

REPORT
OF THE
UNITED NATIONS
CONFERENCE ON DESERTIFICATION



Nairobi, 29 August - 9 September 1977

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ABBREVIATIONS

ACC	Administrative Committee on Co-ordination
CILSS	Permanent Inter-State Committee on Drought Control In the Sahel
ECA	Economic Commission for Africa
EMASAR	International Programme on Ecological Management of Arid and Semi-Arid Rangelands (FAO)
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations
GARP	Global Atmospheric Research Programme (WMO)
GEMS	Global Environmental Monitoring System (UNEP)
ICSU	International Council of Scientific Unions
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFAP	International Federation of Agricultural Producers
IPAL	Integrated Project on Arid Lands (UNEP-UNESCO)
IRS	International Referral System (UNEP)
MAB	Man and Biosphere Programme (UNESCO)
OAU	Organization of African Unity
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Fund for Population Activities
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute for Training and Research
WHO	World Health Organization
WMO	World Meteorological Organization

Part One

ACTION TAKEN BY THE CONFERENCE

Chapter I

PLAN OF ACTION TO COMBAT DESERTIFICATION

I. INTRODUCTION

1. The present Plan of Action to Combat Desertification was presented to the United Nations Conference on Desertification in response to General Assembly resolution 3337 (XXIX) of 17 December 1974 on International co-operation to combat desertification.
2. In August 1976 and January 1977, a preliminary draft and a second preliminary draft were circulated for comments to Governments, members of the United Nations system, intergovernmental organizations, research institutions and other bodies, and the panel of senior consultants appointed by the Secretary-General of the Conference. The second preliminary draft was considered by the four regional preparatory meetings for the Conference, as well as at the fifth session of the Governing Council of the United Nations Environment Programme, acting in its capacity as the intergovernmental preparatory body for the Conference.
3. The present text takes account of the Mar del Plata Plan of Action of the United Nations Water Conference, and of the discussions during the twenty-second session of the Advisory Committee on the Application of Science and Technology to Development. The Plan reflects fully the findings and recommendations of the component reviews and the overview of the causes and processes of desertification (A/CONF.74/1), the case studies (A/CONF.74/4), the feasibility studies (A/CONF.74/3/Add.1) as well as other preparatory material for the Conference, and takes full account of the discussion at the regional preparatory meetings and at the fifth session of the Governing Council of UNEP.

II. ORIGIN AND SCOPE OF THE PLAN

4. More than one third of the earth's land area is arid. Much of it has become desert since the dawn of civilization, and many vulnerable areas are even now being turned into desert. This process has intensified in recent decades, and threatens the future of 628 million people, or that 14 per cent of the world's population who live in the drylands; of this number, between 50 and 78 million people are affected directly by decreases in productivity associated with current desertification processes. In the past half century, on the southern edge of the Sahara alone, as much as 650,000 square kilometres of once productive land has become desert. Drought represents a recurrent menace in various parts of the world. The Sahelian drought of 1968-1973 and its tragic effect on the peoples of that region drew world attention to the chronic problems of human survival and development on the desert margins.
5. In conformity with the Charter of the United Nations, a number of resolutions by the United Nations General Assembly have addressed these problems. The first All-African Seminar on the Human Environment, convened in August 1971 under the auspices of the Economic Commission for Africa (ECA), made specific recommendations for steps to be taken to combat the spread of deserts in Africa. At the third session of the ECA Conference of Ministers, resolution 264 (XII) on desertification drew attention to this menace and urged that ECA take steps in collaboration with the international community

to seek solutions to the problems. General Assembly resolution 3202 (S-VI) of 1 May 1974 recommended that the international community undertake concrete and speedy measures to arrest desertification and assist the economic development of affected areas. Economic and Social Council resolution 1878 (LVII) of 16 July 1974 requested all the concerned organizations of the United Nations system to pursue a broad attack on the drought problem. Decisions of the Governing Councils of the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) emphasized the need to undertake studies of the extent of drought, and to draw up appropriate action programmes to check the spread of desert conditions.

6. The General Assembly then decided, by resolution 3337 (XXIX) of 17 December 1974, to initiate concerted international action to combat the spread of desert conditions. To give impetus to international action, the General Assembly decided to convene a United Nations Conference on Desertification, between 29 August and 9 September 1977, which would produce an effective, comprehensive and co-ordinated Plan of Action to Combat Desertification.

7. Desertification is the diminution or destruction of the biological potential of the land, and can lead ultimately to desert-like conditions. It is an aspect of the widespread deterioration of ecosystems, and has diminished or destroyed the biological potential, i.e. plant and animal production, for multiple use purposes at a time when increased productivity is needed to support growing populations in quest of development. Important factors in contemporary society - the struggle for development and the effort to increase food production, and to adapt and apply modern technologies, set against a background of population growth and demographic change - interlock in a network of cause and effect. Progress in development, planned population growth and improvements in all types of biological production and relevant technologies must therefore be integrated. The deterioration of productive ecosystems is an obvious and serious threat to human progress. In general, the quest for ever greater productivity has intensified exploitation and has carried disturbance by man into less productive and more fragile lands. Overexploitation gives rise to degradation of vegetation, soil and water, the three elements which serve as the natural foundation for human existence. In exceptionally fragile ecosystems, such as those on the desert margins, the loss of biological productivity through the degradation of plant, animal, soil and water resources can easily become irreversible, and permanently reduce their capacity to support human life. Desertification is a self-accelerating process, feeding on itself, and as it advances, rehabilitation costs rise exponentially. Action to combat desertification is required urgently before the costs of rehabilitation rise beyond practical possibility or before the opportunity to act is lost forever.

8. In preparing for the Conference, attention was focused on tropical, subtropical and temperate drylands. The Plan of Action covers areas where desertification is occurring now and others which are vulnerable to future desertification, including arid, semi-arid and sub-humid areas. It is important to note that the irrational use of the complex ecosystems of the humid tropics carries the risk of diminishing their biological productivity,

which in turn could have harmful consequences for neighbouring semi-arid and arid zones. The distribution and relative intensity of desertification problems are shown on the Desertification Map of the World (A/CONF.74/2).

9. The Plan of Action presents a set of recommendations for initiating and sustaining a co-operative effort on the scale required to combat desertification. This co-operative effort should reinforce and integrate national, regional and global international actions against desertification that are currently going on both inside and outside the United Nations family. A review of current United Nations programmes which have an impact on certain aspects of the desertification problem may be found in the report of the Environment Co-ordination Board (A/CONF.74/32) prepared on the occasion of the Conference. Although these programmes, as well as numerous national programmes, are directly or indirectly concerned with combating desertification, there is a compelling need to focus and co-ordinate these activities and support the creation of new national, regional and global programmes, all as part of an international co-operative effort to combat desertification. The goal is to implement the Plan of Action by the year 2000. The seven-year period 1978-1984 has been chosen for the implementation of the immediate actions required and as an indication of the time at which a first general assessment of progress could be made.

III. OBJECTIVES AND PRINCIPLES

10. The immediate goal of the Plan of Action to Combat Desertification is to prevent and to arrest the advance of desertification and, where possible, to reclaim desertified land for productive use. The ultimate objective is to sustain and promote, within ecological limits, the productivity of arid, semi-arid, sub-humid and other areas vulnerable to desertification in order to improve the quality of life of their inhabitants. A campaign against desertification should take its place as a priority among efforts to achieve optimum and sustained productivity. For the countries affected, the implementation of this Plan of Action implies more than a campaign against desertification; it is an essential part of the broad process of development and the provision of basic human needs.

11. Desertification is not a problem susceptible to quick solutions, but it is already urgent in many areas. It calls for continuous assessment and long-term planning and management at all levels, supported by international co-operation. Such programmes, even when long-term, should be started without delay. In many cases, technical solutions are available now, but their application can be impeded by social, legal and sometimes institutional factors. However, in developing countries the lack of financial resources constitutes one of the greatest obstacles to this application.

12. Given the interdependence of the development process, population change, relevant technologies and biological productivity, it follows that the effects of desertification on productive ecosystems can best be ameliorated if action takes into account all these elements. In other words, efforts to combat desertification must be part of a broad programme for promoting social and economic progress. The United Nations has expressed a common aspiration to improve the quality of life and to provide the basic human needs for all

people, especially in developing countries. This aspiration manifests itself in the Charter of the United Nations and in international declarations, decisions and recommendations, particularly of the past decade, especially in the Declaration on the Establishment of a New International Economic Order and the related Programme of Action in the Charter of Economic Rights and Duties of States, in the International Development Strategy for the Second United Nations Development Decade, in the Declaration on the Human Environment and in the action plans of the United Nations Conferences on Science and Technology, the Human Environment, Population, Food, Women, Trade and Development, Human Settlements, and Water. These represent steps taken by the international community to formulate essential programmes for development in its broadest sense. To be successful, the effort to combat desertification must be seen as an integral element in this larger effort of social and economic advancement.

13. Desertification commonly appears as the deterioration of land, water and other natural resources under ecological stress. Deterioration implies that activities undertaken in an area have been unsuitable, either in degree or in kind. Such activities may have been pursued because of lack of environmental knowledge or experience, because alternatives were lacking, or in an attempt to maximize short-term gain at the expense of long-term productivity. While solutions probably rest ultimately in education, social and economic advancement and the adjustment of population growth to the development of resources, the proximate solution centres on improved land use. This involves three elements: (a) an inventory of local resources and an assessment of their capabilities and potential; (b) a determination of which uses are desirable in terms of resource capabilities and socio-economic goals and constraints; and (c) a system for implementing the resulting plan for the optimum use, reclamation and protection of natural resources.

14. While water, soil and other material and biological resources are often the limiting physical factors, social, political and other human systems for making decisions and implementing plans, and the inadequate availability of financial resources, may constitute the major constraints to development, prevention of desertification, and rehabilitation of desertified lands. Social and economic problems in resource management are a principal concern of this Plan of Action to Combat Desertification. As the management of natural resources is a critical component of any strategy for physical, social, or economic development, the adoption of improved policies for the management of natural resources is essential to all ecosystems if their productivity is to be developed and maintained. The recommendations for assessment and management of natural resources in this Plan of Action are generally applicable, but in the context of the Plan, they focus on areas vulnerable to desertification and on those desertified areas that promise a degree of recovery.

15. The causes of desertification vary among the affected regions of the world owing to differences in their ecological characteristics and their social and economic structures and aspirations. Each region may require a distinctive approach to desertification problems. With natural resource management as its primary concern, this Plan of Action recommends methods for setting priorities for action against desertification, but it leaves

the actual determination of priorities to national policies and plans. There are, however, desertification problems which cross national boundaries, and the Plan of Action aims at strengthening regional and international capabilities to deal with such transnational problems and to provide effective international co-operation when requested.

16. The basic principles guiding the present Plan of Action are:

(a) All action shall be consistent with the provisions of the Charter of the United Nations;

(b) A central theme will be the immediate adaptation and application of existing knowledge, particularly in the implementation of urgent corrective measures against desertification, in educating the people and the affected communities to an awareness of the problem, and instituting training programmes in collaboration with international organizations such as the Permanent Inter-State Committee on Drought Control in the Sahel, the United Nations Educational, Scientific and Cultural Organization (UNESCO), through its Man and the Biosphere (MAB) Programme, the Food and Agriculture Organization of the United Nations, through its programme on Ecological Management of Arid and Semi-Arid Rangelands (ENASAR);

(c) Improved land use, calling for assessment, planning and sound management on the basis of the application of known ecological principles to areas subject to desertification, is a key to success in combating desertification;

(d) Improved land use should recognize the inevitability of periodic climatic drought in dry lands and their generally low natural biological potential;

(e) Integrated land-use measures should be directed at the restoration of vegetation cover on marginal land, making particular use of adapted species of plants and animals;

(f) When the restoration of vegetation requires the relaxation of human pressures, temporary compensatory measures should be taken to provide alternative supplies of food and fuel;

(g) The Plan is to be carried out as an effective, comprehensive and co-ordinated action programme against desertification, including the building up of local and national scientific, technological and administrative facilities in the areas concerned;

(h) All measures are to be primarily directed toward the well-being and development of the peoples affected by, or vulnerable to, desertification;

(i) Efforts should be consistent with, and form part of, wider programmes for development and social progress;

(j) Implementation is based on the recognition of socio-economic, cultural and ecological variety in the vulnerable areas, and the overriding need for a positive and flexible response;

(k) Additional research to clarify a number of fundamental problems for the solution of which the requisite scientific knowledge is not yet available, should be consistent with strengthening the scientific and technological capability of the affected areas;

(l) Traditional use as food, fuel or other products of wild species of plants and animals which often do not appear in the national marketing statistics should be regarded as an important resource and fully investigated;

(m) Implementation calls for the pooling of the resources of the United Nations system in launching the Plan and carrying out an integrated and worldwide programme of development, research and application of science and technology to solve the special problems of desertification;

(n) Land and water management should take into account a number of ecological principles:

(I) Lands need to be managed as ecological wholes (e.g. an entire watershed, the total of plant and animal communities, an area viewed as a complex of micro-topographies);

(II) The use of dry lands should be carefully timed to conform with fluctuations in climatic conditions;

(III) The use of land should be carefully allocated, so as to give optimum sustained productivity; its use must be fitted to its capabilities;

(o) Particular attention should be given to the utilization of local experience, knowledge and expertise in the implementation of the recommendations of the Plan at the national level in the countries concerned;

(p) While populations currently affected by desertification urgently require short-term relief measures, long-term amelioration should not be delayed, since the cost of prevention is less than that of cure;

(q) Attention should be given to the assessment of secondary environmental problems which may be triggered by measures intended to remedy desertification, as well as the effects of development activities undertaken outside the affected areas;

(r) Attention should be paid to providing adequate facilities and housing for people living in new conditions created by programmes which combat desertification;

(s) Attention should be paid to the judicious conservation and use of water resources in each region, including fair and equitable sharing of the waters of international rivers, lakes and underground aquifers, and inter-basin transfer of surplus water where this is environmentally sound and is necessary to prevent desertification;

(t) The productivity of all available renewable resources, including forest, wildlife and fisheries, should be optimized and managed on a sustainable yield basis.

17. The implementation of the Plan of Action to Combat Desertification is expected to be carried out by Governments through their national institutions, with the support, when requested, of international or bilateral programmes. It is recognized that the recommendations contained in the Plan may need to be adapted to suit the requirements of individual countries, and that those countries may wish to select such measures for implementation as are appropriate to their needs.

IV. RECOMMENDATIONS FOR NATIONAL AND REGIONAL ACTION

18. The following set of recommendations is proposed for co-operative national and regional action to combat the vast problem of desertification, against which no single recommendation would alone be successful. An integrated complex of measures is the only way to prevent and arrest desertification, and to restore the productivity of areas already desertified. Integration means that all the recommendations are seen to be as linked in a multidimensional inter-relationship. Ideally, all the recommended actions should be implemented together, but unfortunately many countries do not have sufficient resources to do this. Hard choices must be made in the allocation of scarce resources to action programmes. National priorities should be established before financial and technical resources are committed to such programmes.

19. It is recognized that countries affected or likely to be affected by desertification are at different stages with respect to their appreciation of desertification problems and their ability to cope with them. Depending on the level of national awareness and on the kinds of action already taken, countries will follow a certain sequence in their efforts to combat desertification, entering the campaign at an appropriate stage. The sequence of stages might be as follows:

(a) First, define the magnitude and impact of desertification by:

- (i) Strengthening or establishing a national body for assessment and monitoring of desertification;
- (ii) Determining the criteria for identifying and assessing desertification and its causes;
- (iii) Assessing the problem on the basis of the criteria and techniques adopted, particularly to determine what land uses lead to desertification and where;

(b) If a significant problem does exist, then:

- (i) Draw up and implement programmes as outlined in the Plan of Action to Combat Desertification;
- (ii) Set up a system to monitor the problem;

(c) Where remedial programmes have already been started:

(i) Monitor the progress of the programmes and assess their usefulness;

(ii) Disseminate related information among the international community.

20. It would appear that the actual situation in the majority of areas affected by desertification has not been fully assessed. On the basis of the above-mentioned considerations, the proposals of the Plan of Action start with arrangements for assessment and planning, proceed to specific recommendations for improved land management, and conclude with supporting measures.

A. EVALUATION OF DESERTIFICATION AND IMPROVEMENT OF LAND MANAGEMENT

Recommendation 1

21. In undertaking action against desertification, countries need to assess and evaluate desertification in the local situation, its magnitude and extent, its causes and effects. It is necessary to know exactly what parts of the country are affected or vulnerable.

It is recommended that, where it is not yet done, desertification and the degradation processes leading to it be assessed and evaluated as they affect people, the physical elements of the environment (earth, water and air), and the plant and animal products of the land and water in territories experiencing or likely to experience it, using in the first instance existing data and carrying out new surveys whenever required, with the aim of defining priorities for national and local programmes and projects in those areas where population or resources are directly threatened. It is also recommended that, in the assessment of desertification, comparable indices should, whenever practicable, be applied in all regions exposed to the threat of desertification.

22. A system of survey and monitoring should be established or strengthened to assemble information on resources and populations and to carry out monitoring of the dynamics of desertification, including the human condition. The assembly and evaluation of information should be a continuous process, providing a feedback mechanism for national planning and action. To carry this out, national action should be considered to establish machinery for assessing desertification in the following ways:

(a) To indicate the relative seriousness of the situation for all the regions affected, with a view to establishing priorities and degrees of urgency;

(b) To standardize monitoring facilities and methods in regions affected or likely to become so;

(c) To improve networks of climatological, meteorological and hydrological stations in regions exposed to desertification so as to permit more detailed and sustained monitoring and assessment of climatic and hydrological conditions in relation to the desertification process. In most regions of the world undergoing desertification, these networks are inadequate. They could be considerably improved individually or collectively by national climatological, meteorological and hydrological services, with the support of the competent agencies of the United Nations and other international bodies. In sparsely populated regions, where recruitment of the personnel needed for the stations may be difficult, automatic observation posts could be used. Satellite imagery techniques should be employed where appropriate. National meteorological and hydrological services should provide ongoing assessments of the situation on the basis of the data obtained;

(d) To monitor desertification by observing atmospheric processes, the state of vegetation and soil cover, dust transport, shifting of sand dunes, the distribution, migration and abundance of wildlife, the condition of livestock, the phenology of crops, crop yields, and changes in irrigated lands;

(e) To compile desertification maps and see that they are revised through periodic assessments using appropriate techniques which will be efficient at an acceptable cost.

23. The recommendation also implies regional actions, particularly through the United Nations regional commissions and intergovernmental regional organizations, such as:

(a) The implementation of the regional schemes suggested by studies on the feasibility of regional or transnational co-operation in the monitoring of desert processes and related natural resources, including the establishment of regional desertification monitoring centres for groups of countries that are particularly vulnerable to desertification and share ecological conditions, to assist in the co-ordination of national programmes and to organize the maximum use of expertise available in the region;

(b) The organization of a continuous system for the exchange of information gained from monitoring among countries of the region concerned.

Recommendation 2

24. The introduction of improved and effective land management in areas subject to desertification, or to degradation processes leading to it, involves a broad range of social, economic, institutional, legislative, and technical measures. Among various factors which might determine the proposed development, the most important are: availability of water, land capability, climate, biological productivity, and other environmental constraints, reclamation requirements, population and its pressures, social and economic goals and constraints, cultural and behavioural patterns, health conditions, location and relationships with other areas. The wide diversity of social-economic structures and environmental conditions demands flexibility and suggests that blanket proposals are

unsuitable. Each arid land area has established its own land-use practices on the basis of local conditions and aspirations, and these constitute the starting point for proposed changes. At the same time, some general principles of land-use planning and management, as well as of land-use surveys, might be recommended internationally on the basis of existing knowledge. Whereas the present Plan of Action is concerned primarily with areas affected or likely to be affected by desertification, changes in land-use management proposed for those areas should not accentuate any current risk of desertification and, where possible, should be consistent with broader national or regional development plans.

It is recommended that in areas affected or likely to be affected by desertification, land-use planning and management based on ecologically sound methods should be introduced in conformity with social equity and geared to fostering economic and social development.

25. To implement this recommendation, national action is required to:

(a) Strengthen national and local capabilities in land-use planning and management and direct them towards problems of desertification. Many nations have national or (in federal systems) state/provincial economic planning commissions. It follows that land-use planning and policies to combat desertification should be one of the major responsibilities of high-level planning groups concerned with national or state/provincial development. Where such a planning group does not exist, it should be established at a high level of government, with authority to formulate policy and plans and to guide the implementation of those plans. In carrying out such action, the following should receive consideration:

(i) Local-level planning and implementation should be encouraged. It is also important to take an integrated approach, with all the existing machinery and all the available talent in sectoral and central planning institutes being used in the planning process, and with special regard to the aspirations and values of the local people;

(ii) Though the planners' primary expertise should be in the theory and techniques of assessment, planning and management of human and natural resources, they should have access to expertise in law, economics, demography, sociology, urban planning, ecology, geography, geology, soil science, agricultural sciences, hydrology, hydrogeology, climatology, remote sensing, statistics, and cartography. Where such training is not locally available, arrangements should be made to train planners elsewhere until the required training is established locally;

(iii) The land-use planning group should be supported by a natural resource survey, including the preparation of all types of thematic maps for the inventory and assessment of land, water, plant and animal resources and preventive and monitoring programmes;

(iv) Action against desertification, however, should not await the formation of a unit composed of specialists in all pertinent fields of land-use planning;

(b) Survey natural resources and the human condition in areas affected or likely to be affected by desertification. To be realistic, land-use plans must be based on accurate data. To provide control for data collection, the social and environmental objectives for an area must be precisely defined, thus producing a frame of reference for the survey work. The first task of a land-use planning group and its associated survey programme is to assemble and analyse available information. The survey should then be designed to fill gaps in existing information and to update it through continuous surveying or monitoring. A land-use plan must be flexible enough to accommodate changes in the area covered, as revealed by monitoring;

(c) Formulate a land-use plan for an area to be managed effectively within the resources immediately available. This can serve as a pilot area for testing plans and research results, training managers and correcting planning errors. Out of this will arise a comprehensive land-use plan embracing a broad area. At the heart of land-use policy is the difficult determination of what people can realistically hope to achieve with the resources at their disposal. Once a relatively complete inventory of natural resources and the human condition is available, the land-use planning group will identify the management options for each section of the area within its purview. Management options concern the types and intensity of use which are physically and biologically appropriate to the resources of the section, and the codification of the goals and constraints in relation to land-use policy. A comprehensive land-use plan would assign all sections of the area to particular uses, such as crops, livestock, game ranching, forests, biosphere reserves, recreation, mining, industry, roads, urbanization, housing and other uses. The following considerations must be borne in mind:

- (i) Initially at least, land-use planning may be imprecise, given the size of the areas concerned and the absence of previous plans and limitations in financial and technical support. These rough preliminary plans can be elaborated and specified later as survey and monitoring proceed;
- (ii) Evaluations and revisions of the land-use plans at appropriate intervals are essential. Their implementation should allow for continuing evaluation of the real impact of the project socially, economically and environmentally, and authorities should be prepared to modify land-use plans to correct mistakes and accommodate new technology;
- (iii) Where planners determine that a section of land is critically endangered or has become unsuitable for human activities, they should propose a degree of protection, ranging from complete withdrawal to limited uses which promote natural recovery. This is particularly important

In areas recently subject to severe degradation under the impact of human activities. Such areas may recover and be useful in the future, if they are protected for a prescribed period and given reclamatory treatment as required. Possibilities of limited or alternative use could also be explored;

(d) Develop procedures for implementing a comprehensive land-use plan, which should constitute a part of the planning process and not a separate activity. A comprehensive land-use plan specifies the preferred use for each section of the area covered, but the current or intended use of the section is not always the same as that in the plan. Specifically:

- (i) A procedure should be established by legislative action to resolve national, regional or local conflicts among competing users and uses of land. It may involve a system of incentives and penalties, such as grants-in-aid and differential taxation. It may also involve devising and implementing specific measures whereby the users of the land will take responsibility, either collectively or individually, for the condition of the land, particularly where a significant proportion of the users of land do not own, or are not directly responsible for, that land;
- (ii) Systems of taxation, land tenure, water and mineral rights, agricultural credit, insurance, marketing, and transport should be reviewed by the interested Governments, to ensure that they will encourage compliance with the comprehensive plan. Legislation relevant to exploitation and protection of natural resources should be reviewed and when necessary revised or supplemented to ensure consistency with the plan;
- (iii) There are many possible enforcement or implementation schemes. Research and analysis are required to determine the best scheme for a particular country or province/state. Pilot projects demonstrating the implications of a proposed land-use plan, which could be organized in co-operation with MAB or similar programmes, are essential preliminaries to large-scale efforts. Efficient training of the managers and intermediate-level technicians required is of the utmost importance;

(e) The land-use plans should be fully integrated with regional planning and development plans.

26. This recommendation also implies regional action, through the appropriate regional bodies and with the help of international organizations, to:

(a) Strengthen the existing regional institutes for economic and social development and planning, as well as other appropriate regional institutes for the training of land-use planners and managers;

(b) Strengthen the natural and human resources survey institutions in the countries concerned, upon their request, on a regional basis, and with international support;

(c) Organize pilot projects for the implementation of comprehensive land-use plans in each of six major regions affected by or vulnerable to desertification in co-operation with or in addition to national pilot projects (Sudano-Sahel, Africa south of the Equator, North Africa, West Asia, South Asia, Latin America); such projects should be organized upon request of and, so far as they are able, implemented by interested governments, with appropriate co-ordination and assistance from members of the United Nations family, such as UNESCO (MAB Programme) and the regional commissions;

(d) Organize short-term training courses on the implementation of comprehensive land-use plans for extension officers of the countries -- concerned.

Recommendation 3

27. Successful prevention and combating of desertification depends on public awareness and participation. People must be directly involved in the making of decisions that profoundly affect their lives. The involvement of people will also be an important means of making creative use of their experience, ingenuity and skills, thus making effective use of often untapped resources.

It is recommended that public participation be made an integral element of the prevention and combating of desertification and that account be thus taken of the needs, wisdom and aspirations of the people.

28. This recommendation implies national action to:

(a) Increase general awareness of the problem of desertification and a better scientific understanding of new and old technology through education, group discussions, exhibitions etc. In rural schools, training centres and extension services, as well as in appropriate institutes and universities, programmes for teaching the proper use of land and other natural resources should be initiated and strengthened;

(b) Design the process of planning the effort to combat desertification to ensure maximum public participation. Such measures could include extended visits by responsible officers to vulnerable groups and areas, encouragement of the formation of organizations for the channelling of views from different groups, division of the planning process into stages to show when important decisions should be taken and the publication of intelligible and illustrative material on the decision-making process;

(c) Achieve mutual understanding and trust among all parties concerned in the effort to combat desertification by stimulating public participation, making arrangements for joint discussions and using the mass media to provide a forum for public participation and debate;

(d) Ensure the participation of sectors of the population whose role has traditionally been limited. This would require the expansion and strengthening of the role of community organizations, the provision of education and information and the decentralization of the planning and management of action against desertification.

B. THE COMBINATION OF INDUSTRIALIZATION AND URBANIZATION WITH THE DEVELOPMENT OF AGRICULTURE AND THEIR EFFECTS ON THE ECOLOGY IN ARID AREAS

29. The development in arid areas of industry, mining, towns and transport is accompanied by various ecological changes. There are numerous examples of cases in which industrialization or urbanization has led to or accelerated the processes of desertification, pollution or wind erosion. However, the experience of many countries shows that programmes for the development of arid lands (through the building of power stations, new towns and villages, and mines; oil production; and heavy and light industry) based on sound ecological and sociological principles can form the basis for the full utilization of local manpower, the supply of adequate water to towns, industry and agriculture, high labour productivity, and a high material and cultural level of living for the people of such areas. The industrialization of arid areas can create the necessary energy and make it possible to use advanced technology in the implementation of measures to combat desertification. For this reason it is recognized that all aspects of scientific and technical work aimed at discovering natural resources and, above all, mineral resources in arid areas, particularly in the developing countries, must be developed and strengthened.

Recommendation 4

30. It is recommended that steps be taken within the framework of the programme and budget of UNEP, and in conjunction with the United Nations Development Programme (UNDP), the United Nations Industrial Development Organization (UNIDO) and other appropriate United Nations organizations, as well as interested countries, to:

(a) Study and publicize positive and negative local and world-wide experience of the role which industrialization and urbanization play under different social and economic conditions in changing the ecological status of the environment and intensifying, preventing or eliminating the processes of desertification in arid areas;

(b) Consider the feasibility of organizing and holding in the period from 1978 to 1980, under the auspices and at the expense of UNEP, several regional meetings and one general international meeting for the discussion of national, regional and world-wide experience of combining industrial development and urbanization in arid areas with crop and animal husbandry, irrigated farming, and forestry;

(c) Provide arid-zone developing countries with regular scientific advice on studying and planning industrial and urban development programmes in arid zones if the concerned countries so wish;

(d) Publish reviews and monographs illustrating the successes of arid-zone countries in promoting economic and social development while preserving the environment.

C. CORRECTIVE ANTI-DESERTIFICATION MEASURES

Recommendation 5

31. Water shortage is one of the main factors limiting production and settlement in dry lands, and lack of water or its inefficient use are fundamental causes of many desertification problems. Rational assessment of water needs, improved water supplies, reduction in water losses, more efficient use of water and the development of new water resources are called for in many of the recommendations proposed. The United Nations Water Conference held at Mar del Plata, Argentina, from 14 to 25 March 1977 reviewed the general world water situation, and adopted the Mar del Plata Action Plan directed to solving the water problems facing the international community, as well as specific resolutions on the role of water in combating desertification and on drought loss management. These recommendations include inter alia some measures relating to specific problems of dry lands and drought-prone areas subject to desertification. The present Plan of Action to Combat Desertification, in full conformity with the recommendations of the United Nations Water Conference and in addition to them, puts forward a specific recommendation on the management, development, distribution, control and regulation of the use of water resources to suit the nature and potential productivity of the areas concerned. This recommendation does not intend to replace or amend the Mar del Plata Action Plan, but rather specifies the actions required for this particular purpose. It should be implemented as a part of the Mar del Plata Plan, in the framework of the general water policies adopted by Governments and as a part of the campaign against desertification.

It is recommended that efficient, socially, economically and environmentally sound planning, development and management of water resources be introduced as part of measures to combat desertification.

