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DESERTIFICATION AND DROUGHT

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DEVELOPMENT AND INTERNATIONAL
ECONOMIC CO-OPERATION:
DESERTIFICATION AND DROUGHT

Implementation of General Assembly resolutions 42/189 A, B and C

Report of the Secretary-General

1. In its resolution 42/189 A of 11 December 1987, entitled "Implementation of the Plan to Combat Desertification", the General Assembly requested the Governing Council of the United Nations Environment Programme (UNEP) to report to it at its forty-fourth session, through the Economic and Social Council, on the progress achieved in implementing the measures approved by the Governing Council to enhance the work of the Inter-Agency Working Group on Desertification and on the progress made in the implementation of the Plan of Action.
2. In its resolution 42/189 B of the same date, the Assembly requested the Governing Council of UNEP to report to it at its forty-fourth session, through the Economic and Social Council, on progress made in the implementation of the Plan of Action in the Sudano-Saharan region.
3. In its resolution 42/189 C, on the subject of financing and other measures in support of the Plan of Action, the General Assembly requested the Executive Director of UNEP to examine ways and means of enhancing the efficiency of the Consultative Group for Desertification Control. It also requested the Secretary-General to keep under review actions at the national and regional levels and issues pertaining to the financing of the Plan of Action.

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4. Finally, in its resolution 42/189 D, the General Assembly requested the Secretary-General to report to it at its forty-fourth session, through the Economic and Social Council, on the implementation of resolutions 42/189 A, B and C. The annexed report of the Governing Council of UNEP is submitted pursuant to the above requests.

ANNEX

Report of the Governing Council of the United Nations Environment Programme* on the Special Account to finance the implementation of the Plan of Action to Combat Desertification and additional measures and means for financing the Plan of Action, ways and means of enhancing the efficiency of the Consultative Group for Desertification Control, measures to enhance the work of the Inter-Agency Working Group on Desertification, implementation of the Plan of Action to Combat Desertification, and implementation of the Plan of Action in the Sudano-Sahelian region, 1987-1988

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* The present report is based on document UNEP/GC.15/9/Add.4, which was submitted to the Governing Council of UNEP at its fifteenth session. In its decision 15/23 D of 25 May 1989, the Governing Council authorized the Executive Director to transmit this report on its behalf, through the Economic and Social Council, to the General Assembly at its forty-fourth session.

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I. INTRODUCTION

1. Desertification remains a major environmental problem and continues to spread. Achievements in containing it have been limited when set against its magnitude. Although awareness of the gravity of desertification and organizational efforts to deal with it have increased significantly since the General Assembly adopted the Plan of Action to Combat Desertification ^{1/} in 1977, the phenomenon is more widespread today than it was a decade ago. Major obstacles to desertification control persist. These include the low priority given to anti-desertification projects, a general inadequacy of resources devoted to such projects, and a dearth of economically feasible and socially acceptable approaches to land degradation problems.

2. At its thirteenth session, in 1985, the Governing Council of the United Nations Environment Programme (UNEP) adopted decision 13/30, ^{2/} a major initiative on the implementation of the Plan of Action, one provision of which sets out the Council's approval of measures to enhance the work of the Inter-Agency Working Group on Desertification. At its fourteenth session, in 1987, the Council adopted its four-part decision 14/15 ^{3/} on desertification, in which, *inter alia*, it requested the Executive Director to evaluate the UNEP programme in this field, including the functioning of the Consultative Group for Desertification Control and the Special Account to finance the implementation of the Plan of Action. The Council urged UNEP to mobilize more funds through United Nations organizations and other funding agencies and to work more closely with Government in planning strategies and specific plans and projects to combat desertification. The Executive Director was also requested to discuss with Governments the feasibility of adopting a new approach that would encourage them and international financing institutions to contribute directly or indirectly to the Special Account.

3. At its forty-second session, in 1987, the General Assembly adopted resolution 42/189 of 11 December 1987 on the Plan of Action, which closely reflects the concerns of the Governing Council and in which the Assembly requested the Council to report to it at its forty-fourth session, through the Economic and Social Council, on a variety of desertification issues. The present report reviews the work of the Executive Director in these areas, as well as the implementation of the Plan of Action world wide and in the Sudano-Sahelian region in particular.

II. SPECIAL ACCOUNT FOR DESERTIFICATION CONTROL AND ADDITIONAL MEASURES AND MEANS FOR FINANCING THE PLAN OF ACTION

A. Special Account

4. The Special Account to finance the implementation of the Plan of Action was set up under General Assembly resolution 32/172 of 19 December 1977 to help mobilize additional resources for implementation of the Plan of Action. As at 31 December 1988, a total of \$166,886 had been paid into the Account by the Governments of Australia, Chile, Mexico, Panama, Sierra Leone and the Sudan. With interest added to the collections, the Account currently stands at \$245,157.

5. In response to the Executive Director's report (UNEP/GC.14/15), in which he suggested that recipient Governments establish national accounts for desertification control, the Governing Council, in its decision 14/15, requested him to discuss with Governments the feasibility of adopting this new and realistic approach. The General Assembly, in its resolution 42/189 C, took note of this request. The new approach, as agreed upon by the UNEP Governing Council, would entail the following measures:

(a) Countries with national plans of action to combat desertification would establish national accounts in which all efforts undertaken by the Government, local communities and national non-governmental organizations for financing the implementation of anti-desertification activities, preferably within the framework of a national strategy, programme or plan for desertification control, would be recorded;

(b) The national account would act as a stimulus for investment by bilateral and multilateral donors;

(c) The Special Account would monitor resource flows to the desertification control activities as recorded by national accounts and would provide further support to national and regional programmes.

