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Ad Hoc Working Group of Legal and  
Technical Experts for the Elaboration  
of a Global Framework Convention for  
the Protection of the Ozone Layer

Second session  
Geneva, 10-17 December 1982

## REPORT OF THE WORKING GROUP

### INTRODUCTION

1. The first part of the second session of the Ad Hoc Working Group, convened in response to decisions 9/13 B and 10/17 of the Governing Council of the United Nations Environment Programme (UNEP), adopted on 26 May 1981 and 31 May 1982 respectively, was held at the Palais des Nations, Geneva, from 10 to 17 December 1982.

#### I. ORGANIZATION OF THE SESSION

##### A. Opening of the session

2. The session was opened by the Deputy Executive Director of UNEP. Addressing the Working Group at the opening meeting, Mr. Rodolfo Pedrolì, Director of the Swiss Federal Environmental Protection Office, emphasized the global nature of air pollution problems in general, and of the risks to the ozone layer in particular. While opinions differed as to the extent of those risks, that very fact should serve as a stimulus to further research and monitoring, and in no way lessened the need for international co-operation aimed at the establishment of effective international machinery for the development of measures and regulations for the prevention, control and reduction of activities which might have harmful effects on the ozone layer. Such measures had already been taken in some countries, but concerted international action was still required. His Government therefore hoped that the Group's second session would permit tangible progress towards the preparation of the final text of a convention on the subject.

3. At the same meeting the Deputy Executive Director reviewed the background to the Working Group's deliberations, and outlined the documentation before it at its second session. He welcomed the flexibility of the approach recommended by the Group at its first session, namely the development of a convention with protocols and annexes which would make it possible to keep pace with evolving scientific knowledge and policy alternatives. The presence of legal and technical experts would facilitate a decision as to whether such annexes or protocols could be developed, taking into account scientific findings such as those of the Co-ordinating Committee on the Ozone Layer, as well as the socio-economic aspects of possible control measures. Social-economic aspects were already part of the mandate of the Co-ordinating Committee, but some of its members had reservations about addressing them. Those reservations apart, the Committee was available to serve the convention to be drafted by the Working Group, and it was for the Group to decide how best to use that opportunity.

4. The response from Governments to the appeal by the Governing Council in decision 9/13 B for data relating to reduction of the use of chlorofluorocarbons (CFCs) 11 and 12 had been limited. The difficulties of achieving a workable convention for the protection of the ozone layer were thus obvious. The Executive Director had stated at the Group's first session that ozone depletion was a potential pollution problem of a scale and consequence never before faced would be felt primarily by future generations. There was therefore an urgent need for the development of a convention which would both offer legal means of guarding against damage to the ozone layer and permit adjustment in the light of new knowledge.

B. Attendance

5. The session was attended by experts from Argentina, Australia, Belgium, Canada, Chile, Denmark, Dominican Republic, Egypt, El Salvador, Finland, France, Germany, Federal Republic of, Iraq, Italy, Japan, Kenya, Kuwait, Netherlands, Nigeria, Norway, Philippines, Sweden, Switzerland, Thailand, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland, United Republic of Cameroon, United States of America and Yugoslavia, and by an observer from Poland. Representatives of the United Nations Industrial Development Organization, the World Health Organization, the World Meteorological Organization and the European Economic Community also attended the session. An observer from the International Union for Conservation of Nature and Natural Resources also attended.

C. Election of officers

6. At the opening meeting, the Working Group unanimously elected Mr. Rudolf Stettler (Switzerland) as Chairman, Mr. A.R. Al Naser (Kuwait) as Vice-Chairman, and Mr. Willem J. Kakebeeke (Netherlands) as Rapporteur.

D. Adoption of the agenda and organization of work

7. At the first meeting, the Working Group adopted the following agenda:

1. Opening of the session
  2. Election of officers
  3. Adoption of the agenda and organization of work
  4. Consideration of the draft convention for the protection of the ozone layer
  5. Other business
  6. Adoption of the report
  7. Closure of the session.
8. At the same meeting, the Working Group agreed that the rules of procedure of the UNEP Governing Council should apply, mutatis mutandis, to the conduct of its business.

## II. CONSIDERATION OF THE DRAFT CONVENTION

### A. General discussion

9. Several delegations pointed out the complex nature of the problems involved in developing a convention, and felt that the documentation provided by the secretariat was an acceptable point of departure for further discussions. Most delegations noted that if a convention was to be valuable and considered truly global, then it must enjoy the widest possible participation of States. Many considered that the obligations under the convention should be drafted in a general enough manner to allow the widest adherence of States. A number of delegations cautioned against moving too rapidly, which might result in an ill-conceived convention: it was most important to ensure a durable solution. A number of delegations also said that deliberations needed to be based on accepted scientific data. Other delegations considered that presently available information had many insufficiencies. Others stated that there was general acceptance that the danger of ozone depletion was a real threat which required specific measures for its protection to be detailed in annexes to a flexible convention. A number of delegations emphasized the importance of scientific research and monitoring in the elaboration of a convention, and the need to resolve the present scientific uncertainties relating to potential ozone modification. One delegation suggested that a list of chemicals which might perturb the ozone layer should be incorporated in one of the annexes.

10. There was some disagreement over whether or not technical annexes or protocols should be developed simultaneously with the framework convention. One delegation suggested the convening of an informal working group to prepare the way for the establishment of a future formal working group to discuss technical annexes and protocols. Another felt that the plenary should first decide on the need for technical annexes before discussing the details.

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11. The representative of the Netherlands recalled that at the Governing Council session of a special character, his Government had offered to host the next session of the Ad Hoc Working Group. The Working Group unanimously expressed its gratitude to the Netherlands Government for that offer.

B. Detailed discussion

12. Under agenda item 4, the Working Group agreed to go through the draft convention article by article on the first reading.

Preamble

13. Many delegations considered that the general structure of the preamble was satisfactory. Opinion was divided as to which of the alternative texts of paragraph 1 was better. Proposals were made for amendments and combination of the texts, with several delegations indicating a preference for the term "the ozone layer" rather than "stratospheric ozone". Some delegations suggested the deletion of the specific references to chlorofluorocarbons in alternative 1, on the grounds that it was inappropriate to single out individual substances for mention. Another opposed the suggestion, stating that CFCs had received most attention with respect to potential ozone layer depletion, and were already the subject of regulatory action in some States. One delegation said that the third paragraph should be deleted, to avoid problems in interpretation; others disagreed, one stressing the importance of ensuring that activities of one State did not cause damage to the environment of other States. Several delegations said that principle 21 of the Declaration on the Human Environment should be adequately reflected. Two delegations said that the reference to the World Plan of Action on the ozone layer in paragraph 5 should either be expanded to explain the Plan or deleted. Another delegation said that the references to Governing Council decisions were not appropriate, as the decisions had been the subject of reservations during their adoption: the third and sixth paragraphs lessened the flexibility of the convention, and should be deleted. Other delegations put forward other reasons for deleting the reference to Governing Council decisions for example that they were decisions of a subsidiary body of the General Assembly. However, another considered that it was important to refer to the decisions, as an indication of the historical background to the elaboration of the convention and to highlight the catalytic and co-ordinating role of UNEP. The first delegation drew attention to the role of other international organizations, particularly the World Meteorological Organization and the World Health Organization, in contributing to understanding of the ozone layer; the reference to UNEP was necessary, and the paragraph containing it should be deleted.

