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THE ENVIRONMENT PROGRAMME

Report of the Executive Director

Addendum

The material in this addendum deals with important developments that have taken place in the programme during February and March 1980. The text follows the sequence of document UNEP/GC.8/5 and identifies the chapter, section or sub-section concerned. Accordingly, the headings in this addendum do not necessarily run consecutively, since they reproduce those of the programme document itself, not all sections of which require the inclusion of additional material. The omission of a particular chapter, section or sub-section does not, of course, mean that there has been no progress in the area concerned but simply that the basic text of document UNEP/GC.8/5 does not require up-dating or correcting to reflect major developments.

Paragraphs 24, 30 and 53 contain suggested action by the Governing Council in relation to tropical forests soils policy and environmental law. The various annexes are referred to in the text as appropriate.

It has not been possible to discuss the draft of this addendum with members of the United Nations system and other organizations; the information it gives may not, therefore, be complete in every respect.

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ABBREVIATIONS

BPICA	International Permanent Bureau of Motor Manufacturers
UNATAC	Union d'assistance technique pour l'automobile et la circulation routière

Chapter I

ENVIRONMENTAL ASSESSMENT

A. INTRODUCTION

1. Pursuant to the recommendations of the meeting of Government designated experts on environmental assessment reported in paragraphs 9 and 10 of document UNEP/GC.8/5, the Executive Director has initiated the process of collecting information about on-going and planned activities related to assessment. This will be followed by the development of a detailed programme for environmental assessment under Earthwatch. The preliminary views of the Executive Director are that for the next five years the assessment efforts will focus on producing (or up-dating) environmental assessment statements of various levels (according to the state of the art and the availability of data in each case) for the following environmental problems:

- Climate variability and changes including the Carbon Dioxide issue;
- Ozone depletion;
- Long range transport of air pollutants, acid rains and their effects;
- Tropical forest cover;
- Problems of shifting cultivation in the humid tropics;
- Loss of cropland;
- Tropical rangeland;
- Assessment of toxicity of priority environmental chemicals under the International Programme on Chemical Safety;
- Assessment of the state of pollutants in regional seas;
- Status of selected species and selected habitats; and
- Spread of selected endemic communicable diseases.

This list is not exhaustive and is subject to further consultations with agencies and the scientific community.

2. These assessments will result from the collective efforts of various institutions and agencies. A detailed plan for environmental assessment, with estimated costs, will be developed through the in-depth review and joint programming by the Inter-Agency Working Group on Earthwatch.

B. MONITORING: THE GLOBAL ENVIRONMENTAL MONITORING SYSTEM (GEMS)
(budget sub-line 1301)

3. The maps showing the location of stations in the background pollution monitoring and European long-range air-pollution transport networks (see UNEP/GC.8/5, paras. 18 and 27) have been received from WMO and are reproduced in this addendum.

C. INFOTERRA
(budget sub-line 1302)

4. Seven more countries - Guinea, Guinea-Bissau, Ivory Coast, Niger, Rwanda, United Arab Emirates and Yemen - have joined INFOTERRA, bringing the total to 108.

5. The first INFOTERRA Evaluation meeting (17-21 March 1980), attended by the evaluation team leader and six regional evaluators, together with the INFOTERRA Advisory Group consisting of some of the most active national focal points, and specialists on the environment and information, finalized the evaluation methodology and three questionnaires, one each for focal points, sources of information and users. The evaluation field work will take place from May to August 1980, and the evaluation report will be finalized later in the year. It will then be submitted to the Executive Director for his use in preparing documentation for submission to the Governing Council at its ninth session.

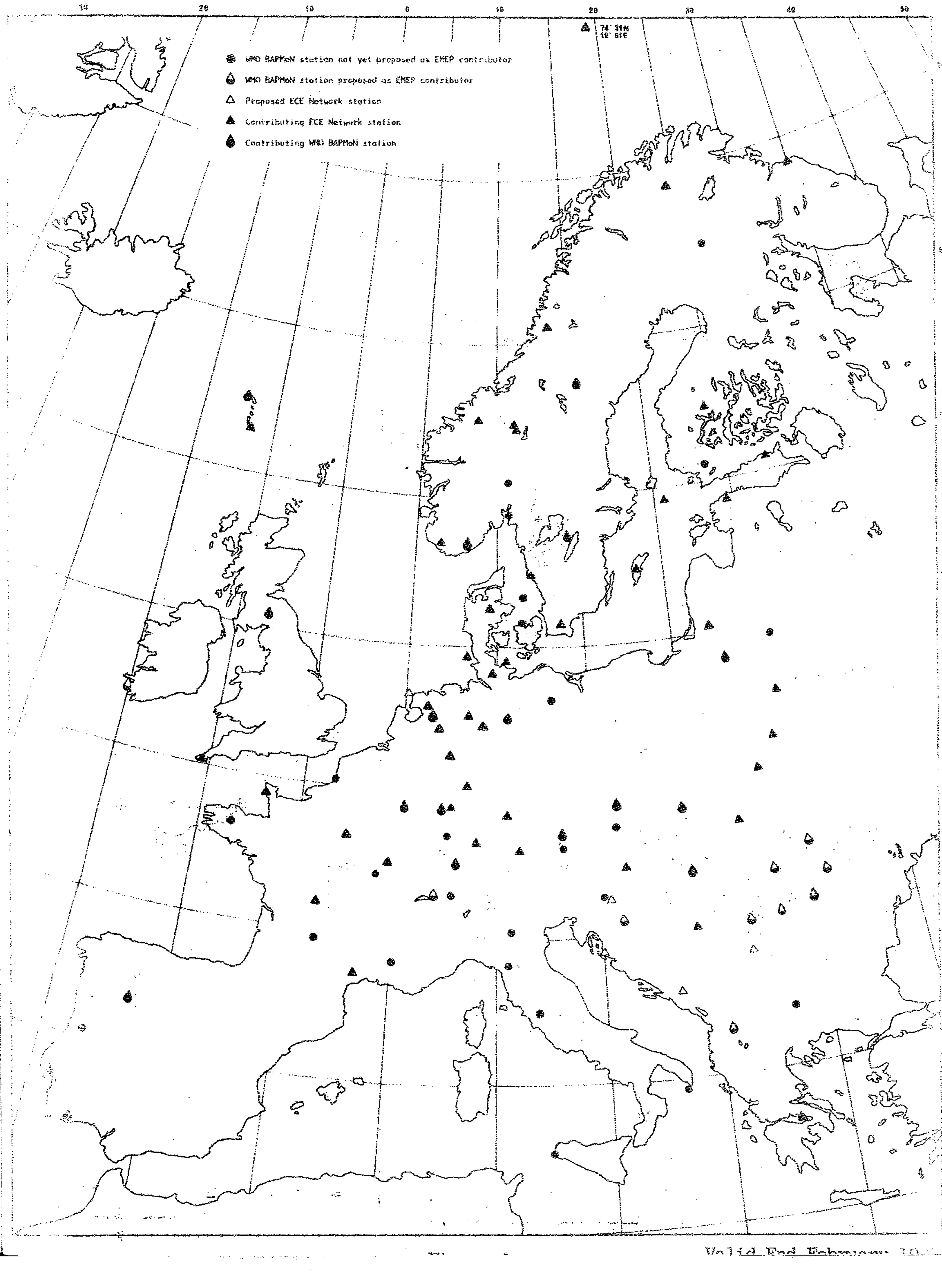
D. INTERNATIONAL REGISTER OF POTENTIALLY TOXIC CHEMICALS (IRPTC)
(budget sub-line 1304)

6. Five more countries, four in Africa and one in Latin America, have appointed one national correspondent each, and four requests for information on the toxicology of chemicals and their uses and on regulations concerning chemicals were received, two from Europe and North America and two from Asia and the Pacific.

7. In March 1980 a group of sixteen experts reviewed the input instructions for selection and presentation of data in IRPTC and the data profiles on sixty chemicals prepared according to these instructions. The group was in general agreement with the concept and organization of the data profiles, but suggested some changes in the grouping of the seventeen sets of attributes and in the parameters on which data were selected.

8. Five United Nations bodies and agencies, and the GEMS, INFOTERRA and IRPTC programme activity centres were represented at the meeting of the IRPTC Sub-Group of the ACC Working Group on Earthwatch (Geneva, 28 March 1980). The participants expressed satisfaction with the progress made by IRPTC since the last meeting and identifies programmes in their areas which could usefully assist IRPTC, as well as enable them to obtain assistance from it.

PRESENT STATE OF THE UNEP/ECE/WMO NETWORK FOR MONITORING OF THE LONG-RANGE TRANSPORT OF AIR POLLUTANTS OVER EUROPE



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PRESENT STATE OF THE UNEP/WMO NETWORK FOR MONITORING BACKGROUND AIR POLLUTION

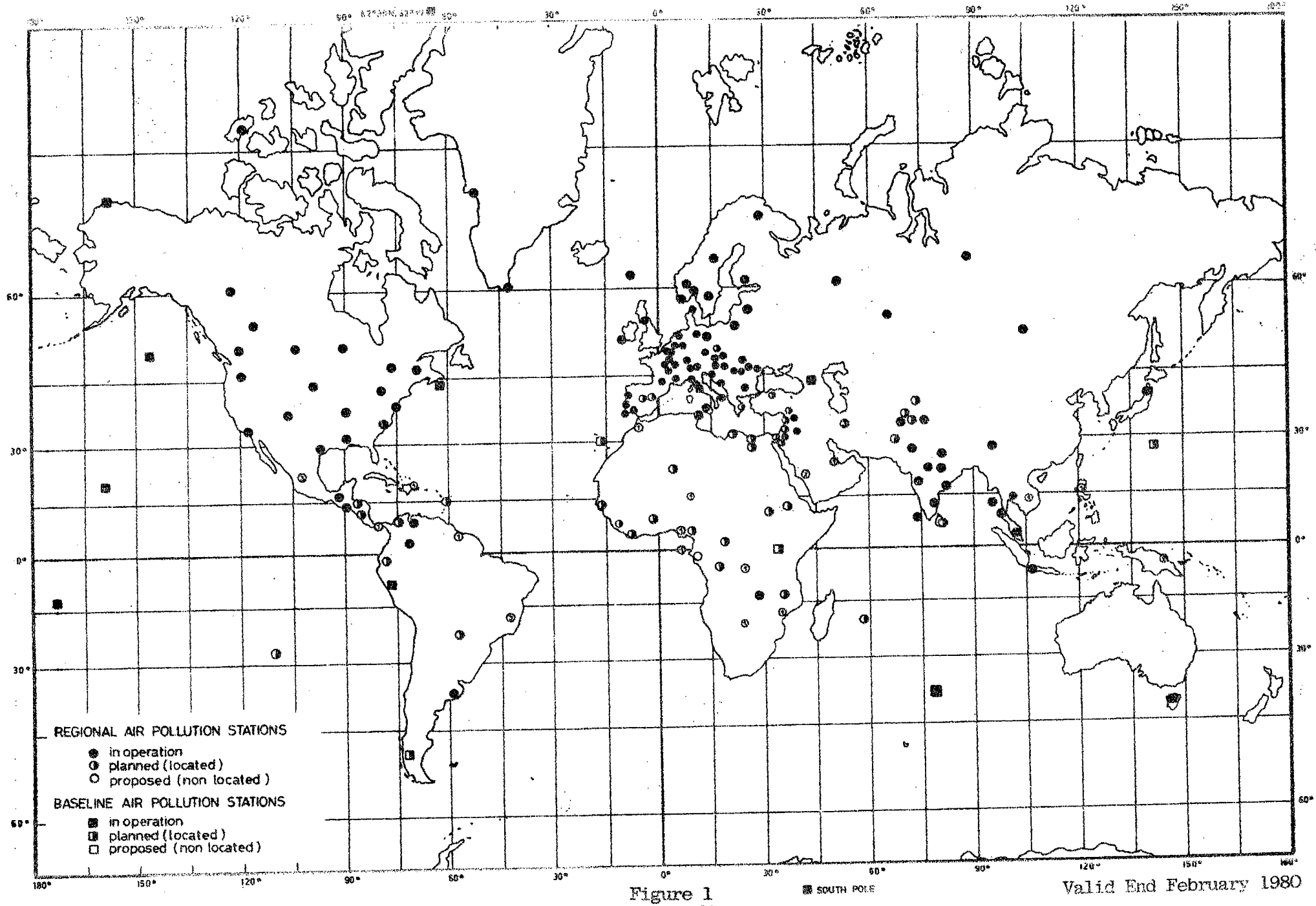

Figure 1

Valid End February 1980

E. OUTER LIMITS
(budget sub-line 1303)

1. Assessment of basic human needs in relation to outer limits

9. The UNEP/ALECSO/ASPEN Workshop on technologies for sustainable provision of basic human needs (UNEP/GC.8/5 para. 51) is scheduled for 31 March - 3 April 1980, and will be reported on orally in Sessional Committee 1.