32. To implement this recommendation, national action should be considered to:

(a) Improve data on the quantity and quality of available water, by inter alia:

- (i) Establishing or strengthening a national co-ordinating body with comprehensive responsibilities for water-resources data, and establishing water-resources data banks, preferably in collaboration with a national resource data bank;
- (ii) Expanding and extending the network of meteorological, hydrogeological and hydrological stations (as already stated in Recommendation 1), taking a long-term view of future needs and employing, as far as possible, standard techniques and instruments in order to obtain comparability of data;

- (iii) Establishing or strengthening systems and facilities for the measurement of existing water use, and for monitoring changes in water quality;
- (iv) Regular assessments of surface and groundwater resources, preferably in terms of the water balance, both for individual basins and at the national level;
- (v) Regular assessment of geochemical budgets affecting water use;
- (vi) Providing national machineries for the use of modern technologies, including geophysical and remote sensing techniques, analog and mathematical models, in collecting and processing data on the quantity or quality of water resources;

(b). Develop and keep under review schemes of water management, as part of a regional and national strategy which is based on a proper balance between social, economic and cultural factors, on the one hand, and purely ecological considerations and constraints on the other. This should be accomplished by, inter alia:

- (i) Ensuring, through proper institutional arrangements, that the development and management of water resources take place in the context of national planning and that there is real co-ordination between all bodies responsible for the investigation, development and management of water resources;
- (ii) Estimating the demand for water for different purposes at different periods of time in conformity with national development goals. In this context the need for awareness of the risks of increased ecological stress from an excess of water should be noted;
- (iii) Keeping under review existing legislative (including environmental aspects) and administrative structures concerned with water resources and enacting comprehensive and unifying legislation based on the concept of the public control of water resources, defining the rights, obligations and responsibilities of the State and the individual with respect to its use, and taking into account the proportionality of development in the various economic and social sectors to ensure the utilization and protection of water in the interests of the whole of society;
- (iv) Ensuring public participation in the planning process at a time when it can constructively influence the choice between alternative possibilities;

(c) Promote the efficient use of water by, inter alia:

- (i) Applying the results of studies on appropriate levels of water use and re-use by the various sectors of the economy;
- (ii) Creating economic incentives for increasing the efficiency of water use;
- (iii) Enacting legislation on efficient water use and conservation;
- (iv) Establishing a system of supervision of water use and pollution control including measures to prevent saline water intrusion from the sea, in both surface and ground waters;
- (v) Applying advanced techniques of water storage, conservation and distribution;
- (vi) Conducting studies and experiments concerning the adaptation of innovative or imported technologies in the light of available resources and prevalent social and environmental conditions;
- (vii) Giving priority to support for the development of technologies that take full advantage of local experience and resources;
- (viii) Promoting the use of locally available manufacturing or construction materials;
- (ix) Developing facilities for the servicing and maintenance of spare parts;
- (x) Making an inventory of traditional water collection and distribution systems, and improving them with suitable techniques;

(d) Provide adequate and uncontaminated community water supplies, sanitation, and waste disposal services with targets and time-tables for each country, taking into account its social and economic conditions, through:

- (i) Rainwater collection by roofguttering into cisterns or suitably lined pits;
 - (ii) The purification of surface water;
 - (iii) The use of pumps and pipe systems as means of protecting dug wells and springs from local contamination;
- (e) Improve the supply and quality of surface water through:
- (i) Management of hydrological systems and revegetation of watersheds in conjunction with measures to reduce erosion, flood hazards and siltation;

(ii) Establishment of water harvesting schemes;

(iii) Promotion of the construction of small low cost reservoirs and the use of hand-dug wells and manual apparatus, where available;

(iv) Construction, where appropriate, of large dams which can make a decisive contribution to the establishment of a balanced food supply, safeguard the environment, and assist in combating desertification and improving living conditions in general;

(v) Reduction of seepage and evaporation from reservoirs;

(vi) Promotion of the reduction of eutrophication and the rehabilitation of surface water;

(vii) Improvement of water distribution, including the use of different types of pipes and channel linings made from local materials;

(viii) Improvement of the infiltration characteristics and water storage capacity of soils;

(f) Promote measures to improve the supply and quality of ground water and its management, by:

(i) Controlling development and siting of wells and pumps;

(ii) Improving maintenance of wells and pumps;

(iii) Monitoring ground water level and quality;

(iv) Preventing ground water pollution, including the intrusion of saline ground water or drainage waters into aquifers through overpumping and saline water intrusion from the sea;

(v) Using solar and wind energy for pumping;

(vi) Promoting schemes for ground water recharge and subsurface storage and purification of water;

(vii) Setting national water quality criteria for ground water to be used for human consumption to meet national requirements;

(g) Promote measures to reduce or eliminate water-borne diseases through, inter alia:

(i) Proper management of liquid and solid wastes, for example, composts;

(ii) Food hygiene;

(III) Improved design and construction of housing by means of appropriate technology, making the best use of locally available materials and drawing on the positive features of traditional technology;

(h) Introduce appropriate methods of water recycling and water pollution control, use of brackish water, desalination and purification;

(i) Launch general campaigns for education in efficient and responsible water use, using public information services and seeking community participation through appropriate organizations;

(j) Promote research into:

(I) Weather modification, evaporation reduction and increase of water condensation;

(II) Means of increasing the efficiency of water use for plant production;

(III) Application of system analysis to water resources planning and management.

33. This recommendation also implies regional action, involving the United Nations regional commissions and other appropriate bodies, including action for the development of the wise and efficient management of shared water resources ^{1/} for rational use within regional economies, as suggested by the Mar del Plata Action Plan of the United Nations Water Conference. Such action is illustrated particularly by the feasibility study on transnational co-operation in the shared use and management of large aquifers in Northeast Africa and the Arabian Peninsula. Suggested measures for regional co-operation might include, as appropriate:

(a) Transnational projects for studying, screening, processing, interpreting and integrating available data and for defining management guidelines for rational, economical and sustained exploitation of regional aquifers, for example in Northeast Africa and the Arabian Peninsula;

(b) Shared use and management of shared water resources which transcend national boundaries, with emphasis on areas where the supply of water is endangered in terms of quantity, quality and availability;

(c) Establishing regional data banks, water resources institutes and training and research institutes for water specialists or strengthening those that exist;

(d) Supporting and establishing regional bodies, when needed, through which international co-operation could be achieved in the collection, standardization and exchange of data; the co-ordination of watershed management; the prevention and control of water pollution; flood control and river improvement; flood-warning systems, etc.;

^{1/} Use of this term, here and throughout the Plan of Action, does not prejudice the position of countries which are in favour of other expressions.

(e) Creating regional teams of experts, at the request of the Interested Governments, to carry out in adjacent countries common studies of water demand, ground water and surface water assessment, reconnaissance of dam sites, etc., to enable the countries to work together over an extended period of time and under similar technical conditions;

(f) Developing and strengthening regional activities concerning the assessment of surface and ground water resources, particularly within the framework of UNESCO's International Hydrological Programme and WMO's Operational Hydrological Programme.

Recommendation 6

34. The degradation of rangelands is the most widespread form of desertification associated with animal-based livelihood systems, and, even in the absence of climatic change, has resulted in impoverishment of, and in physical and social hardship among, many dryland pastoral communities. Regeneration of rangelands and rangeland management designed to sustain productivity in the long term are the main objectives of combative measures. In these high-risk environments, it will be advantageous to integrate systems of rangeland pastoralism and dry and irrigated farming, and to encourage diversification. Remoteness, scattered distribution and the traditional mobility of pastoral peoples have made it difficult to provide them with adequate health and social services. These and related disadvantages must be remedied, with measures to assist sedentarization and resettlement where appropriate.

It is recommended that measures should be taken to prevent desertification and to ameliorate the condition of degraded rangelands, to introduce suitable systems of rangeland and livestock and wildlife management, to develop diversified and integrated systems of production and to improve the living conditions of the inhabitants of those areas.

35. This recommendation calls for national action to:

(a) Prevent the degradation of rangeland and improve already degraded rangeland through:

(i) Surveys of the condition of the rangelands and the extent and intensity of desertification by the establishment of a permanent monitoring network;

(ii) Measures to aid regeneration, such as rotational or deferred grazing, temporary protection from grazing, seeding or planting of desirable and adaptable forage plants and trees for shelter, fodder reserves and firewood and the physical and chemical treatment to aid the re-establishment of plant cover in denuded areas as well as the proper spacing of water points in different areas;

(iii) Water and soil conservation;

- (b) Develop Improved grazing strategies through:
 - (I) Assessment of the productivity of range types under a variety of conditions;
 - (II) Determination of the impact of grazing on rangeland associations and their requirements for regeneration;
- (c) Develop Improved range management, through:
 - (I) Determination of appropriate carrying capacities and stocking rates of various herbivores in various livestock management systems; compatible with spatiotemporal diversity of feeding resources;
 - (II) Measures to facilitate the planned use of rangelands, including the provision of managed water points for multiple use and fencing to control the grazing animals, in order to minimize damage to rangeland near water points and provide sustained long-term utilization of rangeland;
 - (III) Establishment of pilot or demonstration projects to demonstrate range management, particularly aspects concerning bush control and the use or misuse of fire;
- (d) Improve livestock management, through:
 - (I) Improvement of existing stock, selection of local breeds, the introduction of new breeds and species and the improvement of herd structure;
 - (II) Control of animal diseases and pests, especially control of animal trypanosomiasis and control of poisonous plants in range areas;
 - (III) Development of relevant methods of livestock management and their promulgation through extension services and demonstration projects;
- (e) Improve the management of wild fauna through:
 - (I) Measures to restore the potential of adapted fauna to exploit marginal habitats;
 - (II) Improved methods of utilization of wild fauna, including ranching, domestication of new species, etc.;
 - (III) Better wildlife management techniques, including the establishment of stocking and offtake rates and control of predators and disease;
- (f) Develop strategies to deal with the effects of droughts, through:

- (I) Establishment of drought forage stocks and drought grazing reserves;
 - (II) Optimization of the use of dryland crop residues, agro-industrial waste and low-quality forage in general;
 - (III) Provision of means for removing stock from drought-affected areas;
 - (IV) Local water harvesting or irrigation schemes for the production of forage, food and tree crops as a programme for diversifying pastoral diets;
 - (V) Integration with adjacent livelihood systems;
 - (VI) Means for the reduction of stock numbers, including improved marketing facilities and feedlots and introduction of mobile abattoirs;
- (g) Develop strategies to deal with other climatic extremes, e.g. frost, floods, snow, heat, hurricanes, sand and dust-storms, etc., through:
- (I) Creation of shelters for man and animals;
 - (II) Provision of forage and feed stocks;
 - (III) Establishment of carefully sited artificial and natural wind breaks;
 - (IV) Special provisions to maintain water supplies for stock;
- (h) Strengthen the economic basis of the pastoral industry by:
- (I) Establishing truck routes, transport and marketing facilities, and price stabilization schemes;
 - (II) Considering the use of price controls to protect the livestock breeder in relation to other primary producers and the consumer;
 - (III) Overcoming social and cultural obstacles to socio-economic management, for example, of herds, through information campaigns;
- (I) Treat rangelands forming part of a forest agricultural ecosystem, as functional units, by studying, designing and applying forestry, agricultural and stock-raising production systems which take into account their mutual connexions and inter-relations so as to give rise to economically and socially stable systems;
- (J) Establish fisheries projects in small reservoirs for the purposes of food production;

(k) Establish improved systems of land tenure and water rights that are conducive to integrated rangeland management;

(l) Protect the rights of pastoralists through:

(i) Planned land use and improved land tenure systems, supported by appropriate legislation, information and education;

(ii) Regulation of alternative land uses such as tourism;

(m) Promote comprehensive study of the primary and secondary productivity of ecosystems, including rangelands;

(n) Promote alternative livelihood sources, such as craft industries, tourism and utilization of the non-fodder plants of the rangelands as raw material for industrial purposes (for production of fibre, alcohol, beverages and medicines), provided that such actions would not add to the process of desertification and that scientific, technical and economic studies prove that income from the utilization of such plants would exceed the income derived from the use of the land as rangeland;

(o) Provide health, welfare, and education services compatible with dispersed and mobile populations, for example through the use of radio;

(p) Assist with resettlement or partial sedentarization;

(q) Involve pastoralists from the outset in the planning and implementation of all measures that affect them;

(r) Provide preventive measures to control human diseases related to livestock and wildlife;

(s) Develop the network of existing small settlements functioning as central places in the contact zone between nomadic and sedentary land use in order to provide social, educational, health and such other services as are required for livestock production.

36. This recommendation also implies regional action to:

(a) Employ regional research centres and other suitable national or local institutions, such as universities, in the task of developing drought-resistant, high-yield and nutritious forage plants and of organizing mechanisms for their widespread distribution. Such centres should also apply themselves to research and activities directed toward the improvement and adaptation of livestock and wildlife;

(b) Implement and share, through dissemination of results, the experience gained from the transnational project on management of livestock and rangelands to combat desertification in the Sudan-Sahelian and North African regions, as described in the feasibility study (A/CONF.74/26), or from any similar programme following it;

(c) Strengthen and promote the implementation and development of the regional pilot projects proposed under MAB projects 3 and 4 and the EMASAR programme relevant to arid and semi-arid rangelands.

Recommendation 7

37. Areas of rain-fed farming in arid, semi-arid, sub-humid and other zones subject to desertification have undergone extensive desertification through gullying and sheet erosion, blowing away of soil, sand drift and growth of dunes, and salinization. Degradation has followed extensive clearing, exposure and powdering or compacting of the topsoil, clean fallowing, and excessive mechanical treatment. It is linked with the loss of soil fertility and the breakdown of soil structure after continuous monoculture. A major factor in degradation has been the extension of farming into areas where the risk of drought is high or onto marginal terrain, often under pressure from an increasing population. In the dry tropics, degradation is associated with the shortening of cycles in farming and regrowth systems, again linked with population pressure. Some desertification has also resulted from the deterioration of terraces and other structures built for soil conservation, due often to a shortage of labour, as in areas of strong out-migration. The consequences have been lowered yields and loss of productive lands, with resulting economic, physical and social hardship, often associated with high rates of emigration. Deterioration has adversely affected neighbouring animal-based livelihood systems.

38. Combative measures for soil and water conservation must form part of comprehensive reclamation schemes, including for example vegetation recovery on watersheds. They may involve the removal of land from cultivation, the consolidation of holdings, and resettlement schemes linked with alternative forms of livelihood.

It is recommended that comprehensive measures should be adopted for the conservation of water, conservation and improvement of soil, and rational use of soil moisture in order to prevent and fight desertification in rainfed agricultural areas.

39. To implement this recommendation, national action would be required to:

(a) Survey affected areas to determine land capability, degradation hazards and climatic risk, and put forward proposals for appropriate land use and management;

(b) Assist in the introduction of improved, appropriate crop systems, including cover crops, rotational systems with legumes, rational use of organic and chemical fertilizers, careful soil cultivation and tillage and proper use of plant remains, and of appropriate windbreaks to reduce exposure of soil and maintain fertility and soil structure;

(c) Establish legal limits to cultivation by tractor ploughing in marginal dry lands, which are ecologically better suited for grazing;

(d) Assist in the reconstruction and introduction of works such as terracing for soil conservation and water spreading, and, above all, make provision for adequate maintenance of these works;

(e) Encourage the adoption of measures to counter erosion, such as strip cropping, shelter belts, protective forest belts, structures for water control, use of soil conditioners, run-off farming, etc.;

(f) Reclaim degraded lands by such actions as the stabilization of sandy surfaces and dunes and the checking of gully systems;

(g) Assist in the revegetation of watersheds, upland pastures and woodlands and their protection from excessive grazing, cultivation or cutting for fuel where this entails a risk of desertification;

(h) Encourage diversification in farming systems, with appropriate inclusion of livestock and arboriculture;

(i) Encourage changes in those land tenure systems which are incompatible with the introduction of improved agriculture;

(j) Take appropriate measures to protect land from erosion resulting from civil engineering works such as roads and quarries.

40. The recommendation implies regional action to develop, through national and regional institutions such as universities and research establishments, improved agricultural techniques which resist desertification and drought-resistant crop varieties. This action will include the establishment of regional programmes for the application of soil conservation techniques in conjunction with the programmes of FAO.

Recommendation 8

41. Irrigation supports the closest settlement in arid lands, represents the most intensive form of primary land use, and is potentially highly productive. Irrigation of desert land is a very powerful means of increasing land productivity and controlling desertification; as a long-term action, it is desirable that new arid lands should be brought under irrigation, if enough water is available and the soils are suitable, on the basis of integrated construction and development. Nevertheless, many irrigation projects are severely affected by desertification. Waterlogging and secondary salinization or alkalization of soils have caused a reduction in crop yields and the abandonment of irrigable lands, and farm incomes in the areas affected have come too low for an adequate livelihood. Irrigation is costly, and requires skilled techniques if its benefits are to be realized; however, many irrigators need extension services as well as an access to capital and improved marketing facilities. Desertification in irrigated agriculture is commonly linked with the lack of incentive or opportunity for self-improvement. Many problems arise from the close settlement associated with irrigation schemes; such problems include disease, inadequate housing and community services, and the lack of alternative employment for the families of irrigators.

42. Note should be taken of the recommendations and targets fixed by the World Food Conference in 1974, which established two major priorities for the joint development of land and water resources. The first of these is the improvement and rehabilitation of existing irrigation schemes, which are not now being fully utilized, with the result that potential output is lost, water wasted and productive land damaged. It was estimated that remedial action within a ten year programme (starting from 1975) should extend to some 50 per cent of the 90 million irrigated hectares in the developing countries alone. Secondly, the target of a 25 per cent increase in irrigated area was suggested for the same ten year period. In any one country, the relative importance of new schemes and improvements of existing schemes will be decided by economic and social conditions, together with other constraints such as the availability or shortage of water or land, but at the global scale the greater urgency is for the rehabilitation and improvement of existing schemes. To help achieve the goals and targets of the World Food Conference and to combat desertification in irrigated lands, the following recommendation is made.

It is recommended that urgent measures be taken to combat desertification in irrigated lands by preventing and controlling waterlogging, salinization and alkalization; by reclaiming deteriorated lands; by improving irrigation and drainage systems; by modifying farming techniques to increase productivity in a regular and sustained way; by developing new irrigation and drainage schemes where appropriate, always using an integrated approach; and through improvement of the social and economic conditions of people dependent upon irrigation agriculture.

43. To implement this recommendation, national action is called for to:

(a) Improve water management in irrigated agriculture in order to reduce the losses due to irrigation through such measures as:

- (i) Selection of irrigation methods appropriate to the natural conditions (climate, topography, soils, depth and salinity of groundwater, quantity and quality of irrigation water, etc.) and socio-economic conditions (investment and maintenance costs, energy and labour requirements, marketing, etc.), and guaranteeing as uniform a supply of water as possible, thus reducing water losses during irrigation;
- (ii) Reduction of water losses during storage, transportation and distribution, through improved design, lining, construction and maintenance of canals and appropriate irrigation methods;
- (iii) Adoption of appropriate water pricing policies with a view to encouraging the efficient use of water with due regard to social objectives;
- (iv) Watershed management to reduce sedimentation and flood risks;

(v) Determination of the water requirements of crops and the establishment and enforcement of appropriate irrigation schedules;

(vi) Appropriate design of field and crop systems in schemes based on groundwater, in an effort to sustain water supplies;

(vii) Proper maintenance, control and operation of distribution systems, joint use of surface and groundwater, and recycling of waste water;

(viii) Advising farmers on the efficient application of water and associated tillage to retain soil moisture;

(b) Improve drainage and salt-leaching in irrigated lands, where this is economically feasible and socially justifiable, through such measures as:

(i) Investigating soil-water properties, return flow characteristics, hydrogeology and salinity of groundwater and soil geochemistry before and after construction or reconstruction of irrigation schemes;

(ii) Providing adequate drainage systems to maintain harmful groundwater below the active root zone;

(iii) Providing adequate water for the leaching of salt;

(iv) Undertaking reclamation of salinized, alkalinized, or waterlogged soils;

(v) Establishing a network of stations to monitor groundwater and salinity conditions;

(c) Improve irrigated farming systems through such measures as:

(i) Devising appropriate cropping systems in the light of soil surveys and the availability of water;

(ii) Establishing pilot or demonstration projects;

(iii) Introducing new species and varieties of crops, including the selection and development of salt-tolerant crops where fresh water is limited and agriculture is possible only with saline water;

(iv) Advising farmers, through effective and sound extension services, on appropriate farming and irrigation techniques, on the selection of crops to be grown and lands to be irrigated on the basis of water quality, and on the proper use of fertilizers and pesticides;

(d) Establish new Irrigation schemes, as appropriate, taking into consideration the need for:

- (i) Planning and conduct of Irrigation programmes in such a way that the provision of surface and subsurface drainage is treated as an integral and indispensable component;
- (ii) Environmental impact statements as part of the planning of hydraulic structures for Irrigation or energy production, including consideration of the positive and negative consequences of action that influences the environment;
- (iii) Prediction of salinization, alkalization and water-logging hazards (based on factorial salt-balance studies) due to a given action, determination of the possibilities for their prevention, and recommendation of preventive measures;
- (iv) Appropriate schemes of land division that facilitate the effective application of the above measures;
- (v) Studies of soil properties in experimental plots to be established within each Irrigated district.

(e) Improve the social and economic conditions of people earning their livelihood from Irrigation agriculture by:

- (i) Providing capital, and/or purchasing and marketing facilities, for example through agricultural co-operatives;
- (ii) Encouraging ancillary agricultural activities, such as livestock rearing or tree culture;
- (iii) Providing adequate sanitation, domestic water supplies and control of water-borne diseases;
- (iv) Providing adequate infrastructural and social services in newly established settlements.

Recommendation 9

44. There is a need to restore and maintain vegetation cover and to stabilize and protect soils in denuded areas, especially those affected by Intense human impact, for example around settlements and in open cast mines. Because deforestation is one of the principal causes of desertification, efforts to revegetate denuded land will often include the planting of perennial woody plants. The establishment of shelter belts and other tree plantations can be an essential part of the reclamation of degraded areas. This includes the requirement to stabilize moving sands by planting woody species, where possible, and halt dune advance where land use, communications or settlements are threatened. Revegetation of desert uplands is necessary for soil and water conservation and flood control. On a larger scale, "green belts" are called for to promote revegetation, soil conservation, planned land use and environmental protection along some desert margins and in other sensitive areas.

It is recommended that existing vegetation be maintained and protected, and that special measures be taken to revegetate denuded areas and then maintain and protect them to promote soil conservation, and to stabilize moving sands. This may be necessary in areas where human activity may have an adverse environmental impact in hilly areas and on mountain slopes, particularly at points where deterioration may threaten settlements, roads, farm lands and reservoirs; and along vulnerable desert margins.

45. To implement this recommendation, national action is desirable to:

(a) Stabilize and revegetate lands degraded by mining, industry, tourism or other non-agricultural activities, and prevent further degradation through:

- (i) The establishment or strengthening of existing, and the creation where necessary of new, extension and publicity services, including pilot demonstration projects and educational programmes to create an informed and favourable public attitude towards reclamation and conservation in degraded areas, and secure the co-operation and participation of communities in the proposed measures. Similarly, because tree plantations are long-term investments and require long-term planning, a high level of education is needed for understanding their ultimate usefulness; this fact should be particularly considered in information and education programmes;
- (ii) Legislation requiring responsible organizations to undertake reclamation, and controlling further developments through conservational requirements based on environmental impact assessments;
- (iii) Research into methods for stabilizing and revegetating degraded surfaces in desert areas, including soil treatments and the selection or development of drought-resistant and salt-tolerant plants;
- (iv) Taking steps where necessary to study the environmental impact, including the impact on the local population, of any kind of public or private work of an infrastructural or industrial nature before such work is carried out, as well as of the introduction of exotic species;

(b) Establish, around settlements, along roads and in other areas of intense human pressure, fenced reserves in which grazing, traffic and fuel-gathering are strictly controlled;

(c) Take necessary steps to promote the protection, conservation, and, where necessary, reconstitution of hedges and windbreaks;

(d) Control open spaces in settlements through revegetation, provision of stable pavements, and planting of shelter belts;

(e) Control the harmful effects of traffic, particularly in and near settlements and at route intersections, by surfacing and fencing roads;

(f) Evaluate the impact of all-terrain vehicles, whether aquatic, land or amphibious, on the natural environment and its resources and apply such regulations and controls to these vehicles as may be necessary to prevent them from degrading the environment. National land-use plans should identify areas in which all-terrain vehicles may be used or prohibited, particularly vehicles intended for sport, recreation or tourism, in accordance with the conditions prevailing in each country;

(g) Take the necessary steps to ensure that in planning roads, their impact on the environment should be studied before they are built in mountainous, swampy or other areas which, for some reason or other, have remained in their natural state as national parks, reserves or sanctuaries for wildlife, and in natural areas in which no direct economic exploitation is to take place. The construction of railways through such areas should be avoided;

(h) Revegetate watersheds for the improvement of the hydrological balance and soil conservation, as part of general programmes of catchment management. Entire basins should be regarded as ecological units in which joint efforts are directed towards comprehensive development, with the full participation of all segments of the population;

(i) Prevent soil loss through dust storms, sand drift and dune movement, with priority being given to areas where settlements, communications, farm lands, and important installations are threatened, by:

- (I) Surveying the extent of dust and sand drift and dune advance, and establishing the effective wind regime and sand and dust sources;
- (II) Checking sand drift by stabilizing sand surfaces, erecting fences, revegetating source areas and planting shelter belts;
- (III) Stabilizing sand surfaces by the use of matting, mulches, chemical, bituminous or any other economically viable products, vegetating dune surfaces, reshaping dunes and removing slip faces where necessary;
- (IV) Controlling land use in areas of stabilized dunes;

(j) Reduce the impact of the collection of plant material and manure for fuel, through:

- (I) Restrictions on fuel-gathering in sensitive areas;
- (II) Establishing tree plantations for the controlled production of firewood and timber for house construction and other necessary uses;

(iii) Making available alternative heating and cooking devices, as suggested by Recommendation 19.

(k) Create "green belts" consisting of mosaics of revegetated areas, improved pastures, tree plantations, fruit gardens, protected reserves and planted shelter-belts in zones of conservation and controlled land use, along desert margins, and in areas of intense human pressure;

(l) Strengthen national forest and range management, soil and water conservation services, and other organizations involved in implementing these recommendations, including their advisory arms;

(m) Protect tree plantations and other revegetated areas effectively and for a sufficient time against uncontrolled grazing and destructive land use;

(n) Introduce adequate monitoring systems which will detect changes in the status of vegetation;

(o) Take measures, if necessary in close co-operation with neighbouring countries, to control the use of fire and fight uncontrolled fires and other causes of severe damage.

46. The present recommendation also implies regional action for the production and distribution of the plants necessary for the vast programmes of revegetation and the institution of the measures proposed in the feasibility studies of transnational co-operation.

Recommendation 10

47. Ecological equilibrium plays a vital role in the prevention of environmental degradation processes likely to lead to desertification, and wildlife plays a vital role in maintaining this equilibrium.

It is recommended that Governments should take all necessary steps to ensure the conservation of flora and fauna in areas subject or likely to be subject to desertification.

48. To implement this recommendation, national action should be considered to:

(a) Adopt regulations governing the import, sale, exhibition or use of parts of any wild animal or native plant that is threatened, or likely to be threatened with extinction, such as skins, hides, ivory, feathers, entire stuffed animals or parts thereof, etc., with the exception of specimens belonging to species that are not endangered or are reared in captivity for this purpose with the approval of the competent authority, those which are reared at official breeding stations, and those which are bred for scientific or research purposes in conformity with established ethnic, social or cultural traditions;

(b) Adopt regulations governing the import, sale or collection, whether for exhibition or not, by private persons or institutions, of live wild animals and native rare plants of any species, with the exception of those intended for official zoos and specimens intended for scientific purposes;

(c) Ensure that, in cases where the exceptions mentioned in the preceding paragraph are applicable, the specimen or specimens of animals in question is or are transported in such a way as to avoid unnecessary suffering and prolonged confinement, which constitute an affront to civilization. Each country shall prescribe the conditions in which such transport is to take place in the light of the objectives of this recommendation;

(d) Where this has not already been done, sign, ratify and implement the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

49. Regional co-operation is required in respect of fauna and flora protection and management, particularly on the fringes of national parks and where a certain ecosystem extends across international boundaries.

Recommendation 11

50. There is a need to arrest and control desertification processes which are linked to climatic, hydrological or pedological conditions and the ecological conditions of land, water, plants or animals. The following Recommendation constitutes the counterpart, with respect to physical systems and natural or cultural or artificial ecosystems, of Recommendation 16 concerning monitoring of the human condition. The indicators and criteria necessary for monitoring of the above-mentioned conditions are listed in chapter III, sections A and C of the Plan of Action.

It is recommended that national or intra-regional systems for monitoring climatic, hydrological or pedological conditions and the ecological conditions of land, water, plants or animals be established or strengthened, as appropriate, in areas affected or likely to be affected by desertification.

The particular nature of the monitoring systems in question is indicated in earlier paragraphs; since such systems are often presented in sectoral form, it is suggested that a global, integrated and interdisciplinary approach be adopted whenever possible.

D. SOCIO-ECONOMIC ASPECTS

Recommendation 12

51. Although the climatological and ecological aspects of desertification are important considerations, they constitute only one dimension of the problem. Socio-economic factors also require intensive analysis and remedial action.

52. The socio-economic aspects of desertification include both the impact of the process on man, his welfare and his institutions, and consideration of social and economic behaviour and systems as a primary cause of desertification. Attention to the latter has lagged behind the former. In particular, greater account must be taken of the inequalities of resource availability, resource development and resource transfers which exist among and within countries. Inequalities in capital transfer between national and international economic interest, and between rural and urban areas, are of special concern. Such inequalities have their most severe impact on the poorer nations, and on the poorest people in these nations, particularly those constrained to live in the marginally productive lands of semi-arid and arid areas.

53. Various situations of a structural nature have the effect of hampering the organized participation of rural populations in the development process. The task of combating desertification requires that the less well-endowed regions, and the rural populace, be more intimately involved in the planning and management of their resources.

54. In view of the need to satisfy growing world food requirements, there is no alternative to the incorporation of these regions into a more rational system of productivity in the developing countries. This implies a better social organization of the rural population for productive purposes, especially where a system of smallholdings or any other traditional collective land-use system predominates.

55. It is important to note that, in the desertification process, ecological degradation is also due, to a considerable extent, to the essentially subsistence-level economies and activities of the inhabitants of the regions in question, resulting in overgrazing, rapid soil erosion and deforestation.

It is recommended that the social, economic and political factors which have an important bearing on desertification be analysed and evaluated, particularly the matter of inequitable relationships and methods to equalize them, not only at the international level, but also at the level of each country or region.