14. One delegation's suggestion that the words "and should be based on clear scientific and technical evidence" be added to the sixth paragraph provoked lengthy discussion. Opinion was strongly divided as to whether the amendment should be accepted, one delegation noting that present action was based on scientific prediction, not scientific evidence, and the distinction between the terms should be constantly borne in mind. After much discussion, the proposer of the amendment said that as a compromise, "evidence" might be

replaced by "considerations". In an effort to resolve the difference of opinion, a number of alternative amendments were proposed. Another delegation expressed the view that greater scientific evidence should be required to justify the abolition or relaxation of measures that might be taken to protect the ozone layer than for the adoption of such measures.

#### Article 1: Definitions

15. A number of delegations referred to the definition of the ozone layer. A few were of the view that it would be more appropriate to employ a technical geophysical definition which excluded ozone at or within a few kilometres of ground level, or at least to refer to the vertical profile of ozone. A larger number, however, expressed their preference for the definition used in the draft text. Other delegations pointed out the need for definitions of "alternative technologies", "monitoring", and "ozone-modifying substances", in addition to those already included in the article. It was decided that the definitions contained in the article could be amended in the light of the results of the discussion on the other articles.

#### Article 2: General obligations

16. During the preliminary discussion, the first of the four alternatives proposed received fairly broad support.

17. The delegations which preferred that alternative stressed the urgent need to impose specific obligations to protect the ozone layer, since despite the incompleteness of knowledge concerning its depletion, the attendant risks were already clearly apparent. Alternative 3 suffered from the defect of not specifying protective measures, while alternative 4 concentrated too much on information exchange. Some proponents of alternative 1 proposed minor amendments to it, while others indicated that they could accept the incorporation in it of parts of other alternatives.

18. Other delegations, however, felt that alternative 1 was not acceptable, since it imposed obligations that States might not be able to fulfil, emphasized controls that might or might not be required, and might prove insufficiently flexible to reflect evolving knowledge and policy options. A number of those delegations expressed a strong preference for alternative 3, while a few of them preferred alternative 4. To each of those alternatives, amendments were proposed. One delegation proposed a text combining elements of alternatives 2 and 3, while another proposed a text combining elements of alternatives 3 and 4. On the other hand, some delegations felt that none of the alternatives fully reflected the deliberations at the Group's first session. It was also stated that it would be best to formulate the general obligation as broadly as possible, so as to encompass all aspects of the protection of the ozone layer.

19. A number of delegations felt that account should be taken of the special situation of the developing countries, and that their obligations should be defined in the light of the practicable means at their disposal and in accordance with their capabilities.

Article 3: Research and monitoring

20. The draft article was generally felt to be acceptable, although one delegation said it should be more detailed. A number of delegations proposed, or indicated their intention to propose, amendments to the text.

Article 4: Scientific and technological co-operation

21. Preferences were expressed for both alternative 1 and alternative 2. One delegation pointed out that the decision depended on whether the convention was to have annexes or protocols. Co-operation in respect of science and technology was essential; if the convention had annexes, it could be covered there, but if there were only protocols, it would have to be covered in the main body of the convention. A number of specific amendments were proposed, including one that would have reserved most of the details regarding the issue for an annex on information exchange. Among the points also mentioned by delegations were the need for further explanation regarding the World Plan of Action on the Ozone Layer and for an additional subparagraph in paragraph 3 dealing with intercalibration. Two delegations referred to the problem States might face if they undertook to exchange information and transfer technology without qualification, since much information and technology was in the private domain; one of them specifically reserved its position regarding paragraph 3. Other delegations said it was important to retain paragraph 3.

Article 5: Periodic reports

22. The majority of delegations which spoke expressed a preference for alternative 2, which called for reporting on matters specified in the convention itself, and was therefore clearer about the obligations placed on parties. Other delegations, while preferring alternative 1, said that they could accept alternative 2 in a spirit of compromise. It was proposed that the word "periodic" in the title be placed between brackets.

Article 6: Conference of the Contracting Parties

23. Some delegations proposed the addition of a first paragraph establishing the Conference of the Contracting Parties. One delegation suggested that the UNEP Governing Council could discharge the role assigned to the Conference of Contracting Parties by the draft convention. Another delegation opposed that suggestion. A third delegation questioned the need for a reference to financial rules in the context of the Conference of Contracting Parties, while two others expressed the view that the adoption of amendments and protocols should be the function of a diplomatic conference, rather than of the Conference of Contracting Parties. A number of specific amendments to the draft text were also proposed, including one designed to make the article more general in nature.

Article 7: Secretariat

24. Some delegations said that paragraph 1 (d) was out of place, since the functions of the convention secretariat should be purely administrative. One of those delegations added that paragraph 2 was inappropriate, and could be

replaced by an amendment to paragraph 1 (h); another, while endorsing that view, welcomed the active role assigned to the convention secretariat by paragraph 1 (d). Another considered that both paragraph 1 (d) and paragraph 1 (h) were essential to the role of the secretariat. Yet another delegation said that paragraph 1 (e) was superfluous. One delegation said that it would be more in keeping with the catalytic and co-ordinating role of UNEP if the assignment to it of secretariat functions was for a limited period, and subject to review by the Conference of Contracting Parties. It was pointed out that, depending on the decisions taken regarding article 8, paragraph 1 (c) might require amendment.

#### Article 8: Scientific-technical advisory body/mechanisms

25. A number of delegations expressed a preference for alternative 1, which they felt provided a means of co-ordinating the input of scientific and socio-economic information and developing policy and legislative measures based on it, as well as offering the advantage of early establishment of an advisory body for the convention. Other delegations, however, preferred alternative 2, as being more flexible, avoiding potential duplication of effort, and not prejudging the needs of the contracting parties. Amendments were proposed to both the above alternatives, and a few delegations indicated that they had no strong preference for either: all three alternatives were acceptable, but none was perfect. Some delegations said that the entire article could be deleted, and its substance incorporated in article 6. While it was recognized that the Co-ordinating Committee on the Ozone Layer had a useful role to play in providing scientific inputs, it was pointed out that its reports did not constitute a critical appraisal of the state of science and did not evaluate socio-economic data; hence, inputs might also be required from other bodies, for instance the International Ozone Commission and working groups. One delegation advocated changing the mandate and composition of the Committee to enable it to serve as a more effective advisory body for the convention.