2. Assessment of outer limits

(i) Climatic changes

10. The meeting of experts on the World Climate Impact Studies Programme (WCIP) (see UNEP/GC.8/5, para. 54) was held as scheduled in February 1980. Its report has been produced in English only. The action plan proposed by the meeting, with an estimate of the funds required for its implementation, is submitted to the Governing Council in annex I to the present addendum. The estimated cost of implementing the proposed plan for the period 1980-1983 is approximately $22 million of which UNEP would be expected to contribute about $4.2 million, the balance being provided by Governments and international agencies.

11. Should the Governing Council adopt the action plan proposed by the meeting, with UNEP, in line with Council decision 7/4D, assuming responsibility for its implementation, the additional financial resources required could be raised in at least two ways:

(a) The Governing Council might decide to establish a Trust Fund specifically for the World Climate Impact Programme;

(b) Additional contributions to the Environment Fund might be invited to allow an increase in the appropriations under the relevant budget line. 1/

12. The Executive Director proposes the creation of a Scientific Advisory Committee for WCIP, consisting of some 10 to 12 members selected in their personal capacity after consultations with WMO and ICSU, to carry out the following advisory functions to the Executive Director:

(a) To provide scientific guidance for WCIP and serve as the main scientific organ for the formulation of the over-all scientific concepts and the co-ordination of efforts with other elements of the WCIP;

1/ This will be a recurrent theme in UNEP's emerging responsibilities and the Executive Director will raise the issue in his introductory statement to the Council at its eighth session.

(b) To advise on selection of the main research objectives of WCIP, to review and evaluate progress in all its elements, and make recommendations to the Executive Director concerning its development;

(c) To facilitate the exchange of information among scientists involved in carrying out the studies at national and international levels;

(d) To make proposals for financing required to carry out the work of the Committee.

13. The Executive Director also proposes to set up within the Programme Bureau a small unit of one senior and one junior officer, with provisions for consultants and secretariat, to follow up the implementation of WCIP and provide secretariat services for the Scientific Advisory Committee.

14. The Executive Director requests the views of the Governing Council on:

(a) The proposed plan of action;

(b) The above proposals.

15. The ICSU/WMO/UNEP meeting on CO_2 (UNEP GC.8/5, para. 55), held as scheduled in February 1980, made the following recommendations, which the Executive Director endorses and proposes to implement:

(a) The many uncertainties in present knowledge of the atmospheric carbon dioxide programme require extensive research; so much so that it would be impractical to recommend an international plan of action for environmental management at this time. For the present, efforts should concentrate on assessing the problem and for this purpose it is recommended that an international climate action for the environmental assessment of changes in carbon dioxide be developed:

(b) To this end, the following steps are recommended:

(i) The Joint Scientific Committee of WMO/ICSU should meet on 26 March 1980 in Utrecht to discuss scientific and implementational aspects of relevance to research on the issue within the framework of the World Climate Research Programme (WCRP);

(ii) An international environmental assessment of changes in the carbon dioxide level and of the impacts of these changes, should be developed. For this purpose a group of experts designated in their personal capacity should be chosen by WMO, ICSU and UNEP, and should meet in September/October 1980.

(iii) A meeting of experts designated by Governments and intergovernmental and non-governmental organizations should be

convened by UNEP, WMO and ICSU in the first half of 1981 to develop a draft international plan of action for environmental assessment of changes in atmospheric carbon dioxide and their impact, and to recommend means for the follow-up of co-ordination and the implementation of this plan;

(iv) In order to provide a scientific basis for the implementation of the proposed plan of action, the meeting endorsed the recommendation of the WMO Working Group on Carbon Dioxide of the Commission for Atmospheric Sciences that a conference on carbon dioxide and climate be convened in late 1981 under the auspices of UNEP, WMO and ICSU.

(iii) Risks to the ozone layer

16. The fifth issue of the Ozone Layer Bulletin, scheduled to be published in January 1980 (para. 58 of UNEP/GC.8/5), was published in March 1980.

F. ENVIRONMENTAL DATA (budget line 16)

17. At its fourteenth session (Madrid, 10-14 March 1980) the ACC Sub-Committee on Statistical Activities welcomed the progress achieved in the area of environmental statistics, and emphasized the importance of co-ordination in this cross-sectoral area. The members of the Sub-Committee agreed to respond to request from UNEP for information which will serve as an input to the in-depth report on environmental data to be submitted to the Governing Council at its ninth session.

Chapter II

SUBJECT AREAS

B. HUMAN SETTLEMENTS AND HUMAN HEALTH (budget sub-lines 0104 and 0106)

2. Human settlements

18. In February 1980, the Executive Directors of UNEP and UNCHS signed a memorandum of understanding which calls on the two organizations to undertake joint activities related to the development of practical guidelines to incorporate environmental aspects in human settlements planning. The joint activities envisage, among other things, the preparation of guidelines on eight topics which will be reviewed at expert group meetings before they are widely distributed. The first series of activities in this joint venture is scheduled to begin in the second quarter of 1980.

C. TERRESTRIAL ECOSYSTEMS (budget lines 11 and 17)

3. (a) Tropical woodlands and forest ecosystems (budget sub-line 1102)

19. In response to Governing Council decision 7/6 A, the Executive Director convened a meeting of experts on tropical forests (Nairobi, 25 February - 1 March 1980): (see UNEP/GC.8/5, para. 120), which was attended by 67 participants from 25 countries and 8 organizations. The report of the meeting in document UNEP/WG.35/5 has been reproduced in English, French and Spanish, the languages in which the meeting was held. The results are reported in detail in Report to Governments No.24.

20. The meeting discussed the issue of tropical forests on the basis of an overview document (UNEP/WG.35/4) prepared by two consultants under the guidance of FAO, UNESCO and UNEP and adopted a set of recommendations for a plan of action for the wise management of tropical forests. These recommendations were presented to the Executive Director for consideration when making his own submission to the Governing Council. The Executive Director agrees with these recommendations; they are submitted to the Governing Council for consideration in annex II to this addendum.

21. The meeting also approved a proposal that goals should be set for the implementation of a programme of activities in the short, medium and long-term. On the basis of these proposals, the Executive Director proposes, in an appendix to annex II below, a set of goals for the periods 1981-1986, 1987-1992 and 1992 to 2000 and beyond.

22. As regards the division of labour and responsibility mentioned in paragraph 4 (b) of decision 7/6 A, the meeting was not required to discuss what the future tasks of UNEP, FAO, UNESCO or other agencies might be, since there is, within the United Nations system, an established methodology for assignment of responsibilities to the various member organizations. Nor was it intended to infringe on the sovereign right of States to decide on their own responsibilities in relation to tropical forests. Its aim was, rather, to recommend an appropriate division of responsibilities between Governments and international organizations.

23. The programme framework and recommendations approved by the Meeting should be seen by the Governing Council as the first step towards a well-integrated, comprehensive and co-ordinated international programme of action on tropical forests. Suggestions therefore need to be made for the next steps with regard to, inter alia, programme priorities, funding mechanisms, and institutional responsibilities for programme implementation and co-ordination.

24. The Executive Director recommends that the Governing Council consider a decision along the following lines:

(a) Approve the recommendations as an important first step towards the development of an integrated programme on tropical forests, to be further defined and elaborated through the process outlined below;

(b) Request the Executive Director to transmit the international programme to all member Governments, multilateral assistance agencies and other international and regional organizations, including financial institutions and concerned non-governmental organizations, and to seek, within a six-month time frame:

(i) Their comments on the goals, objectives and general framework and components of the integrated programme envisaged in these recommendations;

(ii) A brief description of their on-going and planned activities related to each of the programme components, along with funding allocations;

(iii) An indication of what additional programmes they are prepared to implement in support of the new international programme;

(iv) An identification of gaps in the international programme and areas in which additional resource investments by the international community seem to be required.

(c) Note the intention of the Executive Director to convene, following receipt of the responses from Governments and organizations, a second small expert group meeting to elaborate the programme further on the basis of the comments and information received, and of other relevant studies, with attention to its funding implications and the institutional arrangements required;

(d) Request the Executive Director to submit to the Governing Council at its ninth session a costed, detailed plan of action for the wise use of tropical forests, together with his recommendations regarding financial and institutional implications of implementing such a plan;

(e) Request the Executive Director to initiate preparation for the development of similar plans of action for other types of forests.

3. (c) Soils
(budget sub-line 1106)

25. The need to conserve the world's soil resources and manage them wisely has been emphasized at virtually all sessions of the UNEP Governing Council. In decision 6/5 C and 7/6 B, the Governing Council specifically requested the Executive Director to accelerate the development of a soils policy to assist developing countries in managing their soils in an integrated manner.

26. In compliance with decision 7/6 B and as envisaged in document UNEP/GC.8/5, paragraph 135, the Executive Director, in co-operation with FAO, convened an Expert Meeting on Soils Policy at FAO headquarters, Rome, from 4 to 6 March 1980. A total of 16 invited experts participated, drawn from seven countries and eight international organizations. There were also representatives and specialists from UNEP, FAO and UNESCO. The report of the meeting (in English only) is contained in document UNEP/WG.40/3.

27. Deliberations at the meeting centred upon two distinct but related issues: co-ordination among various organizations engaged in international soil activities, and the need for a well defined soil policy. With regard to the first issue, details of work performed were given for FAO, UNEP, UNESCO, the International Society of Soil Science (ISSS), the International Soils Museum, the International Institute of Applied Systems Analysis (IIASA), the Scientific Committee on Problems of the Environment (SCOPE), the International Federation of Institutes of Advanced Studies (IFIAS), the International Institute of Tropical Agriculture (IITA), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and other organizations. These activities were discussed with particular reference to the need to increase their effectiveness by a greater degree of harmonization, and by identifying gaps and overlaps. While recognizing the very great value of on-going work, the Meeting felt the need for more co-ordination, and for a clearing-house function to collect and exchange information on practical applications of soils research for the conservation and improvement of land.

28. With regard to the second main topic, the meeting felt that an agreed comprehensive soils policy should be formulated and adopted. A substantive background paper, prepared by UNEP for the meeting, described the alarming nature of present erosion and degradation of the world's soils, and discussed the need for increased soils mapping, classification and evaluation, for greater knowledge of farming systems and efforts at their improvement, and for an international soils monitoring system which would record changes in degradation. It also referred to legislative aspects of soil conservation and the need for an international plan of action for soil management and conservation. A supporting contribution from the Permanent Representative of Colombia to UNEP discussed some of the economic, social, scientific, institutional, cultural and legal aspects of a soils policy and stressed the need for international co-operation.

29. On the basis of this background documentation and of a full discussion, the experts addressed to the Executive Director, and through him to the executive heads of FAO and UNESCO, recommendations which are annexed to this addendum (Annex III). The Executive Director agrees to the recommendations, and will follow them up with the relevant agencies and bodies in the light of the comments of the Governing Council.

30. The Governing Council may wish to note the progress achieved in the preparation of the soils policy and the proposed future actions.

3. (f) Wildlife and protected areas (budget sub-line 110)

31. As envisaged in document UNEP/GC.8/5, paragraph 169, the World Conservation Strategy was successfully launched world-wide in 34 countries, on 5 and 6 March 1980, with participation by many heads of States, Prime Ministers and leading political and scientific figures. Many Governments officially endorsed the Strategy and announced commitments to developing national conservation policies, strategies and programmes or otherwise strengthening their capacities for conservation of living resources for sustained development. The launching of the Strategy generated an extensive amount of television, radio and press publicity.

32. A technical meeting on conservation of biotic communities of West and Central Africa was convened in Ouagadougou from 4 to 10 February 1980 by UNEP/IUCN, with the assistance of the Government of Upper Volta (see UNEP/GC.8/5 para. 170). The meeting was attended by representatives from 19 countries, with financial support from UNEP, UNESCO, and WWF and with assistance from the convenors and UNDP. Representatives from FAO, UNESCO, OAU, CILSS and UNSO also attended. The meeting adopted a number of important resolutions on, inter alia, the protection of threatened species (elephant, oryx, addax, chimpanzees and gorillas) and of threatened habitats and biomes (Mount Nimba, Fouta Djalon Massif, wetlands, the Sahel and tropical forests), the need for environmental impact assessments,

especially of river basin development and the need to strengthen training and education programmes in wildlife and national park management, and decided to review implementation of these resolutions at the next FAO African Forestry Commission Working Party on Wildlife and National Parks Management, scheduled for early 1981.

33. The strategy for conservation in the wider Caribbean prepared under the UNEP/IUCN conservation project (FP/1110-79-01) was submitted to the UNEP/ECLA meeting of Government experts held at Caracas from 28 January to 1 February 1980. The revised draft action plan for the Caribbean to be considered by an intergovernmental meeting later in 1980 now incorporates significant conservation elements drawn from the strategy (see also under the regional seas programme below). IUCN has obtained support from ICAD and WWF in implementing aspects of the strategy through involvement of NGOs active in conservation in the region.

34. To date, 270 national research projects in biosphere reserves have been registered at the MAB secretariat.

35. At their eighth session (Geneva, 18-22 February 1980) (see UNE/GC.8/5, para. 181), the ECE Senior Advisers on Environmental Problems endorsed a programme of work for the protection of flora and fauna and their habitats in the ECE region designed to ensure or contribute to the conservation of migratory species, endangered species of plants and animals and the habitats of endangered migratory species. This programme of work calls for evaluation of measures taken or under preparation at the international level, identification of endangered species whose protection would be strengthened by international co-operation within the ECE region, and examination of the applicability of existing instruments and programmes. A study on the possible promotion of a network of representative ecological areas will also be launched.