56. This recommendation implies, among other things, the introduction in each region of a new educational system, giving special attention to adults, that will allow the population to become fully aware of the ecological aspects of development and at the same time create a sense of solidarity with future generations. Steps must also be taken to ensure the wider participation of the rural population, in an organized manner, in the preparation, implementation and evaluation of programmes aimed at combating desertification, the more sensible use of arid and semi-arid zones, and the improvement of living conditions in general. Lastly, it is considered necessary that these programmes include among their main objectives the satisfaction of basic needs, care being taken to avoid the creation of artificial needs and to respect the cultural heritage of different groups.

Recommendation 13

57. Present rates of population growth are unprecedented in human history. Population growth intensifies pressures on the vulnerable land areas by increasing the number of people who live in them - farmers, pastoralists and artisans - and by increasing global food requirements, already on the rise because of rising expectations. At the same time, population growth is accompanied by massive migration from rural areas to urban areas. In excessive proportions, rural migrants tend to come from the most active age-groups, creating labour shortages in rural areas. In certain areas, these shortages have contributed to the deterioration of agriculture, and have thus acted as a cause of desertification. At the same time, waves of rural migrants have compounded the problems of cities, often already overcrowded and ill-equipped to receive the migrants or provide them with employment and the basic amenities of life. Demographic policies, designed to resolve or ameliorate such problems, should be seen as a natural and necessary corollary to policies directed toward improved land use.

It is recommended that countries which so wish should adopt economic and demographic policies that will support programmes for improving land use and sustaining the productivity of agro-ecosystems in dry lands, including, as appropriate, maintenance of an adequate rural labour force, sedentarization of nomads and resettlement of migrants from rural to urban areas.

58. Rural populations in the arid zones of the developing world are growing at approximately three per cent per year. Seldom in touch with modern medicine, nomadic pastoralists generally have higher death rates, and in consequence somewhat lower growth rates. It is unlikely that these rates of growth will decline substantially in the immediate future - indeed, the growth rates of pastoral populations may well rise before falling. In this situation, it can be anticipated that considerable numbers will continue to migrate from rural to urban areas. Problems associated with migration and resettlement can thus be expected to persist.

59. National action is desirable to ease the transition of dry land migrants into urban areas. Many developing countries have already initiated programmes to this effect - to assure migrants of housing and other social amenities such as education and health services and to supply them with counselling on employment opportunities. Countries affected by large-scale migratory movements can anticipate that programmes to ease the transition of migrants will be needed until at least the end of the century. Emphasis should be placed on the productive channelling of migration on the one hand, and on the provision of services to rural areas, on the other.

60. Seasonal or more permanent emigration is not proof that a rural area is disadvantaged: migration and remittance of money back home is often an essential and efficient mechanism of rural development. After determining the size and character of emigration from dry lands, countries so affected may wish to consider additional measures to reduce excessive losses of those in the most vigorous age groups. Improved land-use practices, as recommended elsewhere in this Plan of Action, will assist in this task by enhancing the prosperity of the dry land economies. Other measures could

consist in supplying services to dry land peoples, including the development of alternative sources of income. In the interests of social justice and demographic stability, the people of dry land areas should have access to social services and cultural amenities on a scale comparable with those enjoyed by other parts of the community.

Recommendation 14

61. Communities vulnerable to desertification are often far removed from centres of political power. Their populations are frequently dispersed and difficult to contact. This results in deficient health services, especially among nomads, and eventually in labour shortage. Because it appreciably reduces the productivity of the existing labour force, this ultimately leads to increased disregard for wise land-use practices, and hence to intensified desertification. Thus, in the absence of an adequate communications infrastructure, health care for such groups of the population should constitute an essential component of a programme to combat desertification.

It is recommended that programmes should be undertaken to provide peoples affected by, or vulnerable to, desertification with an adequate level of primary health care services, including family planning where necessary.

62. To implement this recommendation, national action should be considered to:

(a) Provide voluntary family health care and, for those Governments which so desire, family planning services so that people can exercise the parental right to decide on the number and spacing of their children in conformity with the Teheran Declaration on Human Rights, and to reduce rates of morbidity and mortality among both mothers and children, in conformity with the recommendations of the World Population Conference;

(b) Provide the peoples concerned with primary health-care services, including attention to food and nutrition, potable water, home economics, immunization and vaccination, and the control of communicable diseases, to achieve the object of self-sustaining health programmes within the context of overall development; the areas affected by desertification would require provision of adequate fixed health stations, mobile health-team units or paramedical personnel, first-aid posts and air services; the resources of the local pharmacopia should be fully documented, developed and utilized.

(c) Encourage the people concerned to participate in discussions and in the execution of health programmes; an integrated approach should be made by demonstrating appropriate primary health care techniques at different sites;

(d) Control rodents which are carriers of pathogenic organisms;

(e) Design programmes to provide adequate measures to prevent or control diseases which may appear in any new ecological situation created by the effort to combat desertification;

(f). Develop and implement programmes for the improvement of nutrition in the areas concerned, including information, extension and educational aspects, bearing in mind the problems of metabolism among rural people in dry lands, which are quite different from those of people in urban areas;

(g) Develop and implement programmes for the treatment of diseases related to the desert environment;

(h) Where possible, introduce health criteria into policies for integrated land-use planning. Such criteria should be aimed primarily at preventive health care, and should include training and education of the population.

Recommendation 15

63. Action against desertification and for the reclamation of desert lands needs to include sound human settlements planning and the development of a better quality of life. Two points need to be noted:

(a) The principal causes of loss of productive land include urban expansion, establishment of industrial and tourist centres, and the building of highways and airports, etc. Land in desertified areas or areas vulnerable to desertification should be used for the purposes for which it is best suited, bearing in mind the competing needs which other users may have for it;

(b) Design of human settlements in territories prone to desertification or where populations affected by desertification are being resettled needs to take into consideration environmental, particularly climatic, conditions, social, behavioural and cultural needs, the quality of available building materials, and traditional experience and practices in building comfortable dwellings.

The following recommendation is made as a follow-up to the Plan of Action approved by Habitat: United Nations Conference on Human Settlements:

It is further recommended that human settlements in areas affected, or likely to be affected, by desertification be situated within the framework of a national land-use plan that safeguards, as a matter of priority, land with pastoral or agricultural potential, by avoiding the construction on it of permanent buildings or elements of infrastructure.

64. This recommendation calls for national action to:

(a) Incorporate in national land-use plans the following elements:

- (i) Long-term perspectives envisaged by the national demographic policy (see Recommendation 13);
- (ii) Long-term planning for national economic and social development related to sites for industrial development, sites for mines, oilfields, recreation and tourism;

(III) Long-term perspectives for agricultural and pastoral development (see Recommendation 2);

(b) Direct national machinery for science and technology to:

(I) Develop and adapt designs for human settlements appropriate to the prevalent climatic conditions and compatible with socio-cultural values and needs;

(II) Survey traditional experience in settlement design and building architecture so as to collate the principles and guidelines that made traditional dwellings comfortable and, as appropriate, incorporate traditional experiences into innovative modern designs;

(III) Survey locally available building materials and their attributes related to the desert environment, and develop means for the best use of these materials or for their treatment to meet environmental needs;

(IV) Develop architectural designs for housing units that minimize the use of energy for cooling and heating;

(V) Develop designs which optimize the use of solar and wind energy for domestic and agricultural requirements;

(VI) Develop technologies appropriate to arid environments for the use and recycling of solid waste and sewage materials;

(VII) Design technologies and means for communicating information and services to distant, dispersed communities in areas affected by desertification;

(c) Develop, in the light of the scientific information referred to above:

(I) Appropriate planning and building standards and codes applicable to establishing, extending or revitalizing human settlements, whether urban or rural, dispersed or agglomerated;

(II) Plans for establishing new settlements and redesigning and improving existing settlements in accordance with national land-use plans or programmes;

(III) Mass-educational programmes aimed at harmonizing socio-cultural traditions with appropriate, environmentally sound designs of human settlements, and at optimizing the constructive and continuing participation of their inhabitants;

(IV) Appropriate legislation and administrative and co-operative machineries for enforcing approved codes and for ensuring community participation.

65. This recommendation calls for regional co-operation and exchange of information on:

(a) Traditional and new experience in the design of settlements, housing units and other structures; traditional experience which maintains or enhances the environment often transcends political boundaries and relates to climatic zones that are regional in extent;

(b) Available building materials and their environmental appropriateness;

(c) Regional research programmes involving national machinery for science and technology.

Recommendation 16

66. Monitoring of the human condition is required, first for assembling sufficient baseline data to make it possible to judge when serious deviations from the normal pattern have taken place, secondly for establishing an advance warning system that will use certain indicators to assess such serious deviations, and thirdly for establishing monitoring systems to measure the progress of a crisis.

It is recommended that national systems for monitoring the human condition be established or strengthened, as appropriate, in the countries affected or likely to be affected by desertification, always keeping in mind the risk of political abuse of the data collected.

67. The objectives of such a national monitoring system should be:

(a) To monitor both the long-term effects of desertification on human well-being and those aspects of human behaviour which might contribute to desertification; included in this objective is the need to obtain information on the human condition indicating that desertification is indeed occurring (as requested by Recommendation 1);

(b) By obtaining early indicators, to minimize the impact and thus the human and economic costs of drought;

(c) By monitoring the human condition during a crisis, to maximize the benefit of relief programmes and to ensure that effective crisis-management mechanisms are maintained;

(d) To evaluate the effects of crises in order to use that information to help cope with similar future contingencies.

68. To implement this recommendation, it is further recommended that:

(a) Such monitoring be based on social indicators, relating both to gradual desertification and to crises, and that it form an integral part of anti-desertification programmes;

(b) The data consist of indicators of basic needs, production and productivity, and selected physical conditions;

(c) Data collection techniques and initial tabulation processes be simple so that costs and implementation problems are minimized; It is recognized, however, that some countries may subsequently wish to submit the data to more complex analysis;

(d) Existing data and government agencies should be used whenever possible; In particular, recent censuses be exploited and analysed;

(e) In all countries concerned, one or more sample population units should be chosen for monitoring of the human condition;

(f) Urgent attention should be paid to the question of how monitoring information can be rapidly fed to and utilized by national policy-makers;

(g) Monitoring of the human condition should address at least the following variables and indicators as appropriate:

(i) Population;

(ii) Human and environmental health;

(iii) Food;

(iv) Human settlements;

(v) Education;

(vi) Socio-cultural patterns;

(vii) Man as a land user;

(viii) Production and productivity.

69. The human condition may be monitored by three different systems:

(a) Base-line measures obtained by utilizing existing information, by adding questions to censuses and by organizing special-purpose surveys;

(b) Simple and cheap but effective systems for giving advance warning, by the most appropriate means, of changes in the human condition, established by monitoring the chief migration streams to see if they show abnormal changes in magnitude or composition, or by taking periodic measures in selected representative areas;

(c) Crisis-monitoring of the human condition in major droughts, to be carried out along migration routes and at destinations (including refugee camps), and also by examining sample areas in drought-stricken regions from which the refugees originate.

70. Regional co-operation, through the existing regional mechanisms, including the United Nations regional commissions and intergovernmental bodies, is required in implementing this recommendation in order to:

(a) Establish a system for the continuous exchange of information gained from the national monitoring of the human condition among the countries of the regions concerned;

(b) Establish regional systems for monitoring, planning and directing population movements across political borders during drought disasters;

(c) Establish an experimental monitoring area in one or more countries of the region in order to elaborate and improve the suggested systems for monitoring the human condition, to make them consistent with the particular conditions of each of the regions concerned, and to disseminate the experience so gained among the countries of the region.

E. INSURANCE AGAINST THE RISK AND THE EFFECTS OF DROUGHT

Recommendation 17

71. As there is a particularly high risk of drought disaster in areas subject to desertification, the need for disaster relief and rehabilitation must be anticipated. It is recognized that the populations of areas prone to drought practise a wide range of strategies to protect themselves against the effects of drought. Accordingly, it is important for official relief action to take account of these mechanisms and indeed to strengthen them, rather than ignore or damage them. If relief operations are carefully planned before the need arises, they will not only be more rapid and effective, but opportunities for social change created by disaster can be constructively used to promote programmes recommended in this Plan of Action. Explicit recognition of the risk of drought leads to insurance against the risk. Planning for disaster relief involves a set of financial and other measures to insure the inhabitants of the areas at risk against loss of crops, livestock, means of livelihood, housing and food supply.

It is recommended that the recommendation on drought loss management adopted by the United Nations Water Conference be noted and implemented. It is further recommended that preventive measures be taken and protective strategies adopted for effectively combating the risks and effects of drought, and that insurance schemes be adopted at the national level which are compatible with the socio-economic needs of the local people and the national interest in relation to the long-term protection of resources and the quality of the environment.

72. To implement this recommendation national action will be required to:

(a) Establish or reinforce crop and livestock insurance schemes, and savings and credit institutions designed for small farmers and livestock owners;

(b) Create food, fodder, fuel, and pastoral reserves against disaster, as well as reserves of seeds;

(c) Plan in advance for periods of less than normal precipitation

(d) Investigate existing local risk-reduction and insurance mechanisms so that these may be strengthened and supplemented during crises and, where appropriate, incorporated in more permanent insurance schemes;

(e) Consider ways to maintain the purchasing power of dry land farmers and pastoralists during periods of drought so as to protect them against the effects of price instability, and organize pilot projects based on locally available resources;

(f) Establish national and provincial commissions to work toward agreements between farmers and pastoralists about the shared use of common lands and water supplies during periods of crisis;

(g) Provide for a portion of the proceeds of taxation, where taxation of livestock and other means of agricultural production exists, to be set aside for insurance purposes for the people subject to taxation;

(h) Establish food reserves within agricultural areas vulnerable to desertification, with due regard to factors of storage, transportation, distribution and management;

(i) Establish special forms of risk insurance for pastoralists, including: loans of breeding stock, including traditional exchanges; identification of reserve pasture areas, with appropriate management schemes; establishment, maintenance and improvement of permanent breeding stocks; establishment of emergency markets for disposal of surplus animals;

(j) Provide alternative forms of relief employment for people affected by drought, including the stockpiling of tools;

(k) Design essential services, such as water supply, transport, medical and veterinary services, to meet periodic drought crises;

(l) Consider the establishment of national insurance schemes, operating from suitably located centres, for people at risk, to assist them during periods of crisis.

73. Regional co-operation is required to facilitate the movement of people across national boundaries during crisis periods. As the temporary migration of people out of areas and countries suffering from severe drought conditions into less adversely affected areas represents a form of insurance against further loss, international efforts to facilitate these movements should be advanced. This recommendation also implies regional and international co-operation in evaluating remedial and disaster relief programmes with a view to their playing a greater role in ensuring improved water management, thereby improving the livelihood of people, preventing desertification, and reducing the impacts of drought.

F. STRENGTHENING SCIENCE AND TECHNOLOGY AT THE NATIONAL LEVEL

Recommendation 18

74. The lack of scientific and technological capability in many of the developing countries affected by desertification constitutes a serious obstacle to successful national campaigns against desertification. For this Plan of Action to be successful, scientific and technological capabilities must be strengthened, taking into account national, economic and social development plans. Although it is expected that detailed recommendations in this respect will be considered in 1979 by the United Nations Conference on Science and Technology, it is nevertheless appropriate to undertake certain measures, within the framework of the present Plan of Action, which could serve as an input to this later conference.

It is recommended that appropriate action be taken to utilize and strengthen national capabilities in science and technology, with particular attention to planning and management for rational utilization of resources, as part of the campaign against desertification, as well as to establish conditions which will lead to a more adequate international flow of technology to the developing countries.

75. The implementation of this recommendation calls for broad international support in the form of advice, technical and financial assistance, and training. This could be achieved by strengthening existing national institutions, through the mobilization of national and international resources, with the aid of agencies of the United Nations system and governmental and non-governmental organizations, including bilateral arrangements. National action would be required to:

(a) Establish, co-ordinate or strengthen national scientific institutions concerned with the problem of desertification so that they may assist in the transfer and modification of technology and in the dissemination of information on current progress in science and technology related to combating desertification;

(b) Give due attention to the modification of technologies to suit local conditions; taking into account social, cultural and economic factors, and ensuring a proper combination of local and imported technology;

(c) Provide advisory or extension services and training on the application of new or modified technologies, bearing in mind their impact on national technologies;

(d) Provide existing scientific and technological centres, including the universities and agricultural institutes, with the staff, equipment, material and funds necessary for their operation;

(e) Establish or reinforce with the help of international organizations, machinery for monitoring desertification (see Recommendation 11) and the human condition (see Recommendation 16);

(f) Promote the development of programmes to revive traditional techniques for combating desertification, complementing them with existing innovations, and encourage the exchange of these techniques among countries.

76. Regional action involving the United Nations regional commissions and other relevant bodies is required in connexion with this recommendation to:

(a) Reinforce and support existing regional scientific institutions and programmes related to combating desertification, and promote, where necessary, the establishment of new scientific institutes in areas subjected to desertification;

(b) Support and strengthen the Institut du Sahel, the African Remote Sensing Council and any other similar institutions which may be established -- in the future;

(c) Support regional efforts to transfer technology.

Recommendation 19

77. The problem of energy sources is of the utmost importance in areas affected or likely to be affected by desertification. First of all, the collection of woody plants and the manufacture of charcoal are at present, and are likely to remain, the main sources of energy for many inhabitants of arid lands. Excessive wood cutting is among the most serious causes of desertification. If a substitute for woody fuel can be found in these areas, it will be a powerful factor in the improved management of vegetation resources, and hence a tool in combating desertification. Secondly, the use of alternative or unconventional energy sources in dry lands, usually favoured with sunlight and wind, should be vigorously investigated as a means of preserving organic materials, of reducing the tedious human labour so often involved in fuel collection, and of providing the people of the dry lands with simple, inexpensive and convenient devices to serve their daily lives. These unconventional energy resources could be based on solar, wind, biological, geothermal or other sources of energy. They could provide alternatives to burning wood for cooking, and supply water for drinking and irrigation and light for homes.

It is recommended that the conventional use of energy sources based on the use of vegetation be controlled and improved, that existing local or imported technologies for gas and electricity production, as well as for heating or cooling or mechanical purposes, be implemented as far as practicable, and that research be vigorously pursued into the use in the dry lands of alternative or unconventional energy sources that will yield simple, inexpensive, useful and socially acceptable devices to serve the needs of their people.

78. This recommendation implies national action to:

(a) Promote the controlled use of plant materials for fuel as part of conservational management, including the planting of woodlots, the establishment of forest reserves, the rotational collection of fuel and the introduction of improved woody species, encourage the use of various trees which grow rapidly and whose wood could be harvested easily, and develop and implement more efficient charcoal manufacture and energy conversion devices based on plants as fuel;

(b) Establish facilities for the local manufacture of simple and efficient devices shown by investigations to be useful alternative energy sources in the dry lands. The following devices could be recommended for quick national adaptive investigations and for experimentation in pilot projects, bearing in mind the need for improved transfer and co-ordination of information to minimize unnecessary and costly duplication of effort, as well as to facilitate the international sharing of presently available technology:

(i) Solar energy: photovoltaic or thermodynamic generators and water pumps based on them, water pumps combined with reverse osmosis desalters based on solar energy generators, water heaters, water distillers and desalters, cookers, coolers, food dryers, refrigerators,

(ii) Wind energy: windmill water pumps, energy generators, and water pumps combined with reverse osmosis desalters;

(iii) Biological energy: bio-gas generators using animal waste, pyrolytic reactors designed to produce charcoal, gas and oil from agricultural wastes such as grain husks, peanut hulls, stalks of crop residue, palm leaves, etc.;

(iv) Geothermal energy: although this energy source is not yet operational, and concerns at present only certain volcanic regions of the world, it deserves to be investigated more thoroughly because of its future potential, as part of the fight against desertification, notably in the case of developing countries situated in arid and semi-arid zones;

(c) Establish distribution facilities to ensure that such devices reach the people who can use them, at a subsidized price when necessary and accompanied by instructions for use;

(d) Establish appropriate maintenance facilities, including the provision of necessary spare parts for the devices, to ensure their continuing exploitation;

(e) Ensure that women, who in countries affected by desertification are largely responsible for the collection and consumption of wood for fuel in their families, are consulted on the acceptability of any new devices introduced, trained in their management and encouraged to find alternative, productive uses for any time freed by their introduction.

Recommendation 20

79. The implementation of national programmes for monitoring, studying and combating desertification, and for rational management of resources in dry lands subject to desertification, requires various categories of trained scientists and technicians. Their training must take into full consideration the complex and locally varying nature of the process of desertification and the need for integration of measures to combat it, to reclaim lost terrain, and to improve the quality of life for the inhabitants. The success of national plans and their efficient implementation depend on the conscious acceptance and positive participation of the societies concerned. It is desirable that national education programmes be available, and that these be based on a collaborative process involving the users of the land, local and national Governments, resource management specialists and educators. In the same manner, educational opportunities should be available at all levels of society - from the policy maker and resource manager to the student or local citizen. Furthermore, these educational programmes should be linked to national institutions for desertification research and management, so as to improve their relevance, facilitate the actual application of new ideas and research results, and provide training opportunities for students. These activities call for a variety of well co-ordinated mass-media programmes.

It is recommended that training, education and information related to desertification be accorded priority in national programmes, with due regard to the specific circumstances of the country concerned.

80. This recommendation calls for national action to:

(a) Provide for the inclusion, evaluation and modification of information on desertification and arid and semi-arid land processes in environmental programmes and curricula of education at all levels, including schools and universities;

(b) Provide courses and degree programmes in universities and institutes of higher studies, including postgraduate training in multi-disciplinary studies, to support national programmes for combating desertification and reclaiming desert lands;

(c) Provide special scientific and pedagogic courses related to the ecology of deserts and arid and semi-arid lands in teacher training programmes;

(d) Incorporate in the objectives of out-of-school educational programmes the mobilization of popular support for national programmes to combat desertification and reclaim arid lands. These educational programmes need to take prevalent socio-cultural factors into consideration with a view to fostering attitudes compatible with necessary changes, or gradually changing attitudes opposed to change, and to use languages and means of demonstration that are intelligible to the masses, and means of communication accessible to remote areas;

(e) Promote mass-media programmes that comprise continuous and mutually supportive activities, including radio, television, press, cinema, pamphlets, posters, etc.;

(f) Establish demonstration units where improved or new methodologies of land-use are practised. These units could organize demonstration and training programmes in which men and women engaged in farming, agriculture or pastoralism could participate for appropriate periods of time;

(g) Provide information on desertification processes to high-level decision-makers and civil servants in order to make it possible to carry out these and other relevant recommendations in the present Plan of Action.

81. The implementation of this recommendation implies regional co-operation, especially in regions where one language or a common culture prevail, including:

(a) Exchange of experience in school and university educational programmes through, inter alia:

(i) Symposia on environmental education including desert aspects;

(ii) Short-term training on special research techniques (remote sensing, etc.);

(iii) Training courses for technicians;

(iv) Student exchange and internship programmes;

(b) Exchange of experience and information on media programmes through, inter alia:

(i) Seminars on ways and means of sensitizing land-users to problems of ecosystem degradation, including desertification;

(ii) Workshops for the production of model media materials (radio and television programmes, pamphlets, posters, etc.);

(iii) The establishment of appropriate machinery for exchange of media programmes and materials;

(c) Co-ordinated measures to establish or strengthen regional information, education and training centres dealing with the promotion of fundamental or applied scientific knowledge or with integrated methods for the logging, estimation, assessment, monitoring, management and rational use of resources. Such centres could be organized on the basis of those already in existence, by encouraging them to join together in a network within which they would be able to find interests and resources to their mutual satisfaction.

Recommendation 21

82. Desertification is often a national problem, and accordingly a strong national machinery is necessary to combat it. In many countries, activities to combat desertification are scattered among various ministries and departments, with no special arrangements to co-ordinate them. There may be overlap between a variety of bodies with responsibility for combating desertification and the planning and development of arid and semi-arid zones; on the other hand, important areas may not be covered at all. This constitutes an obstacle to technological progress and to the advance of measures for the recovery of areas subjected to desertification. In these circumstances it will be necessary to create national machinery for the elaboration and implementation of national programmes for combating desertification and to make specific budgetary allocations for carrying them out.

It is recommended that where none exists, co-ordinated national machinery to combat desertification and drought be established.

83. To implement this recommendation it would be desirable to establish a national desertification commission at the highest level of government, with high-ranking representatives of the appropriate ministries, agencies and institutes and community leaders and non-governmental organizations, or to assign the task of co-ordination to an appropriate national authority (ministry, department or board), particularly to that responsible for environmental protection. The function of this national body would be to co-ordinate and consolidate activities related to desertification, rather than to impose a new administrative structure. Even so, this body must be administratively and scientifically supported by a small technical staff.

84. The responsibilities of such a national body might include:

- (a) Analysis, evaluation and dissemination of existing information on desertification;
- (b) Preparation of a national plan of action to combat desertification that would co-ordinate all national activities;
- (c) Arranging for financing the implementation of the national plan of action through national institutions;
- (d) Monitoring the progress of measures to combat desertification and recommending necessary changes to the national plan of action.
- (e) Participation in international and regional programmes, and maintaining liaison with regional and international organizations on problems of desertification.

G. INTEGRATION OF ANTI-DESERTIFICATION PROGRAMMES INTO COMPREHENSIVE DEVELOPMENT PLANS

Recommendation 22

85. Immediate action is necessary in the areas most severely affected by desertification. At the same time, it would be advisable for individual Governments to formulate programmes to combat desertification in accordance with an integrated and comprehensive developmental plan capable of going beyond the limits of sectoral approaches.

Programmes to combat desertification should be formulated, whenever possible, in accordance with the guidelines of comprehensive development plans at the national level.

86. The implementation of this recommendation requires a set of actions on the part of individual Governments, including the formulation of comprehensive development plans where they do not yet exist, taking into account the specific problems of desertification. To this end, appropriate United Nations technical assistance should be provided whenever requested by interested Governments.

V. RECOMMENDATIONS FOR INTERNATIONAL ACTION AND CO-OPERATION

A. INTERNATIONAL ACTION

87. As the implementation of the Plan of Action to Combat Desertification is expected to be carried out by Governments through their national institutions, with international support (see para. 17 above), there must be close co-ordination of national, regional and international programmes in a general campaign against desertification.

Recommendation 23

88. The services of the agencies of the United Nations system should be available, and their participation in the implementation of the Plan of Action must be ensured. The agencies of the United Nations system, in their respective fields of competence within the scope of the Plan of Action, should elaborate methodologies, co-ordinate and support scientific and technological research, facilitate the exchange of information, and provide financial and technical support for the implementation of the recommendations outlined in this Plan of Action.

It is recommended that the General Assembly request the Secretary-General of the United Nations and the governing bodies of the United Nations Development Programme, the United Nations Environment Programme, the United Nations Industrial Development Organization, the United Nations Conference on Trade and Development and the United Nations regional commissions, and invite the governing bodies of the Food and Agriculture Organization of the United Nations, the World Meteorological Organization, the United Nations Educational, Scientific and Cultural Organization, the

the World Health Organization, the International Bank for Reconstruction and Development and other relevant United Nations bodies, to support, in their respective fields, international action to combat desertification in the context of the present Plan of Action, and to make appropriate provisions and allocations in their programmes.

89. The implementation of this recommendation requires a set of actions by the agencies concerned, including:

(a) Review and evaluation of current activities related to the problems of arid zones, and to the problems of desertification in particular, with a view to adjusting and co-ordinating these activities to conform with the Plan of Action. The revision should be conducted in close co-operation with the United Nations body entrusted by the General Assembly with the task of co-ordination and follow-up, on the recommendation of the United Nations Conference on Desertification. Priority should be given to the application of existing knowledge and to ensuring that on-going and planned activities are sufficiently financed;

(b) Planning of advisory, financial and technical support for the Plan of Action, including support from their existing budgets in the following fields:

(i) The elaboration of a uniform methodology for the assessment, monitoring and prognosis of desertification;

(ii) Making available to Governments, on request, consulting services and technical assistance in:

(1) Organizing systems for monitoring desertification;

(2) Collecting, processing, analysing and evaluating data;

(3) Land-use planning;

(4) Education on dryland environment and desertification, especially through mass-education programmes;

(5) Implementing, on a continuing basis, the recommendations of the United Nations Water Conference relevant to the problems of desertification;

(6) Formulating national action programmes and policies for improved soil and water management;

(7) Organizing training courses in soil and water management at national and regional centres strengthened for this purpose with international support;

(8) Improving livestock, wildlife and rangeland management;

- (9) Training farmers in improved techniques for rainfed farming, particularly by strengthening the services for extension and on-farm training;
- (10) Improved and appropriate technology in irrigated agriculture; United Nations bodies now concerned with irrigation agriculture should be geared and co-ordinated to provide advice on the planning, design, and construction of irrigation systems, the reclamation of waterlogged, salinized and alkalized lands, the investigation and monitoring of soil-salt-water relations, and the control of water-related diseases;
- (11) Revegetation and afforestation in dry lands, as well as the stabilization of sand dunes;
- (12) Problems related to migration from dry lands and the resettlement of migrants;
- (13) Family planning and family health;
- (14) Planning and research on human settlements;
- (iii) Providing technical assistance to Governments, on request, for the establishment, expansion and improvement of networks of meteorological and hydrological stations in areas subject to desertification;
- (iv) Compiling, publishing and distributing a desertification atlas containing appropriate thematic maps at an adequate scale; such an atlas should be periodically revised;
- (v) Promoting the establishment of dry land biosphere reserves to preserve natural ecosystems, as well as genetic diversity, and to provide baselines for monitoring;
- (vi) Organizing the training of land-use planners and survey specialists at existing training centres, with the assistance of the United Nations University;
- (vii) Working out and distributing to Governments, on request, a methodology for land-use planning in dry lands;
- (viii) Undertaking comparative studies of existing laws and regulations, by institutions concerned with the legal aspects of natural resources, including land and water, and developing guidelines for legislation;
- (ix) Standardization of methodologies and parameters for water survey and water development schemes, and organization of the international exchange of data and information relating to problems of improved water management in areas affected or likely to be affected by desertification;

- (x) Developing comparable methods for the evaluation and study of surface and underground water resources, including an assessment of quality and quantity of water and the sources and extent of their recharge;
- (xi) Developing interdisciplinatory research and pilot projects with a view to promoting the rational management of arid and semi-arid rangelands, dry-land farming, and irrigated agricultural systems, including all socio-economic, health and human aspects;
- (xii) Encouraging all countries to make available, through the International Referral System for sources of environmental information (IRS) and other appropriate international services, relevant methodologies for:
 - (1) Assessing carrying capacities and appropriate stocking rates of natural rangelands and improved pastures, taking into account seasonal and interannual variation and drought risk;
 - (2) Determining the optimum size of agricultural units, and the size and composition of herds, in accordance with the characteristics and carrying capacity of the grazing land and existing land-use systems;
 - (3) Planning and carrying out rotational and deferred grazing;
 - (4) Planning and carrying out the ecological and geographical stratification of livestock breeding, fattening and marketing;
- (xiii) Developing appropriate recommendations for the use of improved fertilizers in dryland farming, with special emphasis on organic manures and biological fertilizers that improve soil properties;
- (xiv) Initiating a co-ordinated international programme to study wind and water erosion and to elaborate a comprehensive system for surveying, monitoring, predicting and combating soil erosion;
- (xv) Organizing, through existing institutions, international postgraduate courses on methods to combat soil salinization and alkalization;
- (xvi) Providing financial and technical assistance for the implementation of projects on the improvement of irrigated agriculture to achieve the goals and targets set by the World Food Conference,

- (xvii) Providing financial and technical support to programmes designed to ease the transition of dryland rural migrants into urban areas and the sedentarization of nomads;
- (xviii) Providing financial and technical support to programmes designed to deliver health care to peoples living in areas affected or likely to be affected by desertification;
- (xix) Providing financial and technical support to programmes for the development of proper human settlements in areas subject to desertification;
- (xx) Reviewing the activities of disaster relief organizations with a view to further increasing their effectiveness, taking into account the present Plan of Action (1978-1979);
- (xxi) Carrying out research into the use of alternative energy sources, especially wind and solar energy, in the dry lands; such research should be keyed to producing, testing, and publicizing simple, inexpensive and efficient devices for the use of dryland peoples;
- (xxii) Organizing, in the Union of Soviet Socialist Republics, International seminar courses for higher level specialists on:
 - (1) Watering and Irrigation in arid areas;
 - (2) Rational use of pastureland;
 - (3) Forestry in desert areas (including forest improvement and stabilization of shifting sand);

(c) Taking account, in the course of international negotiations involving commodities, trade and development, of the special risks involved for people in desert-prone areas;

(d) Co-operation with the Environment Co-ordination Board to prevent overlapping and duplication of effort, with attention, in the case of water problems, to the International Hydrological Programme of UNESCO and the Operational Hydrological Programme of the World Meteorological Organization and, in the case of the problems of arid and semi-arid rangelands, projects 3 and 4 of the MAB Programme, the UNESCO/UNEP integrated Project on Arid Lands (IPAL), and the FAO/UNEP EMASAR Programme.