#### Article 9: Adoption of protocols

26. The representative of WHO said that, while the text of the article was based on a precedent establishing separate protocols, he was not convinced that the precedent relied on was valid in the present instance. The necessary flexibility in dealing with technical matters could be provided for in the text of the convention itself and through technical annexes. One delegation said that discussion of the matter was premature, pending a decision on the context of article 2, paragraphs 2 and 3. Another said that, since not all the technical provisions required could be covered in annexes, the possibility of subsequent adoption of protocols should not be excluded. Others agreed that annexes and protocols were not mutually exclusive, since they contained different types of material, and both were expressly provided for in Governing Council decision 10/17. Two delegations opposed the inclusion of paragraph 3 on the grounds that it was illogical.

#### Article 10: Amendment of the Convention (or protocols)

27. There was general agreement that the issue of time limits should be left until a later stage in drafting the convention. Two delegations said that a period for the consideration of amendments should be specified, and one said

that the time elapsing before the entry into force of approved amendments should be 90 days. Opinion was equally divided as to whether amendments should be adopted by consensus or by a majority, which most proponents of that view felt should be two-thirds: on the one hand, it was argued that amendment should not be made too easy, while on the other, fears were expressed by a number of delegations that one party might be able to block needed amendments. One delegation argued that amendment by majority rather than by consensus could well produce the undesirable consequence of excluding contracting parties from the operation of the convention. It was pointed out that, although some delegations appeared to regard "consensus" as synonymous with "unanimity", that was not the case. One delegation reserved its position generally regarding all majorities and time periods referred to in the draft convention, and specifically regarding paragraphs 2 and 3 of article 10, and added that in its view amendment, whether to the convention or to any annexes and protocols, should be possible only by a diplomatic conference. Other delegations agreed with that view. Several delegations questioned the need for the inclusion of paragraph 5 even if article 13 was retained, which a number of them believed it should not be.

#### Article 11: Status of annexes

28. It was suggested that article 11 be merged with article 12.

#### Article 12: Adoption and amendment of annexes

29. One delegation, supported by others, proposed the addition to article 12, in view of the scientific uncertainty regarding ozone layer depletion, of a sentence identical with the second sentence of article 10, paragraph 1. Following a brief discussion, it was suggested that the words "inter alia" should be inserted in that sentence.

#### Article 13: Amendments by simplified procedure

30. Almost all delegations addressing the subject were opposed to the inclusion of article 13, arguing that a simplified amendment procedure, which could in any event be applied only to matters of a technical and formal nature, was an unnecessary and cumbersome complication for which there was little precedent. One delegation said it would oppose the text unless its applicability was explicitly restricted to drafting and technical matters, while another pointed out that a great deal of clarification would be required to avoid the procedure creating more problems than it solved. An apparent contradiction between the first and third sentences of paragraph 3 was also noted. One delegation, however, expressed strong support for the simplified procedure; one precedent for it was provided by the Convention on the Law of the Sea. Another delegation said that the precedent was not in its Government's view a good one, and pointed out that that Convention was not yet in force.

#### Article 14: Settlement of disputes

31. Most delegations which spoke on the article found alternative 2 too rigid in the context of a framework convention. A number of them expressed a preference for alternative 3 on grounds of brevity, clarity, flexibility, and

its lesser degree of formality than alternative 1. Others, however, found alternative 3 so general as to be of little use, and indicated a preference for alternative 1. One delegation suggested that the optimum solution would be to combine alternative 1 and the second paragraph of alternative 2. Another delegation, while expressing a preference for alternative 2, indicated that by way of compromise it could accept alternative 1. A third said that alternative 2 was a well-defined procedure which would ensure settlement of disputes.

#### Article 15: Signature

32. Some delegations stated that they thought it necessary for a majority of States within a region to become signatories to the convention before the regional economic organization became a party to the convention. Another said that clarification was necessary with respect to the competence of an economic integration organization to act on behalf of States, as well as regarding what rights States might be willing to renounce. The representative of the European Economic Community informed the meeting that the article was based on the existing Convention on Long-Range Transboundary Air Pollution, and in that particular case a satisfactory solution had been found. Another State asked that the term "regional economic integration organization" be explicitly defined.

#### Article 16: Ratification, acceptance or approval

33. One delegation suggested that the article might be satisfactorily merged with Article 17, "Accession", amending the text of the latter by the addition of the words "... who will act as the depositary" to the reference to the Secretary-General of the United Nations. As in the case of the previous article, some delegations stated that a majority of States should become signatories before the regional organization of which they were a member became party to the convention, and that clarification of the competence of regional economic integration organizations would be necessary. One delegation suggested that only the general nature of the provision be agreed, leaving until later the question of competence of individual organizations. Another said that the conditions of accession to the convention should also be applicable for amendments to the convention. One delegation indicated that the possibility of being a party to the convention independently of its protocols should be allowed for.

#### Article 17: Accession

34. Again, some delegations referred to the need to clarify the competence of the organizations by which the convention would be open for accession. One delegation noted that it had not yet been decided who would act as depositary for the convention, and suggested that the text be amended to include the possibility that, as an alternative to the Secretary-General of the United Nations, a State might act as depositary.

#### Article 18: Entry into force

35. There was no disagreement with the text of the article.

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Article 19: Reservations

36. One delegation called for the deletion of the article, but most other delegations said that it should be retained, although provision should be made for reservations to any future annex or protocol developed. To that end, one delegation suggested the addition of words "or of any annex or protocol thereto".

Article 20: Withdrawal

37. One delegation said that since the text was a standard formulation, it should be generally acceptable, although delegations might wish to indicate a preference for the time period for withdrawal to take effect. Most delegations agreed that five years should elapse after the entry into force of the convention before a Contracting Party could withdraw from the convention or a protocol, and that such withdrawal should take effect upon expiry of one year after the date of receipt by the depositary of the relevant notification. One delegation, reserving its position, said that those periods were too long. Another delegation said that it was unnecessary at present to be specific regarding time periods. One delegation felt that the article did not make clear the assumption that withdrawal from the convention or protocols would not affect the withdrawing State's rights while it was still party to the convention.

Article 21: Depositary

38. The delegation that spoke on the article drew attention to the fact that there was also a reference to the depositary in article 13.

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39. Speaking generally on the text of the convention, one delegation, supported by another, said it was concerned at the vague character of the text; a clause should be included allowing future revision of the convention, as it was essential to adopt a flexible instrument able to adapt to an existing situation in the light of new knowledge.