36. The Convention on the World Cultural and Natural Heritage had 51 States Parties as of 31 March 1980.

D. ENVIRONMENT AND DEVELOPMENT (budget line 04)

2. Integrated approach to environment and development (budget sub-line 0404)

37. Following the conclusion of the regional seminars on alternative patterns of development and life-styles referred to in UNEP/GC.8/5 paragraph 190, the different position papers and studies prepared for the Regional Seminars were analysed, at the request of UNEP, by the Latin American Institute for Economic and Social Planning (ILPES). A synthesis of this material prepared byILPES, together with the reports of the five regional seminars, was subsequently analysed by a small group of experts and UNEP officials who produced a synthesis paper for the Inter-Regional Seminar on Alternative Patterns of Development and Life-Styles (Nairobi, 17-19 March 1980). 2/ The Inter-Regional Seminar was attended by the executive secretaries of ECE, ECLA and ECWA (the executive secretaries

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2/ FP/0404-80-01.

of ECA and ESCAP were unable to attend because of meetings of their Commissions), the Executive Director of Habitat and eight eminent economists and ecologists attending as consultants.

38. The meeting approved by consensus an input to the new international development strategy (see annex IV. A below) and authorized the Executive Director to use this material for specific recommendations to the Chairman of the Preparatory Committee for The New International Development Strategy and to the Director-General for Development and International Economic Co-operation since the negotiations relating to the preamble and section on goals and objectives of the new strategy as currently far-advanced in the Preparatory Committee, the Executive Director feels that concentration at present should be on the section dealing with policy measures. His proposals in this respect appear as annex IV. B below.

39. The report of the Kenya national project on environment and development anticipated for March 1980 (UNEP/GC.8/5 para. 192) is expected to be ready in July 1980. A preliminary summary progress report has however been prepared, in English only.

4. Environmentally sound and appropriate technology

40. Preparatory activities on biotechnology have been initiated with the Science Policy Research Unit of the University of Sussex. The preparatory phase of the project will produce a compendium of available biotechnologies classified so that those with environmentally significant qualities or suitable for developing countries are identified, and with an appropriate bibliography. As a follow-up, the group of technologies identified will be further screened to identify those likely to be feasible in the near future for situations where new industrial development is occurring.

41. Preparation of a seminar and training course on microbiological leaching of metals from ores has been initiated with the USSR commission for UNEP, in association with the USSR Academy of Sciences.

42. A second meeting of national focal points on the compilation of a compendium of low and non-waste technology (Geneva, 7-9 January 1980) considered 32 monographs for inclusion in the compendium. A third meeting has been tentatively scheduled for November 1980. In February 1980, the Senior Advisors to ECE Governments on Environmental Problems agreed to working party on low and non-waste technology, which will be responsible for on-going activities 3/ low and non-waste technology and the re-utilization and recycling of wastes as well as the development of new activities resulting from the declaration adopted at the ECE High-Level Meeting. This Working Party will hold its first session from 7 to 11 July 1980.

3/ FP/0402-78-02.

5. Industry and environment
(budget sub-line 0408)

(b) (i) Environmental consideration of major industrial sectors

43. A second ad hoc meeting on motor vehicle maintenance and mechanics training for environmental protection developed specific elements on motor vehicle emission control and other environmental aspects for incorporation in the ILO training manual, which will also be used throughout the United Nations system (ILO/UNIDO/ECE/UNATAC/BPICA/UNEP).

44. A conference on co-operation of East/West business circles in environmental protection was held in Moscow (26-28 February 1980) under the sponsorship of the International Chamber of Commerce (ICC) and the USSR Chamber of Commerce and Industry. It agreed on elements of co-operative programmes and methods for implementing them, and recommended that a standing working party on environmental issues, composed of business leaders, should be set up in the framework of the East/West Committee of ICC and the chambers of commerce of the socialist countries for the promotion of East/West Trade and economic co-operation.

(b) (ii) Working environment

45. The Governing Body of ILO, at its 212th session, endorsed the general objectives and strategies of the co-ordinated programme of action of the United Nations system for the improvement of the working environment agreed at the interagency thematic joint programming meeting (see UNEP/GC.8/5, paras. 97, 216 and Annex V). The views of employers and workers were obtained, as requested by the Governing Council in decision 87 B (v) of 25 May 1977 (ILO/UNEP).

E. OCEANS
(budget line 05)

2. Global programme

(a) Marine pollution
(budget sub-line 0501)

46. GESAMP XI (see UNEP/GC.8/5, para. 229), hosted by UNEP in Dubrovnik, from 25 to 29 February 1980, approved reports on marine pollution implications of coastal area development, monitoring of biological variables related to marine pollution, evaluation of the hazards of harmful substances carried by ships, interchange of pollutants between the atmosphere and the oceans, and scientific aspects of the removal of harmful substances. Working groups were continued or newly established for oceanographic model for the dispersion of waste disposed of in deep sea, biological

effects of thermal discharges in the marine environment, review of potentially harmful substances, criteria for the identification of particularly sensitive sea areas, and for marine pollution implications of ocean energy exploitation. The working group on the review of the health of the oceans convened a metting in Dubrovnik, 22-23 February 1980 and reported to GESAMP XI that a report on its work will be completed by the end of 1981.

47. The interagency group referred to in documents UNEP/GC.8/5 paragraph 230, will meet in October/November 1980, and regional workshops will be organized from 1981 onwards.

3. Regional seas programme (budget sub-line 0503)

Mediterranean

48. The Inter-Governmental Meeting of Mediterranean Coastal States (Barcelona, February 1980) reviewed progress achieved during 1979 in developing the regional Action Plan and confirmed Governement's approval of the work plan for 1980. The status of contributions to the Mediterranean Trust Fund for the 1979-1980 biennium was reviewed and all Governments that had not yet paid their contribution to the Trust Fund were called upon to do so at the earliest possible date in order to avoid financial difficulties during 1980. The participants in the meeting unanimously and strongly reaffirmed their previous commitments to the Mediterranean Trust Fund.

Kuwait Action Plan

49. An interdisciplinary mission of seven experts was launched in early March to visit all eight countries of the region in order to initiate activities for environmental assessment and management projects agreed upon at the expert meeting held in Kuwait in November 1979.

The Caribbean

50. A meeting (Caracas, January 1980) attended by experts nominated by of more than 20 Governments of the region, as well as representatives of ECLA and other organizations of the United Nations system, discussed the action plan as drafted by the Advisory Panel and made recommendations for revising it in order to create a closer linkage between environmental assessment and management. Agreement was reached on the need to convene an additional expert consultation to finalize the draft action plan and to discuss institutional arrangements and the desirability of a regional instrument, preferably in conjunction with an intergovernmental meeting in late 1980.

East Asian Seas

51. An expert meeting on environmental problems concerning offshore exploration and exploitation was convened by ESCAP/CCOP at Bangkok in late March to review relevant regional problems.

Chapter IV

ENVIRONMENTAL MANAGEMENT INCLUDING ENVIRONMENTAL LAW (budget line 10)

B. ENVIRONMENTAL LAW (budget sub-line 1002)

52. At its fifth session (see UNEP/GC.8/5, para. 322), the Working Group of Experts on Environmental Law completed the study on Part 2 of its work programme: "Safety measures to prevent pollution" 4/ and formulated conclusions thereon. 5/ The Group also initiated discussions on the study of Part 3 of the work programme, "Contingency Planning", and formulated one conclusion thereon. To date, the Group has established 26 conclusions on its study of offshore mining and drilling. The results of the meeting are set forth in Annex V, and an account on the work of the Group is given in Report to Governemnts No. 24.

53. The Governing Council may wish to take a decision along the following lines:

(a) To note the report of the Executive Director on the work of the Group of Experts on Environmental Law;

(b) To note further, with appreciation, the considerable progress achieved by the Group on its work;

(c) To request the Group to submit a final report on its work, together with conclusions or guidelines, to the Governing Council at its ninth session;

(d) To approve the priority subject area selected by the Group and to urge it to commence work on it as early as possible.

4/ See UNEP/WG.14/4, annex.

5/ UNEP/WG.36/6, annex II.

Annex I

PROPOSED PLAN OF ACTION FOR THE WORLD CLIMATE IMPACT STUDIES PROGRAMME (WCIP)

A. EXECUTIVE SUMMARY

1.1 The proposed Plan of Action of the World Climate Impact Studies Programme (WCIP) has been prepared in response to a decision of the Governing Council during its seventh session in May 1979. The preparation of this plan followed the agreement reached with WMO, in accordance with the same decision, that UNEP should assume responsibility for this component of the over-all World Climate Programme (WCP).

1.2 The Proposed Plan of Action gives background information on the need for such a programme in the light of recent climate events (for example, in the Sahel, India, America and other parts of the world), and also from recent knowledge about man's potential impact on climate through his own activities (for example, the possible climatic effects of increasing atmospheric carbon dioxide).

1.3 The World Climate Impact Studies Programme is envisaged to take place in a series of phases, the first one to cover the period 1980-1983, which is the financial period over which Governments have made commitments to the over-all World Climate Programme through the eighth World Meteorological Congress.

1.4 The World Climate Impact Studies Programme will consist of four major programme areas pertaining to:

(I) Reduction of the vulnerability of food systems to climate;
(II) Anticipation of impacts of man-induced climatic changes;
(III) Improvement in the science of climate impact studies; and
(IV) Identification of climate - sensitive sectors of human activity.

1.5 The first programme area will introduce the climatic dimension into certain ongoing and planned studies by UNRISD of the resilience and structure of food supply systems in certain areas such as East India, Bangladesh, Nepal, Mexico, Brazil, Botswana, Ethiopia, Tanzania and Upper Volta. The outcome of such studies will assist policy makers in making decisions on priorities in agricultural research, production effort, development of water strategies, etc.

1.6 Studies in the second programme area will primarily focus on the impacts of climate changes that could result from increasing carbon dioxide in the atmosphere. An understanding of such impacts would be essential for examining policy alternatives with regard to energy supply options at both national and international levels to ensure that these do not have unacceptable effects on such factors as water resources and food production.

1.7 The third programme area will include studies by SCOPE of methodologies used for climate impact assessment and will make recommendations for improving them.

1.8 Many of the important impacts of climate relate to individual sectors of human activity which are sensitive to climate variations. During the first phase of the World Climate Impact Programme, the fourth programme area will first involve the identification of sectors of human activities that are particularly sensitive to climatic variations and changes. Four special sectoral studies will then be undertaken.

1.9 The programme envisages the establishment of a scientific/advisory committee to provide advice on the programme and to review it and the setting up of a secretarial unit by UNEP to deal with the WCIP.

2.0 The estimated cost for the World Climate Impact Studies Programme for the period 1980-1983 is approximately $22 million of which it is estimated that UNEP would contribute about $4.2 million - approximately twenty per cent of the total. These budget estimates are made on the basis of contributions from UNEP, other international agencies and national governments. A summary of the budget estimates for the total programme cost and for the contribution of the United Nations Environment Programme is given by major programme area in the tables on pages 23, 25, 26 and 27.

B. THE PLAN OF ACTION

1. Background

1.1 Climate defines a part of the natural environment in which man has evolved and now exists. Climate can facilitate human activities or can hinder them. The variability of climate can sometimes be beneficial but it can be harmful or even disastrous. The Sahelian drought triggered disasters in part of Africa and floods in the Ganges plain have inflicted untold loss and suffering on the peoples of India and Bangladesh. In two successive years, unusually severe winter conditions led parts of North America to experience considerable economic disruption. Locusts, which are highly sensitive to climate, are on the move again in many parts of the semi-arid regions of Africa.

1.2 Such disastrous events have produced a growing realization by socio-economic planners, and by the general public, of the dependence of national economies and welfare on climatic fluctuations. Furthermore, the recognition of the important role to be played by the application of climatic knowledge in planning national socio-economic development has created the need for more effective international action in this field. This need has been expressed at a number of major intergovernmental meetings organized by the United Nations, such as the Conference on the Human Environment (Stockholm, 1972), the World Food Conference (Rome, 1974), the Conference on Human Settlements (Vancouver, 1976), the Water Conference (Mar del Plata, 1977), and the Conference on Desertification (Nairobi, 1977). The problem was the subject of the World Climate Conference organized by WMO at Geneva in February 1979 which adopted a Declaration calling on the nations of the world to take action and to support a World Climate Programme.

1.3 In Resolution 29 (Cg-VIII) of the Eighth World Meteorological Congress, the nations of the world decided to establish the World Climate Programme (WCP) with the following four components:

World Climate Data Programme (WCDP)
World Climate Application Programme (WCAP)
World Climate Impact Studies Programme (WCIP)
World Climate Research Programme (WCRP).