6. In July 1988, the Executive Director convened a high-level consultation in Geneva with representatives of the Governments of donor countries and affected recipient countries, as well as of various bodies of the United Nations system, to discuss, inter alia, the Special Account and the general question of means for financing the implementation of the Plan of Action. The participants favoured the proposals outlined in the new approach. However, at the time the document was prepared, no replies had been received from any of the countries affected by desertification or from major donors to the Executive Director's letter of 30 August 1988 asking for their views on the new approach.

B. Additional measures and means for financing the Plan of Action

7. In 1979, 1980 and 1981, three groups of high-level specialists in the international financing of projects presented to the General Assembly a series of studies on measures and means for financing the implementation of the Plan of Action, in which they proposed a detailed feasibility study on the establishment of an international corporation for financing anti-desertification projects and a variety of new means to finance world programmes in addition to regular budgets and conventional extrabudgetary resources (see A/35/396). The Geneva consultation of July 1988 made the following comments on these proposals:

(a) An international public corporation was feasible; it could be established either as a new organization or as a new window or special operation of an existing financing organization. An international meeting could be held to discuss the technical aspects of establishing such a new mechanism;

(b) The various suggestions for new means of funding, including generalized trade taxes, were considered technically sound. Some participants, however, felt that they were not politically feasible. Others felt that they deserved serious consideration.

C. Conclusions

8. In view of the above, the Executive Director believes that the time has come to consider the following options for financing the implementation of the Plan of Action world wide, in addition to national resources and available international assistance:

(a) To perceive the Special Account as a mechanism for keeping records of national special accounts for desertification control and for monitoring the flow of resources to support anti-desertification programmes;

(b) To decide on the desirability of establishing an international public corporation for providing additional financial assistance for the implementation of the Plan of Action. This corporation would provide for blending hard resources (commercial loans) with soft resources (aid funds); it could be established as (i) an independent (new) mechanism or (ii) a new window or a special operation of an existing international financing organization.

III. WAYS AND MEANS OF ENHANCING THE EFFICIENCY OF THE CONSULTATIVE GROUP FOR DESERTIFICATION CONTROL

9. In paragraph 5 of its resolution 42/189 C, the General Assembly requested the Executive Director to examine, in the context of the evaluation called for in Governing Council decision 14/15 C, ways and means of enhancing the efficiency of the Consultative Group for Desertification Control in pursuance of its mandate. That mandate, set out in General Assembly resolutions 32/172 of 19 December 1977 and 33/89 of 15 December 1978, outlines three primary functions for the Consultative Group: (a) to assist the Executive Director in mobilizing resources for the activities within the framework of implementing the Plan of Action; (b) to exchange information on the anti-desertification policies and programmes of its participants; and (c) to advise the Executive Director on related matters, including identifying constraints, possible solutions to problems, and measures required to improve the implementation of the Plan of Action regionally and world wide.

10. The capacity of the Consultative Group to secure financial resources for projects presented to it has been inadequate to the needs of the Plan of Action. Over the eight-year period from 1978 to 1985, a total of 74 projects was submitted to the Group, of which only 29 have been implemented either in part or in their entirety. Total funding amounted to \$47.3 million, as compared with estimates of a total cost of \$540.6 million for all 74 projects.

11. In an effort to improve its functioning, the Consultative Group, at its sixth session, held at Geneva in March 1986, set up an ad hoc working group composed of representatives of donor and recipient countries (Chile, the Federal Republic of Germany, Kuwait, Swaziland and Switzerland), and several bodies of the United Nations system (the United Nations Development Programme (UNDP), the World Bank, the Food and Agriculture Organization of the United Nations (FAO) and UNEP) to review the experience of the Consultative Group critically and to propose specific ways and means for improving and strengthening it. In its report (DESCON 6/15), issued in February 1988, the working group recommended, inter alia, that the Consultative Group should assist desertification-affected developing countries to develop and establish comprehensive national anti-desertification plans, within which specific activities for intervention could be identified, developed and implemented with the assistance of the international community. The working group also suggested exploring means to involve FAO and UNEP in a joint technical secretariat of the Consultative Group and to develop a core group of limited consultative group membership, including the World Bank, UNDP and donor institutions.

12. As indicated in paragraph 6 above, the Executive Director convened a high-level consultation at Geneva in July 1988, whose agenda included the review and recommendations of ways and means to enhance the work of the Consultative Group. Participants in the Geneva consultation recognized the need for structural and functional changes in the mechanism of the Consultative Group and favoured the main thrust of the proposals of the ad hoc working group. It considered the formulation of national plans of action to combat desertification, conceived as integral parts of the national plans for development, a prerequisite to funding desertification control programmes with resources allocated to overall national economic development. The consultation also saw some value in organizing country-level round tables (mini-consultative groups), which could be held separately in each country as pledging meetings with traditional donors for the support of national plans for combating desertification. Alternatively, such donor meetings could be organized as sections of the special round tables of such organizations as UNDP and the World Bank in support of national development plans.

13. The Executive Director convened a special session of the Consultative Group at Geneva on 21 and 22 November 1988, attended by representatives of 11 Governments, seven United Nations organizations and two intergovernmental organizations, for further consultations (see DESCON/SS.1/1). The participants discussed the need to restructure and revitalize the Consultative Group so that it might carry out its mandate. They agreed with the working group's recommendation that the Consultative Group assist affected countries in the preparation of national plans to combat desertification, as well as with the Geneva consultation's recommendation on the use of round-table meetings to seek financing for such plans from bilateral and multilateral organizations. Three of the four delegations from developed countries expressed the view that a number of other mechanisms such as the Intergovernmental Authority for Drought and Development (IGADD), the Permanent Inter-State Committee for Drought Control in the Sahel (CILSS), the Southern African Development Co-ordination Conference (SADCC) and the Ministerial Conference on desertification (COMIDES), which have emerged through international, regional and subregional arrangements for the purpose of resource mobilization, exchange of

information and facilitating co-ordination, had, in effect, assumed functions of the Consultative Group. They therefore stated that any attempt to restructure and reorient the mechanism of the Consultative Group to improve its functioning was unlikely to succeed, and consequently, that the Consultative Group as a world-wide mechanism should be discontinued. They nevertheless considered that a mechanism such as a technical advisory body would be needed to co-ordinate the activities of the international community in desertification control at the regional and national levels through such bodies as IGAAD, SADCC or CILSS. However, one delegation of a developed country and almost all those from developing countries disagreed with the recommendation to discontinue the Consultative Group, maintaining that the global dimension of desertification required a world-wide body like the existing mechanism.