40. It was agreed that the second reading, aimed at reconciling positions, would take place in an informal working group of the whole. Delegations submitted numerous written amendments; in the course of an extensive discussion the number of alternative texts was reduced in respect of articles 2, 4, 5 and 8, and the second reading was completed as far as article 12. The text of this part of the draft convention, as it emerged from the second reading, appears as annex I to the present report. Amendments on which final agreement was not reached appear between brackets.

## II. RECOMMENDATIONS FOR FUTURE WORK

41. The Ad Hoc Working Group recommended to the Executive Director of the United Nations Environment Programme (UNEP) that the following tasks should be undertaken by the secretariat in preparation for the second part of the Group's second session:

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(a) The revised text of the draft framework convention should be prepared, based on the comments and proposals made at the first part of the second session and containing alternative provisions and commentaries as required;

(b) The revised draft convention together with the report on the first part of the second session should be transmitted to States together with the invitation to the second part of the second session;

(c) A special paper should be prepared on the possible contents of annexes and/or protocols concerning:

(i) Research and monitoring;

(ii) Scientific and technical co-operation;

(iii) A list of chemical substances/activities which may affect the ozone layer;

(d) Bearing in mind the offer of the Netherlands Government to make available financial support, a further meeting of the Working Group should preferably be held in Geneva, before the Governing Council's eleventh session, between 11 and 20 April 1983 as a continuation of the second session of the Working Group, with the objective of further elaborating the draft convention and discussing proposals for technical annexes and/or protocols;

(e) Consideration should be given to holding the sixth session of the Co-ordinating Committee on the Ozone Layer immediately before the second part of the Working Group's second session, and at the same location;

(f) The Co-ordinating Committee on the Ozone Layer should transmit to the Working Group at the second part of the second session the executive summary of its report on its sixth session, together with its recommendations on future research and any other recommendations or advice on scientific and technical matters it wishes to convey to the Group for its consideration;

(g) Special efforts should be made to encourage participation by more countries in the work of the group.

42. While generally in agreement with the above recommendations, a number of delegations regretted that subparagraph 41 (c) did not provide for the preparation of a paper on measures for limiting, reducing and/or preventing one or more activities that have or are likely to have adverse effects resulting from modifications of the ozone layer, and indicated that they were considering presenting papers on the subject. The wish was expressed that such papers should be distributed to participants well in advance, so as to permit careful study.

#### IV. ADOPTION OF THE REPORT

43. The present report was adopted on 17 December 1982, subject to the incorporation of amendments proposed during the discussion of the draft report.

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44. The representative of the Soviet Union expressed regret at the departure from standard practice constituted by the frequent use in the report of such terms as "two delegations"; that should not constitute a precedent.

V. CLOSURE OF THE FIRST PART OF THE SESSION

45. At the closing of the first part of the second session the representative of the Executive Director, speaking on his behalf, thanked the Government of Switzerland for hosting the meeting under such excellent conditions. After the customary exchange of courtesies, the Chairman then declared the first part of the Working Group's second session closed.

Annex I

## REVISED TEXT OF THE PREAMBLE AND ARTICLES 1-12 OF THE DRAFT CONVENTION

## THE PARTIES TO THIS CONVENTION

- [AWARE of the potentially harmful impact of modification of the ozone layer which may be caused by the world-wide emission of chlorofluorocarbons and other compounds,]
- [AWARE of the potentially harmful impact on human health or the environment through human modification [of stratospheric ozone] [of the ozone layer] [likely to be caused by world-wide emission of chlorofluorocarbons and other compounds],
- RECALLING the pertinent provisions of the Declaration of the United Nations Conference on the Human Environment, and in particular principle 21, [which provides that States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction,]
- [RECALLING further decisions 84 C (V) of 25 May 1977, 8/7 B of 29 April 1980, 9/13 B of 26 May 1981 and 10/17 of 31 May 1982 of the Governing Council of the United Nations Environment Programme,]
- MINDFUL of the work and studies proceeding within both international and national organizations [and], in particular [, of the World Plan of Action on the Ozone Layer of] the United Nations Environment Programme,
- [AWARE that measures to protect the ozone layer from modifications due to human activities require international co-operation and action,]
- [AWARE also of the need for further research and monitoring to further develop scientific knowledge of the ozone layer and possible adverse effects resulting from its modification,]
- [RECOGNIZING the co-ordinating and catalytic role of the United Nations Environment Programme, which provides an appropriate institutional framework for international co-operation on problems concerning the ozone layer,]
- DETERMINED to protect man and the environment from adverse effects of modifications of the ozone layer,

HAVE AGREED AS FOLLOWS:

Article 1

DEFINITIONS

For the purpose of this Convention:

1. "The ozone layer" means the total ozone above the earth's surface, most of which is found in the stratosphere.
2. "Adverse effects" means changes in the physical environment or biota, including changes in climate, which are, taken over-all, deleterious to human health or to the composition, resilience and productivity of natural and managed ecosystems.
- [3. "Monitoring" means a system of observations, collation of the results of these observations, and assessment and forecasting of change in the amount and vertical distribution of ozone and substances having a significant impact on the state of the ozone layer on the basis of factual data.]

Article 2

GENERAL OBLIGATIONS

Alternative 1

1. The Contracting Parties shall [take all appropriate measures to] limit, reduce and prevent activities under their jurisdiction or control that have or are likely to have adverse effects resulting from modifications of the ozone layer, using for this purpose the best practicable means at their disposal and in accordance with their capabilities.
2. [ [To this end they] [They] shall take all relevant legislative, administrative, technical and other measures, in particular as specified in this Convention [and protocols and/or annexes thereto].]  
  
[The Contracting Parties shall co-operate in the formulation and adoption of protocols prescribing agreed measures, procedures and standards for the implementation of this Convention].
3. Within the framework of this Convention, the Contracting Parties shall co-operate, by means of monitoring, research, exchange of information and transfer of technology, in developing and harmonizing policies, strategies and measures for [minimizing] [limiting, reducing [and/or] preventing] [regulating] the release of substances which cause or are likely to cause [modifications of the ozone layer] [adverse effects on the ozone layer].

Alternative 2

1. The Contracting Parties shall [either individually or jointly], take all appropriate measures [to control activities under their jurisdiction that have or are likely to have] [in accordance with the provisions of this Convention]

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[and those protocols in force to which they are party] to [protect man and the environment against] [protect the ozone layer and to that end limit and [gradually] reduce and prevent activities under their jurisdiction and control that may have] adverse effects resulting from modifications of the ozone layer [using for this purpose the best practicable means at their disposal and in accordance with their capabilities].

2. To this end the Contracting Parties shall [within the framework of the Convention]:

[a] co-operate by means of monitoring, research and information exchange in order to better [understand [and assess]] the effects of human activities [on total column ozone and the vertical distribution of ozone and to better understand] [on the ozone layer and] the effects on human health and the environment from modifications of the ozone layer.