The annex to the Resolution provided guidance with regard to the planning and implementation of the Programme (see WMO Publication No. 540, Outline Plan and Basis for the World Climate Programme 1980-1983). In the light of the resolution of the seventh session of the UNEP Governing Council concerning the WCIP, the Eighth Congress requested the Secretary General of WMO to negotiate with UNEP the conditions under which UNEP could assume responsibility for the implementation of the WCIP. The WCRP is being undertaken as a joint programme between WMO and the International Council of Scientific Unions (ICSU). WMO has taken the lead responsibility in planning and implementing the WCAP and the WCDP. The collaboration of other bodies of the United Nations family in particular IFAD, FAO, UNESCO, WHO and UNRISD as well as other international bodies such as IIASA has been sought.

1.4 At its seventh session (May, 1979), the Governing Council of UNEP expressed willingness to assume, within the availability of funds, responsibility for the implementation of the sub-programme for the study of the impacts of climate on human activities, under the over-all co-ordination of WMO, and requested the Executive Director of UNEP to develop a Plan of Action for consideration at the eighth session of the Governing Council. Agreement was reached between WMO and UNEP, that UNEP would assume responsibility for the climate impact studies component of the World Climate Programme. The WCIP will be a significant element of the Environmental Assessment Programme of UNEP.

2. Objectives of the World Climate Impact Studies Programme

2.1 In a rational allocation of resources between work relating to climate and other efforts towards improving the well-being of society, reliable estimates of the socio-economic impacts of climatic changes and variability are of primary importance. A proper analysis must establish both the magnitude and distribution of the benefits and the costs of climatic impact. Such an analysis is not an easy task. While some impacts are direct and obvious, others are less so; secondary or indirect impacts may sometimes produce larger effects than primary ones. A full assessment of climatic impact must trace its consequences well into the economic and social fabric of society and examine the whole complexity of linkages and feedbacks in climatic impacts on the biosphere and on human activities. In this connexion, analyses of sensitivity of climate-society interactions are among the most important tasks to be undertaken.

2.2 The ultimate objective of the Climate Impact Studies Programme within the World Climate Programme will be to introduce climatic considerations into the formulation of rational policy alternatives. In areas of the world characterized by different natural environmental conditions, social structures or economic systems, and differing levels of development, there can be different interactions and responses to climatic variability. The basic studies should aim at an integration of climatic, ecological and socio-economic factors entering into complex problems of vital importance for society, such as availability of water, food and energy.

2.3 Specifically, the Programme should strive for:

(a) Improvement of our knowledge of the impact of climatic variability and change in terms of the specific primary responses of natural and human systems (such as agriculture, water resources, energy, ocean resources and fisheries, transportation, human health, land use, ecology and environment;

(b) Development of our knowledge and awareness of the interactive relations between climatic variability and change and human socio-economic activities;

(c) Improvement of the assessment methodology so as to deepen the understanding and improve the simulation of the interactions among climatic, environmental and socio-economic factors;

(d) Determining the characteristics of human societies at different levels of development and in different natural environments which make them either especially vulnerable, or specially resilient, to climatic variability and change and which also permit them to take advantage of the opportunities posed by such changes;

(e) Application of this new knowledge or techniques to practical problems of concern to developing countries or which are related to a common need of all mankind.

2.4 Over-all, the WCIP is envisaged to run in phases, the first of which is the four year period 1980-1983. This period corresponds to the timing of the present financial commitments made by Governments to the World Climate Programme. Considering the magnitude of the problem of accurately assessing the impact of climatic variation and change and the importance of the problem for all nations, this first phase will not dispose of all the work that requires to be done. Further phases of the WCIP beyond the first should therefore be envisaged. The results of the first phase will determine the nature and the magnitude of the effort required in these further phases.

3. Programme areas of the World Climate Impact Studies Programme

3.1 In the first phase of the WCIP, priority should be given to the following programme areas:

I. Reduction of the vulnerability of food systems to climate;

II. Anticipation of impacts of man-induced climatic change;

III. Improvement in the science of climate impact studies;

IV. Identification of climate-sensitive sectors of human activity.

Each of these programme areas is discussed separately below and individual cost estimates for them included in the following section.

3.2 Programme area I: Reduction of the vulnerability of food systems to climate

3.2.1 To be able to eat adequately each day throughout all seasons and years has always been recognized as one of the most fundamental human needs. This need to food is imperilled whenever a climatic shock cannot be absorbed by the society affected. The capacity to withstand such shocks depends on the level of all types of resources of each individual, social group and society and these in turn depend on local, national and international socio-economic structures.

3.2.2 It is in this perspective that the United Nations Research Institute for Social Development (UNRISD) has taken as one of its major programmes a study of food systems and food security in the modern world entitled "Food Systems and Society". This research includes both case studies in countries where malnutrition is still endemic for a large sector of the population and investigations of several themes and issues at the international level. Emphasis is put on the structure and functioning of food systems and sub-systems and their interactions with the broader social systems of which they form a part. Special attention is given to the analysis of food systems in periods of crisis, such as famine, which reveal more clearly than do "normal" periods the structural relationships of society and their inherent vulnerability and resilience.

3.2.3 This research programme is well developed in Eastern India and Mexico and extensions are proposed for Bangladesh and Nepal. In Africa, research on food systems and climate is underway or proposed in Botswana, Ethiopia, Tanzania and Upper Volta. In Brazil, a major study of climate variation and prediction is underway in the North-East drought-prone region. There is an opportunity in the WCIP to enlarge these activities so as to include the climate impact dimension. The United Nations Research Institute for Social Development (UNRISD) should act as the responsible agency for this element of the plan in view of their large commitments to studies and their strong working relationship with the appropriate research institutes in the countries concerned. The effort in the first year would concentrate on the projects in India and Mexico which are already underway, with the extension to the other areas phased over the four years.

3.2.4 The programme of UNRISD and other national activities provide an opportunity to explore in depth ways of increasing the resilience of food systems under the impact of climate variability and change. Such knowledge would enable governments, and particularly their planning authorities to make more realistic forecasts of future conditions and to make appropriate changes in the allocation of resources so as to avoid or mitigate the economic and social damage which might otherwise arise. Decisions on priorities in agricultural research, production effort, development of water resources, marketing strategies, and storage and transport policies would all benefit from such additional information.

3.3 Programme area II:
Anticipation of impacts of man-induced climatic change

3.3.1 There is now evidence that mankind may be inducing changes in the earth's climate through introduction of carbon dioxide, fluorocarbons, and particulates and through agricultural and forestry practices. As agreed by the WMO Congress, "the impacts that may arise specifically from the accumulation of carbon dioxide in the atmosphere deserve most urgent attention of the world community of nations" (WMO Publication 540, p.31). Projections of carbon dioxide (CO_2) releases through the burning

of fossil fuels suggest that atmospheric CO_2 concentrations may continue to increase rapidly and may reach twice present levels by the middle of the next century. Many scientists agree that potentially irreversible changes in the magnitude and distribution of temperature and precipitation could result. Such climatic changes could in turn have significant worldwide impacts on human habitats, economic activity, energy usage and availability, and water and food resources - - impacts that could be either beneficial or detrimental for different regions and groups at different times. These impacts, and their distribution in time and space, need to be weighed against the benefits of fossil fuel use and other human activities which may affect climate.

3.3.2 The WCIP should encourage international study of the impacts of climate change induced by releases of carbon dioxide. It should co-ordinate national programmes to analyze such impacts in order to reduce areas of omission and overlap. It should initiate an international assessment of these impacts by some international agency. The International Institute for Applied Systems Analysis could be a suitable lead agency for such a study because of its previous work on the CO_2 climate problem, its concern with global human problems, and its unique membership.

3.3.3 An important but hitherto neglected aspect of man-induced climate changes is the potential response of society to such a global environmental change. The WCIP should undertake examination of this topic through a suitable case study such as the worldwide response to the probable depletion of the ozone layer due to emissions of fluorocarbons. A World Plan of Action on the Ozone Layer has been approved within UNEP, and is being implemented, which will initiate an international epidemiological study of skin cancer, a co-ordinated international programme on the effects of ultraviolet (UV-B) radiation on plants and ecosystems, and a study of some economic aspects of corrective or alternative actions. Examination of such present and past activities would provide a well-documented case of the problems society may face in responding to newly developed information on potential man-induced climate changes and their impacts and in organizing possible future actions to prevent or ameliorate them.

3.3.4 The continuing goal of both the studies discussed above should be to provide increasingly credible and useful guidance to the many different activities which may be affected. The CO_2 project should yield information that can aid policy officials at national and international levels in considering alternative strategies for energy production, use and allocation under conditions of potential climate changes. The results of both projects would give warning of possible tensions which might arise among nations resulting from differential climatic impacts such as shifts in water resources, agricultural productivity and similar factors. Finally, they should suggest types of international action which might be taken to forestall or ameliorate climate changes and their impacts, whether caused by increasing atmospheric CO_2, by other human activities, or even due to natural variations.

3.4 Programme area III:
Improvement in the science of climate impact studies

3.4.1 The World Climate Impact Studies Programme (WCIP) is an ambitious attempt to marshall and apply to important phenomena related to human wellbeing scientific knowledge across the spectrum of physical, biological and social sciences. As such, it transcends the limits of disciplinary expertise and involves the application of existing scientific methods to complex problems and the development of new concepts and methodologies. Thus, an authoritative review of the methodology should take place early in the development of the WCIP.

3.4.2 The Scientific Committee on Problems of the Environment (SCOPE) of the International Council of Scientific Unions (ICSU) has a demonstrated ability to organize international and interdisciplinary appraisals of major questions related to the environment, to provide authoritative reviews of such efforts and to publish and distribute them widely. Current SCOPE efforts on biogeochemical cycles, particularly the carbon cycle, bear directly on the climate programme. SCOPE's methodological reviews on ecotoxicology, simulation modelling, environmental impact assessment, and risk assessment are standard references in their fields. And SCOPE, while primarily based upon the scientific disciplines of the physical and biological sciences has shown an ability to involve and attract significant contributions from social and behavioral scientists.

3.4.3 SCOPE has offered to undertake a methodological review in which a major facet of the proposed review process would be to broaden the pool of international talent devoted to climate impact assessment and to encourage closer collaboration between natural and social scientists. The methodological review is seen to be a three year effort involving both workshops and individual scientific papers and culminating in the publication of a definitive SCOPE volume. Such a volume will serve as a guide not only to the ongoing WCIP studies, but to the many national impact studies to be undertaken around the world.

3.5 Programme area IV:
Identification of climate - sensitive sectors of human activity

3.5.1 The impact of climate changes across the various sectors of human activity and some sectors are particularly sensitive to climate variability. Early identification of these critical sectors and their relative importance will assist in planning the distribution of effort between sectors and geographical regions. The critical sensitivity of agricultural production, climatic variation and change needs no further study and accordingly the vulnerability of food systems has been designated as one of the four programme areas in the first phase.

3.5.2 Sectors of human activity other than agricultural production need further study, although some impacts can be clearly recognized. For example, fisheries are major income and food source in many countries. Particular types of fishery, such as the anchovy fishery of the Pacific, are highly vulnerable to climatic fluctuations, but in other cases the effect of climate is more uncertain. Similarly, hydroelectric power plays a major role in the energy strategy of many developing nations and is increasingly valued in the complex energy strategies of industrialized ones. Both the supply and the demand for hydroelectric power may be affected by climatic factors but each may be affected in different ways in different types of society. Fisheries and hydropower represent only two examples of the many sectoral problems in which an understanding of climatic impact will have wide application in large number of countries.

3.5.2 Identifying in detail the most sensitive sectors should be undertaken immediately in the WCIP. The task appears suitable for a single consultant to address over the space of a year. Once the relative sensitivity of different sectors is determined, sectoral studies themselves will begin addressing the impacts of climate variability on international and broad regional scales.

3.5.3 It is important that selected sectoral studies in this way should be integrated with the existing programmes as the United Nations Specialized Agencies and with other existing national and international programmes. Accordingly, the United Nations Specialized Agencies should be consulted in regard to the sensitivity study and in the selection of sectors for further study. It is probably that the sectoral studies chosen would be funded partly by direct subvention from the WCIP, partly from the budgets of United Nations Specialized Agencies and partly by national contributions. It is envisaged that it should be possible to initiate one sectoral study before the end of 1980, two studies in 1981, and a fourth study in 1982. It is anticipated that each sectoral study should take about two years.

3.5.4 The completed sectoral studies would provide concrete information on the degree and extent of climatic impact and would serve as a basis for improved national planning in each of the sectors in which studies are undertaken. In each sector, national decisions in relation to production strategy, scheduling of economic activity and plans for emergency preparedness and response could consequently be made on a more informed basis, thus leading to a better use of scarce national resources.

4. Estimated Budget for the World Climate Impact Studies Programme

4.1 Budgetary requirements for the planning and implementation of the World Climate Impact Programme for the 4-year period 1980-1983 have been estimated. This period is regarded as the first phase of a longer range programme. The time period of four years has been selected because it conforms to the financial period for which governments at the World Meteorological Congress made financial and programmatic commitments for the World Climate Programme. The total cost of the first phase of World Climate Impact Studies Programme (WCIP), summarized in Table 1, is estimated to be about $22 million. Of this, it is estimated that UNEP will contribute $4.2 million over the four year period i.e. just under 20 per cent of the total.