14. The Consultative Group remains the only available world-wide mechanism for assisting in the mobilization of resources to support the implementation of the Plan of Action. The discussions suggest the following alternatives:

(a) That sessions of the Consultative Group be held every two or three years to receive reports on national programmes including round-table meetings (at the national level), to consider advising and assisting in raising residual funding to support national and regional programmes, to review the status and exchange of information in the implementation of the Plan of Action, and to advise on further actions for combating desertification, or

(b) That the Consultative Group be abolished.

IV. MEASURES TO ENHANCE THE WORK OF THE INTER-AGENCY WORKING GROUP ON DESERTIFICATION

15. In paragraph 5 of its resolution 42/189 A, the General Assembly requested the Governing Council to report to it at its forty-fourth session, through the Economic and Social Council, on the progress achieved in implementing the measures approved by the Council in its decision 13/30 A with a view to enhancing the work of the Inter-Agency Working Group on Desertification. The measures identified by the Inter-Agency Working Group on Desertification in 1984, subsequently endorsed by the Administrative Committee on Co-ordination (ACC) in its report to the Governing Council (see UNEP/GC.13/5, paras. 20-21) and approved by the Governing Council, included the following actions:

(a) Reduction of the frequency of regular meetings of the Group to one per year, the second meeting being replaced by a meeting for thematic joint programming on specific topics within the Plan of Action;

(b) Possible discussion of the implementation of the Plan of Action by the governing bodies of the members of the Inter-Agency Working Group and its subsequent inclusion as an identifiable item in their approved programmes;

(c) Co-operation with the United Nations regional commissions through effective use of the regional commissions' environmental co-ordination units, and their joint divisions with FAO for agriculture;

(d) Provision of annual written reports by members of the Group on their current and planned activities to facilitate the Group's review of the United Nations system contribution to the implementation of the Plan of Action;

(e) Substantial increase in the financial resources allocated by UNEP and the other organizations of the United Nations system for promoting the activities of the Group;

(f) Designation by each member of one or more representatives in the Group who would also serve as a focal point or points on desertification matters.

In addition, by its decision 13/30 A, the Governing Council requested the Executive Director to take appropriate action to invite international organizations outside the United Nations system to participate in meetings of the Working Group where discussion would benefit from their presence.

16. At the request of the Executive Director, most members of the Inter-Agency Working Group have designated representatives who act as focal points on desertification matters and who represent their respective bodies regularly at the meetings of the Working Group. The meetings of the Working Group during the period 1985-1988 were attended by representatives of the Department of Technical Co-operation for Development of the United Nations Secretariat, the Economic Commission for Africa (ECA), the Economic and Social Commission for Western Asia (ESCWA), FAO, the International Labour Organisation (ILO), the International Fund for Agricultural Development (IFAD), the Office of the United Nations Disaster Relief Co-ordinator (UNDRO), UNDP/United Nations Sudano-Sahelian Office (UNSO), UNEP, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Industrial Development Organization (UNIDO), the World Meteorological Organization (WMO), the World Food Programme (WFP) and the World Bank. The Economic and Social Commission for Asia and the Pacific (ESCAP), while unable to send a representative to any of the regular meetings during the period under review, none the less fully participated in the training and networking activities. The Executive Director also invited several international bodies and intergovernmental organizations to participate in the activities of the Inter-Agency Working Group. In response, the Arab Centre for the Study of Arid Zones and Dry Lands (ACSAD), the International Union for Conservation of Nature and Natural Resources (IUCN), the International Institute for Environment and Development (IIED), and SADCC attended the ad hoc thematic joint programming meetings of the Working Group and participated in the resulting training and research activities.

17. The ad hoc meetings introduced to replace the former second regular annual meeting of the Working Group have proved effective. At the three ad hoc meetings held during the period 1985-1988, the Group identified major gaps in ongoing training programmes and agreed on subject areas in which training should be provided, action to involve international institutions in the training effort and the target groups for the training. The Group also discussed extensively the concept, structure and functions of regional networks and recommended actions to be taken in establishing such networks for regional institutions engaged in research and training, afforestation and sand dune stabilization. As a result of these

discussions, the members of the Working Group achieved satisfactory progress in the regional networking described in paragraph 38 below. Furthermore, during the period 1985-1988, over 6,200 trainees (1,175 technicians plus individuals from villages and grass-roots organizations) participated in training programmes run by Group members in such subjects as planning for development in drylands, management and assessment of desertification, land use planning in drylands and public information in desertification control. This has been a satisfactory achievement, considering that it constitutes almost a doubling of the target proposed by the Executive Director in his report (UNEP/GC.12/9) and approved by the Governing Council in its decision 12/10, i.e., the training of 600 technicians from developing countries affected by desertification during the period 1985-1987. It is against this background that ACC in its report to the Governing Council (UNEP/GCSS.I/5, para. 27), commenting on the outputs of the ad hoc meetings of the Working Group, noted with satisfaction the progress made by members of the Inter-Agency Working Group towards development of regional networks and considered that this networking approach represented an effective means of implementing the Plan of Action.

18. The successful launching of the Regional Network of Research and Training Centres on Desertification Control in Asia and the Pacific was spearheaded by ESCAP in co-operation with UNDP, UNEP, UNESCO, WMO, the USSR Commission for UNEP (UNEP/COM) and the International Council of Women (ICW). ESCWA, through its joint division with FAO for agriculture, has co-operated with UNEP in providing technical assistance to the Governments of Jordan and Yemen for the preparation of draft national plans of action to combat desertification. Further co-operation with ESCWA is envisaged for translating the action plans into concrete projects for implementation within the framework of these national development plans.