Recommendation 24

90. It is evident that climate plays a critical role in most desertification processes, and the need for improving man's understanding of the causes of climate change and development of improved methods of climate prediction is widely accepted. It is also recognized that man's commercial, industrial, and agricultural activities have the potential for causing climate changes,

and that there is a need to understand the consequences of man's activities. WMO, in association with UNEP, FAO, UNESCO, the World Health Organization (WHO) and the International Council of Scientific Unions (ICSU), has initiated planning for a world climate programme to address the full range of climate problems, including the study of the impact of climatic variations on the natural environment and human activities. WMO, in association with other agencies of the United Nations and ICSU, is also planning to convene a World Climate Conference in 1979 in Geneva and, in collaboration with ICSU, is planning a broad research effort into the dynamics of climate. As part of the Global Atmospheric Research Programme, WMO will in 1978 and 1979 be conducting the first Global Weather Experiment to provide the necessary data base for initiating the study of interannual climatic variations. The successful planning and execution of the already agreed World Climate Programme; the World Climate Conference, and the Global Atmospheric Research Programme can provide vital information, understanding, and climatic services required by Governments to cope with the process of desertification.

It is recommended that the General Assembly of the United Nations endorse the activities of the World Meteorological Organization, the International Council of Scientific Unions, and interested United Nations agencies that are directed at understanding and resolving climate problems, and that it urge Governments, international agencies, and other interested bodies to support and participate in the planning and execution of the World Climate Programme, the World Climate Conference, and the Global Atmospheric Research Programme.

Recommendation 25

91. The participation of international and regional organizations outside the United Nations system, both intergovernmental and non-governmental, will be an important factor in the successful implementation of the Plan of Action.

It is recommended that the United Nations General Assembly should request the Secretary-General to invite intergovernmental and non-governmental organizations concerned with desertification problems and their impact on development to participate in the implementation of the Plan of Action to Combat Desertification with a view to co-ordinating their activities within a worldwide programme.

92. To implement this recommendation, such organizations may find it necessary to increase their efforts to raise the resources necessary for the financing of technical co-operation programmes and research projects related to the development of plans for, and the strengthening of institutions engaged in, combating desertification.

B. INTERNATIONAL CO-OPERATION

Recommendation 26

93. Experience has shown that processes of desertification at times transcend national boundaries, making efficient regional co-operation essential in the management of shared resources, with the objective of preventing ecological imbalance which can cause desertification.

In order to achieve judicious management and equitable sharing of resources on the basis of equality, sovereignty and territorial integrity, it is recommended that countries concerned should co-operate in the sound and judicious management of shared water resources as a means of combating desertification effectively.

94. In this connexion, the Conference on Desertification reaffirms the recommendation of the United Nations Water Conference that in the absence of bilateral or multilateral agreements, Member States should continue to apply generally accepted principles of international law in the use, development and management of shared water resources.

95. The work of the International Law Commission in its contribution to the progressive development of international law and its codification of the law of the non-navigational uses of international watercourses should be given higher priority in the work programme of the Commission, and should be co-ordinated with activities of other international bodies dealing with the development of the international law of waters with a view to the early conclusion of an international convention.

VI. RECOMMENDATIONS FOR IMMEDIATE INITIAL ACTION

96. A number of actions should be undertaken immediately upon the adoption by the Conference of the Plan of Action to Combat Desertification and its subsequent endorsement by the General Assembly as the United Nations Plan of Action. These actions could be undertaken at the national level by the Governments themselves, if they so wish; they should be undertaken at the regional level by the regional United Nations bodies and relevant inter-governmental organizations, and at the international level by the body designated for this task by the General Assembly.

97. At the national level, Governments may wish to consider the following immediate actions:

(a) Establishment or designation of a governmental authority to combat desertification (see Recommendation 21);

(b) Assessment of desertification problems at country and provincial or sub-provincial levels (see Recommendation 1);

(c) Establishment of national priorities for actions against desertification;

(d) Preparation of a national plan of action against desertification within the scope of the United Nations Plan of Action to Combat Desertification;

(e) Selection among national priorities of those actions which could be taken:

(i) Nationally;

(ii) With the support of regional or international organizations or other foreign sources;

(iii) In the framework of regional or international co-operation;

(iv) Only with foreign aid;

(f) Preparation and submission of requests for international support for specific activities within the above priorities, as required;

(g) Implementation of actions in accordance with national plans to combat desertification.

98. At the regional level, the United Nations regional commissions, as well as relevant intergovernmental and non-governmental organizations, may, in consultation with the countries concerned, wish to come forward with regional plans or specific proposals for the implementation of the Plan of Action to Combat Desertification. These plans or proposals should be co-ordinated at the international level to avoid any duplication of activities. They may include inter alia the following immediate post-Conference actions at the regional level:

(a) The convening of regional post-Conference technical workshops or seminars by the United Nations regional commissions, in co-operation with the regional organizations and Governments concerned, to discuss the implementation of the Plan at the regional level and to define regional programmes more precisely;

(b) Inter-regional consultations and studies on selecting sites for the establishment of the regional centres proposed in paragraph 99 (e) below;

(c) Organizing and co-ordinating the implementation of the transnational regional projects outlined in the feasibility studies on the major regional aquifers of North-East Africa and the Arabian Peninsula (A/CONF.74/24), the "green belt" in North Africa (A/CONF.74/25), the transnational development of grazing resources in the Sudano-Sahelian regions (A/CONF.74/26), regional monitoring of desertification processes in South-West Asia and South America (A/CONF.74/27-28), and vegetation restoration in the Sahelian belt (A/CONF.74/29). The following steps might be successively undertaken in the course of implementation:

- (i) Arranging for the receipt of any outstanding approval by Governments as to the feasibility of the projects;
- (ii) Undertaking the necessary institutional arrangements;
- (iii) Conduct of pre-investment studies;
- (iv) Formulation and design of the projects;
- (v) Approval of the projects by the countries concerned;
- (vi) Execution of the projects;
- (vii) Monitoring of the results of the projects.

99. At the international level, the body designated by the General Assembly for implementing the plan of action to combat desertification should undertake the following immediate steps:

- (a) Request the agencies and organizations of the United Nations family to actively associate themselves with the implementation of relevant parts of the plan of action to combat desertification;
- (b) Request the Governments concerned to put forward their needs for international support for their own national action against desertification, in accordance with the provisions of paragraph 97 (e) and (f) above;
- (c) Upon receiving replies from the agencies and corresponding requests from the Governments concerned, undertake the necessary joint programming in order to formulate, in implementation of the Plan of Action to Combat Desertification, specific actions in the following categories:
 - (i) Capital investment programmes and projects;
 - (ii) Pilot and demonstration projects;
 - (iii) Feasibility studies;
 - (iv) Training;
 - (v) Monitoring;
 - (vi) Insurance for peoples at risk;
 - (vii) Services: technical, consultative, etc.;
 - (viii) Research: centres, project co-ordination, etc.;
 - (ix) Ad hoc working groups;
 - (x) Seminars, workshops, meetings, and other arrangements for the exchange of information and experience;

- (d) Undertake the necessary steps to mobilize financial resources;
- (e) Arrange for, and where necessary co-ordinate the preparation of, a programme of work, designs of specific projects and strategies for financing and implementing anti-desertification programmes, including:
- (i) The conduct, in consultation with interested Governments, and on the basis of the Plan of Action and suggestions made at the post-Conference regional meetings, of an analysis of the need for strengthened or new integrated regional anti-desertification research and training centres, and the provision of assistance in carrying out whatever measures are required;
 - (ii) The establishment of regional networks of biosphere reserves by upgrading national reserves selected to achieve a representative range of environments and genotypes. Management of the reserves should be co-ordinated at the regional level in conjunction with regional centres for remote sensing, and the reserves could serve as baseline stations for monitoring desertification and training the necessary specialists;
 - (iii) The preparation, publication and distribution by UNEP, in co-operation with relevant United Nations bodies, of teaching and management manuals on the following specific topics of anti-desertification technology and management:
 - (1) The control of water and wind erosion;
 - (2) The stabilization and utilization of shifting sands;
 - (3) Principles of dry farming;
 - (4) Principles of irrigated agriculture;
 - (5) The amelioration and irrigation of saline and alkaline soils;
 - (6) The use of brackish water for irrigation;
 - (7) Rangeland and livestock management;
 - (8) Methods of arid land afforestation;
 - (9) The assessment of water resources;
 - (iv) The preparation, publication and distribution by FAO, in co-operation with UNEP, UNESCO and WMO, of a Desertification Map of the World at a scale of 1:5,000,000, based on the experience gained and the methodology developed in the course of the preparations for the Conference, and in close

co-operation with Governments and the national and regional institutions concerned; this map should be accompanied by a comprehensive explanatory text following the example of the 1:5,000,000 World Soil Map published by FAO/UNESCO;

- (v) The preparation, publication and distribution by UNEP, in co-operation with relevant United Nations bodies and other international governmental and non-governmental organizations, of an updated annotated directory of international, regional and national organizations, institutes, research centres, experimental stations, etc., which are dealing with the problems of desertification and the development of arid lands.

100. The above recommendations for immediate action should not be considered as a substitute for the major actions against desertification recommended elsewhere in the Plan of Action. It constitutes only the initial stage of what needs to be done. Implementation of the Plan in its entirety is the only real answer to the problem of desertification, and, if successfully carried out, will enable mankind to advance further on the way to a new international economic order and to a better life for all.

VII. RECOMMENDATIONS FOR IMPLEMENTATION OF THE PLAN

Recommendation 27

101. One of the basic premises of the United Nations Conference on Desertification, and of the various General Assembly and related resolutions and decisions that have led to the Conference, is that desertification is a global problem, requiring a focus which has hitherto been lacking. Although many disciplines touch on the process of desertification and many international institutions, including those of the United Nations system, deal with the problems of combating desertification, it is evident that an anti-desertification programme requires an interdisciplinary, inter-agency and intra-regional approach. Thus, while the various members of the United Nations family and other intergovernmental bodies and bilateral and multilateral programmes deal with certain aspects of development in arid lands, none of them is concerned primarily with desertification. A focus is needed that can draw together existing institutional endeavour and administrative machinery and mobilize the resources required to carry out the Plan of Action. At the same time, it is evident that no new institution in the United Nations system is needed to carry out the work.

It is recommended that the United Nations Environment Programme, with its Governing Council and the Environment Co-ordination Board 2/

2/ General Assembly resolution 2997 (XXVII) of 15 December 1972, establishing the Board, decided that "in order to provide for the most efficient co-ordination of United Nations environmental programmes, an Environment Co-ordination Board, under the chairmanship of the Executive Director of the United Nations Environment Programme, shall be established under the auspices and within the framework of the Administrative Committee on Co-ordination" and that "the Environment Co-ordination Board shall meet periodically for the purpose of ensuring co-operation and co-ordination among all bodies concerned in the implementation of environmental programmes ...".

should be responsible for following up and co-ordinating the implementation of the Plan of Action to Combat Desertification. It is further recommended that the regional commissions of the United Nations have responsibility for co-ordinating, catalysing and executing 3/ Intra-regional programmes adopted by the member States concerned. It is also recommended that with respect to co-ordination and implementation of programmes to combat desertification, the regional commissions should actively participate in the Environment Co-ordination Board.

102. To carry out this recommendation:

(a) The Governing Council of UNEP should:

- (i) Promote and encourage international co-operation in the field of desertification and recommend, as appropriate, policies to this end;
- (ii) Provide general policy guidance for the direction and co-ordination of desertification programmes within the United Nations system;
- (iii) Submit progress reports annually and complete reports biennially to the General Assembly, through the Economic and Social Council, on the implementation of the Plan of Action;

(b) The Executive Director of UNEP should:

- (i) Under the guidance of the Governing Council, co-ordinate desertification programmes within the United Nations system, keep under review their implementation and assess their effectiveness;
- (ii) Advise, as appropriate and under the guidance of the Governing Council, Intergovernmental bodies of the United Nations system on the implementation of the Plan of Action to Combat Desertification;
- (iii) Secure the effective co-operation of, and contributions from, relevant scientific and other professional communities in all parts of the world;
- (iv) Report annually on desertification matters to the Governing Council;

3/ Within the scope of their competence.

(c) The Environment Co-ordination Board should:

(i) Ensure co-operation and co-ordination among all organs of the United Nations system concerned with the implementation of the Plan, and submit progress reports annually and complete reports biennially to the Governing Council of UNEP;

(ii) Establish a working group on desertification consisting of a small number of highly qualified officers from appropriate United Nations agencies and bodies, within the framework of existing budgets, according to the institutional and financial arrangements for international environmental co-operation, to assist the Board in carrying out its task in the field of desertification;

(d) The regional commissions of the United Nations should, in carrying out their tasks, work in close contact with the regional offices of UNEP as well as with governmental and non-governmental organizations and institutions at the national and regional levels which are of relevance in combating desertification.

103. To carry out their tasks, the Executive Director of UNEP and the Environment Co-ordination Board should be serviced by a very small number of highly qualified staff, who would be clearly identifiable within the UNEP secretariat and drawn from the various United Nations agencies concerned. It could also draw on consultants and institutions primarily in the affected area or areas likely to be affected by desertification. The functions of this staff could include, under the guidance of the Environment Co-ordination Board and its Working Group on Desertification, the following:

(a) To keep a continuous inventory of all needed programmes and projects, as well as present or planned activities dealing specifically with the control and, where possible, reversal of desertification. The purposes of this inventory are to identify gaps which require new financing and to determine which projects and programmes are concerned specifically with desertification as opposed to short-term remedial measures designed to assist in coping with the effects of recurrent drought;

(b) To prepare or help to arrange preliminary surveys and technico-economic feasibility studies as a basis for formulating projects and programmes for the implementation of the Plan of Action, in a form which can be presented to sources of financing;

(c) To prepare alternative proposals for the mobilization of the necessary capital to finance programmes and projects specifically aimed at combating desertification, including the servicing of regional or global consortia when established;

(d) To monitor the implementation of the Plan of Action and to prepare evaluations of its effectiveness;

(e) To record the results of the monitoring of desertification through contacts with various monitoring systems (e.g. the Global Environmental Monitoring System);

(f) To record the results of monitoring of the human condition in areas prone to desertification, including demographic and social indicators such as population movements and trends, with a view to monitoring the long-term effects of desertification, and existing or proposed schemes of insurance for people at risk;

(g) Prepare, compile, edit and publish at six monthly intervals a newsletter giving information on programmes, results and problems related to the combat against desertification around the world.

Recommendation 28

104. The work arising from the Plan of Action is a responsibility of the United Nations system as a whole, and affects projects and programmes of its specialized agencies. The continuous application of the collective knowledge and experience of the United Nations and the specialized agencies is also needed if the Plan of Action is to be effectively implemented within the given time. With this consideration in mind, the activities of the very small staff might be financed from existing funds.

The following forms of financing are recommended for consideration:

(a) Subregional co-operation

When so required, subregional co-operation should be initiated or intensified among groups of countries like the Organization of American States, and individual countries affected by desertification, with a view to formulating other specific joint programmes and development assistance requests. Subregional groups may wish to invite donor representatives to participate in these efforts. UNEP should assist these subregional groups with technical expertise, and relate their proposed programmes to the implementation of the global Plan of Action.

(b) Bilateral, multilateral and multi-bilateral assistance

The traditional sources of financing, multilateral and bilateral assistance programmes, as well as the "multi-bilateral" approach, are effective, and, in view of the new development assistance needs highlighted by the Conference, should increase their assistance to countries suffering from desertification.

Developing countries should give due priority to desertification problems in their development assistance requests. The existing financial institutions within the United Nations system, as well as multilateral and bilateral donors outside the system, should allocate part of their resources to finance activities advocated in the plan of action to combat desertification. To this end, a review of priorities and the activities of those institutions, particularly those within the United Nations system, should be undertaken without delay.

(c) Consultative group/club or group-type financing

The Executive Director of UNEP should, immediately after the adoption by the General Assembly of the Plan of Action, convene a consultative group comprising representatives from organizations referred to in paragraph 102 (c) (ii) above, from such other organizations as might be required, including major donors, both traditional and new, and multilateral financing agencies, and from developing countries having a substantial interest in combating desertification. The group, which would meet as and when required, would also assist in the co-ordination of activities undertaken with the resources mobilized by it. It would be serviced by the staff mentioned in paragraph 103 above, which should include persons with professional competence to deal with financial and related matters.

(d) Special account

The General Assembly should be invited to take the necessary steps for the creation, at the global level within the United Nations, of a special account for implementing the Plan of Action, which should draw its resources from, inter alia, contributions from Member States, international taxation, donations, multilateral financing institutions and from interest free loans.

(e) Additional measures

The General Assembly should be invited to request the Governing Council of UNEP to have prepared, by a small group of high level specialists in international financing of projects and programmes, a study of additional measures and means of financing for the implementation of the Plan of Action as adopted by the Conference, such as funds in trust, fiscal measures entailing automaticity, and an international fund, and to submit a final report on the subject of additional measures of financing to the General Assembly at its thirty-third session, through the Economic and Social Council.

Chapter II

RESOLUTIONS ADOPTED BY THE CONFERENCE

I. Implementation of General Assembly resolution 3337 (XXIX)

The United Nations Conference on Desertification,

Recalling that in resolution 3202 (S-VI) of 17 May 1974 the General Assembly recommended that the international community urgently take concrete measures to stem the spread of deserts and to assist the developing countries affected by the phenomenon to ensure the economic development of the areas affected,

Recalling that in its resolution 3337 (XXIX) of 17 December 1974 the General Assembly decided to convene the Conference to give impetus to the international action to combat desertification,

Recalling further that in the same resolution the General Assembly, recognizing the urgent need to institute a world-wide programme to seek solutions to the problems associated with desertification, and expressing the conviction that work in this field should be carried out at the national, regional and global levels, stressed that the Conference, and the preparations for it, should provide the international community with the basis for launching an action-oriented, comprehensive and co-ordinated plan of action with a view to resolving the problems of desertification,

Recalling also that in paragraph 4 of the same resolution the General Assembly requested the Secretary-General, in co-operation with the United Nations bodies concerned and with the assistance of an ad hoc interagency task force,

(a) To prepare a world map of areas affected and areas likely to be affected by the process of desertification;

(b) To assess all available data and information on desertification and its consequences on the development process of the countries affected;

(c) To prepare an effective, comprehensive and co-ordinated action programme against desertification, including the building-up of the indigenous and autonomous science and technology capacity,

Having examined the world map of desertification 1/ presented to the Conference in accordance with the above-mentioned request of the General Assembly, with accompanying brochure,

1/ A/CONF.74/2.

Having considered the draft plan of action to combat desertification ^{2/} submitted by the Secretary-General of the Conference in pursuance of paragraph 4 (c) of General Assembly resolution 3337 (XXIX), together with the proposals and amendments thereto submitted at the Conference, and having adopted, as amended, the recommendations contained therein for national, regional and international action,

I. Assessment of all available data

1. Takes note with appreciation of the high scientific calibre of the documentation assembled for the United Nations Conference on Desertification, which constitutes the most up-to-date collection and assessment of available data on desertification and its consequences;

2. Further notes the opinion of scientists that, although scientific and technological gaps still exist, man already possesses adequate knowledge and the economic and technical means to bring the advance of desertification to a halt, provided there is the requisite fusion of political will and professional skill;

3. Recommends to the General Assembly that it request the Secretary-General to transmit the main and background documents prepared for the Conference on the causes and processes of desertification to the organizations and bodies concerned within the United Nations system, as well as to the relevant scientific institutions outside the system, both governmental and non-governmental, for further research and development and refinement of the data, to close any existing gaps in scientific knowledge and technology, having regard in particular to the necessity of building up indigenous and autonomous science and technology capacity in the areas concerned;

4. Considers that, while awaiting the results of further research, national, regional and international measures to halt and reverse desertification should be taken immediately in view of the extreme urgency and human significance of the problem;

II. World map of desertification

1. Recommends to the General Assembly that it request the Secretary-General to transmit the world map of desertification to States Members of the United Nations and to competent organizations and bodies within the United Nations system, as well as to the scientific institutions concerned outside the system, both governmental and non-governmental, for further development of the map on the basis of the relevant recommendations of the United Nations Conference on Desertification ^{3/} and taking into account the technical comments thereon made at the Conference:

^{2/} A/CONF.74/3 and Add.1 and 2.

^{3/} See chapter I of the report of the Conference.

(a) That in the definitions used as a basis for preparing the map the question of hydrological quandary, which is an important element to be included in a global map, was not taken into consideration;

(b) That the world map should be combined with the global map of soil degradation under preparation by the Food and Agriculture Organization of the United Nations, so as to be able to include humid areas;

(c) That since desertification is a dynamic process, there is a need for a map, or maps, or an atlas, on a large scale;

(d) That consideration should be given to receiving from national sources relevant data which can be systematically collected for improving the map;

(e) That a world map of desertification at a scale of 1:5 million and/or an atlas on desertification should be prepared, as the present scale of 1:25 million is too small to be dynamic;

(f) That the world map does not show the process of desertification, but only desertification hazards, and should therefore logically be called a world map of desertification hazards;

2. Considers:

(a) That the world map of desertification should be accepted as a first approximation primarily intended to indicate the global magnitude of the problem;

(b) That the inevitable limitations which the map, in its first form, contained, should be recognized, and that, in the light of the views of the Conference regarding the scope of desertification, the production at regional and national levels of detailed maps at larger scales, using the same legend or other appropriate legends, should be encouraged;

(c) That the production of other accompanying maps, for example of areas liable to salinization, alkalization, hydrological quandary, seasonal drought, etc., should be encouraged;

III. Plan of Action to Combat Desertification

1. Commends the Secretary-General of the United Nations Conference on Desertification and the Conference secretariat for the thorough preparation and the relevance and excellence of the draft plan of action presented to the Conference;

2. Approves the Plan of Action to Combat Desertification for inclusion in its report ^{4/} and commends the recommendations contained therein for necessary action, as appropriate, to all Governments, the General Assembly and all organizations and bodies within the United Nations system, at the regional and international levels, as well as to other concerned regional and international intergovernmental and non-governmental organizations;

^{4/} See chapter I of the report of the Conference.

3. Strongly urges that the necessary financial and other resources for the implementation of these recommendations be made available, so that they may be effectively implemented by all concerned.

17th plenary meeting
9 September 1977

2. Financial and technical assistance to the least developed countries

The United Nations Conference on Desertification,

Bearing in mind that the General Assembly, in resolution 3337 (XXIX) of 17 December 1974, decided to convene a United Nations Conference on Desertification in 1977,

Recognizing that desertification processes constitute a global human and social problem, as indicated in Desertification: an overview and in the Plan of Action to Combat Desertification,

Conscious of the fact that a number of developing countries and their limited resources, in particular the least developed countries, are confronted with special economic and social problems, and encounter the threat of desertification,

Emphasizing their conviction to the principle of sovereignty of States over their natural resources,

Recalling resolution 98 (IV) of the United Nations Conference on Trade and Development,

1. Urges the United Nations, the specialized agencies and international and regional financial institutions to extend, in addition to the current international and bilateral assistance, appropriate technical and financial assistance to the least developed countries for the purpose of enabling them to combat desertification effectively, as indicated in the Plan of Action to Combat Desertification;

2. Recommends to the General Assembly that it request the Secretary-General to report on the implementation of this resolution to the General Assembly at its thirty-third session.

17th plenary meeting
9 September 1977

3. Drought in the Sahelian countries

The United Nations Conference on Desertification,

Considering that during the current rainy season the Sahelian countries have once again had particularly low rainfall,

Considering that the brevity of the rainy season is such that those countries can no longer hope to obtain satisfactory harvests, and especially not harvests of cereals which will assure them of being able to feed their human and animal populations;

Considering that, since the emergency assistance currently being given to those countries cannot be an end in itself or a solution, an answer must be found to their problems which will be lasting and provide them with a permanent guarantee of adequate agricultural output,

1. Draws the attention of the international community to the critical situation prevailing throughout the Sahelian zone;
2. Recommends that increased aid be given to all Sahelian countries, which are once again stricken by drought;
3. Recommends, in view of the particular hardships to which those countries are subject, that everything possible be done to achieve the immediate implementation of the Plan of Action to Combat Desertification, in order to combat desertification in the subregion.

15th plenary meeting
8 September 1977

4. Effect of weapons of mass destruction on ecosystems

The United Nations Conference on Desertification,

Recalling the comments in Desertification: an overview 5/ and in the report of the preparatory meeting for the United Nations Conference on Desertification held at Nairobi from 12 to 16 April 1977 6/ on desertification resulting from war,

Recalling General Assembly resolutions 31/64 and 31/65 of 10 December 1976,

5/ A/CONF.74/1, para. 197.

6/ A/CONF.74/33/Add.1, para. 107.

Recalling inter alia the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, 7/ and the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, 8/

Recalling the ongoing discussions of the Conference of the Committee on Disarmament to achieve the prohibition of the development, production, and stockpiling of chemical weapons,

Considering that the protection of ecosystems and of the biosphere should be one of the major concerns of mankind,

Considering further that the development of technology and modern techniques places at the disposal of mankind dangerous means for the mass destruction of ecosystems,

Noting that the use of chemical and biological weapons during wars has been one of the factors contributing to desertification in certain parts of the world and that these factors are most seriously felt in developing countries including those which are currently engaged in armed struggle for independence and those which have recently achieved independence through armed struggle,

1. Condemns the use of any techniques that cause the destruction of the environment;
2. Denounces the effects of destructive weapons and practices on the ecosystems of all countries which have suffered them, and particularly developing countries, including those which are currently engaged in the struggle for independence and those which have recently achieved independence through armed struggle;
3. Condemns further the use of chemical and biological weapons which destroy or diminish the potential of ecosystems and are conducive to desertification;
4. Condemns, and demands the prohibition of, the use of poisons in water as a weapon of war;
5. Appeals to all States members of the organizations of the United Nations system to refrain from using or supplying to those who support this policy of destruction, arms or chemical products for military use that have a widespread, long-lasting or severe effect on the environment;
6. Requests the Secretary-General to report on the implementation of the present resolution to the General Assembly.

16th plenary meeting
9 September 1977

7/ League of Nations, Treaty Series, vol. XCIV, 1929, No. 2138.

8/ General Assembly resolution 2826 (XXVI).

5. Colonial desertification practices

The United Nations Conference on Desertification,

Recalling the General Assembly resolutions on apartheid,

Recalling also the international community's condemnation of the creation of bantustans, 9/

Recalling, lastly, the views expressed by delegations during the Conference 10/ on colonial practices that destroy the ecosystems of countries struggling for their independence,

Decides:

(a) To condemn the policy of bantustanization, which, by grouping together in restricted areas of poor land the very great majority of the black population of South Africa, gives rise to excessive pressure on that land, which is a very serious factor in desertification and degradation of the environment;

(b) To request the States members of the organizations of the United Nations system to undertake international action in the immediate future with a view to prohibiting the continuation of this policy;

(c) To appeal to all States members of the organizations of the United Nations system to refrain from recognizing the bantustans.

16th plenary meeting
9 September 1977

6. Namibia: desertification

The United Nations Conference on Desertification,

Recalling resolution 2145 (XXI) of 27 October 1966 by which the General Assembly terminated the mandate of South Africa over South West Africa, now known as Namibia,

Recalling further resolution 2248 (S-V) of 19 May 1967 by which the General Assembly established the United Nations Council for Namibia as the legal administering authority of Namibia until independence,

Bearing in mind the subsequent resolutions of both the General Assembly and the Security Council relating to the question of Namibia, in particular Security Council resolution 385 (1976),

9/ General Assembly resolution 3411 D (XXX) of 28 November 1975.

10/ See chapter V below, para. 51.

1. Condemns the continued illegal occupation of the territory of Namibia by South Africa;

2. Recognizes that proper implementation in Namibia of the Plan of Action to Combat Desertification will not be possible until the illegal occupation by South Africa has been terminated and Namibia has achieved independence.