Table 1

	1980		1981		1982		1983		Total	UNEP Total
	Total	UNEP	Total	UNEP	Total	UNEP	Total	UNEP		
I.	2,500	200	2,700	600	3,000	700	2,400	500	10,600	2,000
II.	1,200	100	2,500	250	2,300	150	2,200	150	8,200	650
III.	100	25	250	75	200	50	100		650	150
IV.	100	75	350	200	300	150	150	75	900	500
V.	225	125	450	250	450	250	450	250	1,575	875
Total	4,125	525	6,250	1,375	6,250	1,300	5,300	975	21,925	4,175

All figures in thousands of US dollars

The budget is presented in terms of the four major programme areas which the group recommends for the first phase of the WCIP and which were described in the preceding section. While not budgetted as part of the major programme areas of the WCIP, there will be a need for funding a Scientific/Advisory committee and some augmentation of the UNEP secretariat for the planning and co-ordination of the programme. The funds required for these purposes are indicated in Section V of the budget estimate.

4.2 Table 2 below seeks to show for each of these major programme areas the contributions that might be made by the United Nations Environment Programme, by other United Nations agencies, by other International organizations, and by national governments for each of the four years of the first phase. These numbers do not represent commitments from any agency

or government for the funding represented in the budget estimates. The estimates represent only expectations of the group of experts based upon their knowledge of ongoing programmes. In many cases the agencies and governments have not been contacted and the figures in parentheses in Table 2 require to be verified.

4.3 The funds represented in these budgetary estimates represent only those required for direct support of the WCIP. These are extensive indirect contributions to the WCIP from many other programmes which have not been estimated. The World Climate Programme is visualized as an integrated system of its four components with many indirect connections and the funds required to carry out other parts of the World Climate Programme will contribute indirectly to the successful implementation of the WCIP. These funds will be provided by the WMO, the International Council of Scientific Unions and national governments and will support the planning and implementation of the other three components of the World Climate Programme. For example, the World Climate Data Programme as well as the World Climate Application Programme will develop data and other information which will be of use in the WCIP. Similarly, the WCIP will draw heavily upon many of the assessment programmes of UNEP. Programmes of other agencies such as FAO, UNESCO and UNRISD will also provide inputs to the WCIP.

Table 2

Project Title and Contributing Body	1980	1981	1982	1983	Total
1. Reduction of the vulnerability of food systems to climate					
a) Mexico Project					
UNEP	100	200	100	100	500
UNRISD	100	200	300	300	900
National	(1,000)	(200)	(200)	(200)	(1,600)
Sub-total	(1,200)	(600)	(600)	(600)	(3,000)
b) India, Bangladesh, Nepal Project					
UNEP	100	200	200	100	600
UNRISD	600	700	700	400	2,400
National	( )	( )	( )	( )	( )
Sub-total	(700)	(900)	(900)	(500)	(3,000)
c) Africa					
UNEP	0	100	300	200	600
UNRISD	50	300	400	350	1,100
National	( )	( )	( )	( )	( )
Sub-total	(50)	(400)	(700)	(550)	(1,700)
d) Brazil					
UNEP	0	100	100	100	300
UNRISD	50	200	200	150	600
National	(500)	(500)	(500)	(500)	(2,000)
Sub-total	(550)	(800)	(800)	(750)	(2,900)
Total for Programme area 1	(2,500)	(2,700)	(3,000)	(2,400)	(10,600)

( ) figures in parentheses to be confirmed

All figures are in thousands of US dollars and are provisional estimates.

Project Title and Contributing Agency	1980	1981	1982	1983	Total
II. Anticipation of impacts of man-made climatic change					
a) CO_2 Climate Impacts Project *					
UNEP	50	200	150	100	500
IIASA	50	200	150	100	500
National	(1,000)	(2,000)	(2,000)	(2,000)	(7,000)
Sub-total	(1,100)	(2,400)	(2,300)	(2,200)	(8,000)
b) Ozone Case Study					
UNEP	50	50	-	-	100
ECE	(50)	(50)	-	-	(100)
Sub-total	(100)	(100)			(200)
Total for Programme area II	(1,200)	(2,500)	(2,300)	(2,200)	(8,200)
III. Improvement in the science of climate impact studies					
UNEP	25	75	50	-	150
SCOPE	25	75	50	-	150
National	(50)	(100)	(100)	(100)	(350)
Sub-total	(100)	(250)	(200)	(100)	(650)

( ) figures in parentheses to be confirmed

* All figures are in thousands of US dollars and are provisional estimates.

Project Title and Contributing Agency	1980	1981	1982	1983	Total
IV. Identification of climate - sensitive sectors of human activity					
a) Sensitivity Studies					
UNEP	50	50	-	-	100
	50	50	-	-	100
b) Sectoral Studies					
UNEP	25	150	150	75	400
National	(-)	(-)	(-)	(-)	(-)
United Nations Agencies	(25)	(150)	(150)	(75)	(400)
Sub-total	(50)	(300)	(300)	(150)	(800)
Total for Programme Area IV	(100)	(350)	(300)	(150)	(900)
V. Scientific/Advisory Committee and Secretariat					
a) Committee					
UNEP	50	100	100	100	350
b) Secretariat					
UNEP	75	150	150	150	525
* National	(100)	(200)	(200)	(200)	(700)
Total	(225)	(450)	(450)	(450)	(1,575)
TOTALS	4,125	6,250	6,250	5,300	21,923

* Seconded personnel

All figures are in thousands of US dollars and are provisional estimates.

Annex II

RECOMMENDATIONS OF THE EXPERT MEETING ON TROPICAL FORESTS

The Meeting of Experts,

Recognizing the right of States to exercise permanent sovereignty over natural resources in their territories and their primary responsibility for environmental protection therein,

Recognizing further that the primary responsibility for use of tropical forest resources to ensure the optimum flow of goods and services now and in the future rests on Governments, assisted when appropriate by international and non-governmental organizations and technical and scientific and economic and co-operation agencies,

Emphasizing the desirability, in the use of tropical forest resources, of avoiding extreme positions whereby resources are either frozen, paralysing development, or exploited exhaustively without regard for forms of management designed to sustain production and maintain their renewable character,

Has agreed on the following recommendations:

I. Raising of awareness

1. Since many of the major problems faced by the tropical forest ecosystem result from the lack of awareness of individuals and organizations throughout the community of nations, programmes to raise awareness of the importance of rational utilization and conservation of the ecosystem should be regarded as a matter of utmost importance. In this respect, a two-level programme of activities should be undertaken, directed at the national and international, including regional, levels.

2. At the national level, specific programmes should be developed to create awareness within the following groups:

(a) Policy-makers

Policy-makers play a critical role in forestry, and land-use and other related decisions and concerted efforts need to be made by national authorities to win their support through such activities as:

(i) Investigation, demonstration and dissemination in convincing language of the short-term and long-term social and economic benefits to be derived from harmonious rural development which takes ecological criteria into account; and

(ii) Compilation and dissemination of successful cases of rational management of the tropical forest ecosystem.

(b) Government agencies

Dialogue should be promoted among all those responsible for development in the humid tropics, and particularly for the development of agriculture, stockraising, wildlife, fisheries and forestry, together with planners, economists, sociologists and ecologists, as well as those who implement the infrastructure of development, in order to reach a consensus on the most desirable development alternatives. In view of the critical importance of humid tropical forests for the future of their nations, the Governments of the countries in which they occur should approach their development on the basis of interdisciplinary efforts at the highest level to produce integral and integrated plans and strategies which, in addition to reconciling the alternatives, are capable of co-ordinating and taking due advantage of international technical and economic co-operation programmes.

(c) Scientists

Scientists should make every effort to reconcile the excessively divergent views on social and economic development potential of humid tropical forests, dealing with particular urgency with the question of the suitability of their soils for agriculture and stockraising.

(d) The public

Public awareness should be increased and oriented to emphasize the need for rational development and conservation through an array of actions that could include the mass media and educational programmes at all levels, as well as such occasions as World Forestry Day.

3. At the international level:

(a) The various United Nations agencies concerned with the development of the humid tropics should improve their co-ordination mechanisms so as to render more effective service to countries. Apart from the urgent need for better definition of the responsibilities of each agency, it is also desirable that their mechanisms for disseminating results to the institutions directly concerned should be rationalized;

(b) International agencies should enhance awareness among regional bodies and national Governments by introducing discussions on tropical forestry and related subjects into the full range of international meetings, including those at the highest level;

(c) International agencies should increase support of activities at the national and regional levels to enhance public awareness by stimulating new programmes and participating more actively in national dissemination and extension programmes as identified in recommendation 2 (a) (i) above;

(d) International agencies should also increase their support for national programmes through increased funding and the provision of relevant documentation and information materials.

II. Appraisal of problems and opportunities

A. Surveys and assessment

1. Surveys designed to remedy the relative lack of up-to-date information on the resources of tropical forest ecosystems are best conducted at the national level. National inventory and monitoring systems should have clearly defined objectives that are also relevant to national development strategies.

2. Such surveys should whenever possible use the most appropriate data acquisition methods, such as satellite, airbone and ground based data collection systems. They should provide appropriate information to allow the periodic synthesis of global and regional information assessments through international machinery.

3. Particular attention should be paid to the proper collection of adequate ground truth relating to data of both ecological and economic importance. In this respect biosphere reserves and similar areas will be of particular importance.

4. It would be useful to have periodic monitoring surveys in order to record change, and to determine rates of change of selected ecosystem attributes, such data being used subsequently to ascertain correlation and causative relationships.

5. In view of the recognized need for rational land-use planning, national inventory and monitoring surveys should seek to ensure that information collected is also relevant to land capability and land use determinations.

6. Information derived from regular periodic inventory and monitoring surveys should be analysed as quickly as possible and presented in forms that are suitable for use by both planners and managers.

7. International organizations should assist Governments in carrying out such inventory and monitoring activities by providing supplementary funds, equipment and manpower, either singly or in combination, as appropriate. They should also attempt to co-ordinate such surveys on a global basis (e.g. within Earthwatch) to ensure adequate compatibility and comparability of data.

B. Research

8. In every research programme, there should be a balance between new knowledge and dissemination of that knowledge, in order to reconcile fundamental and applied research. All research programmes should contain a balanced analysis of ecological, sociological and economic aspects, so as to reinforce the balance between science, education and application.

9. Official connexions should be established or strengthened between research institutes and all research users, from national and regional

forestry and other organizations to individual farmers, and these connexions should be two-way so as to form a feedback mechanism. Connexions should also be established or strengthened between national and international governmental and non-governmental organizations and also with the private sector.

10. Research results from areas outside the strict field of tropical forests, particularly concerning soils and agriculture should be used to further forestry research.

11. Particular importance should be attached to problems of integrated and applied ecological research aiming at a better understanding of the functioning of tropical forest ecosystems so that the fullest benefit can be derived from them.

12. In the development of research on tropical forests, particular importance should be attached to the following fields, although because of their interdependence and of regional differences, no priorities can be established among them, and there are indeed many other fields of equal importance:

(a) Tropical forests and abiotic factors: climate-water-soil-forest relationships (e.g. microclimate, drought, erosion, world climate regulation, soil fertility, nutrient cycling, etc);

(b) Tropical forests and biotic factors: ecosystem-niche-species relationships (e.g. primary productivity, genetic build-up, taxonomy, antecology, synecology, of flora and fauna, etc);

(c) Development of systems for forest management, inventory, assessment and monitoring, gene preservation, evaluation and utilization, cropping and processing, agro-forestry, silviculture, ecosystem analysis and design of artificial ecosystems, bioenergy production, multiple use, and conservation of tropical forest ecosystems, including their wildlife.

(d) Harvesting and wood utilization: efficient logging, transport, wood preservation, storage, processing and uses of end products, and utilization of lesser-known species;

(e) Fish and wildlife utilization and management: impact of traditional uses and management of fish and wildlife in terms of economic and social benefits and of the protection of endangered species.

13. Particular attention should be given to small-scale tradition based pilot projects on small farming, silvicultural and agroforestry methods to stop unplanned deforestation at the farmers' level.

14. The role of the international agencies, in close collaboration with each other, should remain one of balancing and strengthening "basic", "fundamental" and "development" research and promoting positive feedback between all of them.

15. Priority should be given to the second phase of network projects on tropical forests, aiming at developing research sites for training experts and demonstrating and using the results of applied pilot projects in better land management and environmental education, and to in situ ecological training.

16. All Governments should be energetically assisted if they wish to undertake new pilot projects for integrated and applied research in forest ecosystems, and on the relations between these ecosystems and other components of the environment, such as agricultural lands, grasslands and fresh-water ecosystems.

17. All existing international structures for research on tropical forests should be strengthened in an efficient and balanced way, so as to enable them to evolve towards closer co-operation at the regional and international levels.

C. Information collection and dissemination

18. The international community as a whole should make a considerable effort to improve tropical forest utilization, conservation and protection by increased application of existing research results, technologies and methodologies, and by ensuring that information on what is available, with or without adaptation, reaches the people who have the problem or need. To this end the flow of information, particularly between regions sharing similar socio-economic problems and ecological conditions, but also between all nations that have information of mutual interest, needs to be diversified and reinforced.

19. The concept of regional information, documentation and communication centres should be reinforced and supported, with formal links to existing data bases, information systems and libraries to ensure maximum service capability.