19. During the period 1985-1988, the Inter-Agency Working Group held four regular meetings to review issues of co-ordination in the implementation of the Plan of Action. The discussions have been significantly enhanced by continuity of representation on the part of most members of the Group. The Working Group adopted guidelines for reporting on its members' activities to ensure that such reports contain syntheses of information on desertification control activities and that the system-wide medium-term plan on the environment is used as a common denominator for all members' contributions to the implementation of the Plan of Action. This has facilitated computerizing the members' activities into the United Nations Project Compendium on Desertification Control and Dryland Development, which is now one of the UNEP data bases.

20. Although the members of the Group have reported on activities undertaken to implement the Plan of Action, the respective governing bodies have yet to discuss the Plan of Action as such. While desertification control activities are included in their respective programmes within the framework of their mandates, co-operation among the members of the Group in concrete joint field projects would be enhanced if the Plan of Action itself were more clearly reflected in those programmes. Moreover, direct financial allocations to the Plan of Action by the members of the Inter Agency Working Group are limited by other priorities set out by their governing bodies, as well as by the general financial constraints that currently affect the United Nations system as a whole.

21. The participation of organizations outside the United Nations system has benefited the work of the Inter-Agency Working Group by the identification of other contributions to the implementation of the Plan of Action. This has clarified and reinforced the complementarity of the activities of the United Nations system on the one hand and, on the other, those of other international organizations and non-governmental organizations. This complementarity could be strengthened further by greater support of those non-governmental organizations which have become increasingly involved in desertification control activities. For example, the networking of such non-governmental organizations with regional and international institutions involved in research and training could provide cost-effective modalities for training and the dissemination of information in such key areas as afforestation. Such networking could be particularly effective in regional contexts, particularly because the transnational nature of the desertification problem calls for regional programmes.

22. Overall, the Inter-agency Working Group on Desertification has (a) developed its operations satisfactorily in accordance with the measures approved by the Governing Council at its thirteenth session and (b) clarified its role as a mechanism for ensuring that activities related to arid lands and desertification set forth in the system-wide medium-term plan on the environment are included within the programmes of its member organizations. Nevertheless, all the members of the Inter-Agency Working Group need to intensify their efforts to improve the functioning of the Group. Therefore, the Group might be requested to implement the following measures:

(a) To include in the agenda of its regular meetings reporting on the activities of its members relevant to the implementation of the Plan of Action, review of activities of other structures concerned with implementation of the Plan of Action, e.g. the Consultative Group on Desertification, the Special Account, and regional bodies such as CILSS, COMIDES, IGADD and SADCC. In this way, the Group could truly review the overall status of the implementation of the Plan of Action;

(b) To institute its ad hoc meetings as a permanent feature and to devote all such meetings to thematic joint programming;

(c) To undertake joint inter-agency action to mobilize technical and financial resources to assist national activities for the development and implementation of national plans and programmes to combat desertification;

(d) To collaborate with the Inter-Agency Working Group of the African Ministerial Conference on the Environment, with special reference to the work of the African Deserts and Arid Lands Committee.

V. IMPLEMENTATION OF THE PLAN OF ACTION TO COMBAT DESERTIFICATION

23. In paragraph 6 of its resolution 42/189 A, the General Assembly requested the Governing Council to report to it at its forty-fourth session, through the Economic and Social Council, on the progress made in the implementation of the Plan of Action.

24. Several of the obstacles to desertification control, notably the low priority accorded to anti-desertification projects, the general inadequacy of resources allocated directly to such projects and the dearth of economically and socially acceptable approaches for addressing land degradation projects at the grass-roots level, have been mentioned in the introduction to the present report. In addition, as indicated above, in view of the transnational nature of desertification, there is also a need for programmes at the regional level. The present section is devoted to these problems and other severe impediments which arise largely from misconceptions or inadequate conceptions of desertification control, as well as to efforts to resolve them.

25. As the Executive Director stated in his annual report for 1987, (chap. III, para. 264), the factors contributing to desertification, in particular over-exploitation and mismanagement of the natural resource base, continue virtually unabated. Dealing with such factors calls for a shift from the development models of traditional economists to those based on the concept of sustainable development. This, in turn, leads to conceiving desertification control as an integral part of national development.

26. In most affected countries, efforts to combat desertification continue to be isolated in sectoral projects whose impact is severely reduced by the lack of a clearly defined framework for desertification control that is effectively integrated into national development plans. National institutions for dealing with desertification are weak because of the inadequacy of resources mentioned above and because the sectoral nature of government structures makes co-ordination difficult.

27. Given this background, UNEP made a concerted effort during the period 1987-1988 to engage donors and the Governments of countries affected by desertification in a dialogue to search for effective institutional mechanisms for integrating desertification control programmes into overall national development plans and priorities. In view of the importance of appropriate technologies for desertification control, UNEP has also initiated action, in accordance with the request of ACC (see UNEP/GC.15/8/Add.3), for the development and assessment of simple technologies for application in the regions prone to desertification. In addition, UNEP has assisted in the identification and development of methodologies for assessing and mapping the status of desertification - its extent, rate and risk - as knowledge of all these parameters is essential to effective planning for desertification control. Other activities as well have been launched or continued in regional networking, subregional projects and the development of a global data base.