13th plenary meeting
7 September 1977

7. Associated case study "The Negev: a desert reclaimed"

The United Nations Conference on Desertification,

Considering that the Conference is solely directed to the problems of desertification,

Conscious of the necessity to examine all climatical, ecological, human and social factors leading to desertification,

Having taken cognizance of all documents presented to the Conference,

Considering that the associated case study The Negev: a desert reclaimed, II/ presented by Israel, departs from scientific and technical issues related to the Conference in that it expresses religious fanaticism and contains elements which are historically inaccurate,

Considering also that the said document is not in conformity with the aims and purposes of the Conference as outlined in General Assembly resolution 3337 (XXIX) of 17 December 1974,

Considering that the policies of settlement and displacement of populations in the Negev, in the West Bank of the Jordan, and in other places in the area constitute an aggravating factor leading to desertification,

Denounces the associated case study The Negev: a desert reclaimed.

15th plenary meeting
8 September 1977

II/ A/CONF.74/20.

8. Expression of thanks

The United Nations Conference on Desertification,

Recognizing the need for concerted international action to combat desertification,

Convinced that the United Nations Conference on Desertification which took place at Nairobi from 29 August to 9 September 1977 has, by launching a comprehensive and co-ordinated programme of action, made a significant contribution to the efforts of the international community to seek solutions to the problems associated with desertification,

Convinced further that this action programme will enable Governments and the international community urgently to take concrete measures to stem the spread of deserts,

Expresses its profound appreciation to the President, Government and the people of Kenya for making possible the holding of this Conference and for their generous hospitality and their great contribution to the successful outcome of its work.

17th plenary meeting
9 September 1977

Part Two

BACKGROUND

Chapter III

CONSTITUTION OF THE CONFERENCE

1. The African drought of 1968-1973 aroused world attention, not only to drought disaster, but to the problem of desertification in general, and provided the immediate background to General Assembly resolution 3337 (XXIX) of 17 December 1974, whereby the Assembly decided "to initiate concerted international action to combat desertification", and to convene in 1977 a United Nations Conference on Desertification. The General Assembly also requested the Secretary-General to authorize the Executive Director of the United Nations Environment Programme to establish a small conference secretariat, and to convene an ad hoc interagency task force to assist the secretariat in the preparations for the Conference.
2. In the same resolution, the General Assembly requested the Governing Councils of the United Nations Development Programme and the United Nations Environment Programme to provide financial and technical assistance to the conference preparations. Subsequently, the General Assembly, in resolution 3511 (XXX) of 15 December 1975, requested the United Nations Fund for Population Activities to help finance the demographic studies carried out as part of the preparations, and the Governing Council of UNEP to act as the intergovernmental preparatory body for the Conference. In resolution 31/108 of 16 December 1976, the General Assembly designated the Executive Director of UNEP as Secretary-General of the Conference.
3. Central to the preparations for the Conference was the secretariat's response to the General Assembly's call for "the assessment of all available data and information on desertification and its consequences on the development process of the countries affected". After consultation with specialists, it was decided to structure the principal documents for the Conference in terms of four themes - climate, ecological change, demographic and societal aspects and technology - preparing on each theme substantial "component reviews" intended to provide the theoretical structure for a new science of desertification. Panels of specialists prepared outlines of each component review, and the authors selected to write them agreed on terminology and co-ordinated their approaches to preparing the four reviews.
4. The secretariat also decided to strengthen the information obtainable from field experience by initiating a set of selected case studies. Two such studies were carried out in arid regions with cold-season rainfall (Chile and Tunisia), two in arid regions with warm-season rainfall (India and Niger), and two on irrigated lands affected by waterlogging and salinization (Iraq and Pakistan). All were financed by UNDP with UNESCO serving as executing agency (except in Chile, where the executing agency was the World Bank). Six States volunteered to contribute nine additional case studies, one each from Australia, Iran, Israel and the United States of America, two from the Union of Soviet Socialist Republics and three from China. The studies examined the desertification process in its historical setting, emphasized the lessons to be learnt and described remedial measures undertaken. To facilitate access to the case studies, all of which were presented to the Conference as background documents, they were synthesized

In one of the principal documents of the Conference. The findings of the case studies and the conclusions of the component reviews were summarized in another principal document entitled Desertification: an overview. (A/CONF.74/1/Rev.1).

5. In resolution 3337 (XXIX), the General Assembly had called for "the preparation of a world map of areas affected and areas likely to be affected by the process of desertification". Such a map, at a scale of 1:25 million, was prepared by FAO with the assistance of UNESCO and WHO. FAO also prepared a desertification map of Africa north of the Equator, and a desertification map was prepared for South America, both at a scale of 1:5 million. Three additional world maps were also prepared by individual scientists, one based on a climate aridity index, another representing aridity and drought probability, and the third depicting the status of desertification in hot arid regions. In addition, some of the case studies were accompanied by synoptic maps.

6. To comply with the request of the General Assembly in resolution 3337 (XXIX) for "the preparation of an effective, comprehensive and co-ordinated action programme against desertification, including the building-up of the indigenous and autonomous science and technology capacity in the areas concerned", the secretariat prepared a draft plan of action to combat desertification for submission to the Conference. One of the purposes of the assessment of available data and information on desertification was to establish a sound scientific basis for the recommendations proposed in the draft plan. The overview was prepared in such a way that its conclusions would be seen to underlie and lead to the various elements in the draft plan, and examples of specific programmes of a kind that the plan was intended to stimulate were dealt with in six feasibility studies of transnational projects which could be initiated without delay. The establishment of all projects contained in the feasibility studies required 40 agreements from the 29 countries concerned, and 18 of these agreements had been obtained before the Conference was convened.

7. All scientific documents prepared for submission to the Conference, including the draft plan of action, were reviewed by a panel of senior consultants, composed of 23 internationally recognized experts from 13 countries. Documents were also reviewed in four regional preparatory meetings held in the spring of 1977 at Santiago, Chile, for the Americas, at Algarve, Portugal, for the Mediterranean region, at Nairobi, Kenya, for Africa south of the Sahara, and at New Delhi, India, for Asia and the Pacific. General preparations for the Conference were reviewed at meetings of the ad hoc interagency task force established pursuant to General Assembly resolution 3337 (XXIX) and by the Governing Council of UNEP acting in its capacity as the intergovernmental preparatory body for the Conference.

8. In resolution 31/108, the General Assembly requested the Secretary-General to issue invitations to participate in the Conference to all States, to representatives of organizations that have received a standing invitation to participate as observers in the work of all international conferences

In accordance with General Assembly resolution 3237 (XXIX) of 22 November 1974, to representatives of national liberation movements recognized in its region by the Organization of African Unity, to the United Nations Council for Namibia, to the specialized agencies and other interested organs, to the International Atomic Energy Agency, and to representatives of interested intergovernmental and non-governmental organizations to participate as observers.

Part Three

PROCEEDINGS OF THE CONFERENCE

Chapter IV

ORGANIZATION OF WORK

9. The United Nations Conference on Desertification was held at Nairobi from 29 August to 9 September 1977.

A. Participants

10. Representatives of the following 95 States invited in accordance with General Assembly resolution 31/108 participated in the Conference: Afghanistan, Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Botswana, Brazil, Burundi, Canada, Cape Verde, Central African Empire, Chad, Chile, China, Colombia, Congo, Cyprus, Czechoslovakia, Democratic Yemen, Denmark, Ecuador, Egypt, Ethiopia, Finland, France, Gambia, German Democratic Republic, Germany, Federal Republic of, Ghana, Greece, Guinea, Guinea-Bissau, Holy See, Hungary, India, Indonesia, Iran, Iraq, Israel, Italy, Japan, Jordan, Kenya, Kuwait, Lebanon, Lesotho, Libyan Arab Jamahiriya, Mali, Mauritania, Mexico, Morocco, Mozambique, Nepal, Netherlands, Niger, Nigeria, Norway, Oman, Pakistan, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Rwanda, Saudi Arabia, Senegal, Somalia, Spain, Sri Lanka, Sudan, Sweden, Switzerland, Syrian Arab Republic, Thailand, Tunisia, Turkey, Uganda, Union of Soviet Socialist Republics, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United Republic of Cameroon, United Republic of Tanzania, United States of America, Upper Volta, Uruguay, Venezuela, Yemen, Yugoslavia, Zaire and Zambia.

11. Representatives of the United Nations Council for Namibia also participated in the Conference.

12. Representatives of the Palestine Liberation Organization, the South West Africa People's Organization and the Pan-Africanist Congress of Azania also participated.

13. Members of the secretariats of the following United Nations offices and bodies attended the Conference: Department of Economic and Social Affairs, Office for Inter-Agency Affairs and Co-ordination, Economic Commission for Africa, Economic and Social Commission for Asia and the Pacific, Economic Commission for Western Asia, United Nations Children's Fund, United Nations Conference on Trade and Development, United Nations Development Programme including the Sahelian Office, United Nations Environment Programme, United Nations Fund for Population Activities, Office of the United Nations High Commissioner for Refugees, United Nations Industrial Development Organization, United Nations Institute for Training and Research, United Nations Institute for Social Development and United Nations University.

14. The following specialized agencies were represented: Food and Agriculture Organization of the United Nations, United Nations Educational, Scientific and Cultural Organization, World Health Organization, Bank for Reconstruction and Development and World Meteorological Organization.

15. Observers from the following intergovernmental organizations participated in the Conference: African Development Bank, Commission of the European Communities, Permanent Inter-State Committee on Drought Control in the Sahel, Economic Community of West African States, Lake Chad Basin Commission, League of Arab States (Arab Centre for the Studies of Arid Zones and Dry Lands, Arab League Educational, Cultural and Scientific Organization), Organization of American States and Organization of African Unity.

16. Observers from 65 non-governmental organizations invited to the Conference also participated.

B. Opening of the Conference

17. The Conference was opened on behalf of the Secretary-General of the United Nations by the Secretary-General of the Conference.

Message from the Secretary-General of the United Nations

18. In a message read out by the Under-Secretary-General for Economic and Social Affairs, the Secretary-General of the United Nations said that the Conference bore witness to the determination of the United Nations to help prevent the repetition of disasters such as the tragic drought which had devastated the Sahelian region. The continued loss of productive land to the insidious process of desertification could only impede the effort to promote social and economic progress and provide a better standard of living for all people. The United Nations was directing major efforts towards the establishment of a new international economic order, and alleviating the worsening plight of the millions of people in arid zones was essential to that end.

19. The preparatory work for the Conference had drawn heavily on the work and recommendations of previous United Nations conferences, particularly those dealing with the environment, population, food, human settlements and water. Together with those conferences, the present Conference formed a series of meetings concerned with interacting global problems which could not be solved in isolation. Coping with desertification and its tragic human effects was a major step forward on the road to peace, and it was incumbent upon nations to provide the needed attention and resources for that task.

Statement by the Vice-President of Kenya

20. The Vice-President of Kenya and Minister for Home Affairs, Daniel T. arap Moi, addressed the Conference on behalf of His Excellency, Mzee Jomo Kenyatta, President of Kenya. Issues of relevance to the Conference included questions of water management, land use and management, the problem of rising human, livestock and wildlife population and the question of energy, which in developing countries was often derived from firewood or charcoal. Extensive areas had been stripped of vegetation, and it was imperative to initiate programmes of revegetation and devise alternative sources of energy. The Government of Kenya welcomed the spur which the Conference would give to wider national and international consciousness of the spread of desert conditions in many parts of the world.

21. Protecting the land and soil from degradation should be viewed as a priority concern of all Governments. Urgent steps were needed to stop desert encroachment and rehabilitate those areas which had already been devastated. However, such steps could not be taken solely through international action: In the final analysis, each nation must start by putting its own house in order before seeking help on a regional or international basis.

Message from the President of the United States of America

22. The Secretary-General of the Conference read out a message addressed to the Conference by the President of the United States of America. The United States, suffering severe drought, had appropriately taken the lead in examining the problem of desertification. The United States was committed to help find a solution, not just at the Conference, but as part of its continuing desire to assist others in meeting basic human needs. The significant investment it was making in the Sahel Development Programme - the international response to the tragedy which had spawned the Conference - testified to its interest and commitment. The President wished the Conference every success and pledged his Government's support for a long-term world effort to protect the earth's natural resources and co-operate with other countries in developing efficient land and resource management policies and programmes.

C. Election of the President

23. At its 1st plenary meeting, on 29 August 1977, the Conference elected by acclamation the Minister for Water Development of Kenya, J.G. Kioko, as President of the Conference.

24. The President said that it was now up to those responsible for implementing programmes of national, regional and international action for the benefit of mankind to achieve three specific objectives with regard to desertification. The first was to arrest and reverse the process of desertification. The second was to create, promote and sustain productivity in the arid, semi-arid and low-rainfall regions of the world so as to increase food production and the incomes of their inhabitants, thereby providing protection against famine, malnutrition and poverty in general. Lastly, provision must be made for relief supplies in times of drought. The Conference should not merely identify the grave threat which desertification posed to mankind, but should carefully examine the financial and manpower requirements for solutions to the problem and make provision for adequate financing to ensure effective implementation of the plan of action. In so doing, it should recognize the interdependence of nations in the battle against the spread of deserts, which could only be won by concerted efforts on an international scale.

25. At its 2nd plenary meeting, on 29 August 1977, the Conference heard an address by the Secretary-General of the Conference, as well as statements by the Secretary-General of the United Nations Water Conference and the Assistant Administrator of the United Nations Development Programme (see chap. V below).

D. Rules of procedure

26. At its 2nd plenary meeting, on 29 August 1977, the Conference adopted as its rules of procedure the provisional rules of procedure contained in document A/CONF.74/RULES/Rev.1. Rule 55 was adopted on the understanding that the representatives of the United Nations Council for Namibia did not have the right to vote.

E. Election of officers other than the President

27. At its 2nd plenary meeting, the Conference elected the following 18 Vice Presidents: Ahmed Bencharif (Algeria), Mahamad Bachar (Chad), Alberto Besa (Chile), Guillermo Nannetti-Concha (Colombia), Joachim Hanke (Germany, Federal Republic of), George Tzitzikostas (Greece), Istvan Szabolcs (Hungary), A. Tavakkoli (Iran), Adnan Hardan (Iraq), Masami Ota (Japan), P.M.J. Rasekoai (Lesotho), Shaikh Manzoo Ahmed (Pakistan), José Lizarraga Reyes (Peru), Zdzislaw Lesiak (Poland), Adrien Senghor (Senegal), Ali Dualeh (Somalia), Aleksandr Sidorenko (Union of Soviet Socialist Republics), James A. Joseph (United States of America).

28. The Conference also elected Donald McMichael (Australia) as Rapporteur-General and M.S. Swaminathan (India) as Chairman of the Committee of the Whole (see para. 30 below).

F. Adoption of the agenda

29. The Conference, at its 2nd plenary meeting, adopted the following agenda:

1. Opening of the Conference and election of the President.
2. Organization of the work of the Conference
 - (a) Adoption of the rules of procedure
 - (b) Adoption of the agenda and organization of work
 - (c) Establishment of committees and other sessional bodies
 - (d) Election of officers other than the President
 - (e) Credentials of representatives to the Conference
 - (I) Appointment of the Credentials Committee
 - (II) Report of the Credentials Committee
3. General debate
4. Processes and causes of desertification
5. Plan of action to combat desertification
6. Adoption of the report of the Conference

G. Establishment of Committees and allocation of Items

30. In accordance with rule 44 of the rules of procedure, the Conference, at its 2nd plenary meeting, established a Committee of the Whole and allocated to it for consideration Items 4 and 5 of the agenda. For the report of the Committee, see annex I below.

31. In accordance with rule 4 of the rules of procedure, the Conference at its 4th plenary meeting, on 30 August 1977, established a Credentials Committee comprising the following States: China, Ecuador, Mexico, Netherlands, Niger, Syrian Arab Republic, Union of Soviet Socialist Republics, United States of America and Zambia. The report of the Credentials Committee is contained in annex II to the present report.

Chapter V

GENERAL DEBATE

32. In his opening statement to the Conference, at its 2nd plenary meeting, the Secretary-General of the Conference said that the mandate from the General Assembly to assess available data and information on desertification and its consequences had been a difficult one, since the subject of desertification, fragmented among a great variety of disciplines, lacked structure and coherence. The very word "desertification" had not yet been defined to everyone's satisfaction. Precise standards had yet to be formulated for measuring desertification and gauging its advance. Nevertheless, the problem was a serious threat to the welfare of mankind and one of overwhelming urgency, since the initially modest cost of reclaiming degraded land rose steeply until reclamation became economically impractical.

33. The causes of desertification, and in particular the reasons for its recent acceleration, were known. Man himself, rather than the shifting play of climate, had to be viewed as the agent of desertification. Man also possessed the knowledge to halt and reverse desertification. The key to combative measures lay in proper land use; while each separate situation would require its own assessment and action specifically tailored to the situation as evaluated, it remained true that whatever the situation might be, it was not beyond human control, as the technologies for dealing with it were known.

34. Desertification must be seen as a human problem rather than one concerned solely with the deterioration of physical systems. Man was its victim as well as its agent. The degradation of land was invariably accompanied by the degradation of human well-being and social prospects. All efforts to combat desertification must therefore centre on the welfare of man and must contribute to the development and prosperity of communities and nations. From the human perspective, international action might well assign priority to the most vulnerable nations, and national action might well focus on the most vulnerable peoples rather than on the most vulnerable land.

35. The purpose of the Conference was to co-ordinate separate actions, agree on further steps to be taken and formulate a comprehensive global action programme that would end a menace to human welfare and the world's food supply. The secretariat had been directed to assess what was known about desertification for one overriding purpose: to provide a scientific basis for actions to be taken and to guarantee that those actions had the most favourable prospects for success. The secretariat's scientific studies and consultations had led directly to the draft plan of action to combat desertification, which it was hoped would emerge as an effective guide to action. The plan had been based on the perspective that desertification could be halted everywhere by the year 2000, and integrated a short-term programme of measures to meet pressing needs with long-term actions extending to the end of the century. It placed strong emphasis on popular participation in measures to combat

desertification. In the final analysis, land use depended on the land user, and good land use would come from users who were informed, capable and above all willing to apply sound practices.

36. The six feasibility studies illustrated the kinds of action that the plan was intended to stimulate - programmes which, although transnational in scope, were fundamentally amalgams of national action integrated into efforts in which the actions of different countries supported one another and were reinforced by regional and international co-operation. They were also designed to strengthen local and national capacities in science and technology. As a modest but successful start, the feasibility studies might set the stage for additional transnational projects that might emerge from the deliberations. Participants might wish to consider strengthening the provisions of the plan of action that encouraged such activities.

37. The secretariat's financial consultants had indicated that the reclamation of degraded land was justified in terms of economic rates of return. Preventive measures, less expensive than reclamation, had even greater economic justification. Additional resources were needed for the implementation of the plan of action, and it was hoped that the Conference would decide on effective means of financing the plan's implementation. Concrete proposals for financing and implementation were as crucial to success as a realistic plan of action itself.

38. The draft plan suggested that implementation should be co-ordinated by the Environment Co-ordination Board and serviced by a small number of highly qualified staff, and proposed that the General Assembly call on the governing bodies of the specialized agencies to re-examine their programmes and allocations so as to support international action to combat desertification. The plan also suggested the establishment of a technical advisory body composed of representatives of research institutions dealing with desertification problems, to help ensure that research was accurately focused and its findings adequately disseminated. The core of the campaign against desertification, however, would lie in national action undertaken by bodies capable of keeping the problem in focus and of acting with sufficient authority to ensure success, which would also ensure that national desertification programmes were co-ordinated with regional and international action.

39. Action against desertification could not yield results unless Governments perceived it as an integral part of their plans for social and economic development and as part of their collective effort to establish a new international economic order. A powerful current of thought viewed a firm and self-reliant agricultural base as an essential prerequisite for national development, and saw productive land and water as the key national resources, renewable assets that would continue to yield wealth when non-renewable resources had been exhausted. The goals of the international efforts which would be discussed at the Conference were to maintain land productivity, to conserve water resources, and to reclaim degraded land and make it productive once again.

40. The Secretary-General of the United Nations Water Conference said that, while loss of productivity was seen as the prime feature in the process of desertification, the key to reversing that process was water. The introduction of water had radically transformed environments which would otherwise have continued to be deserts or semi-deserts. Remedying situations such as the Sahelian drought involved not merely better land use, but also social and economic development, in which water development had a major role to play. Full co-ordination had been maintained between the water and desertification conferences, and the Water Conference decisions relevant to desertification had been circulated (A/CONF.74/30). Recommendation 3 of the draft plan of action underlined the basic consistency and unity of action implicit in the two plans of action so far as water was concerned. It would therefore be appropriate for the Conference to take note of the decisions of the Water Conference and urge all Governments to implement the Mar del Plata action plan.

41. In their statements, representatives of the specialized agencies and other United Nations bodies indicated the full readiness of their organizations to co-operate in all relevant actions arising from the plan of action to be approved by the Conference. The representatives of UNDP and UNFPA, which had helped finance the Conference preparations, and the representative of UNIDO pointed to their organizations' many past and ongoing programmes related to the fight against desertification. The representative of FAO said that the Organization had prepared the desertification map of Africa north of the Equator, and developed the world map of desertification (A/CONF.74/2) with the collaboration of UNESCO and WMO; FAO's EMASAR programme was extremely relevant to the fight against desertification. The representative of UNESCO noted that the Organization had served as executing agency for the case studies, and was involved in efforts to control desertification through its MAB programme. The Secretary-General of WMO emphasized the importance of the Organization's GARP programme as well as its new World Climate Programme. The representative of WHO referred to the Organization's efforts to improve the health of peoples living in lands vulnerable to desertification. The representative of the United Nations Sahelian Office said that the Office was seeking to mobilize resources for projects totalling \$442 million, of which \$250 million had already been raised on a bilateral or multi-bilateral basis. The representative of ESCAP noted that the Asia and Pacific region had the largest area of land afflicted by desertification, and said that regional agencies would be especially important in the fight against desertification.

42. The general debate went into every aspect of the subject of desertification. In the course of 10 plenary meetings from 29 August to 5 September, the discussion was enriched by detailed descriptions of national action already initiated or planned for the future, and accounts of national experience were given by many speakers, as well as in country papers presented by delegations. All speakers expressed their gratitude for the hospitality provided by the Government and people of Kenya, their appreciation to the President for his distinguished conduct of the Conference, and their recognition of the high quality of the Conference preparations carried out by the Secretary-General of the Conference and his secretariat. Frequent reference was made to the Conference documentation as scientifically sound and of exceptional quality.

43. The representative of OAU said that Africa did not wish to politicize the Conference. However, document A/CONF.74/20, the associated case study prepared by Israel, was essentially a political document, referring to the West Bank of the Jordan as "Judæa" and stating that Islam was a factor in desertification. The representative of the Libyan Arab Jamahiriya requested that the document be withdrawn and all reference to it deleted from other Conference documents. The representative of Israel said that there was no intention to depict, nor did the maps depict, formal political or national boundaries, nor was there an intention to malign, nor did the case study malign, any nation or people. He added that Zionism, a reaction of the Jewish people against racism, constituted a national liberation movement, and that he did not intend to counter statements made against his country, in the hope that the Conference would be scientific rather than political.

44. The following brief summary of a lengthy and deeply informed debate attempts to emphasize its dominant themes.

The Conference

45. The Conference was viewed as a forum for the fruitful exchange of opinion, information and experience, an opportunity for the international community to take stock of a serious global situation and as a means of mobilizing world opinion in support of remedial and preventive measures. The primary function of the Conference, however, was to produce a realistic and effective plan of action, coupled with financial and institutional recommendations that would ensure the plan's implementation. The Conference was also seen as one of a series of global meetings, held under the auspices of the United Nations, of which each dealt with one of a set of interrelated problems. In the view of some delegations, those conferences were an expression of the development of peaceful co-operation on the basis of the further implementation of the principle of peaceful co-existence of States with different social and economic systems. The same delegations also stated that effective disarmament measures would make it possible to combat desertification more efficiently. The suggestion was made that the various plans of action arising from the series of conferences should be co-ordinated, perhaps even integrated into one comprehensive plan of action.

General considerations

46. It was agreed that the problem of desertification was global, and that countries not directly affected suffered indirect effects. There was also agreement that the problem was serious, especially so in an era when food production must be dramatically increased to provide adequate nourishment to growing populations. In view of the world's food requirements, and because desertification could be a self-accelerating process, certain aspects of the problem required urgent action.

47. Many speakers pointed out that, although the problem was global, desertification had exerted its most devastating impact in the third world, where many developing nations not only were seriously affected but also lacked the resources necessary to cope with the problem. It was stated

that desertification was primarily a problem of developing nations, and that the plan of action should serve to reduce the discrepancies between developed and developing countries.

48. It was agreed that man now possessed sufficient knowledge and technological means to begin action against desertification without delay. However, that should not be considered as implying a rejection of the value of carefully directed research, whose findings could facilitate the struggle against desertification and speed the achievement of the goals of the plan of action. It meant, rather, that no country had to wait on further research before initiating action.

The causes of desertification

49. There was broad agreement with the conclusion expressed in Desertification: an overview (A/CONF.74/1/Rev.1) 1/ that the process of desertification, and in particular its acceleration in recent years, was largely due to the actions of man, who had misused the land as he sought to wrest a living from often fragile ecosystems. It was agreed that while climate had often set the stage for desertification, notably through the erratic rainfall patterns and recurrent drought that characterized drylands, there was as yet no firm evidence that desertification had accelerated because of a shift towards more arid climatic conditions.

50. It was noted that the situation in vulnerable lands was complicated by social and economic pressures, including population growth and economic growth, which had led to the unwise extension of cropping onto marginal lands, and to increases in livestock numbers beyond the carrying capacity of rangelands, i.e. to overgrazing. Other man-induced causes of desertification mentioned were uncontrolled woodcutting, especially in watersheds and on slopes, misapplied technology, unwise tillage practices, inadequate drainage in irrigation schemes, unregulated burning for clearing land and uncontrolled bush fires, improper water management and lack of water conservation measures, the concentration of livestock around watering points, the inability of landholders to respond flexibly to drought and the lack of integrated land-use planning. It was pointed out that some causes of desertification were not mentioned in the Conference documentation. One delegation referred to forest fires, another to volcanic eruptions. Still another delegation said that inequitable management of international river waters had led to sea-water intrusion and soil salinization in his country, and that States should co-operate on the question of shared resources on the basis of sovereign equality and the territorial integrity of all States and their responsibility under international law to ensure that activities within their jurisdiction or control did not cause damage to other States, and of principle 21 of the Declaration of the United Nations Conference on the Human Environment.

1/ The delegation of Chile informed the secretariat of its view that for the sake of accuracy the word "inequitable" in the last sentence of paragraph 66 of document A/CONF.74/1/Rev.1 should be replaced by "traditional".

51. It was recognized that desertification could be hastened by social and political factors, including inappropriate systems of land tenure and the fragmentation of holdings. One delegation said that a decrease in investment was a cause of desertification in vulnerable areas, one that widened the gap in living standards between urban and dryland peoples. Another important factor lay in economic pressures exerted on vulnerable lands from outside. Several delegations pointed to colonialism as an important factor in desertification, especially when colonial regimes forced indigenous farmers onto marginal lands. One delegation said that the problem was directly connected with political and economic conditions, and that foreign aggression and control still existed to varying degrees in many developing countries even after they had gained independence. Some delegations supported the liberation movements of Palestine, Zimbabwe and Namibia, fighting for the freedom and independence of their peoples.

52. One speaker cited the use of chemical and biological weapons of war as a cause of desertification of a kind that still continued, especially in southern Africa. Another speaker pointed out that the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques adopted by the General Assembly at its thirty-first session, which had already been signed by many States, in no way hindered the use of environmental modification techniques for peaceful purposes. States that had not yet signed it were urged to do so, and it was suggested that the Conference urge nations to take full advantage of the potentialities of the Convention.

Solutions to the problem

53. Most delegations agreed that, as desertification resulted from misuse of land, the solution to the problem lay in proper land-use practices. Emphasis was placed on water conservation and good water management, in particular by proper river basin development. It was noted that the case studies, as well as many examples of national action, provided grounds for optimism by demonstrating that desertification could be halted and degraded land reclaimed by such actions as afforestation, revegetation, sand-dune fixation, control of pastures and livestock numbers, the improvement of breeds, the establishment of windbreaks and shelterbelts, improved cropping practices, the redesign of irrigation systems so as to prevent waterlogging and salinization, the reclamation of areas affected by waterlogging and salinity, the introduction of salt-tolerant and drought-resistant plants, the use of saline water in irrigation, and the setting aside of biosphere and other reserves.

54. Many delegations pointed out that it was essential for the design of programmes against desertification that countries affected by it give high priority to the problem in their national development plans. Specific programmes against desertification would depend on the assessment and evaluation of the specific areas undergoing desertification or vulnerable to it. Assessment on a broad scale would be greatly facilitated by the new satellite technologies, and it was noted that several countries had recently established ground receiving stations, while others showed interest in establishing them.

55. A number of speakers pointed out, however, that desertification was also a social and economic problem, rather than a purely technical one. Emphasis was placed on the need for public participation in and public acceptance of actions to combat desertification; such participation and acceptance could be achieved through information, educational programmes and the reinforcement of extension services. The strengthening of indigenous capabilities in science and technology, as a prerequisite for the success of measures to combat desertification, was thus viewed as essential not only at the national level, but also at the grass roots level of the individual land user. It was emphasized that traditional practices which had shown themselves capable of operating in harmony with nature should be promoted and strengthened, and that projects should seek to adapt research findings to particular socio-economic environments. Several delegations indicated that all action should contain a strong social component.

Action to combat desertification

56. It was generally agreed that remedial and preventive action against desertification should be given high priority, and integrated with national development plans and priorities. Such action was seen by some delegations as essentially developmental in nature. Some delegations mentioned the important role of the comprehensive use of natural resources, including mineral resources, for the development of the economies and industries of countries subject to desertification. Emphasis was placed on the importance of co-ordinating action at all levels - national, regional and international; to that end, one delegation proposed an international decade of action to combat desertification. At the same time it was recognized that, while global commitment was essential, the core of the campaign against desertification would lie in national action. The wide variety of social and economic conditions in the world, and the different forms which desertification took in different settings, meant that each country must formulate its own programme to deal with the problem. Several delegations said that an attitude of self-reliance was essential, and that accordingly a basic prerequisite for success in combating desertification lay in control of their own natural resources by developing countries. Delegations from developing countries affected by desertification universally reported the initiation or expansion of national action against the problem, although many said that action was hampered because of lack of funds. A number of speakers reported that their Governments had established, or were considering establishing, national commissions to supervise and co-ordinate action programmes against desertification.