20. Modern abstracting, archiving, storage, retrieval and dissemination systems for data and information should be encouraged and supported, as should an efficient system for dissemination of information to small-scale users, particularly through audio-visual means.

21. Natural resources departments should establish or strengthen the formal institutional capability to develop, store and disseminate information internally, and also externally in co-operation with other appropriate organizations.

22. Up-to-date regional, national and local handbooks, atlasses and manuals on fauna and flora and their characteristic and management, should be prepared.

23. Increased support should be provided for the translation of appropriate documents into major international languages, and abstracts should be provided in an international language for documents that are not otherwise translated.

24. A service should be established to exploit all existing dormant files on research in all appropriate international agencies, and the information in these files should be processed in the same way as that which originates directly from research.

25. Users with limited resources should be supplied with documents free of charge at cost, or at affordable prices, where necessary through subsidy schemes.

26. All data should be published at least at two levels of sophistication, using local languages where appropriate, and if appropriate at an intermediate level (level (b)) below:

(a) Simple pamphlets for small-scale users (e.g. farmers);

(b) Guidelines for middle-level technical personnel;

(c) Scientific overview documents for world-wide distribution;

(d) Appropriate data should be adequately documented by audio-visual means.

27. Seminars should be organized at national and regional levels to convey to decision makers such as land-use planners and policy-makers the importance, roles, characteristics, values and benefits of tropical forests.

28. Workshops, training courses, newsletters and other forms of communication should be organized at local, national and regional levels to inform technicians and resource managers of the findings of integrated tropical forest research.

III. Management of resources and environment

A. Land-use planning

1. Governments and international bodies should develop and adopt policies that foster sound management of tropical forests, taking account of all the benefits and services they provide. Such policies should be co-ordinated with other relevant policies, such as those for rural development and agriculture.

2. International organizations should promote research of general applicability on the quantification of the indirect values of forests. In particular, they should promote the application of a welfare economics approach to land-use and development planning at the national level. They should also develop suitable methods for, and co-ordinate, data gathering and data searching.

3. International organizations should also, at the request of national Governments, accelerate assistance in the collection and interpretation of land capability data, which are crucial to the development of the forest and related resources of the tropics.

4. Governments should utilize such data promptly, as they become available, to develop rational land use plans, giving special attention to ecological problems such as some compaction, erosion, and maintenance of hydrological cycles, and the value of preserving diverse mosaic patterns of land use, and the capacity of the ecosystem to recover from conversion. Specific actions involving significant forest clearing or other significant modifications of forest ecosystems should be preceded by assessments of the likely environmental impacts, including effects on other resources such as water and wildlife.

5. Since in many tropical soils the level of plant nutrients is extremely low and limits growth, the magnitude, causes, and control of the losses of these nutrients by extraction and leaching should be assigned high priority in research and in the selection of development and crop alternatives.

B. Protected areas (conservation of biological resources by protection of sites, ecosystems and species)

6. In identifying forest areas to be preserved, Governments should include those which exhibit high diversity, are representative of both primary forests and successional stages and contain multiple sources of germplasm, including that of important crop plants.

7. Each nation in the tropical forest biome should undertake systematic surveys of all of its natural resources to ascertain those areas that should or could be reserved to provide representation of the full variety of ecosystems and species. All levels of protection should be considered, from national parks and equivalent reserves to biosphere reserves and areas of national concern, as well as critical plant and animal habitats, and areas containing concentrations of endemic species. Where possible, continuity of habitat and maintenance of mosaics of ecosystem components should be preserved, consistent with plant and animal dispersal and disposition.

8. International organizations should provide assistance to Governments in carrying out research of use in the selection, management and efficient safeguarding of preserved forests, and should assist with expertise for continuing studies of the composition, evolution, and dynamics of the ecosystems within them.

9. In view of the efforts of international organizations to identify, in co-operation with Governments, tropical ecosystems and species in special need of preservation, and measures required to this end should be endorsed and strengthened.

C. Multiple use approaches, agroforestry

10. Governments, with assistance from specialized organizations, should experiment with pilot programmes of agroforestry, located on deforested lands, in an effort to demonstrate the productivity and stability of such systems.

11. In view of the growing human pressures on the lands of the humid tropics and the imperative need to integrate to best advantage multiple uses of tropical forests, international organizations should assist Governments in recognizing multiple-use opportunities and planning their integration. Such efforts should involve close co-ordination of disciplines, including agronomy as well as forestry.

12. International organizations should co-operate with Governments in accelerating the systematic collection of knowledge of crops and cropping, including presently non-cultivated food plants, possessed by indigenous peoples, interpret it and arrange its presentation as a foundation for subsequent comparative research.

13. International organizations and Governments should work together in assessing the environmental impacts of cropping practices, crop rotations and sequences, and the intensity of harvesting, with particular reference to nutrient effects and sustainable yields.

D. Plantation, community, and industrial forestry

14. In view of the potentially highly productive capacity of forest plantations and their suitability for certain humid tropical forest lands already deforested, of the imperative need to use all available agricultural productivity potential for food crops, and of the prospect through forest plantations of reducing the human pressure on remaining tropical forests and increasing social stability and employment, Governments should encourage the establishment and management of forest plantations on deforested areas where technical and economical prospects favour them. In setting goals for such programmes, the economies of scale and the prospective need for wood products for local use and for exports should serve as guides.

15. Governments of both developed and developing countries, within and outside the tropical forest region, should study, independently and in unison, legislative means to increase concern for continuing forest productivity while maintaining environmental values during exploitation of tropical forests for export.

16. International organizations should assist Governments in the development of permanent forest research institutions and the conduct of investigations directed toward the selection of tree species, soil maintenance, relative merits of monocultures and polycultures, the potential role of fertilizers, nitrogen fixing trees, crop mixtures, appropriate labour and land intensity, reduced costs of production, reduced ecological impacts and waste in harvesting, and prospective processing of products at the rural community level.

17. The present efforts of international organizations to study the status and potentials of community forestry in the tropics should be supported. Governments should be encouraged, possibly with the collaboration of international organizations, to formulate and implement community forestry programmes.

E. Naturally regenerated forests

18. Since secondary forests are a growing component of the forest cover of the tropics, and since the foreseeable intensification of the demand for diverse forest products makes it probable that trees heretofore unmarketable may soon find a use, Governments should undertake inventories of their secondary forests to determine their location and extent and to determine whether their trees, including the understorey, are adequate in number and quality to constitute, ultimately, a fully stocked source for a useful harvest.

19. International organizations should assist Governments in investigating the utility of tree species heretofore little used and the cost-effectiveness, socially as well as economically, of the tending of secondary forests for a variety of wood and other crops. In addition, practices should all be assessed as to their significance in nutrient conservation.

F. Wood energy and other alternatives

20. Governments should incorporate into their land-use planning recognition of the desirability of juntaposing areas of firewood production with the rural communities dependent thereon.

21. National programmes for agro-forestry should ensure that, in addition to a diversity of products from the land, production of firewood adequate for the participants is ensured. National afforestation programmes should, in addition to diversity of products from the land, ensure adequate production and efficient marketing of firewood and charcoal.

22. As the efficiency of agriculture is a factor in protecting remaining tropical forests from destructive shifting cultivation, Governments should accelerate research efforts in support of intensified food production on those lands most suited to such use, giving special emphasis to perennial crops because of their stability, protective value and economic advantages.

23. Because of the availability of savannah and already deforested lands, Governments should discourage continued deforestation for forage production, in view of the waste of wood that is entailed.

24. International organizations should assist national Governments in assessing the local feasibility of the use of forest biomass as an energy alternative, and the value of forests in protecting hydropower sources. A search should be undertaken for tree species of outstanding value as sources of energy, both by combustion and by conversion.

G. Alternatives to shifting cultivation

25. Governments should explore methods of encouraging the implementation of alternatives to shifting cultivation, using technical assistance and credit incentives, so as to gain from the subsequent forest and agricultural production.

26. International organizations should provide technical expertise to assist Governments in searching for alternatives to shifting cultivation, which is destroying an ever greater area of tropical forest and leaving lands in a non-productive state. These alternatives should provide stability and promise sustained yields. Ideally, they should require neither new skills nor migration, and they should be economically and socially viable.

27. International organizations should assist national Governments to conduct research on short-term palliatives to conventional shifting cultivation that may lead to lengthened periods of cultivation, shorter fallow periods, and more productive or labour-intensive crops.

IV. Supporting measures

A. Education, training and extension

1. Rational management of tropical forest resources is dependent among other things on the existence of citizens who understand the values derived from these resources, policy and decision-makers at all levels who are informed about the impact of goods and services from the tropical forests on human welfare and the ecological constraints on the delivery of these goods and services by the ecosystems, and an adequate number of technically trained and professionally educated personnel to manage these services within the framework of national policies. The spectrum of training and educational levels must therefore include:

(a) Environmental education, with specific attention to the values of tropical forests, for people of all ages;

(b) Continuing education about the values of forests and the functioning and management of forest systems for all segments of society, with particular attention to those responsible for decisions which affect forest and wildlife resources;

(c) Technician training for management support personnel - for example, forest guards, forest technicians, wood processing technicians, wildlife and parks personnel and others who perform protection and management tasks and prevent abuse and wastes. Training at this level will substantially assist in reducing land and timber damage in forests operations and waste in harvesting and processing of forest and wildlife resources;

(d) Education and training to provide resources to professionals who have a sound field-based understanding of tropical forest systems, agricultural and other land uses associated with tropical forests and of the socio-economic dimensions of tropical forest management, as well as in-depth specialized knowledge to implement management plans for all types of forest use.

2. In order to achieve the educational needs in all countries with tropical forests, each country should:

(a) Develop a programme for citizen education appropriate to its needs;

(b) Analyse its requirements for training of technical and professional personnel to place its tropical forests on a sound management basis;

(c) Establish time goals for full implementation of its citizens education programmes and for attaining the required level of technically and professionally educated personnel;

(d) Assess its internal capacity to deliver the needed level of education and training in all categories and develop plans to augment that capability, as needed, in order to achieve its educational and training goals. These may include: establishing technical training programmes, developing professional educational programmes, and instituting co-operation arrangements with other nations or sending people to other countries, as appropriate.

3. The United Nations agencies and international Governmental and non-governmental financial co-operation agencies should:

(a) Consider the establishment of regional centres to meet educational and training needs that cannot be accommodated in individual countries. Such centres may meet interim needs for education and training at any level until in-country capability can be developed, or for some groups of countries, they may be the most efficient mechanism on a permanent basis;

(b) Establish co-operative professional educational and training programmes between institutions in developed and developing countries, devised to use the strengths of the developed country institutions on such universally applicable areas on basic services, analytical studies or for studies relying on specialized facilities, and the institutions in the developing country for site-specific studies on tropical ecology and other subjects;

(c) Establish demonstration centres for sound tropical forest management in areas where internationally supported projects are located;

(d) Catalyse and assist in developing educational progress in countries as needed.

B. Institutions

4. The sound management of the tropical forest resource is directly dependent on the strength, functioning, and interactions of governmental institutions within each country. It may be substantially strengthened by a variety of external and international institutions. In order to ensure the appropriate level and institutional support, each country should examine the internal governmental framework to ensure that:

(a) The institution responsible for the tropical forest resource possesses the stature and influence within the Government appropriate to the importance of this resource;

(b) The jurisdictions of governmental institutions impinging in any way on the forest resource are clearly delineated and are co-ordinated to assure communication and efficiency of operation;

(c) Lines of authority are clear and responsibility is delegated to the level under whose immediate jurisdiction the activity will occur;

(d) There is attention to and full co-ordination between agriculture, forestry, fisheries, wildlife, water, and other sectors associated with tropical forests;

(e) Information about sound practices related to tropical forests is transferred from governmental and educational institutions to farmers, woods operators, and other practitioners with an impact on the forests.

5. International organizations should, together with Governments, professional societies and other relevant institutions as appropriate, ensure co-ordination of activities and provide for communication and information exchange between countries processing tropical forests, with a view to the introduction of improved forest management practices. They should also ensure that institutions responsible for development assistance have an appropriate level of tropical forestry expertise within the organization, and should develop assistance programmes that respond to needs in relation to tropical forests as perceived by the countries in which the forests are found.

C. Trade aspects

6. There is a need to maintain and increase the economic benefits derived by exporting countries from the sale of tropical timber and timber products, while ensuring that such trade is conducted on terms that are equitable for the consuming countries as well as remunerative and just to the producing countries, and at the same time implementing measures to ensure the long-term sustained availability of this resource. The United Nations and other national and international bodies with appropriate mandates in this area should therefore pursue and expedite, taking into account the environmental implications of such exploitation, their work designed to maximize the revenue accruing to developing countries from any given level of timber exports, expand in-country processing of timber, and promote commercial acceptability of little-used species.

D. Programme funding

7. Although studies within the United Nations system on financial requirements for tropical forest management programmes are not yet completed, it is clear that an expanded international effort to improve the management of tropical forests, as set forth in these recommendations, will require not only better

use of existing resources, but also their supplementation. Governments, international and regional bodies, and private organizations which have not yet done so should therefore take immediate measures to review the nature of their ongoing activities in the tropical forest sector, including budgetary allocations, to determine whether greater efficiency and impact can be achieved through better programme focus and co-ordination, particularly in response to the directions and priorities which emerge from these recommendations. The United Nations and other bodies should carry out similar reviews, particularly to eliminate any overlap or duplication among different programmes.