A. Technical assistance to Governments

1. National plans and programmes

28. By its decision 14/15 C, the Governing Council requested the Executive Director to evaluate the content, relevance and feasibility of integrating plans of action to combat desertification into national development plans. Accordingly, UNEP has pursued discussions with the Governments that have national plans for

desertification control or are in the process of formulating such plans, with a view to assisting them to integrate these plans into national development plans and to finance them within the framework of resources allocated to economic development. Through a joint ESCWA/FAO/UNEP effort in November 1987, preparatory technical assistance was provided to the Government of Yemen to prepare a draft national plan for combating desertification. The Government of Argentina requested and received from UNEP the assistance of consultants for preparing a draft national plan of action to combat desertification which was presented at a national meeting of experts held in September 1988. Discussions have also been held with the Government of Pakistan concerning assistance to the Sind Arid Zone Development Authority of the Government of Sind Province in preparing a programme for desertification control in the Province; the existing special development programme for the Sind Arid Zone was considered a good framework for desertification control projects, including training activities.

29. UNEP held consultations with the Governments of Mali, Mauritania, the Sudan and the Syrian Arab Republic. All prepared national development plans and agreed that further actions should integrate their plans for combating desertification with the national development plans. The Government of Mauritania advanced along these lines in the preparation of its master Plan to combat desertification with the assistance of UNSO (on behalf of UNEP) in close collaboration with FAO, UNDP, the World Bank and bilateral donors. A donors' round table is scheduled to take place in Mauritania in May 1989. The Governments of Mali, the Sudan and Yemen are expected to be ready to present national programmes to donors' meetings during 1989. This approach to integrating desertification control programmes and financing them within the framework of resources allocated to social and economic development was supported at the consultations held by the Executive Director at Geneva in July 1988 with high-level officials and experts from the developed and the developing countries.

30. Also in its decision 14/15 C, the Governing Council recommended that national plans of action and the process of their implementation should be grassroots-oriented for easier integration into national economic systems. During 1987-1988, the UNEP Desertification Control Programme Activity Centre assisted a number of African countries in formulating pilot projects for the rehabilitation of villages and the sustainable development of stock-raising zones in semi-arid areas within the framework of the Cairo Programme for African Co-operation. These projects are intended to foster grass-roots participation, self-help and self-reliance. The Governments of Djibouti, Egypt, Ethiopia, Ghana, Guinea, Kenya, Mali, Mauritania, Senegal, the Sudan, the United Republic of Tanzania, Uganda, Zaire, Zambia and Zimbabwe have designated villages and semi-arid stock raising zones and have earmarked indicative planning figures and/or other voluntary contributions for their development. UNEP responded to requests from the Governments of these countries for assistance in preparing the projects. Funding assistance was provided by the Norwegian Agency for International Development (NORAD), through the UNEP clearing-house mechanism, for preparation of the pilot projects in Uganda and the Sudan. The USSR Commission for UNEP (UNEP/COM) provided technical assistance for the preparation of two pilot village projects in Mali. Several other countries have prepared their own project proposals.

31. The donors' meeting held at Nairobi in March 1988 provided a forum for discussion between donors and Governments on possible donor support for specific pilot projects presented by the Governments at the meeting. Belgium, Canada, Denmark, the European Community, Finland, France, the Federal Republic of Germany, Italy, Japan, Norway, Sweden, Switzerland and the United Kingdom of Great Britain and Northern Ireland were represented at the meeting. In general, most donors indicated that they would consider providing support through the normal channels of bilateral co-operation or through multilateral arrangements. The implementation of pilot village projects has begun in Senegal and Uganda with funding assistance from UNEP and in Ghana and Zaire with funding from UNDP.

2. Appropriate technologies

32. An assessment of development aid directed to the Sahel during the past decade indicated the need for technologies adaptable to traditional communities. For instance, UNEP, in collaboration with a French industrial firm, has devised and built a prototype of an efficient animal-driven pump. After the pump was tested in a workshop in France, a project was established in 1987 in a Malian village for field tests. Mali was selected for these field tests because it represented conditions typical of the central part of the Sahel and because of the contributions and commitments from government institutions and from the local people. The prototype is being developed and disseminated through the Cairo Programme and through UNDP projects in Senegal, Mali and the Sudan for use in small-scale irrigation of pasture land to reduce grazing pressures on rangelands and modify the shifting character of traditional agriculture in these areas.

33. Other examples concern problems of restoring soil fertility, improving the water storage capacity of soils, and managing Sahelian soils that are poor in phosphorous, calcium and nitrogen. Phosphate ores found in some of the countries of the Sahel may potentially relieve some of the deficiencies. UNEP has therefore taken the initiative of assisting countries in the production and use of low-cost locally produced soil ameliorants. A UNEP-funded study was initiated during 1988 in the Sudan and Uganda with a view to identifying local sources of minerals and assessing their usability as low-cost ameliorants and fertilizers. The outcome of the studies will be used as a basis for formulating pilot projects for the production of these materials for trials in the countries concerned within the framework of the pilot villages projects under the Cairo Programme.

34. At the request of the Government of Uganda, UNEP undertook a study in 1988 on the production of low-cost stabilized soil bricks and roofing tiles. This simple technology for producing stabilized soil/lime brick can considerably reduce the deforestation due to the traditional production of fire-baked clay bricks. This technology is now used by ILO in a UNEP-funded Cairo Programme pilot project for three villages in Uganda, and in a UNDP-funded rehabilitation project as well.

B. Regional networks and subregional actions

35. In accordance with Governing Council decision 12/10, UNEP, together with its partners in the Inter-Agency Working Group on Desertification during the period 1985-1988, has co-ordinated a number of regional networks of institutions for training and research programmes of sand dune stabilization and afforestation and non-governmental organizations (NGOs) in Africa, Asia and Latin America. FAO co-ordinated sand dune fixation and afforestation networks in the Middle East and North Africa, in the Sahelian and North Sudanese zones of Africa, and in Latin America and the Caribbean. These networks carry out key activities related to desertification control, including training, information exchange and dissemination, assessment and mapping, and institution building. The Regional Network of Research and Training Centres on Desertification Control in Asia and the Pacific was established by ESCAP, UNDP, UNESCO, and UNEP, with a membership of 17 Governments and international organizations in that region. It has implemented, in co-operation with UNEPCOM, a training programme funded by UNEP and ESCAP. The Regional Network's two-year (1989-1990) work programme includes the preparation of a desertification map of Asia with the support of ESCAP, UNDP, UNEP, UNESCO, WMO and UNEPCOM. The Environmental Training Network for Latin America and the Caribbean was established with the support of the Governments of the region and with seed money from UNEP. Among its activities, it undertakes training in desertification control. Under its Man and Biosphere Programme (MAB), UNESCO has also established research and training networks in arid and semi-arid zones in Latin America, sub-Saharan Africa, North Africa and Western Asia.