57. Wide support was expressed for the establishment or strengthening of regional centres that could serve to co-ordinate regional action, initiate and co-ordinate research on regional problems and serve as focal points for the exchange of information and experience. Several delegations said that their Governments were prepared to host such centres. Numerous references were made, particularly by speakers from the countries involved, to the feasibility studies, as examples of co-ordinated regional action which had tapped a positive expression of political will. One delegation from a country involved in the transnational project for the management of major regional aquifers suggested that a map should be prepared of water

resources in north Africa and the Arabian peninsula. Some delegations suggested that much of the international co-operation that would be mobilized in the fight against desertification should be channelled through regional bodies.

58. Many delegations expressed gratitude for the international support already extended both to actions against desertification and to relief measures against catastrophe, particularly in relation to the disastrous African drought of 1968-1973. At the same time, several delegations said that the fight against desertification should receive much more international support. Speakers from a number of developing countries indicated that national programmes, particularly those of the least developed and the land-locked countries, would not be adequate to the task without more support from international sources. One delegation stressed that such assistance must strictly respect the sovereignty of the recipient country, attach no conditions, and seek no privileges. Many delegations indicated that, just as national action should support national development, international action should support the establishment of a new international economic order.

The draft plan of action to combat desertification

59. It was agreed that the draft plan of action, as submitted by the secretariat, provided a good basis for deliberations on the subject. Several delegations suggested a need to assign priorities to the various actions recommended in the plan. It was pointed out that the plan must be flexible enough to meet unforeseen circumstances. One delegation suggested that to ensure effective application of the plan of action, a chart should be drawn up indicating the precise tasks and targets on a yearly basis, coupled with a system to monitor progress. Many speakers representing developed countries said that their Governments would willingly co-operate with the provisions of the plan of action, as ultimately approved, by providing training, technology and technical advisory services, sharing expertise and experience and contributing to relief efforts, and studying requests from developing nations with a view to providing support. Representatives of developing countries that had initiated action said that they, too, would be willing to share expertise and experience.

60. Representatives of international youth organizations noted that there was no mention of the role of youth in the draft plan of action. One indicated his organization's intention to mobilize youth to co-operate in measures against desertification by holding an international meeting in a country that had called on youth to play a part. One delegation, as well as representatives of the non-governmental and intergovernmental organizations attending the Conference, pointed out that specialized knowledge and an ability to mobilize popular support were contributions those organizations could make, and that they should be involved more fully in formulating policies and plans of action.

Follow-up to the plan of action

61. It was agreed that the Conference should seek to ensure effective implementation of the plan of action by making recommendations for international institutional arrangements to co-ordinate a global programme of both action and research, and for appropriate financial arrangements to support such a programme. A number of speakers suggested that it would be desirable for the relevant United Nations bodies to re-examine their programmes and priorities to ensure their full co-operation in actions against desertification. Many delegations said that there was a need for close co-ordination within the United Nations system, and several suggested that the relevant United Nations bodies should be strengthened so as to make an adequate response to the needs arising from the desertification problem. Use should be made of the experience and possibilities of the United Nations regional commissions. Some delegations endorsed the proposal in the draft plan of action for regional post-Conference, technical meetings to be convened by the United Nations regional commissions and/or by other appropriate bodies.

62. Most delegations were opposed to any new institution being created to implement the plan of action. The vast majority of speakers expressed broad agreement with the institutional suggestions embodied in the draft plan of action, as follows:

(a) Within the United Nations system, the Environment Co-ordination Board should supervise co-ordination of the global programme against desertification;

(b) A small staff of qualified experts drawn from within the United Nations system would service both the Board and any technical advisory group.

A majority of those who spoke on the subject expressed a preference that such a unit should be located within UNEP. One delegation suggested that while such a unit was desirable, it should be established within UNEP's present budget. Another suggested that there should be two such units, one to service the Board and another to service the UNEP Governing Council. Another delegation said that how the problem of desertification was viewed would determine whether the unit was placed in UNEP or attached to a development-oriented institution.

63. Alternative suggestions regarding institutional arrangements, some of which were supported by more than one delegation, were as follows:

(a) The co-ordinating body should be the Governing Council of UNEP, rather than the Environment Co-ordination Board; the Board should limit its responsibilities to intra-agency co-ordination;

(b) The Administrative Committee on Co-ordination (ACC) should be the co-ordinating body;

(c) Co-ordination might be effected by a new ACC sub-committee established on the lines of the sub-committee on nutrition;

(d) A consultative group for the control of desertification should be established comprised jointly of representatives of UNEP, FAO, UNDP, UNESCO, WHO, the World Bank and IFAP.

64. There was general agreement that funding arrangements should be specified at the Conference. Some delegations favoured the establishment of a special fund to combat desertification. Others were opposed to the establishment of a special fund, and one said that a fund should be established only as a last resort. It was widely suggested that funding agencies such as UNDP, IDA, IFAD and regional banks should be urged to increase their contributions to programmes combating desertification. Several delegations spoke in favour of a consortium arrangement. One delegation, pointing to world armament expenditure of \$350,000 million in 1976, with a projected rise to \$500,000 million by 1980, said that a diversion of only one per cent from that huge outlay would pay all the costs of establishing a green belt across the Sahel. A delegation from a Sahelian country said that human and financial resources were lacking in the Sahel, while colossal sums were devoted to the manufacture of armaments intended to destroy mankind.

Other matters

65. In his statement, the representative of Cyprus said that although his country had a desertification problem, its major problem was the expansionist policies of its neighbour to the north. In his statement, the representative of Turkey referred to "the representative of the Greek Cypriot community" and said that the Turkish army had intervened in Cyprus only after a coup led by a Greek Cypriot, that its intervention had been in accord with the unique constitution of Cyprus, and that if it had not happened at the right time, Cyprus would have lost its independence and Turkish Cypriots their lives. Exercising his right of reply, the representative of Cyprus said that he was the representative of the only legal government of the Republic of Cyprus and that Turkey had invaded and occupied a large part of his country in contravention of several General Assembly and Security Council resolutions. He said that Turkey's aims in Cyprus were expansionist, and that Turkey was trying to erode the Republic of Cyprus so that it could continue its occupation of the northern part of Cyprus which it was colonizing with settlers from Turkey. Exercising his right of reply, the representative of Turkey said that the Greek Cypriot community's representative had as usual exploited an international forum for political purposes, and his statement contained a mere allegation. He said that he did not wish to spoil the atmosphere of co-operation at the Conference, and added that the present forum was not the right place to discuss a political matter which was still pending and was under consideration by the relevant international political body of mankind; to introduce political matters in technical forums could not help to solve the problem, but would only make it more difficult.

Chapter VI.

CONSIDERATION OF DRAFT RESOLUTIONS

A. Draft resolutions submitted directly to the plenary

Desertification in Namibia (A/CONF.74/L.28)

66. At its 13th plenary meeting, on 7 September 1977, the Conference adopted by consensus a draft resolution submitted by the representatives of the United Nations Council for Namibia. 1/

Drought in the Sahelian countries (A/CONF.74/L.37)

67. At its 15th plenary meeting, on 8 September 1977, the Conference adopted by consensus a draft resolution submitted by Cape Verde, Gambia, Mali, Mauritania, Niger, Senegal and Upper Volta. 2/

Associated case study: "The Negev: a desert reclaimed" (A/CONF.74/20).

68. At its 15th plenary meeting, on 8 September 1977, the Conference considered a draft resolution submitted by the delegations of Afghanistan, Algeria, Bangladesh, Egypt, Iraq, Jordan, Kuwait, Libyan Arab Jamahiriya, Morocco, Mauritania, Pakistan, Sudan, Syrian Arab Republic, Tunisia and United Arab Emirates.

69. The delegations of Algeria and Mauritania spoke in support of the draft resolution. The Algerian representative said that the draft resolution was purely procedural and needed no introduction. He hoped it would be adopted.

70. The representative of Australia, speaking on behalf of the group of Western European and other States (except for one delegation) said that it was regrettable that a draft resolution of the kind before the Conference had been submitted. The views of delegations on the matter had already been adequately reflected in the summary of the general debate (see chap.V above, para.43). It was not in the best interests of the Conference that the associated case study in question (A/CONF.74/20), which had been submitted to the Conference as part of the preparatory documentation solicited by General Assembly resolutions and the secretariat of the Conference, should be singled out and denounced in a formal resolution.

71. The representative of Israel, speaking also in his capacity as the editor of the associated case study and as a member of the international scientific community, said that document A/CONF.74/20 did not in any way impugn any people, nation or creed as being responsible for desertification.

1/ For the text of the resolution, see chapter II of the present report, resolution 6.

2/ Ibid., resolution 3.

The case study contained valuable information regarding Israel's experience in combating desertification and could be a valuable tool for nations in the arid and semi-arid areas throughout the world in efforts to improve the living conditions of their inhabitants. Israel's activities had not led to desertification; rather they represented an example of what could be accomplished given the necessary means and determination. The draft resolution was unacceptable, since it constituted an affront to the entire scientific community and a denial of basic intellectual endeavour and contributions.

72. The representative of Pakistan said it had been hoped that discussions with political undertones could be avoided. However, document A/CONF.74/20 did not confine itself to matters of desertification. A political element had been subtly introduced, particularly in Map I and on page 22. Page 22 contained a paragraph that was slanderous, and represented an attempt to bring Islam and Muslims into discredit. The sponsors of the draft resolution were not opposed to document A/CONF.74/20 because it was submitted by Israel or because of its technical context, but because it contained elements extraneous to technical considerations which could not go unchallenged.

73. The representative of Israel, speaking in exercise of the right of reply, said that in deliberations with various individuals and committees his delegation had, in the spirit of understanding and in order to dispel any shadow of a doubt as to the true meaning of the sentence, proposed the deletion of a phrase which it believed had been wrongly interpreted by some as being offensive.

74. At the request of the representative of Australia, speaking on behalf of the group of Western European and other States, the draft resolution was put to the vote by roll call. The text was adopted by 45 votes to 17, with 14 abstentions. 3/ The voting was as follows: 4/

In favour: Afghanistan, Algeria, Bangladesh, Cape Verde, Central African Empire, Chad, China, Democratic Yemen, Egypt, Gambia, German Democratic Republic, Guinea-Bissau, Hungary, India, Indonesia, Iran, Iraq, Jordan, Kenya, Kuwait, Lebanon, Lesotho, Libyan Arab Jamahiriya, Mauritania, Morocco, Niger, Nigeria, Oman, Pakistan, Poland, Qatar, Rwanda, Saudi Arabia, Senegal, Somalia, Sudan, Syrian Arab Republic, Tunisia, Union of Soviet Socialist Republics, United Arab Emirates United Republic of Tanzania, Upper Volta, Yemen, Yugoslavia, Zaire.

Against: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Federal Republic of, Greece, Israel, Italy, Netherlands, Norway, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, United States of America.

Abstaining: Argentina, Brazil, Chile, Colombia, Ecuador, Ethiopia, Japan, Mexico, Peru, Portugal, Romania, Spain, Thailand, Venezuela.

3/ Ibid., resolution 7.

4/ After the vote, the delegation of Turkey informed the secretariat that had it been present during the vote it would have voted in favour. The representative of Uruguay similarly informed the secretariat that his delegation would have abstained.

75. The representative of the United States of America said that his delegation had voted against the draft resolution because of its serious implications regarding future conferences held under United Nations auspices. The purpose of the Conference was to discuss ways of dealing with the manifold problems of desertification. Some Member States had been thoughtful enough to share the benefits of their experience in stemming desertification, and even recovering desert lands; rather than denouncing any of the papers submitted, the Conference should be encouraging States to follow that example. If narrow political allegations of any kind could intrude themselves even into the substantive work of the Conference, the United States would have to question the continuing utility of such conferences.

Colonial desertification practices (A/CONF.74/L.7/Rev.1)

76. At its 16th plenary meeting, on 9 September 1977, the Conference adopted by consensus, as orally revised, a draft resolution submitted by the delegation of Cape Verde. 5/

77. The representative of Canada said that the delegations of Canada, France, Germany, Federal Republic of, Italy, Netherlands, United Kingdom of Great Britain and Northern Ireland and United States of America had joined the consensus on the draft resolution because they agreed with its basic intent. They regretted, however, that it had not proved possible to arrive at a more precise wording and that the resolution, particularly subparagraph (b) of the operative part, lacked practicability. They would have preferred a formulation recognizing the actions under way in the international sphere and the need to carry those actions forward to a successful conclusion.

Financial and technical assistance to the least developed countries (A/CONF.74/L.38)

78. At its 16th and 17th plenary meetings, on 9 September 1977, the Conference considered a draft resolution submitted by the delegations of Afghanistan, Bangladesh, Botswana, Democratic Yemen, Egypt, Ethiopia, Mauritania, Morocco, Nepal, Senegal, Sudan, Syrian Arab Republic, Uganda and United Republic of Tanzania. The draft resolution, as revised orally by the representative of Afghanistan, was adopted by consensus. 6/

79. The representative of the United Kingdom of Great Britain and Northern Ireland, speaking also on behalf of the delegations of Austria, Belgium, Canada, France, Germany, Federal Republic of, Japan, Switzerland and United States of America, expressed gratitude to the sponsors for co-operating in improving the text. That co-operation had made the consensus possible. The delegations associated with his statement reaffirmed their strong support for the underlying principle in the resolution that special attention should be given to the needs of least developed countries for technical and financial assistance. In the context of the Conference and its plan of action, that was particularly relevant to those least developed

5/ For the text of the resolution, see chapter II of the present report, resolution 5.

6/ Ibid., resolution 2.

countries that suffered from desertification. Some of the language of the resolution appeared to be not related directly to the Conference and raised questions being addressed more appropriately in other forums. The delegations on whose behalf he spoke wished to make it clear that their going along with the consensus was not meant to suggest any alteration to their national positions that had been or were being expressed in other forums.

Expression of thanks

80. At the same meeting, the representative of India introduced a draft resolution expressing the gratitude of participants to the people and Government of Kenya for their hospitality and most generous assistance. The Conference adopted the draft resolution by acclamation. 7/

B. Draft resolutions submitted through the Committee of the Whole 8/

Implementation of General Assembly resolution 3337 (XXIX) (A/CONF.74/L.30/Rev.1)

81. At its 17th plenary meeting, on 9 September 1977, the Conference adopted, as orally amended, a draft resolution on the implementation of General Assembly resolution 3337 (XXIX). 9/

Effect of weapons of mass destruction on ecosystems (A/CONF.74/L.32/Rev.1)

82. At its 16th plenary meeting, on 9 September 1977, the Conference adopted by consensus a draft resolution submitted by the delegation of Cape Verde on the effect of weapons of mass destruction on ecosystems. 10/

83. The representative of China, indicating his delegation's support for the resolution, recalled that in the general debate his delegation had stated its principled stand on certain major issues addressed in the resolution and had expressed its support for the suggestion made at the regional preparatory meeting for Africa south of the Sahara that the Conference should seek to prohibit the use of biological and chemical weapons, particularly in Africa; his delegation now reaffirmed opposition to such means of waging ecocidal warfare and creating man-made deserts.

7/ Ibid., resolution 8.

8/ For an account of the consideration of the draft resolutions by the Committee, see annex I below, paras. 95-100.

9/ For the text of the resolution, see chapter II of the present report, resolution 1.

10/ Ibid., resolution 4.

84. ~~The representative of Argentina reiterated his delegation's position that political elements of the kind contained in the resolution should not be introduced at purely technical meetings such as the Conference; had the draft resolution been put to the vote, his delegation would have abstained.~~

85. The representative of Australia, speaking on behalf of the group of Western European and other States, reiterated the statement made at the time of the approval of the draft resolution by the Committee of the Whole. 11/

86. The representative of the German Democratic Republic said that his delegation's statement in the Committee of the Whole 12/ also reflected the views of the delegations of Czechoslovakia, Hungary, Poland and the Union of Soviet Socialist Republics on the resolution just adopted.

87. The representative of Brazil said that, had there been a vote on the draft resolution, his delegation would have voted in favour. However, it would have abstained in a separate vote on the phrase "armed struggle" contained in the final preambular paragraph.

88. The delegations of Japan and Switzerland reiterated their respective positions as stated in the Committee of the Whole. 13/

89. The representatives of Mexico, Peru, Colombia, Venezuela, Chile and Uruguay said that, although they agreed in principle with the spirit of the draft resolution, they could not endorse its preambular paragraphs and would have abstained in a vote. The representative of Ecuador said that his delegation, too, would have abstained.

90. The representative of Mauritania reaffirmed the support of the African Group and the Group of 77 for the draft resolution; many countries of those groups had had to struggle for their independence and had suffered from the effects of the use of biological weapons.

11/ See annex I below, para. 97.

12/ Ibid., para. 100.

13/ Ibid., para. 99.

Chapter VII

ACTION REGARDING THE WORK OF COMMITTEES

A. Committee of the Whole

1. Report of the Committee

91. At its 15th plenary meeting, on 8 September 1977, the Conference considered paragraphs 1-55 of the report of the Committee of the Whole (A/CONF.74/L.17 and Add.1).
92. The Secretary-General of the Conference said that paragraph 21 in document A/CONF.74/L.17 was the only paragraph which the Conference had adopted; it was required only to take note of the remaining paragraphs in documents A/CONF.74/L.17 and Add.1.
93. At the proposal of the President, the Conference agreed to take note of paragraphs 1-20 and 22 of document A/CONF.74/L.17, and of paragraphs 23-55 of document A/CONF.74/L.17/Add.1.
94. The representative of Mauritania said that an informal committee of the African Group composed of representatives of Morocco, Ethiopia, Botswana and Mauritania had been established to consider the world map of desertification. Paragraph 21 of document A/CONF.74/L.17 did not reflect the recommendations contained in the report of the informal committee; those recommendations, however, should be taken into account by the Conference. The map should be essentially scientific and should not pronounce itself on political frontiers.
95. The representative of Algeria said that his delegation could not accept the report of the informal committee. The remarks of the Mauritanian delegation were inappropriate and inopportune. Algeria agreed with the Secretary-General that the question of the world map of desertification should be depoliticized.
96. The Conference adopted the recommendations contained in paragraph 21 of document A/CONF.74/L.17. 1/
97. The Conference considered the parts of the draft report of the Committee of the Whole that had not been considered by the Committee at its 16th and 17th plenary meetings, on 9 September 1977. At its 16th plenary meeting the Conference approved paragraphs 56-75 of the draft report of the Committee of the Whole, as orally amended.
98. The representative of the United States of America expressed her delegation's reservations concerning paragraph 65. That paragraph could be taken to imply that the full consent of the country concerned would be required for satellite monitoring programmes such as the United States LANDSAT

1/ The recommendations appear in chapter II above, resolution I, sect. II, para.2.

programme, which was an open, international effort, with the results available to all. Her delegation would have preferred a specific reference in the paragraph to ground-based monitoring. The question of consent in respect of satellite monitoring was already before the United Nations Committee on the Peaceful Uses of Outer Space, and the Conference should not take any action that would prejudice the work of that Committee.

99. At its 17th plenary meeting, on 9 September 1977, the Conference considered paragraphs 76-100 of the draft report of the Committee of the Whole (A/CONF.74/L.9/Add.3). Paragraphs 76-86, 88 and 99 and 96-100, as orally amended, were approved by consensus.

100. At the proposal of the representative of the Netherlands, paragraph 87 was replaced by the text of the amendment reproduced in paragraph 92 of the draft report. 2/ At the proposal of the representative of Japan, a new paragraph 90 was inserted.

101. The representative of the United States of America said that her delegation reserved its position with respect to the character of the consultative group referred to in the original paragraph 90, and considered that such a group had only a strictly temporary and advisory role. Accordingly, it proposed the replacement of the paragraph by the text of the amendment reproduced in paragraph 93 of the draft report. The representative of the Federal Republic of Germany supported the proposal.

102. The representative of Poland, speaking also on behalf of the delegations of Czechoslovakia, the German Democratic Republic, Hungary and the Union of Soviet Socialist Republics, reiterated the statements recorded in paragraph 94 of the report of the Committee of the Whole. He added that the delegations on whose behalf he spoke would in principle be in a position not to object to the possible convening of a consultative group of representatives as described in paragraph 102 (c) (ii) of the revised plan of action, bearing in mind the limited mandate of the group. As to the various proposals on possible ways of financing activities arising from the plan of action, as reflected in subsequent paragraphs of the draft report of the Committee, the aforementioned delegations held the view that solutions should be in accordance with the regulations of the United Nations system and be geared towards a more effective utilization of the existing institutional framework and means, without increasing the regular budget of the United Nations.

103. The United States amendment was rejected by 26 votes to 10, with 21 abstentions.

104. The original text of paragraph 90 was adopted by 35 votes to 1, with 31 abstentions.

2/ The report of the Committee of the Whole as approved by the Conference appears as annex I to the present report. For ease of reference, the draft text of paragraphs 87-95 as transmitted to the plenary appears as an appendix to annex I.

105. The representative of France proposed the insertion in the original paragraph 91 of the draft report of the additional recommendation contained in paragraph 94 of the draft. The proposal was subsequently withdrawn.

106. The representative of the Sudan, supported by the representative of Senegal, suggested that the original paragraph 91 should be replaced by the text appearing as paragraphs 92 and 93 of the report of the Committee as approved.

107. The representative of Norway said that most delegations in the group of Western European and other States had doubts about the usefulness of establishing a special account, as proposed in the Sudanese amendment.

108. The part of the amended text entitled "Additional measures" was adopted by consensus. The part entitled "Special account" was put to the vote and was adopted by 37 votes to 10, with 18 abstentions.

109. The representative of Japan said that his Government reserved its position regarding the recommendations concerning a special account.

110. The representative of the United Kingdom of Great Britain and Northern Ireland said his delegation regretted that the Conference had not been able to proceed by agreement on the basis of the arrangements agreed in the working group of the Committee of the Whole on financial issues. What was required was not narrow divisions on controversial matters, but the widest measure of agreement. His delegation's vote against the amendment was in line with its position, already stated during the general debate, that the establishment of special sectoral arrangements, including a new fund, would duplicate existing facilities and could lead to a diversion of money and skilled manpower into additional administrative channels at the expense of activities in the field. Special sectoral funds increased the problems of co-ordination within the United Nations system and resulted in the establishment of costly administrative machinery, without achieving the aim of resource transfer. The United Kingdom did not see that there would be in practice any difference between the establishment of a special fund and the establishment of special account; both would have the drawbacks mentioned. His Government would continue to channel its financial contributions for development through existing international aid machinery, including UNDP, the specialized agencies and the World Bank, where those contributions could be utilized in accordance with the priorities of recipient countries, and did not intend to contribute directly to any special fund or special account.

111. The delegation of France associated itself with the views expressed by the representative of the United Kingdom.

112. The United States delegation also associated itself with the views expressed by the representative of the United Kingdom, reserved its position regarding the recommendations contained in the amendment just adopted, and expressed the hope that the Conference could resume its discussions in a spirit of consensus.

113. The representative of Australia said his delegation had voted against the amendment because it believed that a special account arranged in the manner proposed would not serve the purposes of the plan of action. The breakdown of consensus in respect of financial matters was regrettable.

114. The representative of Italy said his delegation, too, regretted that the hitherto prevailing unanimity of purpose was lacking with respect to financial arrangements. His delegation had been unable to support the proposal for the establishment of a special account, because it was not clear whether that would entail the creation of new bureaucratic machinery. The creation of such machinery might regrettably lead to a diversion of resources from action-oriented programmes to the new bureaucracy.

115. The representative of the Federal Republic of Germany said his delegation considered that the importance of the problem of desertification had to be duly reflected in national development plans and adequately recognized in existing bilateral and multilateral programmes of technical and financial assistance. Any institutional arrangement had to take into account General Assembly resolution 2688 (XXV) of 11 December 1970, the central role of UNDP in planning, co-ordinating and financing United Nations programmes for technical assistance and the decision of the UNDP Governing Council at its twenty-fourth session concerning the role and activities of UNDP. His Government was opposed to the creation of new funds and would continue to channel its contributions for multilateral assistance through the existing machinery. It would continue to support the developing countries through bilateral and multilateral assistance, assigning special priority to the least developed countries and to the basic needs of the poor segments in the developing countries. With respect to bilateral support in combating desertification, his Government would concentrate assistance on affected countries lying in the arid, semi-arid and sub-humid zones.

116. The representative of the German Democratic Republic, speaking also on behalf of the delegations of Czechoslovakia, Hungary, Poland and the Union of Soviet Socialist Republics, said that maximum use should be made of existing United Nations institutions, organizations and resources, including programmes based on voluntary contributions. The socialist States had contributed and would continue to contribute, as was in their judgement appropriate, to such programmes. While appreciating the concern of developing countries confronted with desertification to find solutions to the problem, the delegations on whose behalf he spoke were not convinced that a special account as proposed by the Sudanese representative would result in an increase in the total resources available for development purposes, in more efficient use of the voluntary contributions of Member States. Accordingly, they were not in a position to support the amendment and had abstained.

2. Plan of Action to Combat Desertification

117. At its 17th plenary meeting, on 9 September 1977, the Conference adopted by consensus the draft plan of action to combat desertification transmitted to it by the Committee of the Whole (A/CONF.74/L.36), as amended in the light of its consideration of paragraphs 87-95 of the draft report of the Committee and as orally revised by the Rapporteur of the Committee and by delegations.

118. The representative of Ethiopia, speaking also on behalf of the delegations of Cape Verde, Chad, Gambia, Mali, Mauritania, Niger, Senegal and Upper Volta, said it was hoped that the efforts made at the Conference would benefit all peoples in areas affected or likely to be affected by desertification. However, the success of the Conference could be assured only through the commitment shown by national Governments in implementing the Plan of Action in an integrated manner. It was to emphasize the importance of integrated planning for the restoration and/or maintenance of the productivity of marginal lands that the delegations on whose behalf he spoke wished to have the following statements included in the report of the Conference:

"Restoration of vegetation cover and of an optimal biological productivity of the environment of marginal lands can be most successfully accomplished only within the framework of integrated programmes comprising use of land, of water, of energy, of other natural resources and of human settlements.

"Temporary relaxation of human pressure on marginal lands is essential for the purpose of restoring their productivity and socially acceptable only if alternative sources of food and fuel are made available.

"The full co-operation and participation of the people affected or likely to be affected by desertification is an essential element for the success of any such rehabilitation programme.

"Well publicized successes will be the best way of disseminating new policies and techniques for using natural resources.

"Therefore, national Governments are urged to take note of the need for an integrated approach in implementing the Plan of Action recommended by the United Nations Conference on Desertification."

119. The representative of Australia said that his country was firmly committed to support the Plan of Action and had joined the consensus in approving it. The United States proposal concerning paragraph 90 of the draft report of the Committee of the Whole had in his delegation's view offered the best prospects of viable and generally acceptable procedures for enabling prompt and continuing support for the plan of action. Accordingly, his delegation, along with most members of the group of Western European and other States, had supported that proposal. The Australian delegation had abstained in the vote on the paragraph in question, and had voted against the amendment to paragraph 91 of the draft report.

120. The representative of Brazil said that his delegation had wholeheartedly endorsed the Plan of Action. With respect, however, to paragraphs 31, 33, 93 and 94 of the Plan, which related inter alia to the question of international and regional co-operation to combat desertification from the point of view of management of shared resources, he reiterated his delegation's views reflected in paragraph 81 of the report of the Committee of the Whole. He stressed that Brazil did not share with other countries of the region areas subjected or likely to be

subjected to desertification. The aforementioned paragraphs, which dealt with that specific phenomenon at the regional level, did not, therefore, apply to Brazil. On that understanding, his delegation had not opposed the consensus.

121. The representative of Spain said that his delegation and other Spanish-speaking delegations had noted certain inaccuracies and stylistic flaws in the Spanish version of the Plan of Action, and requested that appropriate corrections be made before final printing.

122. The representative of the United States of America expressed her delegation's enthusiastic endorsement of the work done at the Conference, its total support for the Plan of Action and its hope that the plan could be implemented in every part of the world threatened by desertification. The United States invited attention to the careful discussions during the Conference on the financial implications of the Plan of Action. Sections VI and VII of the Plan mentioned many steps that needed to be taken before the final report on financing could be submitted to the General Assembly at its thirty-third session. Her delegation hoped those steps could be taken in a spirit of determination to reach consensus on any financing mechanisms. It was with that understanding of the key paragraphs of section VI that her delegation endorsed the Plan. Noting that the Plan called upon every State, region and relevant international organization to take action on the vital problem of desertification, she pledged the whole-hearted support and commitment of the United States to that effort.

123. The representative of France said that his delegation, while not wishing to oppose the consensus, wished to state that the adoption of recommendation 25 should not be allowed to call in question the principle of the sovereignty of States over their natural resources or to prejudice the work of the Intergovernmental working group of experts on natural resources shared by two or more States.

124. The representative of Ecuador said that although his delegation had supported the Plan of Action, it wished to place on record its reservations with respect to the paragraphs referring to shared natural resources.

B. Credentials Committee

125. At its 15th plenary meeting, on 8 September 1977, the Conference approved the report of the Credentials Committee (A/CONF.74/35), as orally revised by the Chairman of the Committee.

126. Referring to paragraph 5 of the report, the representative of the United States of America said that his delegation had consistently taken the position that credentials committees might properly examine only whether the credentials were signed by authorized officials of participating Governments, whether the signatures were genuine and whether the individuals submitting the credentials were those named; they were not empowered to base decisions on extraneous political issues. Accordingly, the representatives of the Republic of Korea were qualified to participate in the Conference. The United States delegation regretted that an extraneous political issue had been introduced and hoped that the Conference would proceed, free of contention, to constructive discussion of desertification issues.

Chapter VIII

ADOPTION OF THE REPORT OF THE CONFERENCE

127. At its 12th and 13th plenary meetings, on 7 September 1977, the Conference adopted by consensus the sections of the report of the Conference, as amended, contained in documents A/CONF.74/L.3 and Add.1.

128. At its 16th plenary meeting, on 9 September 1977, the Conference adopted by consensus the sections of the report of the Conference, as amended, contained in document A/CONF.74/L.3/Add.2.

129. At its 17th plenary meeting, on 9 September 1977, the Conference, having adopted individually all the sections of the report except those covering the last two plenary meetings, authorized the Rapporteur-General to include those sections in the appropriate parts of the report, to make appropriate editorial changes of a technical and linguistic nature, and to ensure that all reservations would be duly reflected in the report. On that understanding, the Conference adopted its report.

130. The Secretary-General of the Conference stated that inasmuch as, in accordance with the Financial Regulations of the United Nations, all Conference decisions having programme-budget implications for the United Nations had the status of recommendations to the General Assembly, regardless of their specific description or form, the United Nations Secretariat would submit those programme-budget implications to the Economic and Social Council and the General Assembly at the time when the report of the Conference came before those bodies for consideration.