8. With a view to increasing funding within existing mechanisms, national ministries involved with resource, environmental and forest management should actively seek greater budgetary support for the programmes, basing their justification in part on the growing evidence of the values that are being lost or forfeited by failure to apply sound forest management approaches as reflected by the present recommendations. Likewise the Governments of tropical developing countries should consider assigning higher priority to requests for development aid and technical assistance in the area of tropical forest management.

9. International bodies should expand their financial support in this area to levels commensurate with the growing worldwide concern over the need to accelerate efforts to address tropical forest management needs. Both multilateral and bilateral development agencies should announce their willingness to respond to increased requests by developing tropical countries for financial and technical assistance in this field.

10. In view of the absence of information about current levels of funding in comparison with the funding required to mount the expanded international programme envisaged by the present meeting, the consideration of new international financial mechanisms in this area should await the results of the ongoing UNCTAD-FAO study of this issue, to be considered at the time of the second experts meeting proposed under the recommendations on "Programme initiation and co-ordination" below, together with other studies which may be undertaken covering topics not included in that study, such as funding for management of wildlife and protected areas. Meanwhile, both developed and developing countries should encourage the forest-related private sectors to establish foundations or other appropriate funding mechanisms in tropical countries for forest research and education programmes.

11. In view of the research needs referred to elsewhere in these recommendations, all efforts to maintain and increase the funding of integrated ecological research programmes on tropical forests should receive particular attention.

E. Programme initiation and co-ordination

12. The programme framework and recommendations set forth by the present meeting should be seen as the first step towards a well integrated, comprehensive and co-ordinated international programme of action on tropical

forests. Suggestion should therefore be made for the next steps, beyond consideration of these recommendations by the UNEP Governing Council at its eighth session, with regard to, inter alia, programme priorities, funding mechanisms, and institutional division of responsibility for programme implementation and co-ordination. It is therefore proposed that the Executive Director of UNEP recommend to the UNEP Governing Council at its eighth session that it:

(a) Approve the recommendations presented herewith as an important first step towards the development of an integrated programme on tropical forests, to be further defined and elaborated through the process proposed below;

(b) Request the Executive Director to transmit the international programme to all member Governments, multilateral assistance agencies and other international and regional organizations, including financial institutions and non-governmental organizations and to seek, within six month time frame:

(i) Their comments on the objectives and general framework and components of the integrated programme envisaged in these recommendations;

(ii) A description of their ongoing and planned activities related to each of the programme components, along with funding allocations;

(iii) An indication of what additional programmes they are prepared to implement in support of the new international programme;

(iv) An identification of gaps in the international programme and areas in which additional resource investments by the international community seem to be required.

(c) Agree to convene, following receipt of the responses from Governments and organizations, a second small expert meeting to elaborate the programme further on the basis of the comments and information received, with attention to the funding implications of the activities recommended. The meeting might draw in this connexion on the results of the study being undertaken by UNCTAD and FAO, to establish the current level of international financial assistance to the tropical forest sector and to assess whether additional funding is required, and if so in what amount, as well as other related studies, and on all other information received.

Appendix

GOALS FOR A PROGRAMME OF ACTION RELATING TO TROPICAL FORESTS

On the basis of the report of the Expert Meeting, the Executive Director submits the following goals for consideration by the Governing Council:

(a) Short-term goals (5 years) for achievement 1981-1985

- Policy commitments by all countries and international and regional organizations to adopt and pursue practices and programmes that foster sound, long-term forest resource management;

- Final design and initiation of implementation of an internationally co-ordinated action programme for tropical forests, involving research, monitoring, training and education, information exchange, technical assistance, and management demonstration;

- Doubling or at least increasing by 50 per cent, the current annual rate of reforestation and afforestation worldwide;

- Completion of a comprehensive worldwide analysis of the causes and rates of tropical forest loss, including socio-economic factors, and the magnitude and trends of the impacts;

- Substantial increase in research and development on improved forest management methodologies and technologies, ecosystem dynamics and plant and animal ecology, commercial forestry operations and efficiency, and economic uses of forest products;

- Launching of a major, internationally co-ordinated effort to develop and introduce alternative low-cost energy and food production systems in rural areas;

- Initiation of an international programme to inventory, evaluate, classify, and catalogue unique types of forests, plants, and animals;

- Expansion of national parks, wildlife refuges, ecological and biosphere reserves, and similar protected areas by at least one-third (on a total, worldwide basis), as part of the effort to maintain representative tropical forests and to preserve the greatest possible diversity of plant and animal life.

(b) Medium-term goals (10-12 years) for achievement by 1992

- Achievement of significant reduction in the present rate of forest loss, with any large-scale clearing of land the result of deliberate, enlightened decisions by Governments and local communities;

- Availability, in virtually all countries with tropical forests, of an integrated set of strong policies and laws, national planning priorities, and improved institutions and management capabilities dedicated to sound forest resource management;

- Increased production of wood and wood products to meet expanding consumer demand, provided increasingly from plantation forestry, including village woodlots, and from natural forests managed for multiple use, rather than from the opening up of all remaining virgin forests;

- Expanded application of sound management methods for sustained yield harvesting of plant and animal resources in tropical forest ecosystems;

- Adequate understanding of forest-carbon dioxide-climate relationships on which to assess potential consequences of additional deforestation and reforestation on global climate.

(c) Long-term goals for the year 2000 and beyond

- A stabilized global situation in which a broad mix of tropical forest values exists and is maintained, including commercial forestry plantations, natural areas, and multiple-use forest areas devoted to wood and food production, biomedical products, wildlife, and other values. At this stage, the total worldwide extent of the forests should be relatively static, or expanding, as reforestation and afforestation efforts offset cutting and other losses;

- Adequate knowledge of the biological and soil characteristics, ecosystem dynamics, and land-use effects associated with tropical forest ecosystems on which to base sound tropical forest management in the future;

- Significant success by the international community in providing food, shelter, and energy for poor people, and in slowing population growth and regulating migration and land-use patterns to relieve and control pressures on the forest resource.

Annex III

RECOMMENDATIONS OF THE EXPERT MEETING ON SOILS POLICY

(a) Harmonization activities

1. The experts recognize the very great value of on-going soils work being carried out by the various national, international, bilateral, regional and other organizations. However, in view of the serious threats to the productive capacity of land resources in various parts of the world, the experts consider that the impact and usefulness of this work would be further increased by a greater degree of harmonization and co-ordination, aimed at avoiding duplication and at making more effective use of the resources available. The experts therefore recommend that an increased exchange of information be achieved and that gaps be identified so as to establish priorities for soil related activities.

2. While expressing appreciation to UNEP for its initiative in calling this valuable preliminary meeting on soils policy, the experts request and recommend that further regular meetings with an increased participation and representation be called at least once a year.

3. The experts further recognize the need for a clearing house function to be established for the collection and exchange of information on practical applications of soil research for the development and conservation of land. Such a function should be established at once, and continue for 2-3 years in the first instance. Later on this function might be taken over by some other organization, possibly by the proposed International Board of Soil Resources Management. The experts therefore request UNEP, FAO and UNESCO to take the necessary steps to support these and related activities, in co-operation with appropriate regional institutions.

(b) Soils policy paper and plan of action

4. In recognition of the fact that the soil and land resources of the earth are finite, and that there is competition for the use of land for agriculture, forestry and urban development, the experts emphasize that Governments need to have firm policies for the use and management of their land and soil resources, taking into consideration scientific, technical, legal, cultural, educational and institutional aspects.

5. In agreement with the sentiments expressed by the Governing Council of UNEP, and in the belief that the maintenance and improvement of the productive capacity and usefulness of the land is so basic and so vital for the future of mankind that far more emphasis needs to be given to it than at present, the experts recommend that the organizations of the United Nations system, and especially UNEP, FAO and UNESCO, assume a leadership role by (i) elaborating and adopting an agreed world soils policy, and (ii) working on the methodology

involved in the implementation of the policy at an international level. Such a policy will be supplemented by technical documentation based on the background paper presented at the meeting and could be a catalyst and prompter of further activity at the national level.

6. The experts emphasize that a soils policy encompasses much more than erosion control. It includes making an inventory of and evaluating soil resources, and conserving, managing and improving them with due consideration of the environmental qualities and functions of the soil. It should take cognizance of the fact that:

(a) Available soil resources are limited, and should not be degraded or destroyed, and that man's existence depends on their continuing productivity;

(b) Decisions on use and management must be related to the ecological characteristics of the soil and its environment, and must take into account soil limitations and the hazards of degradation;

(c) Use and management decisions should be based on long-term needs rather than short-term expediency.

7. The experts suggest and request that a clear, concise soils policy statement which expresses the beliefs of the Meeting in respect of the urgency of conservation of the world's soil resources be prepared, for discussion and adoption at the next expert meeting referred to above, and subsequent release under the authority of UNEP, FAO and UNESCO.

8. The experts further stipulate that efforts should be made to implement such a policy. The experts note that this implementation should be supported by a comprehensive plan of action to be discussed at the next meeting. The plan of action should clarify what should be the responsibilities at the national level, and the roles of international and regional agencies and institutions. The plan should also specify the kinds of actions that must be taken to preserve, protect and enhance the world's soil resources. It should be the framework for national soils policies adapted to the needs of individual nations.

9. The experts believe that specific actions at the national level which might be included in national soils policies could include:

(a) (i) A systematic inventory of the distribution and quality of soil resources at the country level;

(ii) On-going monitoring activities which would assess soil degradation and the degree to which national soil resources are being altered or affected;

(b) The initiative of action programmes for the conservation and improvement of national soil resources, based upon the trends made apparent by the inventorying and monitoring activities, and taking into account local socio-economic conditions.

Governments should be able to draw upon assistance and guidance from the appropriate international organizations regarding suitable methodologies to implement both the surveys and the plans of action.

Annex IV

A. THE NEW INTERNATIONAL DEVELOPMENT STRATEGY

Preamble

1. Humankind is a part of the biophysical world, acts upon it and is affected by its reactions. The biophysical world is the life-support system of society and provides space, a flow of materials and energy, and a medium for the reabsorption of wastes. These functions of the environment, adequately understood and wisely managed, constitute a basis for the achievement of the goals of development, but many of the characteristics of the recent development patterns, both in developed and developing countries, and in the relations among them, are impairing those functions and represent severe actual or potential constraints on the development process. It is essential, therefore, that the interaction between patterns of development and the environment be fully and explicitly taken into account in the new international development strategy for the 1980s.

2. The conflicting nature of the international order, and the unsustainable character of the development patterns of the recent past, were already present before the energy challenge. They have been dramatically highlighted by the serious overall economic, financial, social, political, cultural and environmental repercussions for all countries and for international relations generally.

3. The development process should seek the satisfaction for present and future generations of their basic requirements without exceeding the biosphere's tolerance of man's activities.

4. Pressures on resources and disruption of the environment are increasing because of various reasons. In developed countries, these arise from the scale and pattern of production and consumption, from the specific technologies used, and from the absence of incentives to control the consequences inflicted on others. In developing countries, they arise essentially from imitation of the developed country lifestyles and development patterns, on the one hand, and the limited access to land and water of the poor leading to further degradation, on the other.

Goals and Objectives

5. The relationship between lifestyles, resources, production and consumption patterns and the environment is complex and malleable. As development proceeds, it may open up opportunities to change lifestyles and their related resource and environmental consequences; these possibilities should be fully considered by public opinion and by policy-makers at all levels.

6. An effective new international development strategy must come to grips with the issues that extend beyond national territories, in particular, the global commons, including their future maintenance, the rate of utilization of their resources and the proprietary and distributional issues involved.

7. The arms race is one of the worst abuses of resources and a serious threat to the environment. To reach, on a global basis, fully rational pattern of resource use, armaments must stop taking a staggering share of world natural and human resources.

8. Depletable resources, viewed as a stock, have a finite time span at any given rate of use. Through conservation and recycling, that time span can be extended. But new technology allowing the substitution of new or more plentiful materials for the scarce ones can transcend the time limit on supply and convert a finite stock into an expanding supply. Society should do both. Given the long time-horizon and the massive investments implied by such a transition, market forces alone are not likely to prove adequate to secure man's future supplies.

9. Renewable resources can yield their services indefinitely; the scale at which they can do so depends on the way in which they are managed. The scale limit implied here may not be immutable - it can be extended by sound and innovative technology - but prudence requires that existing renewable resources not be degraded permanently.

10. Most environmental stresses can be alleviated over time by technological change or by the cessation of the insult, or they can be avoided by changes in the way we use the environment. Sustainable development requires ecologically sound management of renewable resources and the non-wasteful use of depletables. Policy-makers would be assisted in this effort by devising a system of indicators that provide some measure of the consumption of the capital of nature.

11. Production and consumption patterns should be brought into harmony with ecological requirements and, thus, become instrumental in relieving the pressures on resources and environment and in the solution of human settlements problems.