[3]

[b] [The Contracting Parties shall] co-operate in the formulation and adoption of protocols and annexes prescribing agreed measures, procedures and standards for the implementation of this Convention.

[4]

[c] [The Contracting Parties further pledge themselves to] [The Contracting Parties shall] co-operate [in promoting further, within] with competent international bodies [programmes and measures concerning the protection of the ozone layer] [to implement effectively this Convention and those protocols to which they are a party].

[5] Within the framework of this Convention, the Contracting Parties shall co-operate, by means of monitoring, research, exchange of information and transfer of technology, in developing and harmonizing policies, strategies and measures for [minimizing] [limiting, reducing [and] [or] preventing] [regulating] the release of substances which cause or are likely to cause [modifications of the ozone layer] [adverse effects on the ozone layer].

### Article 3

#### RESEARCH AND MONITORING

1. The Contracting Parties undertake, as appropriate, to initiate and co-operate in, directly or through competent international bodies, the conduct of research generally on:

(a) The physical, chemical, and dynamic processes that may affect the ozone layer;

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(b) The human health and other biological effects deriving from modifications of the ozone layer, particularly those resulting from changes in UV-B radiation;

(c) Climatic effects deriving from modifications of the ozone layer;

(d) Substances, practices, processes and activities that may affect the ozone layer, and their cumulative effects;

(e) Alternative substances and technologies;

(f) Related socio-economic matters;

as further elaborated in Annex I.

2. The Contracting Parties undertake to promote or establish as appropriate, directly or through competent international bodies and taking fully into account relevant on-going activities at both the national and international levels, joint or complementary programmes for monitoring the state of the ozone layer and other relevant parameters, and to provide the resulting data to world data centres in a regular and timely fashion, as elaborated in Annex I.

3. The Contracting Parties undertake to co-operate, directly or through international bodies, in ensuring the collection, availability and validation of observational data.

#### Article 4

##### SCIENTIFIC AND TECHNOLOGICAL CO-OPERATION

1. The Contracting Parties undertake, taking fully into account the relevant on-going programmes at both the national and international levels, and that carried out under the World Plan of Action on the Ozone layer, to promote or establish, directly or through the competent international bodies, joint or complementary programmes for data analysis and interpretation concerning the state of the ozone layer and the [causes, extent, trends and] effects of its possible modification.

[2. The Contracting Parties shall facilitate and encourage the exchange of legal, scientific and technical information relevant to this Convention, particularly information related to:

(a) Activities undertaken or planned with a view to limiting and reducing activities and emissions of substances that modify or are likely to modify the ozone layer;

(b) Other activities under their jurisdiction or control that modify or are likely to modify, the ozone layer.

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3. The Contracting Parties shall co-operate, in accordance with the provisions of annex II to this Convention, and taking into account in particular the needs of the developing countries, in promoting, directly or through competent international bodies, the development and transfer of technology and knowledge in fields relating to reduction of emissions that modify, or are likely to modify, the ozone layer, particularly through:

(a) Facilitation of licensing and of sale of alternative technologies to other countries;

(b) Provision of information on alternative technologies and equipment, and supply of special manuals or guides to them;

(c) Exchange of necessary monitoring equipment and facilities needed to supplement existing monitoring systems;

(d) Appropriate training of scientific and technical personnel;

(e) Ensure intercalibration of observational means and methods with a view to generating comparable or standardized data called for in specialized protocols or annexes]

[2. The Contracting Parties shall facilitate and encourage the exchange of legal, scientific and technical information relevant to this Convention as specified in the annex or annexes thereto and protocols to which they are a party.]

#### Article 5

##### TRANSMISSION OF INFORMATION

The Contracting Parties shall transmit through the Secretariat to the Conference on Contracting Parties information on the measures adopted by them in implementation of this Convention [and annexes and protocols thereto,] [and of protocols to which they are parties,] in such form and at such intervals as the Conference of Contracting Parties may determine.

#### Article 6

##### CONFERENCE OF THE CONTRACTING PARTIES

1. [A Conference of the Parties is hereby established.] The first meeting of the Conference of the Contracting Parties shall be convened by the [Executive Director] [secretariat] of the United Nations Environment Programme [Depositary] [not later than one year] after the entry into force of this Convention. Thereafter, [ordinary] meetings of the Conference of the Contracting Parties may be held [at regular intervals to be determined by the Conference. Extraordinary meetings of the Conference of the Contracting Parties may be held at such other times as may be deemed necessary by the Conference, or] at the written request of any Contracting Party, provided that such a request is supported by at least one third of the Contracting Parties.

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2. At its first meeting, the Conference of the Contracting Parties shall agree upon and adopt rules of procedure [and financial rules] for itself and for [any] [its] subsidiary bodies established [under article 8] [by this article], as well as financial provisions governing the functioning of the secretariat established under article 7.

3. The Conference shall keep under continuous review the implementation of this Convention, and, in addition, shall:

(a) Consider [periodic reports] [information] submitted through the secretariat in accordance with article 5 as well as reports submitted by [[the scientific-technological advisory body/mechanisms] established under article 8 of this Convention and by the scientific, technical or legal working groups referred to in subparagraph (h) below;] [such mechanisms, groups, bodies, committees and organizations referred to in subparagraphs (f) and (g) below;]

(b) Review of the state of the [latest scientific information on] ozone layer;

(c) [Define common policies, strategies and measures, in accordance with the provisions of article 2, for minimizing the release of substances causing or likely to cause modification of the ozone layer, and make recommendations on any other measures relating to this Convention;]

(c) [Consider co-operative activities to be undertaken within the framework of the Convention and its protocols or annexes;]

(d) [Adopt programmes and measures, in accordance with the provisions of article 2, for minimizing the release of substances causing or likely to cause modification of the ozone layer, as well as programmes for research, monitoring, scientific and technological co-operation, the exchange of information and the transfer of technology and knowledge in accordance with the provisions of articles 3 and 4;]

(d) [Make recommendations regarding the adoption of protocols or amendments to this Convention or its protocols in accordance with article 10;]

(e) [Consider and adopt amendments to this Convention [as well as to the protocols and/or annexes thereto] as laid down in article(s) 10 [and 12];]

[(f) Consider the need for new protocols.]

[(g) [Consider and] adopt [review and amend] annexes to this Convention as laid down in [in accordance with] article 12;]

[(h) Establish such [mechanisms] [scientific, technical or legal] [scientific, technical, socio-economic or legal] working groups as are deemed necessary for the implementation of this Convention;]

(i) Seek, where appropriate, the services of competent international bodies and scientific committees, in particular the World Health Organization,

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[and] the World Meteorological Organization [and the Co-ordinating Committee on the Ozone Layer], in scientific research and monitoring and other activities pertinent to the objectives of this Convention, and make use as appropriate, of information from such bodies and committees;

(j) Consider and undertake any additional action that may be required for the achievement of the purposes of this Convention [and the protocols thereto].

4. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State not party to this Convention, may be represented at meetings of the Conference of the Contracting Parties by observers who shall have the right to participate in the debate without the right to vote. Any body or agency, whether national or international, governmental or non-governmental, [technically] qualified in fields relating to the protection of the ozone layer, which has informed the secretariat of its wish to be represented at a meeting of the Conference as an observer, may be admitted unless [at least one third of] the Contracting Parties present object. Once admitted, the observers of such bodies or agencies shall have the right to participate in the debate without the right to vote [at that meeting]. The participation of [a non-governmental body or agency] [an observer] may be limited to parts of the meeting that are considered to be directly relevant to its work.

#### Article 7

##### SECRETARIAT

1. The Contracting Parties designate the United Nations Environment Programme as responsible for carrying out the following secretariat functions [taking into account the organizational and financial possibilities of UNEP] [until the first ordinary meeting of the Conference of the Parties held pursuant to article 6. These functions shall be]:

(a) To arrange for and service the meeting of the Contracting Parties as provided for in articles [6], [8], [9 and 10];

(b) To arrange for and service the meetings of [the advisory body established under article 8] [scientific, technical, socio-economic or legal] working groups established under article 6;

(c) To transmit the information received in accordance with article 5 as well as information derived from meetings of bodies established under articles [6 and 8];

(d) To invite the attention of the Contracting Parties to any matter pertaining to the purposes of this Convention;

(e) To perform the functions assigned to the Secretariat by any protocols to this convention;

/...

(f) To prepare [administrative] reports on the activities carried out by the Secretariat in the implementation of this convention and present them to the conference of the Contracting Parties;

(g) To ensure the necessary co-ordination with other relevant international bodies, and in particular to enter into such administrative and contractual arrangements as may be required for the effective discharge of the secretariat functions;

(h) To perform such other functions as may be determined by the Conference of the Contracting Parties.

[2. If the United Nations Environment Programme is no longer able to provide the Secretariat, the Conference of the Parties shall make alternative arrangements for the Secretariat.]

[2. The Contracting Parties shall, at the first ordinary meeting of the Conference of the Parties, make arrangements for a permanent secretariat.]

#### Article 8

##### ADVISORY BODY

#### Alternative 1

1. An Advisory Committee is hereby established consisting of [x of] the representatives of the Contracting Parties to this Convention. The selection of members, their terms of office, admission of observers, and approval of the procedures of the Committee will be provided for in the rules of procedure established under article 6.

2. The functions of the Committee shall be:

(a) To formulate recommendations for consideration by the Conference of the Parties;

(b) To facilitate the exchange of relevant legal, scientific and technical and socio-economic information related to actions that increase, limit, or reduce activities and emissions of substances that modify or are likely to modify the ozone layer;

[(c) To facilitate the development and transfer of technology and knowledge relating to the reduction of such emissions in implementation of article 4, paragraph 3;]

(d) To review and analyse the information and reports submitted in accordance with articles 4 and 5, and to request under the authority of the Conference of the Parties such additional information from the Contracting Parties as may be deemed necessary by the Committee to meet the responsibilities assigned to it by this Convention and the Conference of the Parties;

(e) To advise the Conference on the state of the ozone layer, the extent and trends of its modifications and possible resultant effects;

(f) To perform such other functions as may be deemed necessary by the Conference of the Parties.

3. The Committee shall seek as appropriate from the Co-ordinating Committee on the Ozone Layer [and other bodies] scientific, socio-economic and technological advice, as well as assessments of the state of the ozone layer, the extent and trends of its modification, and possible resultant effects.

4. The Committee shall utilize [ad hoc] [standing] working groups of experts on scientific, legal and socio-economic aspects of the protection of the ozone layer [and on the transfer of technology], and shall arrange for or undertake, in accordance with the financial rules, special scientific, legal and technical studies, as required to meet the responsibilities given to it by this Convention [and any protocol in force] and by the Conference of the Parties.

#### Alternative 2

[1. The Conference of the Parties shall, under its rules of procedure and financial rules, provide for the necessary mechanisms to carry out its responsibilities under article 6 of this Convention.]

[1. The Conference of the Contracting Parties shall establish a committee consisting of representatives of the Contracting Parties and having the function of advising the Conference on all matters of relevance to the implementation of the Convention. The selection of members, admission of observers, and approval of the procedures of the Committee shall be provided for in the rules of procedure established under article 6.]

2. In addition to [such mechanisms] [that Committee], the Conference of the Parties shall request from the Co-ordinating Committee on the Ozone Layer [and other bodies] scientific, socio-economic and technological advice as well as assessment of the state of the ozone layer, the extent and trends of its modification, and possible resultant effects.

#### [Article 9

##### ADOPTION OF PROTOCOLS

1. The Contracting Parties may adopt, at a diplomatic conference, additional protocols to this Convention pursuant to the provision of article 2, paragraph [2] [3].

2. A diplomatic conference for the purpose of adopting protocols shall be convened by the secretariat at the written request of any Contracting Party, provided that within six months from the date of communication by the secretariat to the Contracting Parties of the fact of such a request, it is supported by at least one third of the Contracting Parties.

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[3. Pending the entry into force of this Convention, the Executive Director of United Nations Environment Programme may, with the agreement of majority of the signatories to this Convention, convene a diplomatic conference for the purpose of adopting protocols.]]

#### Article 10

#### AMENDMENT OF THE CONVENTION [OR PROTOCOLS]

##### Alternative 1

1. Any Contracting Party to this Convention may propose amendments to this Convention [or any Protocol thereto]. Such amendments shall take due account of relevant scientific and technical considerations. The secretariat shall circulate such proposals to all Contracting Parties. Amendments shall be adopted by a meeting of [the Conference of the Contracting Parties] [a diplomatic conference] which shall be convened by the Executive Director of the United Nations Environment Programme at the request of two-thirds of the Contracting Parties.

2. Amendments to this Convention [or any protocol] shall be adopted by [consensus] [a two-thirds majority vote] of the Contracting Parties to the Convention [or to such protocol] [present and voting at the meeting] and shall be submitted by the Depositary for acceptance by all Contracting Parties to the Convention [or to such protocol]. [For these purposes "Contracting Parties present and voting" means Contracting Parties present and casting an affirmative or negative vote.]

3. Acceptance of amendments shall be notified to the Depositary in writing. Amendments adopted in accordance with paragraph 2 of this Article shall enter into force [between Contracting Parties having accepted such amendments] on the [sixtieth day] [ninetieth day] following the receipt by the Depositary of notification of their acceptance by [all Contracting Parties] [at least three fourths of the Contracting Parties] to this Convention [or to the protocol concerned]. Thereafter the amendments shall enter into force for any other Party thirty days after that Party deposits its instrument of acceptance of the amendments.