36. In its decisions 12/10 and 13/30, the UNEP Governing Council recognized the significant role played by NGOs in anti-desertification efforts and recommended that they should be involved to a greater degree in this field. Consequently, UNEP funded a project to support pilot village projects within the framework of the Cairo Programme to be executed by the African NGOs' Environmental Network (ANEN) in co-operation with NGOs at the grass-roots level in Botswana, Burkina Faso, Kenya and Senegal. In a related three-year project, UNEP and the International Institute for Environment and Development (IIED), in association with ANEN, are setting up a research and information network covering Sudano-Sahelian countries. The network is intended to improve patterns of development by increasing awareness of potential strategies for sustainable livelihoods in arid and semi-arid lands in Africa. At a meeting held in September 1988, 16 NGOs from Burkina Faso, Ethiopia, Kenya, Mali, the Niger, Senegal, the Sudan and Uganda, as well as two regional and two international NGOs, adopted a package of proposals concerning exchange of information and experience among themselves, strengthening NGO/government co-operation and closer links between the NGOs and the development research community. Further, UNSO, as part of its new initiatives aimed at the prudent and comprehensive management of natural resources, developed with the Governments of Niger and the Sudan two major projects for integrated land management and entrusted their implementation to CARE, an international non-governmental organization (see para. 102 below).

37. In Asia, UNEP provided support to a successful NGO activity in afforestation and training in southern India. It began in 1985 and was carried out by the G. G. Soans Memorial Farmers' and Rural Afforestation Training Centre. By 1987,

there were 45 "People's Nurseries" growing 3.7 million seedlings at five project sites. Altogether, more than one million trees have been planted with a 95 per cent survival rate. The project has received support from NORAD and OXFAM.

C. Training

38. UNEP has co-operated with Governments and regional training and research institutions in conducting training programmes in combating desertification. The broad aims of the training are to enhance the technical capabilities of desertification-prone countries in tackling desertification, and to promote awareness of the threat of desertification. During the period 1987-1988, UNEP, in co-operation with UNEP/COM, the Arab Centre for the Study of Arid Zones and Dry Lands (ACSAD), the Instituto Argentino de Investigaciones de las Zonas Aridas (IADIZA) and the Governments of Argentina, Brazil, Botswana, China, Mali and the Syrian Arab Republic organized 11 training courses and seminars, in which 224 participants received instruction in drylands management, monitoring and assessment of desertification and the provision of public information. The members of the Inter-Agency Working Group, namely ECA, ESCWA, ACSAD, FAO, UNESCO, WMO, UNSO, SADC and IIED reported training a total of 950 individuals in different areas related to desertification control.

D. Assessment and mapping of the status of desertification

39. The magnitude of desertification has often been assessed generally on the basis of geographic data. There is still a need for an adequate, simple and cost-effective method to measure the desertification process. To prepare for the second general assessment of progress in the implementation of the Plan of Action in 1992, called for by the Governing Council in its decision 12/10, UNEP has co-operated with the Governments of France, Kenya, Mali and the Union of Soviet Socialist Republics to launch pilot projects to utilize appropriate methods for the assessment of desertification.

40. In Kenya and Mali, the experts are applying the refined UNEP/FAO provisional methodology for the assessment and mapping of desertification by collecting and evaluating field data gathered during 1987-1988 from an area of 20,000 square kilometres in Kenya and 27,000 square kilometres in Mali.

41. A pilot project funded by UNEP and the Government of France was launched in 1987 for the development of a methodology to assess desertification in the south Saharan arid, semi-arid and sub-humid ecozones. The project seeks to develop a low-cost methodology for the assessment of desertification, using earlier aerial photographs (some taken 30 years ago) and new aerial photographs, together with remote sensing imagery, to study the degradation of soil and vegetation and the evolution of the landscape in a few selected north-south transects in the south Saharan ecozones. The initial field study was carried out in a regional transect of approximately 50,000 square kilometres in Mali and Mauritania. The second phase will extend it further into Mauritania, as well as into Côte d'Ivoire, on one side, and further into Mali, as well as Burkina Faso, on the other side, within a three-year period.

42. ACC has noted in its report that "the important task of better assessing the current status and trends of desertification world wide still faces serious problems in respect of methodology and lack of financial resources" (ibid.). In order to prepare for a more precise and meaningful assessment of desertification as part of the overall assessment planned for 1992, ACC has urged UNEP to "increase its efforts of co-operating with the relevant United Nations entities and with competent institutions outside the United Nations system" in order to identify and test relatively simple methods of assessing and mapping desertification. UNEP is accordingly arranging a series of consultations during 1989 with national, regional and international institutions which carry out research related to monitoring and assessing in order to mobilize their efforts towards the 1992 assessment.

E. Information and data base:

43. The UNEP Desertification Information System, established in accordance with Governing Council decision 12/10, deals with the identification, collection, classification and dissemination of all types of information related to dry-land development and desertification processes. The data bases that have been completed and computerized include a directory of organizations dealing with desertification control and dry-land development, a compendium of United Nations projects related to desertification control and dry-land development, and a directory of UNEP projects on desertification control. The directory of organizations and the compendium of projects have been published and distributed to United Nations organizations, international training and research institutions, libraries, government environmental agencies, universities, development aid agencies and intergovernmental organizations. These directories are scheduled for updating every two years and will be distributed as publications. An arid lands bibliography data base is being prepared by UNEP in collaboration with the Office of Arid Land Studies of the University of Arizona, United States of America. A wind erosion bibliographic referral system has also been established.