Chapter IX

CONCLUDING STATEMENTS

131. The representatives of India, Sudan, Union of Soviet Socialist Republics, Colombia and Australia, speaking on behalf of the States in their respective regional groups, paid tribute to the Secretary-General of the Conference and the secretariat for their untiring efforts to make the Conference a success, to the President of the Conference for the diligence and skill with which he had directed its work and to the people and Government of Kenya for their contribution to the successful outcome of the Conference.

132. The Secretary-General of the Conference, in his concluding remarks, said that the Conference, as the first occasion on which nations had turned their concerted attention to a comprehensive plan developed within the world scientific community to halt and reverse a widespread threat to the well-being of the human race, would yield valuable lessons in how to deal with global problems. While it was the first in the series of recent United Nations conferences to reject the idea of any new institutional body, it had made sure that responsibilities for follow-up were clearly defined, and had given concrete guidance on how to mobilize some financial resources to start immediate implementation of elements of the Plan of Action.

133. The momentum generated by the Conference would not be lost. On Monday, 12 September 1977, a workshop convened by UNEP at Nairobi would bring together field workers from more than 45 countries to examine ways of proceeding at the national level to carry out specific projects under the Plan of Action. 1/

134. The Secretary-General of the Conference made a plea for national action, inasmuch as implementation of the Plan of Action depended primarily on the political will of Governments and on sustained enthusiasm for its support at the national level. He accompanied a plea for furthering regional co-operative programmes to combat desertification with an appeal to countries and organizations which had provided relief to the Sahelian countries to maintain their generosity, not simply in response to a temporary need, but as a sustained effort in support of the Plan of Action. On behalf of UNEP, he pledged co-operation with other United Nations organizations in serving the Plan of Action and promoting co-operation among national, regional and international agencies. Implementing the Plan of Action, securing the resources needed at the national, regional and global levels and co-ordinating all action in the field would be extremely difficult: without strenuous efforts to attain those objectives, to succeed in halting desertification by the year 2000 would almost be impossible. The efforts of UNEP itself would lead to nowhere without the co-operation, support and extremely strong political will of States to work together and build together.

1/ For an account of the workshop, among other activities associated with the Conference, see annex IV to the present report.

135. The President of the Conference, in his concluding statement, noted that there had been determination and political will to arrive at concrete and practical solutions to the diverse problems identified as urgently requiring solution. He urged participants to make the Plan of Action a plan for continuous implementation, so that the Conference could become another milestone in the history of man's conquest over the cruelties of nature and an event that historians would describe as having accelerated the reversal of desertification and promoted the encroachment of good lands upon desert areas. The Conference had been involved in a search for ways of ensuring better living conditions for ordinary human beings. Participants had achieved unanimity on a wide range of issues, and should continue in the same spirit when they returned to their homes and whenever they met in various international forums.

Annex I

PROCESSES AND CAUSES OF DESERTIFICATION AND PLAN OF ACTION TO COMBAT DESERTIFICATION

Report of the Committee of the Whole

1. The Committee of the Whole considered Items 4 and 5 of the agenda at 17 meetings held from 30 August to 8 September 1977. At its 1st meeting, the Committee elected G. Schumann (German Democratic Republic) and Mohamed Abdul Aziz (United Arab Emirates) as Vice-Chairmen and M.J. Magariños de Mello (Uruguay) as Rapporteur. In an opening statement at the same meeting, the Chairman outlined the terms of reference of the Committee, and said that the issues before it affected the welfare of a considerable segment of a humanity.

A. Processes and causes of desertification

2. In considering Item 4 of the agenda, the Committee had before it three principal Conference documents (A/CONF.74/1/Rev.1, A/CONF.74/2 and A/CONF.74/4) and 24 background documents (A/CONF.74/5-23 and A/CONF.74/30-34).

3. The Secretary-General of the Conference stressed that sufficient knowledge was available to initiate effective action for combating desertification in its varied forms, and cited examples of lessons learned from the case studies undertaken in different regions of the world by Governments and United Nations agencies.

4. Most delegations commended the Conference secretariat and its senior advisers and consultants on their comprehensive approach to elaborating the processes, causes, and effects of desertification, as evinced in the documents before the Committee.

1. Desertification: an overview

5. Several speakers expressed the opinion that the overview of the processes and causes of desertification (A/CONF.74/1/Rev.1) and related principal and background documents, as an objective and comprehensive analysis of the problem of desertification, provided an excellent basis for the plan of action to combat desertification, and a number of delegations advocated endorsement of the overview.

6. One delegation pointed out that although generally an excellent document, the overview did not take fully into account the experience of countries with different socio-economic structures, and of various physico-geographical and ecological regions of the world; another said that the overview did not fully reflect the findings and recommendations of the regional preparatory meeting for Asia and the Pacific. Another delegation said the overview did not sufficiently stress the importance

of plant cover, which was endangered by the cutting of wood for sale, or of wildlife as a source of protein. Another delegation said that plant cover was imperilled by colonial wars and wars of occupation, with their wholesale destruction, and by the use of defoliants and other chemical or biological weapons, and that such degradation of plant cover had above all affected those countries which had achieved independence through armed struggle. The same delegation added that the Second World War had cost its country 30 to 40 per cent of its forests.

7. One delegation suggested that paragraphs 181-194 of the document should be redrafted to highlight the problems and positive aspects of urbanization and the need to overcome them, while another maintained that labour shortages resulting from immigration to urban areas did not affect water management to the extent indicated in paragraph 114. It was suggested that paragraph 128 of the overview should reflect the effects of burning on soil erosion and the quality of grazing land. Commenting on paragraph 233 of the overview, another delegation pointed out that LANDSAT was still in the experimental stage, and that global surveillance of ecosystems by earth satellites required ground work.

8. Reservations were expressed regarding the conclusions in respect of population growth and pressure in areas vulnerable to desertification. It was pointed out that global generalizations in that respect could have only limited value, and that population issues, which involved not only the number of people, but their health, well-being and environment, could best be considered at the national level.

9. Several delegations described national experience in combating desertification and reclaiming desert lands, with particular emphasis on such measures as over-all planning and integrated control, appropriate preventive measures against specific local hazards, the elimination of harmful, and promotion of beneficial, land use, the creation of "green belts" along desert margins and mobilization of concerned populations in a general campaign against desertification and for land reclamation.

10. It was pointed out that, although much was already known on the subject, there still remained a need for additional basic, as well as applied, research into desertification processes. A number of speakers expressed the view that increased climatological research was essential, in respect of the causes of desertification and in order to permit better prediction of changes; the need for closer relationships between climatologists and agriculturalists at various levels was repeatedly stressed.

11. The need for further research in such areas as water harvesting (especially using local traditional technology), use of brackish water, water desalinization, rainfall prediction, alternative sources of energy and water-crop relationships was also pointed out. It was observed that both ground water and surface water were subject to contamination by salt-water intrusion. It was stressed that particular attention should be paid to the development and proper utilization of small local water resources in the countries affected by desertification, a subject to which the documents before the Committee did not pay sufficient attention. In that

connexion, it was pointed out that world expenditure on space exploration and the development and production of weapons was far greater than that on the development of water resources.

12. Several delegations expressed the view that the experience of nomads in combating desertification and adapting to desert conditions, which had still not been properly studied and taken into account, could serve as a good basis for future anti-desertification activities, particularly in respect of the parallel management of land and cattle. However, it was pointed out that sedentarization of nomads was a policy in some countries, and the difficulties of asking a population to remain pastoral were noted.

13. Some doubts were expressed about the validity of the economic calculations of the costs of land reclamation presented in the Conference documents, particularly in the overview and in addendum 2 to the draft plan of action to combat desertification, and it was suggested that too much emphasis should not be given to the figures. The Deputy to the Secretary-General of the Conference explained that the figures in table 2 of the overview were deliberately conservative, and should be regarded as a preliminary set of approximations to be refined later as more precise data became available.

2. Definition of desertification

14. The view was expressed that desertification was not adequately defined in the overview, and that the definition should therefore be improved and further developed. One delegation proposed deletion of the definition. Regarding the scope of an improved definition, various opinions were expressed: that it should be restricted to the degradation of ecosystems in arid and semi-arid lands; that it should distinguish between desertification in that narrow sense and land degradation in general, various aspects of which were already being dealt with by competent agencies of the United Nations system, such as UNESCO and FAO; and that it should be sufficiently broad to cover any destruction of the biological potential of land, covering desertification occurring, often as a result of economic and technical factors, in humid as well as arid lands. To the latter view, it was objected that such a universal definition would not provide a suitable basis for the achievement of positive practical results. One delegation argued that any definition of desertification should be flexible, so as not to restrict attainment of the aspirations of those living in all the different areas affected.

15. The Chairman drew attention to the definition of desertification contained in the first sentence of paragraph 4 of the draft plan of action (A/CONF.74/3). Many delegations considered that definition to be an adequate response to General Assembly resolution 3337 (XXIX), and felt that, since it had been prepared on the basis of decisions of the Governing Council of UNEP acting as the Intergovernmental preparatory body for the Conference, it constituted a satisfactory basis for the work of the Conference. Other delegations considered that the definition should be broader in scope, while yet others felt that it should be made narrower and more precise.

16. Many delegations emphasized the importance of human factors in desertification. The point was stressed that in some areas, under colonialism, desertification was caused by forced displacement of people from productive lands onto marginal fragile lands, which led to destruction of plant cover and soils along the desert margins under artificially created excessive population pressure. Reference was also made to certain types of military activity as a cause of desertification.

17. It was recognized that, in some of its forms, desertification occurred in areas outside the immediate scope of the documents and maps submitted to the Conference. In that connexion, the attention of the Committee was drawn to the note by the Executive Director of UNEP (UNEP/GC.51/Add.2), submitted to the Governing Council of UNEP at its third session, paragraph 3 of which read in part:

"The Executive Director suggests that the scope of the activities requested should include arid and semi-arid regions, irrigated lands (oases and river basins) within the geographical boundaries of arid and semi-arid regions, and salt deserts (coastal and inland). Cold deserts such as tundra, ice caps and frozen soils will also be examined, particularly from the standpoint of application of experience in these regions to the above areas."

That suggestion had been approved by the Governing Council in decision 30 (III), which was subsequently noted by the General Assembly in resolution 3511 (XXX) of 15 December 1975. Accordingly, the documents and maps were restricted in scope to the above-mentioned areas.

3. Desertification maps

18. The Secretary-General of the Conference said that every effort had been made by FAO, UNESCO, WMO and individual scientists, under the leadership of the Conference secretariat, to present the processes of desertification cartographically, as requested by the General Assembly in resolution 3337 (XXIX). Nevertheless, the desertification maps were still in an experimental stage and open to change; as, at best, scientific experiments, they implied no opinion on the part of the United Nations regarding the status of any country or territory shown on the maps.

19. Several delegations expressed reservations with regard to the maps presented to the Conference, particularly the world map of desertification (A/CONF.74/2). The Committee agreed to establish a working group to look into technical inadequacies or inaccuracies in the map. The working group comprised the delegations of Algeria, Argentina, Australia, Bangladesh, Chile, Egypt, France, German Democratic Republic, Greece, Hungary, India, Iraq, Kenya, Mexico, Senegal and the United States of America, with the delegation of Saudi Arabia as an observer. Also in attendance were representatives of UNESCO, FAO, WMO and OAU.

20. The working group held one meeting. The following technical comments were made in the course of the discussions on the map:

(a) That in the definitions used as a basis for preparing the map the question of hydrological quandary, which was an important element to be included in a global map, had not been taken into consideration;

(b) That the world map should be combined with the global map of soil degradation under preparation by FAO, so as to be able to include humid areas;

(c) Since desertification was a dynamic process, there was a need for a map, or maps, or an atlas, on a large scale;

(d) That consideration should be given to receiving from national sources relevant data which could be systematically collected for improving the map;

(e) That a world map on desertification at a scale of 1:5 million and/or an atlas on desertification should be prepared, as the present scale of 1:25 million was too small to be dynamic;

(f) That the world map did not show the process of desertification, but only desertification hazards, and should therefore logically be called a world map of desertification hazards.

21. The working group made the following recommendations to the Committee of the Whole:

(a) That the world map of desertification should be accepted as a first approximation primarily intended to indicate the global magnitude of the problem;

(b) That the Committee should recognize the inevitable limitations which the map, in its first form, contained, and should encourage the production of detailed maps at larger scales, using the same legend or other appropriate legends, at regional and national levels, in the light of the views of the Conference regarding the scope of desertification;

(c) That the Committee should request the Conference to encourage the production of other accompanying maps, for example of areas liable to salinization, alkalization, hydrological quandary, seasonal drought, etc.

22. The Committee noted the recommendations of the working group. Two delegations stated that in further work on global maps the experts should consult the Governments concerned, and one delegation said that consultation with Governments should occur after the maps were made. It was also suggested that desertification in highlands and in moister regions of the world should be shown on future maps. The Chinese delegation reserved its position with regard to the desertification maps. Two delegations suggested that the definition of the phenomena mentioned in paragraph 21 (c) above should be examined at the expert level in order to establish a precise and generally acceptable definition before proceeding with the preparation of additional maps. They also stated that in appropriate cases it would be necessary to ensure that the views of all those concerned would be taken into account before embarking upon such a cartographical exercise.

∴ B. Draft plan of action to combat desertification

23. In considering item 5 of the agenda, the Committee had before it three principal Conference documents (A/CONF.74/3 and Corr.1 and Add.1 and 2) and six background documents (A/CONF.74/24-29), as well as the relevant documents listed under item 4 above.
24. The Secretary-General of the Conference recalled that General Assembly resolution 3337 (XXIX) called for the preparation of a comprehensive programme against desertification, including the building-up of scientific and technological capacity in the areas concerned. The draft plan of action before the Committee had undergone widespread review and amendment. Action could begin with existing knowledge and should not await additional research; with national and international support, desertification could be halted by the year 2000. The plan of action recommended action at national, regional and international levels, and feasibility studies had already demonstrated the political acceptability of the principle of such actions. Implementation of the plan would not depend on new administrative machinery but on the use of existing machinery, for example under the Environment Co-ordination Board. Possible sources of financing included bilateral, multilateral, or consortium approaches; long-term loans; and some form of international taxation.
25. Delegations stressed the complex nature of desertification. Further study was called for in several areas, including basic research on arid ecosystems, on the prediction of climatic change and on the impact of the introduction of modern technology on traditional systems of land use. One delegation drew attention to the social causes of desertification in many developing countries of the world, which were particularly due to colonialism and imperialist aggression.
26. In any area, measures to combat desertification should form part of integral development programmes which took into account local ecological, economic, social and political circumstances. Programmes should be prepared in the context of over-all socio-economic development and should be consistent with limitations set by the environment and by financial resources.
27. Human dimensions of desertification, such as malnutrition and scarcity of food and water, were stressed, and with them the need for a more equitable distribution of resources between fertile and desertified areas and between developed and developing countries.
28. The importance of co-operation was emphasized, from the level of the local community to co-operation between ongoing or planned projects at regional and international levels. Co-operation by neighbouring countries in the management of shared waters was particularly stressed. The representative of UNITAR offered the Institute's co-operation with other agencies in implementing the plan of action.
29. Other measures advocated to combat desertification included the supervision of military weapons which might cause environmental damage and the condemnation of forcible displacement of populations.

30. It was requested that, in order to avoid duplication of effort, recommendations by previous United Nations conferences relating to areas undergoing or threatened by desertification be brought together in the plan of action.

31. There was general support for the plan by non-governmental organizations. Their recommendations included greater emphasis on the restoration of vegetation as a fundamental source of food and fuel, stress on wildlife as a resource and a call for a more sober analysis of the human economic costs and technological demands of the plan of action.

1. Recommendations for national, regional and international action

32. Following a general discussion, the Committee proceeded to examine each recommendation in turn.

Recommendation 1 a/

33. There was general endorsement of the need for assessment and evaluation of desertification and of the importance of surveys whenever required as the basis for drawing up programmes for combating desertification. It was stressed that use should be made of all existing knowledge and that action should not await the completion of new detailed surveys. The wide range of monitoring methods was noted, from questionnaires for land users to satellite-borne sensors; it was accepted that the choice of method would be limited by the available technology, but in most cases ground observation would be required to support remote sensing. It was generally agreed that the text of the recommendation, and of other relevant recommendations, should include an indication of the importance of preventing desertification. One delegation supported the organization of a system of data and information exchange, based on a network of existing centres.

Recommendation 2

34. It was agreed that sound land use was fundamental to preventing and combating desertification. The need for integrated planning and management of land and the interdisciplinary training of planners and land managers was emphasized, as were social aspects of comprehensive land-use policies and the need for cost-benefit analyses of projects.

35. Local public participation in such planning and general public awareness of the problems and remedies of desertification hazards were considered so important that it was proposed to establish a separate recommendation on the subject.

36. It was stressed that pilot projects should be representative of the particular types of environment and enterprises which they were designed to test, and it was recommended that selection principles should be formulated as under the MAB and EMASAR programmes. It was also pointed out that such projects should be consistent with the needs and aspirations of local populations of the areas concerned.

a/ The recommendation numbers are those used in the draft plan of action (A/CONF.74/3); where this differs from the number in the Plan of Action adopted by the Conference, the new number is given in brackets.

37. Social aspects of desertification as well as the campaigns against it should be prominent in the recommendation, and particular emphasis should be given to the interrelationship between the owners of land and its users, to interdependence between people in cities and villages, and to ways in which the public could participate in the planning and implementation stages of various projects.

Recommendation 3 (5)

38. There was general agreement on the importance of the recommendation in all programmes and campaigns against desertification; measures to improve water management should constitute a part of the integrated strategy, at both national and regional levels, for rational use of water resources. The recommendation should be fully consistent with the recommendations of the United Nations Water Conference, specifying their implementation for the particular purposes of combating desertification.

39. The importance of water management policies and practices on a catchment or a river basin basis, particularly where there were shared water resources requiring co-operation among several countries, was stressed.

40. It was emphasized that the recommendation should clearly bring out the necessity of assessment, rational exploitation, conservation and storage of water, including surface and ground-water resources, especially in the Sahelian countries, and should place emphasis on the balanced use of water available from all three sources: rains, surface water, and ground water. It was pointed out that large quantities of ground water were available in many parts of the world, and should gradually be mined and used in carefully designed projects, with emphasis on water conservation.

41. It was stressed that building up of small water reservoirs as well as large hydraulic works should be encouraged to boost over-all development in needy areas. Particular attention should be paid to advance studies of various environmental consequences of major hydrological works, especially to possible negative side-effects, both physical and social.

Recommendation 4 (6)

42. It was generally agreed that improvement of rangeland and livestock management was an important part of the campaign against desertification, as overgrazing constituted one of its major causes. The importance of strengthening regional programmes on the basis of the achievements of such programmes as MAB of UNESCO and EMASAR of FAO/UNESCO/UNEP, was stressed.

43. In improving livestock management, special attention should be paid to eradication of major animal diseases, particularly in Africa, where they constituted very serious obstacles to the economy and to rational use of natural resources. The eradication programmes should take into account the interests of husbandry, forestry, agriculture and the population itself, with all necessary environmental considerations.

44. Mixed grazing was considered to be an important tool in improvement of rangeland and livestock management, since it was based on very sound traditional experience. At the same time, promoting wildlife utilization, and fish culture in dams and reservoirs as a source of protein, as a most rational form of land use in some areas was advocated and generally supported, subject to the need for more research on the question.

45. The need for establishment of reference areas for research into rangeland dynamics, particularly in degraded areas, was suggested, and the importance of studies on interrelationships between primary and secondary biological productivity of rangelands was stressed.

Recommendation 5 (7)

46. The importance of soil and water conservation as a central part of all measures concerned with the improvement of rain-fed farming was generally stressed. Particular attention should be paid to preservation of the chemical, physical and biological properties of soil, which constituted the basis of its fertility. Appropriate technology to prevent soil deterioration should be developed in rain-fed farming, taking into account the traditional local experience.

Recommendation 6 (8)

47. It was noted that, although irrigation could be a powerful tool in combating desertification, it could also be a cause of desertification in some cases, and that economic and social constraints should be always considered before undertaking large irrigation projects. Some delegations pointed out that reclamation of salt-affected lands, especially alkaline lands, was not as costly as the utilization of new lands, and that the human angle should always be taken into account before deciding on the priority of cultivation expansion onto new lands. Serious investigations should be carried out at the design stage, with particular attention to possible negative environmental side-effects.

48. Other delegations pointed out that reclamation of saline or alkaline lands could be very costly and should be undertaken only when other more productive lands were not available. In response to that statement, the opinion was expressed that such was not always the case; in any event, the human aspect always should constitute the most important factor in any consideration of reclamation projects. Improvement of human conditions should always constitute a primary aim of any irrigation project, and traditional technology should be taken into account in designing irrigation projects, especially small ones. The importance of selecting appropriate land for irrigation was stressed.

Recommendation 7 (9)

49. It was felt that the great importance of protecting soil against water and wind erosion should receive more emphasis in campaigns for the revegetation of degraded areas and all other areas threatened or likely to be threatened by desertification. Such action was also very important as a preventive measure against further desertification. The problems of desertification

and of soil erosion in particular, constituted a very important area for international co-operation, which should be considered most appropriately on a catchment area basis, integrally with the problems of water conservation and restoration of vegetation.

50. Tree planting and the creation of "green belts" whenever ecologically sound and appropriate, should be encouraged, and their importance should receive greater emphasis in the plan of action, of which reforestation and afforestation should constitute an essential part. The protection of existing forests should also be stressed. To that end, forest services should be strengthened, tree plantations should be protected against destruction by grazing or by other improper use, and the multiple benefits of forest plantations should be stressed. Creation of new forest plantations should be environmentally sound, and measures should be taken to prevent the possible spread of exacerbation of epidemic human and animal diseases in the new environment. Measures should be considered to protect forest plantations against fires.

Recommendation 8 (13)

51. It was generally agreed that the recommendation on improvement of demographic policy should be more practically oriented, and should not contain generalized statements on demographic situations. It should also not advocate general sedentarization of nomadic populations. Basically, it should emphasize the need for socio-economic and demographic studies of the populations concerned, particularly nomadic communities. It was pointed out that the problem of nomadism lay not in the migrations themselves, but in the degradation of the environment of nomadic populations. At the same time, positive and negative aspects of nomadism should be adequately covered in the plan of action. The difficulties of providing necessary services to the nomads should be fully realized, and the appropriate measures must be undertaken to overcome them.

Recommendation 9 (14)

52. It was pointed out that the provisions of the recommendation should be consistent with the goals established by WHO with regard to equal primary health-care services for all. It was generally agreed that research into the traditional pharmacoplia and traditional medicine should be promoted, and that local structures capable of exploiting medicinal plants of scientifically established value should be established or strengthened. The need for good housing, nutrition and drinking water as a prerequisite of good health was stressed. Improvement of health-care services should be based on communications and infrastructures. At the same time, account should also be taken, in plans to remedy the situation, of the fact that desertification led to concentration around urban centres, thus facilitating further desertification round settlements and the spread of communicable diseases.

Recommendation 10 (15)

53. The Committee generally accepted the recommendation and stressed that human behaviour in the areas concerned and psychological factors should receive more consideration and emphasis in the plan of action.

54. The need to restrict the use of fertile land for non-agricultural purposes, particularly for construction of buildings, was unanimously stressed.

Recommendation 11 (16)

55. The need for a careful and cautious approach to implementing the recommendation was generally supported. Stress was placed on the need to ensure that data on the human condition were used only as a means of furthering the well-being of the peoples concerned, and to exercise care in selecting the critical parameters for continuous monitoring.

Recommendation 12 (17)

56. Particular emphasis was placed on the need to take preventive action prior to the onset of droughts in order to alleviate their impact. It was pointed out that insurance was most likely to be an effective disaster relief measure if good land management had been practised during climatically favourable years; that disaster relief programmes should be designed to lead to improved land and water management; that for disaster relief action to be effective, it must include the provision of transportation access to remote areas and the establishment of self-help centres for drought-affected people; and that a disaster alarm system would be useful. One delegation cautioned that risk insurance programmes should be designed to avoid encouraging over-use of land.

Recommendation 13 (18)

57. Full support was given to the essence of the recommendation. It was noted that national capability must be developed to deal with technology transferred from abroad as well as locally developed technology.

Recommendation 14 (19)

58. The need to conserve present fuel sources and to generate new energy sources was recognized. It was pointed out that, since wood would be a primary source of fuel for many people during the years immediately ahead, priority should be given to controlling, managing and expanding existing resources. Delegations noted the need for international co-operation in the development of simple devices to burn conventional fuels more efficiently, which offered promise of immediate rewards, and in the general area of developing and sharing appropriate energy technologies. Reference was also made to the potential advantages of such devices as hay boxes as means of conserving energy. It was recognized that, since women played a key role in the utilization of fuel, their participation in the development and testing of new technologies was essential. Delegations also pointed out that control of wood cutting should be coupled with the provision of alternative supplies of fuel, and that geothermal energy was, in some regions, a potential substitute for other types of energy which should be developed.

Recommendation 15 (20)

59. Public awareness of desertification on the part of decision-makers and the general public was mentioned by several delegations as a key factor in education and information activities seeking support for anti-desertification programmes. It was pointed out that greater public participation at all levels could create an environment conducive to making financial and administrative changes which would facilitate the implementation of anti-desertification programmes.

60. The importance of the role of women in development and the need to provide education for women and children, especially migrants, was noted. It was suggested that a section on international co-operation be added to the recommendation.

61. It was noted that several references had been made during the discussions to other United Nations conferences, and that it might be desirable to bring those references together in one section of the plan of action.

Recommendation 16 (21)

62. The recommendation received general support. It was, however, considered that the function of the national machinery should include the dissemination, as well as the analysis and evaluation, of existing information. Since desertification was an international problem, national machineries should be designed on principles shown to be valid at the international level, in order to enable them to collaborate with similar bodies at regional and global levels.

63. It was suggested that the recommendation should leave open the question of where the responsibility for the task of co-ordination between various national bodies concerned with the implementation of the plan of action would be placed, since the solution adopted would vary from country to country.

Recommendation 17 (23)

64. In supporting the recommendation, the Committee considered that more explicit recognition should be given to existing or projected activities of United Nations agencies relevant to the plan of action to combat desertification, including, for example, the UNESCO International Hydrological Programme and the WMO Operational Hydrological programme in relation to water resources, MAB Projects 3 and 4, the UNESCO/UNEP Integrated Projects on Arid Lands (IPAL), the World Climate Programme and Global Atmospheric Research Programme (GARP) of WMO, and the joint programme by UNEP and FAO on the Ecological Management of Arid and Semi-Arid Rangelands in the Near and Middle East (EMASAR). While it would not be necessary to revise all those programmes, the agencies should take the opportunity to strengthen and modify existing projects and initiate certain new ones in accordance with priorities in the plan of action, and to provide appropriate budgetary support. There was a particular need for a strong co-ordinating function by the United Nations body entrusted with the follow-up of the plan.

65. It was pointed out that the proposed system for global monitoring of desertification, which should include the monitoring of human aspects such as settlements, should be so designed as to fit within the Global Environmental Monitoring System (GEMS) of UNEP. However, there should be no monitoring of any area without the full consent of the country concerned.

66. It was considered that technical support measures should include the management of soils as well as water management, that attention should be given to the protection of endangered wildlife species and to the need for afforestation and forest protection programmes, and that assistance to threatened livestock-based economies should include the provision of alternative income sources, such as small-scale industries, extended cropping and fisheries.

Recommendation 18-(25)

67. In supporting the recommendation, delegations stressed the important actual and potential contributions of intergovernmental and non-governmental organizations outside the United Nations in combating desertification, not only at the international level, but also at the regional and national levels.

68. It was emphasized that non-governmental organizations also had a particular function in communicating between authorities and the public, and accordingly in educating and ensuring the participation of local communities in programmes to combat desertification, that their role should extend into every aspect of planning and implementation of such programmes at all levels, and that they should be represented in whatever body was entrusted with over-all co-ordination of the plan of action.

Proposed new recommendations

69. The Committee also considered proposed new recommendations on the following subjects:

(a) Public participation in programmes to combat desertification

70. The proposed recommendation was approved. The need for active participation by local people in decisions affecting their lives was stressed as a means of mobilizing hitherto untapped local resources in the form of experience and traditional skills.

(b) Climate and desertification

71. Strong general support was expressed for the proposed recommendation, as a recognition of the fundamental importance of climate in desertification and of the need for improved knowledge of the cause of climatic change and for improved methods of climate prediction.

(c) Monitoring of climatic, hydrological, pedological and ecological conditions

72. Several delegations supported the recommendation, although one stated that the wide emphasis on monitoring throughout the draft plan of action indicated a need for selectivity in the choice of criteria for monitoring; indiscriminate monitoring was not only costly, but yielded much information of little utility. It was pointed out that the identification of critical indicators of desertification was a research need of the highest priority.

(d) Combination of industrialization and urbanization with the development of agriculture in arid areas ...

73. A number of amendments were proposed with the intention of demonstrating the general applicability of the proposed recommendation over a wide range of social and economic systems. It was recognized that, since the exploitation of minerals, ground water and other industrial resources was likely to be a high priority in developing countries, the promulgation of guidelines for environmentally sound development was of the highest importance. The recommendation that the United Nations should assist in studying and publicizing the positive and negative impacts of urbanization and industrialization in deserts was generally supported, although two delegations considered that the proposal to hold a series of regional and international meetings on those topics under UNEP auspices in 1978-1980 should be considered further.

(e) Socio-economic aspects

74. Delegations expressed full support for the proposed recommendation. It was generally recognized that the socio-economic factors involved in desertification required intensive analysis and remedial action.

(f) Integration of anti-desertification programmes into comprehensive plans

75. It was stressed that the proposed recommendation was not intended to delay immediate action where that was called for. Two delegations suggested that similar principles might also guide action at the regional level.

76. The Committee also considered a series of recommendations aimed at regulating a number of activities harmful to dryland ecosystems, and hence potential causes of desertification. All speakers agreed with the recommendations in principle, reservations arising mainly from the broad and mandatory form of several of the constituent proposals, such as those relating to hedges, roads in unspoiled areas, environmental impact assessment, and restrictions on the use of all-terrain vehicles. Several delegations commented on the need to include flora as well as fauna in the proposed recommendation regarding conservation. Although many delegations agreed that restriction on the sale of animals or animal products was essential if poaching and illegal exploitation of wildlife were to be suppressed, several suggested that complete prohibition of the use or sale of any part of any kind of animal would be impracticable, save in the case of endangered species. Several African delegations pointed out that survey and study of their national fauna was still in progress, and exceptions would need to be made in

the case of specimens for research or for educational purposes. Several speakers pointed out that wildlife was a resource which must be managed and exploited, and that some limitation of wildlife numbers might be necessary in some cases. Others stressed the need for international action, particularly between neighbouring countries, to protect wildlife and prevent illegal traffic in animal products through more effective enforcement of the Washington Convention and similar international agreements to protect wildlife.