4. Following the entry into force of an amendment to this Convention [or to any protocol], any new Contracting Party to this Convention [or such protocol] shall become a Contracting Party to the instrument as amended.

[5. Apart from the procedures set out above, the amendments may be adopted by the simplified procedure provided for in article 13.]

##### Alternative 2

1. Any Contracting Party to this Convention may propose amendments to this Convention. Amendments shall be adopted by a diplomatic conference which shall be convened by the Secretariat at the request of the Contracting Parties. Such amendments shall take into account all relevant scientific, technical and other considerations.

2. Any Contracting Party to this Convention may propose amendments to a protocol to this Convention. Amendments shall be adopted by a diplomatic conference which shall be convened by the Secretariat at the request of the Contracting Parties. Such amendments shall take into account all relevant scientific, technical and other considerations.

3. The text of any proposed amendment shall be communicated by the Secretariat ... days before such a diplomatic conference.

[Article 11 \*/

#### STATUS, AMENDMENT AND ADOPTION OF ANNEXES

1. Annexes to this Convention shall form an integral part of it.
2. An annex may provide for a simplified amendment procedure or for adoption of amendments by qualified majority vote; in any other case the procedure for amendment shall be the one referred to in article 10 of this Convention.
3. Adoption and entry into force of new annexes shall be subject to the procedure referred to in article 10.]

[Article 11

#### STATUS OF ANNEXES

The annexes to this Convention [or to any protocol] shall form an integral part of this Convention [or such protocol, as the case may be].]

[Article 12

#### ADOPTION AND AMENDMENT OF ANNEXES

1. Any Contracting Party may propose amendments to the annexes to this Convention [or to any protocol] at the meeting referred to in article 6. [Such amendments should take due account [, inter alia,] of relevant scientific and technical considerations.]
2. Such amendments shall be adopted by [consensus] [a two-thirds majority vote] of the Contracting Parties [present and voting on the instrument in question]. The Depositary shall without delay communicate the amendments so adopted to all Contracting Parties.
- [3. Any Contracting Party that is unable to approve an amendment to the annexes to this Convention [or to any protocol] shall so notify the Depositary, in writing, within six months from the date of the circulation of the communication by the Depos tary. The Depositary shall without delay

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\*/ Proposed as a replacement for articles 11 and 12, to be followed by present article 9.

notify all Contracting Parties of any notification received.] [A Contracting Party may at any time substitute an acceptance for a previous declaration of objection and the amendment shall there upon enter into force for that Party.]

[4. On the expiry of six months from the date of the circulation of the communication by the Depositary, the amendment to the annex shall become effective for all Contracting Parties to this Convention [or to any protocol concerned] which have not submitted a notification in accordance with the provision of paragraph 3 above.]

5. The adoption and entry into force of a new annex to this Convention [or to any protocol] shall be subject to the same procedure as for the adoption and entry into force of amendments to the Convention [or to any protocol], provide that, if any amendment to the Convention [or to the protocol concerned] is involved, the new annex shall not enter into force until such time as the amendment to the Convention [or the protocol concerned] enters into force.

[6. Apart from the procedures set out above, the amendments may be adopted by the simplified procedures referred to in article 13.]]

Annex IIPROPOSALS SUBMITTED IN WRITING AT THE FIRST PART OF THE GROUP'S  
SECOND SESSION REGARDING OTHER PARTS OF THE DRAFT CONVENTIONArticle 15

Replace the existing text by:

This Convention shall be open for signature at \_\_\_ from \_\_\_ to \_\_\_ by any State. It shall also be open for signature between the same dates by any regional economic integration organization exercising competence in the fields covered by this Convention and if a majority of its member States are signatory to this Convention.

Article 16

At the end of the first sentence of the existing paragraph, add by States.

Add the following new paragraphs:

2. This Convention and any protocol thereto shall also be subject to ratification, acceptance or approval by the organizations referred to in article 12 if a majority of its member States are a party to the Convention. In their instruments of ratification, acceptance or approval, such organizations shall declare the extent of their competence with respect to the matters governed by the Convention and the relevant protocol. These organizations shall also inform the Depository of any substantial modification in the extent of their competence.

3. In matters within their competence, such organizations shall exercise the rights, and fulfil the obligations under the Convention on behalf of their member States. In such cases, the member States of the organization shall not be entitled to exercise such rights individually. The participation by such organizations shall in no case entail an increase in the representation of their members which are Contracting Parties to the Convention.

Article 19

Delete the article.

Article 20 bis

Add the following new article:

In order to take account of advances in scientific knowledge regarding the ozone layer, the Contracting Parties shall consider at a meeting of the Conference of Parties the need to review the Convention.

ANNEX I TO THE CONVENTION: RESEARCH AND MONITORING

1. Recognizing the importance of research and monitoring to the protection of the ozone layer, and of international scientific assessments to the development of international scientific consensus, the Contracting Parties agree to support, individually and collectively, research, monitoring and scientific assessments appropriate to their expertise, geography, and available resources.

2. The Contracting Parties shall co-operate in:

(a) Conducting research and publishing in peer-reviewed literature information developed on understanding the physics and chemistry of the earth's upper atmosphere and of its susceptibility to change, in particular on the state of the ozone layer and on environmental and climatic effects which would result from changes in either the total column content of the vertical distribution of ozone;

(b) The assessment of research results and the development of recommendations for future research;

(c) The sharing of information on planned and on-going research, both government and private, to facilitate the co-ordination of research programmes so as to make the most effective use of available national and international resources;

(d) The development and implementation of multi-national satellite and ground-based global measurement systems.

3. Areas of research and monitoring that the Contracting Parties recognize as important include:

(a) Research in the physics and chemistry of the atmosphere

(i) Comprehensive theoretical models: the continued development of multidimensional interactive models of radiative, chemical and dynamical processes; studies of the simultaneous effects of various species, e.g. CFCs, chlorocarbons, CO<sub>2</sub>, N<sub>2</sub>O, NO<sub>x</sub> and CH<sub>4</sub>, upon atmospheric ozone; interpretation of satellite and non-satellite field measurement data sets; studies of the radiative effect of ozone and other minor species which affect ozone photochemistry and atmospheric dynamics, potentially resulting in climatic impact; the evaluation of trends in atmospheric and geophysical parameters, in particular relating to ozone, temperature and precipitation data, and the development methods for attributing changes in ozone data to specific causes;

(ii) Laboratory studies of: rate coefficients, absorption cross-sections, quantum yields, and reaction mechanisms of tropospheric and stratospheric chemical and photochemical

