. New food products developed through biotechnology have the potential to displace millions of agricultural jobs in developing country economies primarily dependent upon commodity exports. Many Northern governments took the position that socioeconomic considerations are issues of national concern that should not enter into a protocol on biosafety. There is no simple answer to this problem, breathtaking in its potential for global economic dislocation, although the CBD does allow "equity" to enter into decisions about resource use (CBD Article 1).

TRADE, ENVIRONMENT AND LIABILITY: The first meeting of the Working Group marks a turning point in the balance of lobbyists attending the CBD and its subsidiary bodies. This meeting saw a large contingent of industry organizations representing their considerable proprietary interest in these proceedings. As with meetings of the Framework Convention on Climate Change, the balance of representation seemed more or less evenly split between industry and environment. The CBD is now firmly established among the roster of treaties linking trade to the environment.

Perhaps most worrying to industry is the inclusion of liability clauses in the protocol, favored by most developing countries (and Norway), opposed by some developing countries and most developed ones. While the term "liability" is open to interpretation, many delegates and observers were left wondering aloud whether opposition to including liability in the protocol meant that governments were unwilling to hold their industries accountable for failures to adequately test LMOs, particularly those intended for field release. Many questioned the effectiveness of a biosafety protocol lacking compliance incentives based on product liability.

PUBLIC PARTICIPATION: NGOs expressed satisfaction with their ability to make interventions in the Plenary. This is in contrast to the closed proceedings of the biosafety contact group that met at COP-2, which excluded all observers from all-night negotiating sessions on the mandate for a biosafety protocol. As always, the ongoing concern for NGOs is the issue of transparency and public participation. While a good precedent was set at BSWG-1, it remains to be seen whether this openness will extend to future sessions, when the gloves come off and delegates get down to the real business of negotiating a protocol.

CONCLUSION: The negotiation of a global biosafety protocol augurs to be slow and painstaking. Some delegates recalled the workings of the biosafety protocol contact group at COP-2, where negotiating blocs spent hours arguing over the placement of commas in the text. For this reason, the Working Group took a decision not to discuss its work at the next meeting of the Conference of the Parties, in order to avoid any unnecessary backtracking.

After almost ten years, the international community has come full circle on biosafety. The call for governments to negotiate a global protocol, which came in 1988 at the inception of negotiations that eventually led to the drafting of the Convention on Biological Diversity, has finally been answered.

THINGS TO LOOK FOR BEFORE BSWG-2

FOURTH SESSION OF THE GLOBAL BIODIVERSITY FORUM: GBF4 will be held from 31 August - 1 September 1996, immediately prior to SBSTTA-2, at the Palais des Congress, Montreal, Canada. GBF4 will focus on four themes: Marine and Coastal Biodiversity; Forests Biodiversity; New Methods for Linking People and Protected Areas; and Economic Incentives for Biodiversity Conservation. For information on submitting abstracts or attending the forum contact: Jeffrey McNeely, Chief Scientist, GBF4 - Montreal, IUCN-The World Conservation Union, 28 Rue Mauverney, CH-1196 Gland, Switzerland. Tel: +41-22 999-0001; Fax: +41-22 999-0025; e-mail m@hq.iucn.org. Alternate contact: Tim Lash, Acting Director, GBF4-Montreal, IUCN Montreal, 380 St. Antoine Street West, Suite 3200, Montreal, Quebec, Canada H2Y 3X7. Tel: +1-514 287-9704; Fax: +1-514 287-9057; e-mail: <gbf@iucn.ca>.

SUBSIDIARY BODY FOR SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE: SBSTTA will hold its second meeting in Montreal, Canada, from 2 - 6 September 1996. Contact: CBD Secretariat, World Trade Center, 413 St. Jacques Street, Office 630, Montreal, Quebec H2Y 1N9, Canada; Tel: +1-514 288-2220; Fax +1-514 288-6588; e-mail: <biodiv@mtl.net>.

REGIONAL AND SUBREGIONAL MEETINGS: The CBD Secretariat is currently discussing preparations for Regional and Subregional Meetings, as provided for in Decision II/22 of COP-2, in order to assist in regional coordination for COP-3. Contact the CBD Secretariat for more information as it becomes available.

UNEP-SPONSORED BIOSAFETY MEETING (TITLE TO BE ANNOUNCED): A technical workshop on biosafety will be held the week before COP-3 of the CBD in Buenos Aires, Argentina from 31 October - 1 November 1996. Contact: Hamdallah Zedan, UNEP Biodiversity Unit, Nairobi, Kenya; Fax +254-2 623 926; e-mail: <hamdallah.zedan@unep.org>.

FIFTH SESSION OF THE GLOBAL BIODIVERSITY FORUM: GBF5 is scheduled for the weekend before COP-3, from 2-3 November 1996 in Buenos Aires, Argentina. Contact Jeffrey McNeely, IUCN for more information.

THIRD CONFERENCE OF THE PARTIES: COP-3 will be held in Buenos Aires, Argentina from 4-15 November 1996. Contact the CBD Secretariat for more information.

FUTURE MEETINGS OF THE WORKING GROUP ON BIOSAFETY: Pending sufficient funds and Secretariat assistance, delegates proposed to hold two five-day meetings in 1997, tentatively scheduled for 12-16 May and 13-17 October. It is likely that the dates and the locations will be finalized at COP-3.