2. Recommendations for immediate initial action and for follow-up of implementation of the plan of action

77. In considering chapter V of the draft plan of action, b/ delegations noted that the list of items proposed for immediate initial action was too large and that individual countries would have to define their priorities. The list of actions in the chapter was questioned on the grounds that it did not always follow from the preceding sections of the draft plan of action, including some items not mentioned previously and excluding other items that featured in earlier chapters.

78. The Committee established a working group to consider chapters V and VI of the draft plan of action. c/ The working group made recommendations to the Committee for amendments to chapter V, as revised text of recommendation 19, and the deletion of recommendation 20.

C. Action by the Committee

1. Adoption of the report of the Committee

79. The Committee adopted paragraphs 1-22 and 23-55 of its draft report at its 11th and 12th meetings respectively. During the adoption of paragraphs 23-55, the representative of Brazil indicated that his delegation reserved its right to disagree with some portions of that part of the report. The remainder of the draft report of the Committee was not considered by the Committee owing to lack of time.

2. Approval of the draft plan of action to combat desertification

(a) Recommendations for national, regional and international action

80. Following its consideration of the individual recommendations, the Committee considered a set of amendments to the draft plan of action selected, by a group of delegations nominated by the Chairmen of the regional groups to work with the Rapporteur, from among the amendments submitted by delegations. A number of amendments not so selected were also considered.

b/ Section VI of the Plan as adopted.

c/ Sections VI and VII of the Plan as adopted.

The Committee agreed to submit for consideration by the Conference a revised draft plan of action (A/CONF.74/L.36) incorporating the amendments approved by it.

81. In the course of its consideration of the amendments to the draft plan of action, the Committee also considered the proposed new recommendations and proposed amendments to them. d/ A new recommendation on co-operation between the countries concerned in respect of shared water resources was adopted by consensus (recommendation 26). Following its adoption the representative of Brazil stated that his delegation considered the Conference to be an inappropriate forum for discussion of the subject, and had participated in the consensus only on the understanding that the recommendation adopted would not prejudice the outcome of the work of the appropriate legal forums currently deliberating on the matter, that it was applicable only to those cases where a well-established desertification problem gave rise to consultations at the request of the interested Governments, and that the mention of "equality, sovereignty and territorial integrity" referred to the universal principle of the sovereign rights of States over their natural resources with a view to their economic development.

82. The representative of Algeria stated that his delegation accepted the recommendation on the understanding that it did not prejudice the results of current work by competent international bodies and that its strict interpretation in no way impinged upon the sovereignty of States. The representative of France stated that his delegation accepted the recommendation on the understanding that it would not prejudice the results of the work of the UNEP Group of Experts on Natural Resources Shared by Two or More States. The representative of India stated that co-operation between neighbouring countries in the sound and judicious management of shared resources could be effective only when it took place bilaterally, and where necessary multilaterally, based on mutuality of interests and understanding of each other's position.

83. The representative of the German Democratic Republic, speaking on behalf of the delegations of Czechoslovakia, Hungary, Poland and the Union of Soviet Socialist Republics, stated that the recommendation reaffirmed a recommendation of the United Nations Water Conference on which the Governments represented by those delegations had stated their position in document E/CONF.70/28. They wished to reiterate that problems related to the utilization of water resources shared by two or several countries should be settled by such countries by means of negotiation on the basis of mutual respect for the sovereignty and rights of the States concerned.

84. The Committee also unanimously approved proposed new recommendations on public participation in programmes to combat desertification (3), integration of anti-desertification programmes into comprehensive

d/ The recommendation numbers as they appear in the Plan of Action appear in brackets.

development plans (22), climate and desertification (24), monitoring of climatic, hydrological, pedological and ecological conditions (11), combination of industrialization and urbanization with the development of agriculture in arid areas (4), socio-economic aspects of desertification (12) and for incorporation into appropriate parts of the draft plan, a set of recommendations relating to hedge and windbreaks, roads in unspoiled areas, environmental impact assessment, use of all-terrain vehicles and conservation of flora and fauna. e/

(b) Recommendations for immediate initial action and follow-up

85. The Committee approved for incorporation in the revised draft plan of action the amendments to chapter V of the draft plan submitted by the working group, and those amendments to chapter VI relating to institutional arrangements for follow-up.

86. Regarding the financing of activities arising from the plan of action, the Committee made the following recommendations.

(i) Subregional co-operation

87. When so required, subregional co-operation shall be initiated or intensified among groups of countries, such as the Organization of American States, and individual countries affected by desertification with a view to formulating other specific joint programmes and development assistance requests. Subregional groups may wish to invite donor representative to participate in these efforts. UNEP should assist these subregional groups with technical expertise, and relate their proposed programmes to the implementation of the global plan of action.

(ii) Bilateral, multilateral and multi-bilateral assistance

88. The traditional sources of financing, multilateral and bilateral assistance programmes, as well as the "multi-bilateral" approach, were effective, and in view of the new development assistance needs highlighted by the Conference, should increase their assistance to countries suffering from desertification.

89. Developing countries should give due priority to desertification problems in their development assistance requests. The existing financial institutions within the United Nations system, as well as multilateral and bilateral donors outside the system, should allocate part of their resources to finance activities advocated in the plan of action to combat desertification. To that end, a review of priorities and the activities of those institutions, particularly those within the United Nations system, should be undertaken without delay.

e/ The recommendation regarding conservation of fauna and flora appears separately, as recommendation 10.

90. The Committee also briefly considered the following recommendations, and referred them to plenary.

(iii) Consultative group/club, or group-type financing

91. The Executive Director of UNEP should, immediately after the adoption by the General Assembly of the plan of action, convene a consultative group comprising representatives from organizations referred to in paragraph 97 (c) (ii) of the revised draft plan of action from such other organizations as might be required, including major donors, both traditional and new, and multilateral financing agencies, and from developing countries having a substantial interest in combating desertification. The group, which would meet as and when required, would also assist in the co-ordination of activities undertaken with the resources mobilized by it. It would be serviced by the staff mentioned in paragraph 98 of the revised draft plan of action, which should include persons with professional competence to deal with financial and related matters.

(iv) Special account

92. The General Assembly should be invited to take the necessary measures for the creation, at the global level within the United Nations, of a special account for implementing the plan of action, which should draw its resources from, inter alia, contributions from Member States, international taxation, donations, multilateral financing institutions and from interest free loans.

(v) Additional measures

93. The General Assembly should be invited to request the Governing Council of UNEP to have prepared, by a small group of high level specialists in international financing of projects and programmes, a study of additional measures and means of financing for the implementation of the plan of action as adopted by the Conference, such as funds in trust, fiscal measures entailing automaticity, and an international fund. The Governing Council of UNEP should be requested to submit a final report on the subject of additional measures of financing to the General Assembly at its thirty-third session, through the Economic and Social Council.

94. With respect to the financing of activities resulting from the plan of action the representative of Poland, speaking also on behalf of the delegations of Czechoslovakia, the German Democratic Republic, Hungary and the Union of Soviet Socialist Republics, said that their Governments had always supported the active development of international co-operation, primarily with developing countries on the basis of equitable, equal and mutually advantageous relations in the interests of international peace and detente. They had always rendered assistance to developing countries and would continue to do so, primarily on a bilateral and voluntary basis, which in their view yielded the most positive results for the countries concerned, and should be given priority in respect of developing countries affected by desertification. They also participated actively in the implementation of United Nations programmes and activities in favour of developing countries

Including those based on voluntary contributions; in that connexion they advocated more effective use of the existing financial resources of the United Nations and improved co-ordination between all bodies of the United Nations system, and supported the enhancement of the role of the regional commissions in solving important tasks of co-operation to combat desertification.

3. Draft resolutions

95. The Committee considered a draft resolution submitted by the Chairman on the Implementation of General Assembly resolution 3337 (XXIX). The draft resolution, as amended in the course of the debate, was approved unanimously.

96. The Committee also considered a draft resolution submitted by Cape Verde on the effect of weapons of mass destruction on ecosystems. A considerable number of delegations expressed unreserved support for the draft resolution.

97. The draft resolution, as amended in the course of the debate, was adopted by consensus. The representative of Australia, speaking on behalf of the Group of Western European and other States, said that most of its members, while strongly supporting the efforts to eliminate the use of chemical and biological weapons, in particular the use of such weapons in a manner which has long-lasting harmful effects on the environment, nevertheless had difficulties with the language of the resolution. Many were concerned that the resolution as worded discriminates against countries which have achieved independence without armed struggle. Others felt that many of the complex technical issues involved were being addressed in more appropriate forums - for example, the Conference of the Committee on Disarmament. The members of the Group attached importance to General Assembly resolutions 31/64 and 65 of 10 December 1976 concerning respectively incendiary and other specific conventional weapons which might be the subject of prohibition or restriction of use for humanitarian reasons, and chemical and bacteriological (biological) weapons, to the 1925 Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare and to the 1972 Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction and other relevant conventions, and strongly supported the ongoing efforts on the Conference of the Committee on Disarmament to achieve prohibition of the development, production and stockpiling of chemical weapons.

98. The representative of Peru, speaking on behalf of the Latin American Group (except for one country) said that they supported the spirit and general idea of the draft resolution, but would have abstained if it had been put to the vote, since they did not agree with some of the documents mentioned in the preamble; the majority of the delegations in the group also did not agree with the wording of the operative part. The representative of Mexico said his delegation would have abstained in the event of a vote, although it agreed with the spirit and general idea of the draft resolution, since it did not agree with some of the views expressed in the preamble.

99. The representative of Portugal stated that his delegation was not in favour of the use of the words "independence through armed struggle", since all wars, and not only wars of independence, had the effects referred to; however, it had joined the consensus. The representative of Japan said that his delegation actively supported the ongoing efforts in the field of disarmament in the Conference of the Committee on Disarmament and in other bodies within the United Nations system, including the efforts related to chemical and biological weapons; it believed that the subject matter of the resolution was outside the scope of the Conference, and that its implementation should be in conformity with the principles laid down in the Charter of the United Nations. The representative of Switzerland stated that his delegation supported the intention of the resolution to the extent that it invited the competent organizations to take the effects of chemical and biological weapons on ecosystems into account in their proposals and decisions, but would have abstained in the event of a vote, on the grounds that, in that respect as in others, the resolution was -- vague and incomplete.

100. The representative of the German Democratic Republic said that his delegation had stated its position on the draft resolution during the debate in the Committee; having fully supported the resolution, his delegation wished to emphasize its conviction that both the preambular and the operative parts of the resolution were in full accordance with all General Assembly resolutions on the subject, with existing international conventions on the prohibition of biological weapons, with the ongoing deliberations of the Conference of the Committee on Disarmament aimed at prohibition of the development, production and stockpiling of chemical weapons, and with the provisions of the relevant Geneva conventions.

Appendix

TEXT OF PARAGRAPHS 87-95 OF THE DRAFT REPORT OF THE COMMITTEE OF THE WHOLE AS TRANSMITTED TO THE 17TH PLENARY MEETING

1. Subregional co-operation

87. When so required, subregional co-operation should be initiated or intensified among countries affected by desertification with a view to formulating joint programmes and development assistance requests.

2. Bilateral, multilateral and multi-bilateral assistance

88. The traditional sources of financing, multilateral and bilateral assistance programmes, as well as the "multi-bilateral" approach, were effective, and in view of the new development assistance needs highlighted by the Conference, should increase their assistance to countries suffering from desertification.

89. Developing countries should give due priority to desertification problems in their development assistance requests. The existing financial institutions within the United Nations system, as well as multilateral and bilateral donors outside the system, should allocate part of their resources to finance activities advocated in the plan of action to combat desertification. To that end, a review of priorities and the activities of those institutions, particularly those within the United Nations system, should be undertaken without delay.

3. Consultative group/club, or group-type financing

90. The Executive Director of UNEP should, immediately after the adoption by the General Assembly of the plan of action, convene a consultative group comprising representatives from organizations referred to in paragraph 78 (c) (ii) of the revised draft plan of action f/ from such other organizations as might be required, including major donors, both traditional and new, and multilateral financing agencies, and from developing countries having a substantial interest in combating desertification. The group, which would meet as and when required, would also assist in the co-ordination of activities undertaken with the resources mobilized by it. It would be serviced by the staff mentioned in the proposed amendment to recommendation 19, g/ which should include persons with professional competence to deal with financial and related matters.

f/ The paragraph in question is now 102 (c) (ii) of the Plan of Action.

g/ The proposed amendment was incorporated in the Plan of Action as recommendation 27, paragraph 103.

4. Additional measures

91. The General Assembly should be invited to request the Governing Council of UNEP to have prepared, by a small group of high-level specialists in international financing of projects and programmes, a study of the following measures and means of financing for the implementation of the plan of action as adopted by the Conference:

- (I) The creation, at the global level within the United Nations, of a special account for implementing the plan of action, which should draw its resources from, inter alia, contributions from Member States, international taxation, donations; multilateral financing institutions and from interest free loans;
- (II) As alternative measures, funds in trust, fiscal measures entailing automaticity, and an international fund.

The Governing Council of UNEP should be requested to submit a final report on the subject of additional measures of financing to the General Assembly at its thirty-third session, through the Economic and Social Council.

92. During the debate in the Committee, the representatives of Mexico, Netherlands, Sweden and the United States of America suggested the following addition to be included in paragraph 86 above, on subregional co-operation:

"When so required, subregional co-operation shall be initiated or intensified among groups of countries like the Organization of American States and individual countries affected by desertification with a view toward formulating other specific joint programmes and development assistance requests. Subregional groups may wish to invite donor representatives to participate in these efforts. UNEP should assist these subregional groups with technical expertise, and relate their proposed programmes to the implementation of the global plan of action."

93. The representative of the United States suggested the addition to paragraph 75 (d) h/ of the draft plan of action of the following:

"Specifically, the General Assembly should request the Executive Director of UNEP to convene, immediately after the approval of the plan of action by the General Assembly, a consultative group comprising representatives from affected countries, United Nations organizations, non-governmental organizations, major donors, both traditional and new, multilateral financing agencies and other such organizations as may be required. It would be assisted by the staff

h/ Now paragraph 99 (d) of the Plan of Action.

mentioned in paragraph 79. ^{1/} The consultative-group would serve in that capacity only until the completion of the tasks as specified below. The consultative group would serve UNEP in its endeavours to mobilize resources for interregional and other projects and serve UNEP in making detailed investigations of the financial implications, both immediate and long term, of the plan of action including:

"The availability of financing among existing mechanisms and programmes, problems of financing arising from the plan of action, and alternative means of overcoming problems or gaps in financing the plan of action. Its terms of reference would include:

"(1) Review on a priority basis of financial plans for the immediate actions specified in this chapter of the plan of action, and identify available sources of funding, problems of financing, and alternative means of overcoming problems and/or shortfalls in available financing;

"(2) A review of existing financial institutions within the United Nations system as well as national programmes, bilateral and multilateral donor programmes, and programmes of non-governmental organizations to see how much existing programmes do now, or how much can be reallocated within existing budgets to contribute to the specific implementation of the remainder of the plan of action;

"(3) Analysis of specific problems of financing arising from the plan of action, including both types and magnitudes of financing;

"(4) Feasibility and practicality of alternative means of overcoming financial problems, including inter alia the establishment of a permanent consultative group for finance mobilization, a special account within the United Nations, funds in trust, and measures involving automaticity taking into account the final report of the United Nations Conference on Desertification and the reports of its special working groups on such forms of financing as well as past discussions and resolutions of the General Assembly of the United Nations on financing of international programmes;

"(5) Assisting UNEP in preparation of a detailed report on the financial implications of the plan of action including recommendations as necessary for specific new requirements. This report should be prepared in time for submission through the Governing Council of UNEP to the General Assembly at its thirty-third session."

^{1/} Now paragraph 103 of the Plan of Action

94. The representative of France suggested the inclusion of the following additional recommendation in the draft plan of action:

"It is recommended that, in order to make possible the implementation of the Plan of Action to Combat Desertification, the various organizations in the United Nations system establish, within the framework of existing budgets, a Special Section devoted and showing the funds which could be allocated to that end. This suggestion is intended as an alternative to the proposal to set up a special account, for the way in which the latter would operate is not clear, a fact which seems likely to delay the implementation of the Plan."

95. The proposals in paragraphs 92, 93 and 94 were not considered by the Committee of the Whole, which agreed that they would be reflected in the report of the Committee for consideration by the Conference in plenary session.

Annex II

CREDENTIALS OF REPRESENTATIVES TO THE CONFERENCE

Report of the Credentials Committee

1. At its 4th plenary meeting, on 30 August 1977, the Conference, in accordance with rule 4 of its rules of procedure, appointed a Credentials Committee composed of the following states: China, Ecuador, Mexico, Netherlands, Niger, Syrian Arab Republic, Union of the Soviet Socialist Republics, United States of America and Zambia.
2. The Credentials Committee held one meeting on 6 September 1977. Mr. Najada Ibrahim (Niger) was unanimously elected Chairman.
3. The Committee noted from a memorandum submitted to it by the Secretary-General of the Conference that as at 6 September 1977:
 - (a) Credentials issued by the Head of State or Government or the Minister for Foreign Affairs had been submitted, as provided for in rule 3 of the rules of procedure of the Conference, by 67 States participating in the Conference;
 - (b) The credentials of the representatives of 8 States were communicated to the Secretary-General of the Conference in the form of cables from their respective Heads of State or Government or Ministers for Foreign Affairs;
 - (c) The representatives of 17 States were designated in letters or notes verbales from their respective permanent representatives or permanent missions in New York, or from their embassies in Nairobi; and
 - (d) The representatives of 2 States were designated by other authorities different from those specified in rule 3.
4. On the proposals of the Chairman, the Committee agreed that, as an exceptional measure, in view of the short duration of the Conference and taking into account rule 5 of the rules of procedure of the Conference, the communications referred to in subparagraphs (b), (c) and (d) of paragraph 3 above should be accepted provisionally, pending the receipt of the formal credentials of the representatives concerned. The Committee noted that in most instances assurances had been given that proper credentials would be transmitted as soon as possible. Furthermore, the Committee authorized its Chairman to report directly to the Conference in the event that, in the time intervening between the meeting of the Credentials Committee and consideration by the Plenary of the Committee's report, further credentials were received.

5. The representative of China reserved the position of his Government with regard to the credentials submitted by the delegation of the Republic of Korea. He stated that the Democratic People's Republic of Korea was the true representative of the people of Korea and that the South Korean authorities could not represent the people of Korea. The representative of the United States of America reserved the position of her Government with regard to the statement made by the representative of China and announced that her delegation might present a more detailed statement at a later stage.

6. Upon the proposal of the Chairman, the Committee thereupon decided to submit the present report for the approval of the Conference.

Annex III

LIST OF DOCUMENTS BEFORE THE CONFERENCE

Principal Documents */

A/CONF.74/AGENDA	Provisional agenda with annotations
A/CONF.74/AGENDA/Rev.1	Agenda with annotations to items 3 to 6
A/CONF.74/RULES	Provisional rules of procedure
A/CONF.74/RULES/Rev.1	
A/CONF.74/RULES/Rev.1/Corr.1 (French only)	
A/CONF.74/1	Desertification: an overview --
A/CONF.74/1/Corr.1 (English only)	
A/CONF.74/1/Corr.2 (In all Conference languages except English)	
A/CONF.74/1/Corr.3	
A/CONF.74/1/Rev.1	Desertification: an overview
A/CONF.74/2	World map of desertification
A/CONF.74/2/Corr.1 (Arabic only)	
A/CONF.74/2/Corr.2 (Russian only)	
A/CONF.74/3	Draft plan of action to combat desertification
A/CONF.74/3/Corr.1	
A/CONF.74/3/Add.1	Transnational projects: description and status of feasibility studies
A/CONF.74/3/Add.1/Corr.1	
A/CONF.74/3/Add.2	Economic and financial aspects of the plan of action to combat desertification
A/CONF.74/3/Add.2/Corr.1 (English only)	
A/CONF.74/3/Add.2/Corr.2	
A/CONF.74/4	Synthesis of case studies of desertification
A/CONF.74/4/Corr.1	
A/CONF.74/4/Corr.2 (Russian only)	

*/ Principal documents were prepared in all the languages of the Conference: Arabic, Chinese, English, French, Russian and Spanish.

Background Documents **/

		<u>Languages</u>
A/CONF.74/5	Climate and desertification	E
A/CONF.74/6	Technology and desertification	E
A/CONF.74/6/Corr.1		
A/CONF.74/6/Corr.2		
A/CONF.74/7	Ecological change and desertification	E
A/CONF.74/8	Population, society and desertification	E
A/CONF.74/9	Chile: case study on desertification	E F S
A/CONF.74/9/Add.1	Region of Combarbalá	--
A/CONF.74/10	Iraq: case study on desertification	E F
A/CONF.74/10/Add.1	Greater Mussayeb Project	
A/CONF.74/11	India: case study on desertification	E F
A/CONF.74/11/Add.1	Luni Development Block	
A/CONF.74/12	Tunisia: case study on desertification	E F
A/CONF.74/12/Add.1	Oglat Merteba Region	
A/CONF.74/13	Pakistan: case study on desertification	E F
A/CONF.74/13/Add.1	Mona Reclamation Experimental Project	
A/CONF.74/14	Niger: case study on desertification	E F
A/CONF.74/14/Add.1	The Eghazer and Azawak Region	
A/CONF.74/15	Australia: associated case study	E
	Gascoyne Basin	
A/CONF.74/16	China: associated case study	C E
	Tame the wind, harness the sand and transform the Gobi	
A/CONF.74/17	China: associated case study	C E
	Control the desert and create pastures	
A/CONF.74/18	China: associated case study	C E
	Combating desertification in China	
A/CONF.74/19	Iran: associated case study	E
A/CONF.74/19/Add.1	The Turan Programme	
A/CONF.74/20	Israel: associated case study	E
	The Negev: a desert reclaimed	

**/ Most background documents were prepared only in the language in which they were written plus English.

Languages

A/CONF.74/21	United States of America: associated case study The Vale rangeland rehabilitation programme: The desert repaired in south-eastern Oregon	E
A/CONF.74/22 A/CONF.74/22/Add.1	Union of Soviet Socialist Republics: associated case study Integrated desert development and desertification control in the Turkmenian SSR	E R
A/CONF.74/23	Union of Soviet Socialist Republics: associated case study Golodnaya Steppe	E R
A/CONF.74/24	Transnational project: the management of the major regional aquifers in North East Africa and the Arabian Peninsula	E F
A/CONF.74/25	Transnational green belt in North Africa	A E
A/CONF.74/26	Transnational project on management of livestock and rangelands to combat desertification in the Sudano-Sahelian regions (SOLAR)	E F
A/CONF.74/27	Transnational project to monitor desertification processes and related natural resources in arid and semi-arid areas of South America	E S
A/CONF.74/28	Transnational project to monitor desertification processes and related natural resources in arid and semi-arid areas of South-West Asia	E
A/CONF.74/29	Sahel green belt transnational project	E F
A/CONF.74/30	Decisions of the United Nations Water Conference relevant to the work of the United Nations Conference on Desertification: report by the secretariat of the Water Conference	A C E F R S
A/CONF.74/31 A/CONF.74/31/Corr.1	Status of desertification in the hot arid regions; Climate aridity index map; Experimental world scheme of aridity and drought probability	E

		<u>Langues</u>
A/CONF.74/32	Current international activities to combat desertification	A C E F R S
A/CONF.74/33	Report on the regional preparatory meetings	A C E F R S
A/CONF.74/33/Add.1	Reports of the regional preparatory meetings	A C E F R S
A/CONF.74/34	Study of alternative economic strategies for the development of arid and semi-arid lands.	E
<u>Country papers</u>		
Afghanistan	Country report	E
Algeria	<u>Le barrage vert</u>	F
	<u>Monographie nationale sur la désertification</u>	F
	<u>Lutte contre la sécheresse et la désertification: programme d'action météorologique</u>	F
Australia	Desertification in Australia	E
Bangladesh	Country report	E
Botswana	Situation report for Botswana	E
Chad	<u>Les mécanismes de la désertification de la zone sahélienne: un aperçu des conséquences socio-économiques de la sécheresse de 1972</u>	F
	<u>Monographie nationale de la République du Tchad sur l'eau</u>	F
Cyprus	Desertification factors and control measures	E
Democratic Yemen	Country paper	E
Ecuador	<u>El problema de la desertificación en la Provincia de Manabí-Ecuador</u>	S

		<u>Languages</u>
Egypt	Country report	A
Ethiopia	Desertification - the Ethiopian experience	E
Ghana	An examination of the desertification process and measures in Ghana	E
Greece	Desertification in Greece	E
Guinea-Bissau	<u>Menace de désertification en Guinée-Bissau</u>	F
India	Country report	E
Iraq	Report by the Republic of Iraq	A
Italy	<u>Expériences de contrôle sur les ressources du territoire d'Italie</u>	F
Jordan	Jordan's experience in combating desertification	A E
Kenya	Kenya's experience in combating desertification	E
Kuwait	National report on desertification	A E
Libyan Arab Jamahiriya	Desertification control experience in Libya	A E F
Morocco	<u>Éléments d'une stratégie de lutte contre la désertification dans les zones arides et sahariennes du Royaume du Maroc</u>	F
Nepal	Experiences of anti-desertification campaigns in Nepal	E
Nigeria	Desertification - the Nigerian situation	E
Pakistan	Country report	E
Portugal	Desertification in Portugal	E
Senegal	National report	F
Somalia	Desertification and control measures in Somalia	E

		<u>Languages</u>
Sudan	The Sudan experience in the field of desert encroachment control and rehabilitation	E
Syrian Arab Republic	Role of range management in the campaign against desertification: the Syrian experience as an applicable example for the Arabian Peninsula	E
Turkey	Desertification problems and related activities in Turkey	E
Uganda	National report	E
United Arab Emirates	Report submitted to the United Nations Conference on Desertification	A
United Republic of Tanzania	The threat of desertification in central Tanzania	E
	Desertification in Tanzania	E
United States of America	The food-people problem: can the land's capacity to produce food be sustained?	E
	Desertification in the United States	E
Upper Volta	<u>Activités du Gouvernement de la République de Haute-Volta en matière de lutte contre la désertification en zone sahélienne</u>	F
Uruguay	Desertification in Uruguay	S
Yugoslavia	A contribution to the acquaintance of desert conditions and applied measures for their control at the Delbiato Sand - Yugoslavia	E
Zaire	<u>Contribution à l'étude de la cryptodésertification au Zaire</u>	F

Annex IV

ACTIVITIES ASSOCIATED WITH THE CONFERENCE

A. Audio-visual presentations

1. Exhibits of photographs, slides, maps, graphics and other materials including a water pump and a table model of a rain-trapping system, were on display in the Kenyatta Conference Centre, the site of the United Nations Conference on Desertification. The countries represented by displays were: Australia, Botswana, Hungary, Israel, Iran, Japan, Kenya, Mexico, Morocco, Peru, Sudan, United Kingdom of Great Britain and Northern Ireland, United States of America, Union of Soviet Socialist Republics and Yugoslavia. UNESCO, FAO and UNEP also set up visual presentations, including a slide-tape demonstration by the International Referral System (IRS) of UNEP.

2. Fifty films on problems of desertification and what is being done to combat them were made available for screening at the Conference. Countries showing their filmed experience included Algeria, Australia, Botswana, Ethiopia, Ghana, India, Indonesia, Iran, Israel, Jordan, Libya, Morocco, Nepal, Niger, Nigeria, Pakistan, Romania, Somalia, Sri Lanka, Sudan, Swaziland, Turkey, United Arab Emirates, United States of America and Union of Soviet Socialist Republics. Continuous showings were held each day of the Conference, and special screenings were arranged on request from delegations.

B. Nairobi seminar on desertification

3. From 21 to 25 August 1977, a seminar on desertification was held in the Kenyatta Conference Centre, under the sponsorship of six scientific associations - the American Association for the Advancement of Science, the Association Française pour l'Avancement des Sciences, the British Association for the Advancement of Science, the East African Academy, the Indian Science Congress and Interiencia Association.

4. Some 40 scientists from 23 countries attended the seminar. The participants reviewed the draft plan of action to combat desertification, submitting their comments to the Conference Secretariat. They also heard and reviewed a set of scientific papers on subjects relating to desertification. The seminar focused on establishing a set of critical desertification indicators which could be used to assess vulnerability to desertification, predict the onset of the process, monitor its advance, and assess its effects as well as the effects of programmes to combat desertification. An international working group was formed to refine the indicators and test them in the field.

C. Encounter for journalists

5. In a new design for such encounters, journalists were encouraged to brief themselves instead of attending a course of lectures. Journalists in developing nations were asked to visit and then write about parts of their own countries undergoing desertification, and the selection

of Journalists to participate in the Encounter was made on the basis of the articles produced. In Kenya, seven journalists made a visit of inspection to desertified areas in the vicinity of Lake Turkana, where programmes are under way to combat and reverse the process.

6. Twelve journalists from eleven countries were selected to attend the Encounter, which was organized and managed by the Centre for Economic and Social Information, while three others attended the Encounter with assistance from UNDP.

D. Orientation workshop

7. A post-Conference orientation workshop was held in Kenyatta Conference Centre from 12 to 15 September 1977. The workshop was attended by 102 persons from 49 countries, plus 18 representatives of nine United Nations bodies, 11 consultants to the Conference on Desertification and staff members of the Conference secretariat. Most of the participants were Government officials or specialists actively involved in their own countries in programmes to combat desertification.

8. The workshop represented an effort to sustain the momentum of the Conference by directing the general prescriptions contained in the Plan of Action to specific action programmes. More precisely, the workshop aimed to: (a) consider possible measures which would give effect to the recommendations in the Plan of Action, (b) provide specialist advice on practical actions to be taken, (c) encourage co-operative planning among countries facing similar problems, and (d) explore ways in which the United Nations system could continue to provide constructive support to projects undertaken.

9. The workshop discussions, at plenary sessions alternating with working group session, covered a broad range of desertification issues, with special emphasis on aids and obstacles to action. In conformity with the informal nature of the workshop, it was decided that no formal report would be issued. Instead, four papers would be produced and sent to participants: (1) a report on the workshop procedures, including a list of the topics and questions considered; (2) a description of the programmes to combat desertification in which participants expected to be involved upon their return to their home countries; (3) a set of suggestions as to ways in which programmes could receive vigorous support from the international community; (4) a list of participants, giving affiliation and address.

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