44. In addition to producing the Desertification Control Bulletin and several publications on the desertification problems, UNEP, in co-operation with the Television Trust for the Environment (TVE), supported the production of television films, in Colombia, Viet Nam and Thailand. UNEP also supported TVE in 1987 for a film on salinization in China, co-produced with National Geographic Television of the United States of America. Additionally, information was disseminated through radio interviews, press conferences and articles by UNEP staff that appeared in newspapers, magazines and scientific journals.

F. Conclusions

45. It is imperative that the Governments of desertification-prone countries make decisions at the highest levels to ensure that desertification control is an integral part of national development priorities. Recognition of the need to approach desertification control in an integrated, multi-sectoral manner is particularly important because of the wide scope of desertification issues that require complementarity of action. It is therefore recommended that Governments

institute the following measures for integrating desertification control into development planning at all levels:

(a) Locally: More resources should be provided for integrated rural development and assistance at village community levels and for the design of related methodologies and technologies;

(b) Nationally: Clearly defined resources should be allocated to the implementation of national plans of action to combat desertification and to the assessment of major natural resources and their present use. The formulation of long-term development programmes for desertification control should include the creation or strengthening of national machineries for efficient inter-ministerial co-ordination and the development of technical tools for the assessment and monitoring of ecological degradation, including desertification.

46. Specifically, Governments in countries prone to desertification are urged to take the following steps to formulate and carry out activities related to combating desertification, including rehabilitation of degraded land and management of recurrent drought:

(a) Prepare a national programme to combat desertification within the framework of national plans for the development of natural resources and the rehabilitation of impaired ecosystems;

(b) Ensure that these programmes are ecologically sound, technically feasible and socially acceptable;

(c) Appropriate, within the resources available for implementation of national plans for development, resources needed for the implementation of the programme to combat desertification;

(d) Establish - or strengthen, if existing - centrally placed national machineries capable of mobilizing national institutional resources needed for implementation of the national programme to combat desertification and of monitoring progress in executing related activities;

(e) Set up - as appropriate in the fiscal system adopted - national special accounts for desertification control that would keep records of national funds, aid resources and other international resources (loans etc.) allotted to programmes of combating desertification;

(f) Devise means for co-ordinating bilateral and multilateral aid and technical assistance resources that would support the national programme to combat desertification, e.g., through special round tables, or as sections within round tables for national development programme.

47. The process of formulating the national programme for desertification control and the establishment of national mechanisms to implement it on a multi-sectoral basis, within the framework of the overall objectives of national development, will require national consultation to ensure consensus and commitment of all the government agencies.

48. Once the programme, the related package of projects and the necessary mechanisms are established, and the national political commitment has been secured, the stage will be set for soliciting financial resources for implementing the programme of action under the national plan. In this regard, it is recommended that the Governments of affected countries should, within their existing bilateral agreements, consider convening special round-table meetings of donors in a form of "mini-consultative groups on desertification" to secure financial support for the implementation of anti-desertification programmes. This will ensure the co-ordination of sources of bilateral development aid within the framework of implementing the national plan of action to combat desertification.

49. At the international level, the donor community and international agencies should be encouraged:

- (a) To co-ordinate their actions in accordance with the approaches of recipient countries recommended in paragraphs 45 and 46 above;
- (b) To support long-term programmes rather than short-term sectoral projects.

50. Specifically, the donor community may wish to:

- (a) Accord priority in their bilateral aid programmes to national programmes for combating desertification and rehabilitation of degraded land resources;
- (b) Adapt the conditions of the aid programmes to the time frame needed for long-term ecological and social rehabilitation programmes in areas prone to desertification;
- (c) Participate in consultative meetings (round tables etc.) of donor institutions to be held at national level for co-ordinating aid resources in support of the implementation of national programmes for combating desertification;
- (d) Consider favourably voluntary contributions to local, national and regional mechanisms (special accounts etc.) for financing implementation of programmes for combating desertification;
- (e) Consider means that would alleviate the negative impacts of deteriorating terms of trade, debt and debt service on countries prone to desertification and create economic and financial conditions that would enable those countries to appropriate part of their available resources for control of desertification;
- (f) Consider favourably providing support to the establishment of an international corporation for financing the implementation of the Plan of Action to Combat Desertification world wide.

VI. IMPLEMENTATION OF THE PLAN OF ACTION TO COMBAT
DESERTIFICATION IN THE SUDANO-SAHELIAN REGION,
1987-1988

51. In 1987, the rains failed again in most countries of the region, the deficiencies being most pronounced in East Africa. Desertification continued at an alarming rate, as did the general deterioration of the region's physical environment. In 1988, many areas received torrential downpours that resulted in serious flooding, particularly in Burkina Faso, Mali and the Sudan. The intensity of the floods was coupled with deforestation and losses in ground vegetative cover, which are themselves a consequence of overgrazing and poor cultivation practices. The run-off and flooding caused massive soil erosion, which contributed to the region's desertification problems and therefore reinforced the need to promote environmentally sound land management practices.

52. Thus, once again events underlined the growing need for the kind of focused activities against desertification that the United Nations Sudano-Sahelian Office (UNSO) brings to the region under its mandate to implement the Plan of Action in the Sudano-Sahelian region. As the agency responsible for the implementation of the Plan of Action on behalf of UNEP and under joint UNEP/UNDP sponsorship, UNSO supports a programme of desertification control in 22 Sudano-Sahelian countries, consisting, as of September 1988, of 64 ongoing projects with a total funding of some \$71 million, which brings the total value of all UNSO-supported projects to approximately \$96 million.