12. With regard to energy two goals should be pursued concurrently: (a) to provide for new and diversified energy sources, including the use of renewable resources, and (b) to structure energy use particularly in developed countries, in a way that will yield the services that we ask of energy while limiting energy inputs. International co-operation to ease present burdens and perform energy development and research is imperative.

13. Food also presents special problems. The aim is to produce food and make it available in sufficient quantity to meet the dietary needs of the growing population of the world without damage to the renewable resource

base. Modern agriculture, like other sectors, will need to economize on its energy inputs and to be environmentally sound. In developing countries, cultivators require improved access to land, water and appropriate agricultural technology. Rural development programmes and agrarian reform may be called for both to increase output and to ameliorate the conditions of the rural population.

14. Humankind's greatest resource to meet the challenges of the decades ahead is the innate capacity for comprehension and creativity of the human being. Although inherently renewable and expandable, this capacity has been largely underestimated and neglected. Our limits are defined less by the physical world than by the response of the human mind and spirit. To advance that understanding and capacity to cope is one of the highest missions that the United Nations and its Member States can undertake. Investment in education, training and human development and encouraging the participation of the enormous reservoir of young people in developing countries are essential in this regard.

15. Developing countries introducing sustainable, self-reliant development patterns should be supported by the international community in that effort. The new international order should allow them to achieve this goal.

Policy measures

16. Policies aimed at the harmonization of socio-economic goals with an ecologically sound management of the resources and environment must take into account the diversity of ecological, cultural and socio-political situations leading to a wide range of required measures and instruments. Given the recent awareness of environmental problems, many of these measures and instruments require yet to be identified and explored, opening a wide field for exchanges of experiences and regional and sub-regional co-ordination. Even so, a few general problems and principles can be formulated.

17. Natural resources are an endowment that should be conserved and developed. Development of depletable resources should include conversion to other forms of social capital, and the full productive potential of the renewable-resources systems should be sustained. National policy measures aiming at the restricting of excessive and wasteful consumption, through lifestyles changes, are a commendable means for resource and environment conservation. Where international or global environmental systems are involved, bodies at the appropriate level should be established to monitor and prevent threats as they arise or control them. Such environmental systems include oceans and international seas and atmospheric problems. Management of common resources should be geared towards development priorities. This calls for an international regime.

18. Each country has sovereignty over its own resources and has full claim on their economic yield. At the same time, it should feel responsible to the rest of the world for environmental impacts arising out of its resource use pattern. When participating as partners in shared resources nations must behave responsibly towards their partners as in international trade involving dangerous goods, wastes, equipment or technologies. International norms, values and regulations in all these fields should be gradually developed.

19. For environmentally sound management of resources, national land-use policies and plans are commendable instruments. Spatial patterns of economic activities and of human settlements influence the environment and the use of resources. Spatial development analysis and programming within the national scale as well as within the continental and/or sub-continental scale is a useful instrument in this respect.

20. Many environmental problems directly affecting human well-being are local in their manifestation, and are strongly linked to individual behaviour. The policy decisions to deal with them and their implementation thus require widest popular participation.

21. The provision of basic shelter and infrastructure for all people, in rural as well as urban areas, is a long-term goal. A planned and balanced network of cities, towns and villages is a condition for the adequate provision of infrastructure and services and a necessity for the development of effective linkages between industrial and agricultural activities. Well balanced programmes for the development of human settlements are necessary so as to provide greater benefits to low-income groups. The living conditions of children should be improved, special attention being paid to the large number of children under 15 years of age living in rural and urban poor areas. (Already in the draft goals and objectives).

22. Long-term productivity of agro-ecosystems should be at the base of food production. Public programmes to ensure against erosion and other forms of deforestation, soil degradation and desertification are needed. In developing countries this should be carried out within plans of integrated rural development requiring, wherever appropriate, reforms of land tenure.

23. Two of the most serious problems confronting the world, particularly in developing countries, are the loss of croplands to desertification and the deforestation which are taking place at alarming rates. The causes for these two processes are varied. There appears to be a consensus that deforestation is mainly related to commercial exploitation. All efforts should be made to avoid any further loss of croplands, through whatever means it is taking place, in order to avoid a massive food deficiency in the coming years. Concrete integrated programmes to prevent desertification and deforestation are essential.

24. Two simultaneous approaches are needed in the area of energy: conservation and diversification including exploration of new sources of energy.

B. RECOMMENDATIONS FOR CONSIDERATION BY THE PREPARATORY COMMITTEES OF THE NEW INTERNATIONAL DEVELOPMENT STRATEGY CONCERNING POLICY MEASURES

1. Humankind is a part of the biophysical world, acts upon it and is affected by its reactions. The biophysical world is the life-support system of society and provides space, a flow of materials and energy, and a medium for the reabsorption of wastes. These functions of the environment, adequately understood and wisely managed, constitute a basis for the achievement of development goals, but many of the characteristics of recent development patterns, both in developed and developing countries and in the relations among them, are impairing those functions and represent severe actual or potential constraints on the development process. It is essential, therefore, that the interaction between patterns of development and the environment be fully and explicitly taken into account in the new international development strategy for the 1980s.

2. Policies aimed at the harmonization of socio-economic goals with an ecologically sound management of resources and the environment must take into account the diversity of ecological, cultural and socio-political situations, leading to a wide range of required measures and instruments. Given the recent awareness of environmental problems, many of these measures and instruments have yet to be identified and explored, opening a wide field for exchange of experience and regional and sub-regional co-ordination. Even so, a few general problems and principles can be formulated.

3. Natural resources are an endowment that should be conserved and developed.

4. Sustainable development requires ecologically sound management of renewable resources and the non-wasteful use of depletable ones. Policy-makers would be assisted in this effort by devising of a system of indicators that provide some measure of the consumption of the capital of nature.

5. Development of depletable resources should include conversion to other forms of social capital, and the full productive potential of the renewable resources systems should be sustained. National policy measures aimed at restricting excessive and wasteful consumption, through lifestyles changes, are a commendable means of resource and environment conservation. Where international or global environmental systems are involved, bodies at the appropriate level should be established to monitor and prevent threats as they arise, or to control them. Such environmental systems include oceans and international seas and the atmosphere. Management of common resources should be geared towards development priorities. This calls for an international regime.

6. Each country has sovereignty over its own resources and has full claim on their economic yield. At the same time, it should feel responsible to the rest of the world for environmental impacts arising out of its resource use pattern. When participating as partners in shared resources or in international trade involving dangerous goods, wastes, equipment or technologies, nations must behave responsibly towards their partners. International norms, values and regulations in all these field should be gradually developed.

7. For environmentally sound management of resources, national land-use policies and plans are commendable instruments. Spatial patterns or economic activities and of human settlements influence the environment and the use of resources. Spatial development analysis and programming on the national scale as well as on the continental and/or sub-continental scale are useful instruments in this respect.

8. Many environmental problems directly affecting human well-being are local in their manifestation, and are strongly linked to individual behaviour. The policy decisions to deal with them, and the implementation of these decisions, thus require the widest popular participation.

9. Long-term productivity of agro-ecosystems should be at the base of food production. Public programmes to guard against erosion and other forms of soil degradation, deforestation and desertification are needed. In developing countries, these should be carried out within integrated rural development plans calling, wherever appropriate, for reforms of land tenure.

10. Two of the most serious problems confronting the world, particularly in developing countries, are the loss of croplands to desertification and the deforestation which are taking place at alarming rates. The causes for these processes are varied. There appears to be a consensus that deforestation is mainly related to commercial exploitation. All efforts should be made to avoid any further loss of croplands, through whatever means it is taking place, in order to avoid a massive food deficiency in the coming years. Concrete integrated programmes to prevent desertification and deforestation are essential.

11. The arms race is one of the worst abuses of resources, and a serious threat to the environment. To reach, on a global basis, fully rational pattern of resource use, armament must stop taking a staggering share of world natural and human resources.

12. Humankind's greatest resource to meet the challenges of the decades ahead is the innate capacity for comprehension and creativity of the human being. Although inherently renewable and expandable, this capacity has been largely underestimated and neglected. Man's limits are defined less by the physical world than by the response of the human mind and spirit. To advance that understanding and capacity to cope is one of the highest missions that the United Nations and its Member States can undertake. Investment in education, training and human development and encouraging the participation of the enormous reservoir of young people in developing countries are essential in this regard.

Annex V

STATUS OF WORK OF THE WORKING GROUP OF EXPERTS ON ENVIRONMENTAL LAW

I. INTRODUCTION

1. The Governing Council, by decision 91 (V) of 25 May 1977, requested the Executive Director among other things to:

> "(a) Convene as soon as possible a small working group on environmental law, composed of government experts, to examine and further pursue, inter alia, the work undertaken in accordance with Governing Council decision 66 (IV);".

2. Decision 66 (IV) had requested the Executive Director to continue, together with existing activities in this area:

> "(b) The development of the relevant principles contained in the Declaration of the United Nations Conference on the Human Environment, in particular through studies by a group of governmental and other experts on the specific aspects of the problem relating to liability for pollution and other environmental damage and compensation for such damage, taking into account inter alia the progress made in the work of the Intergovernmental Working Group of Experts on Natural Resources Shared by Two or More States as well as the relevant work of other international governmental and non-governmental organizations and forums, especially that of the International Law Commission;".

3. The Executive Director accordingly constituted a working group of experts on environmental law, comprising Government-nominated experts selected on the basis of equitable geographical distribution and of expressed interest, and recommended the following topics for study by the group during 1977-1979:

(a) Liability for compensation for damage from marine pollution and by offshore mining and drilling;

(b) Liability and compensation for damage caused from land-based sources;

(c) Responsibility and liability of States and their nationals for pollution and other damage caused to the environment beyond limits of national jurisdiction.

The Group selected the topic under (a) and has been studying it since 1977 with a view to submitting conclusions or guidelines on the legal aspects of it to the Governing Council by the end of 1979.

4. Some Governments found the progress of the Group very slow and unsatisfactory. Consequently, at an informal consultation which the Executive Director held with Governments in Nairobi from 8 to 12 January 1979, a consensus was reached that he should prepare a report on the status of work of the Group of Experts, with recommendations on how to accelerate that work, and to submit the report to the Governing Council at its seventh session.

5. The Executive Director accordingly submitted his report (UNEP/GC.7/7/Add.1, annex) together with recommendations which covered the work the Group had accomplished during its first three sessions, covering the period 1977-1979. By decision 7/11 of 3 May 1979, the Governing Council took note of that report and, among other things, requested the Executive Director to prepare a further progress report on the work of the Group and submit it to the Governing Council at its eighth session.

6. The purpose of the present report, therefore, is to present the Governing Council with a comprehensive account of the progress the Group has made since the Executive Director last submitted his report on it in April 1979.

II. PROGRESS OF THE WORKING GROUP OF EXPERTS ON ENVIRONMENTAL LAW, 1979-1980

7. Since the Executive Director reported on the progress of the Group to the Governing Council at its seventh session last year, the Group has held two more sessions.

8. At its fourth session (Geneva 2-12 October 1979) the Group continued with its work under Part 1 of its programme of work 1/ and completed the preparation of legal conclusions on "Consideration of the transfrontier environmental impact when authorizing offshore mining and drilling. In particular (a) Notification; (b) Consultation". The Group used this session also to improve upon texts already agreed at previous sessions, and thus completed all basic work on Part 1 of its programme of work.

9. At its fifth session (Geneva, 19-29 February 1980), the Group dealt mainly with Part 2 of its programme of work. 2/ The Group completed the formulation of all legal conclusions on this part. It then started the the preparation of conclusions on Part 3 of its programme. 3/ Because of lack of time, it was able to complete the formulation of only one conclusion under Part 3.

1/ See document UNEP/GC.7/7/Add.1, annex, para. 12.

2/ Ibid. - Safety measures to prevent pollution from offshore mining and drilling.

3/ Ibid. - Contingency plans on the national and international levels.

10. To date, the Group has formulated twenty-six major conclusions on Parts 1 and 2 of its study and one provisional conclusion on Part 3. These conclusions may be found in the reports of the fourth and fifth sessions of the Group. 4/

III. FUTURE PLANS OF THE GROUP

11. The Group has two more topics to deal with under its present study. They are Part 3, "Contingency plans on the national and international levels" and Part 4, "Liability and compensation". The Executive Director has made provision for the Group to meet in July 1980 to complete its work under Part 3, and in October 1980 and February 1981 to complete work under Part 4. Thus, it is intended that the Group will be able to submit a final report on its work to the Governing Council at its ninth session.

12. As requested by the Governing Council at its seventh session 5/, the Group, after a protracted negotiation, agreed by consensus on the choice of the following topic as a priority area for future study:

> "The improvement of remedies available on national and international basis to the victims of pollution, taking into account the concept of non-discrimination".

13. The Group agreed to wait until it had studied UNEP's in-depth report on environmental law, which is to be submitted to the Governing Council at its ninth session in 1981 before considering the addition of new topics. That report will, inter alia, contain a survey of activities in United Nations organizations and agencies on environmental law, which will help the Group to choose topics not already being dealt with by other bodies.

4/ See document UNEP/WG.34/1, Annex III, and UNEP/WG.36/6, Annex II and para. 10.

5/ Decision 7/11, para. 2 (b).