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processes over the relevant pressure and temperature ranges, including the search for additional reactions which may affect atmospheric chemistry; line positions, line widths, broadening coefficients, line strengths and line identification to support field measurements in the ultra-violet, visible, infra-red and microwave spectral regions;

- (iii) Field measurements: simultaneous measurements of the concentrations of photochemically related compounds of the various families using in situ and remote sensing instrumentation from ground, aircraft, balloon, rocket-borne, and satellite platforms; emphasis should be placed on extending the measurements of radical species down to the tropopause; the intercomparison of different sensors; obtaining 3-D fields of key trace constituents, solar flux, and meteorological parameters in the stratosphere using satellites; co-ordinated correlative measurements for satellite instrumentation; atmospheric dynamics studies using aircraft and ground-based radar;
  - (iv) Instrument development, including: reliable operational satellite sensors for accurate measurements of the vertical distributions of ozone, water vapor and temperature over the complete altitude range of the stratosphere; reliable operational satellite sensors for the total column content of ozone and solar flux (wavelength-resolved) including the continued development of in-flight calibrations; improved ground-based, balloon- and rocket-borne sensors for integration into a Global Ozone Observing System and for performing correlative measurements for satellite ozone measurements (column content and vertical distribution); in situ or remote sensors for key constituents for which instrumentation currently does not exist;
- (b) Research in health and biological effects
- (i) The relationship between human exposure to solar ultra-violet radiation and the development of non-melanoma skin cancer, and the possible relationship between sunlight and melanoma skin cancer, including social and environmental conditions;
  - (ii) Biological effects of UV-B, including the wavelength dependence, upon agricultural crops, forests and other ecosystems, in different geographical locations and under local growing conditions;
  - (iii) Aquatic effects studies extended to the natural water environment to gain knowledge of the effect of enhanced solar UV-B, including the wavelength dependence, on aquatic food productivity;

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- (iv) The mechanisms by which UV-B radiation acts on biological species and ecosystems including: the relationship between dose, dose rate, and response; photorepair, adaptation, and protection;
  - (v) Studies of biological action spectra and the spectral response using polychromatic radiation in order to include possible interactions of the various wavelength regions;
  - (vi) The influence of existing and enhanced UV-B radiation on: the sensitivity and activities of insects important to the biospheric balance (animal food chain, plant cross-fertilization, etc.); micro-organisms, such as those causing plant and animal diseases; primary processes such as photosynthesis, biosynthesis, etc.; the photodegradation of herbicides, pesticides, fertilizers and similar agricultural chemicals;
- (c) Monitoring
- (i) The status of the ozone layer (i.e. the spatial and temporal variability of the total column content and vertical distribution) by making the Global Ozone Observing System based on the integration of satellite and ground-based systems, fully operational. This requires a significant improvement in the quality and quantity of vertical distribution measurements, and an upgrading and calibration of Dobson and M-83 type instruments;
  - (ii) The tropospheric and stratospheric concentrations of source gases for the HO<sub>x</sub>, NO<sub>x</sub>, and ClO<sub>x</sub> families including H<sub>2</sub>O, CH<sub>4</sub>, N<sub>2</sub>O, CFC1<sub>3</sub>, CF<sub>2</sub>Cl<sub>2</sub>, CCl<sub>4</sub>, CH<sub>3</sub>Cl, CH<sub>3</sub>CCl<sub>3</sub>, CHF<sub>2</sub>Cl and other chlorinated compounds. In addition, similar measurements of CO<sub>2</sub>, and CO are required;
  - (iii) The temperature from the ground to the mesosphere, utilizing both ground-based and satellite systems;
  - (iv) Wavelength-resolved solar flux entering the earth's atmosphere, utilizing satellite measurements;
  - (v) Wavelength-resolved solar flux reaching the earth's surface in the ultra-violet range with biological effects (UV-B), in conjunction with total ozone measurements;
  - (vi) Aerosol concentrations from the ground to the mesosphere, utilizing both ground-based and satellite systems;
  - (vii) Improved methods for analysing global monitoring data on trace species, temperatures, solar flux, and aerosols.

ANNEX II TO THE CONVENTION: INFORMATION EXCHANGE

1. The Contracting Parties recognize that the sharing of information is an important means of implementing the objectives of the Convention and of assuring that any actions taken are appropriate and equitable. In developing annexes and protocols under the Convention, the Contracting Parties shall draw upon the following Guidelines for Information Exchange.

1. INFORMATION TO BE EXCHANGED

2. The Contracting Parties recognize that they will need to consider the following types of information in taking actions under the Convention: scientific, technical, business/commercial, legal and socio-economic.

(a) Scientific information

3. This includes information on the nature, status, and results of work described in annex I, as well as information regarding emissions due to human activities or natural events which may affect the ozone layer. Types of information to be exchanged include:

(a) Reports and literature on the ozone depletion theory and the effects of ozone depletion on health and the environment;

(b) Studies which are under way or planned, for purposes of co-ordinating world testing programmes;

(c) Assessments of results and recommendations for future work performed by national or international bodies;

(d) Information on the emissions of various substances, as well as production and use data needed in modelling;

(e) Model results;

(f) Raw data, especially from field measurements, as well as their archiving, as feasible and appropriate.

(b) Technical information

4. This includes information on:

(a) The availability and cost of substitute and new technologies;

(b) Research, planned and on-going on technologies for reducing modification of the ozone layer;

(c) Business/commercial information

5. This include information regarding the production, use, and emission data needed for modelling and monitoring studies and for the assessment of economic effects of contemplated actions.

(d) Legal information

6. This includes information regarding:

(a) Licensing and patent protection;

(b) National laws or administrative measures concerning production, work practices or emissions;

(c) Laws giving administrative bodies the authority to regulate production, work practices or emissions;

(d) International agreements, including bilateral agreements, concerning production, work practices, or emission controls, especially those involving imports or exports.

(e) Socio-economic information

7. This includes information regarding:

(a) The risks and benefits of human activities which may modify the ozone layer;

(b) The socio-economic effects of possible ozone depletion;

(c) The consequences of regulatory actions taken;

(d) Import/export and international marketing information.

2. CO-OPERATION IN THE EXCHANGE OF INFORMATION

8. The Contracting Parties recognize that when they decide to limit particular emissions, it is to their mutual benefit to share knowledge as to the availability of certain techniques, equipment, or substitutes. The Contracting Parties agree to co-operate by:

(a) Facilitating the licensing and sale of alternative technologies among countries;

(b) Providing information on alternative technologies and equipment, including supplying manuals and guides;

(c) Stationing necessary monitoring equipment and facilities;

(d) Providing appropriate training of scientific and technical personnel.

9. The Contracting Parties recognize that co-operation under this annex will be subject to national laws regarding patents, trade secrets, and protection of confidential information.

10. In deciding what information is to be collected, the Contracting Parties shall take into account the usefulness of information and the costs of obtaining it.