53. In the second half of 1987 and early 1988, in accordance with the instructions given by the administrator of UNDP, an in-house study on the operating modalities and the activity content of UNSO was conducted, which resulted in a number of important findings and conclusions. The study refined the role of UNSO to include the following:

(a) To co-ordinate and harmonize a wide spectrum of United Nations drought-related and desertification control activities;

(b) To assist in the mobilization of the complementary external financial resources needed for the implementation of the medium- and long-term drought-related and desertification control programmes of the Sudano-Sahelian countries;

(c) To manage the United Nations Trust Fund for Sudano-Sahelian Activities;

(d) To intensify and maintain the widest possible public awareness of the predicament of the Sudano-Sahelian countries and to sustain the active interest and momentum of the continued involvement of the international community, including the organizations of the United Nations system, in the successful implementation of the programmes of the Sudano-Sahelian countries;

(e) To maintain direct and close contacts with CILSS and IGADD on matters relating to the United Nations participation and contribution to the drought-related recovery and rehabilitation efforts and the struggle against desertification.

54. As regards the UNSO functional undertakings, the study concluded that they should comprise:

(a) Co-operation with Governments of the countries served by the Office in planning and co-ordination of their activities, including the provision of technical and planning advice on a continuous basis;

(b) Identification, development, financing and monitoring of programmes and projects, with an increased emphasis on specific categories and fields of activity, in particular those relating to natural resource management, environment and ecology;

(c) Mobilization of resources, including non-cash resources and private or corporate contributions;

(d) Facilitating co-ordination, both among the United Nations and non-United Nations organizations and at the field level;

(e) Serving as a United Nations system focal point for CILSS and IGADD, and their membership;

(f) Information and public awareness activities, including preparation of scholarly papers, education materials, assistance for public information campaigns and other measures to increase knowledge in the field of drought and desertification.

55. In view of this new orientation of UNSO, it has been further concluded that the field level activities of the Office should be significantly strengthened and that its relationship to and co-operation with UNEP should be substantially intensified. Given these objectives, it has been decided, after consultations with the respective States served by the Office, CILSS and IGADD, as well as the United Nations organizations concerned, to establish a regional office of UNSO and to place it in Nairobi, with terms of reference as follows: (a) to serve as a Nairobi-based link between UNEP and UNSO with the objective of intensifying their co-operation and operational relationship; (b) to function as an extended arm of UNEP in the region of East Africa in the implementation of the provisions and objectives of the Plan of Action to Combat Desertification; and (c) to act as a United Nations liaison with and provide support to IGADD and its member States, i.e. Djibouti, Ethiopia, Kenya, Somalia, the Sudan and Uganda, in the development and implementation of their drought-related medium-term and long-term recovery and rehabilitation programmes and their desertification control activities. In addition, the Regional Office will serve the United Republic of Tanzania and possibly other countries of the region. The Office became operational in February 1989.

Planning and programming

56. UNSO's work in 1987 and 1988 increasingly reflected the priority given to assisting the Governments of the countries of the region in the area of planning and co-ordination to ensure the integration of the environmental dimension in the development process.

57. In Mali, following a donor round table held in 1985, UNSO provided \$51,700 in 1987 to assist the Government to put its National Plan of Action to Combat Desertification into operational form. A follow-up meeting to the donor round table was held in June 1987 to discuss the programme and project proposals thus formulated. UNSO will continue to assist the Government to ensure a follow-up to this co-ordination and consultative process; the next follow-up meeting is to be held with UNSO support in March 1989.

58. With joint venture funding, UNSO initiated in 1988 a preparatory project assisting the Government of Kenya in its efforts to establish a desertification control system which will monitor, assess and propose interventions to prevent further land degradation. A Scientific Advisory Committee was established and UNSO is currently finalizing a project document that will propose district-based monitoring, assessment and intervention methods in the field of desertification control.

59. In June 1987, UNSO fielded a mission to the United Republic of Tanzania to undertake discussions with the Government on potential projects. The Government identified the establishment of a drought and desertification control division within the National Environment Management Council as a priority project and, in February 1988, UNSO fielded a formulation mission to the country to finalize the project document. The project document has now been signed and its implementation is expected to start in early 1989 with financing from the Government of Norway in the amount of \$323,629.

60. In March 1987, a tripartite mission organized by CILSS, the Club du Sahel and UNSO visited Chad to confer with the Government with a view to promoting a first draft of a national plan of action to combat desertification. In December, the country's first national seminar on desertification was held at N'Djamena with financing provided by UNSO. The seminar dealt with ways of integrating measures to combat desertification into all development activities. As a follow-up to this seminar, UNSO assisted the Government in the organization of a concertation meeting with the donor community in December 1988.

61. UNSO's activities in 1987 and 1988 included assistance in developing operational and multi-sectoral national plans of action to combat desertification in Mauritania and Somalia. As a follow-up to the National Plan of Action in Somalia, an environmental monitoring project has been formulated and is expected to be implemented in 1989.

62. In its programming activities, UNSO has special co-operative relationships with CILSS and IGADD. It was represented at meetings of these organizations and represented the UNDP system at the CILSS and IGADD summits of heads of State, which met in 1988 at N'Djamena and Djibouti, respectively.

63. A system of regular consultations has been initiated with the Executive Secretary and staff of CILSS to review plans and programmes of common interest, and concrete support was extended to CILSS through funding or formulation of projects (e.g., "Plants and crops protection co-ordination" and "Sahelian programme for environmental education at secondary level"). Steps have been taken to initiate a

similar system of co-operation with IGADD, to which UNSO has contributed funds for the development of anti-desertification projects.

64. Direct support was also extended to IGADD through the financing of a pilot study tour programme to enable seven IGADD officials to visit CILSS programmes and regional institutes in West Africa. The tour facilitated the exchange of information and ideas between the two organizations.

65. In 1988, UNSO reactivated its co-operation with the Institut de Sahel, the CILSS body responsible for co-ordination of the research effort in the subregion.

66. UNSO also supported the development of a concertation forum among the countries of the Maghreb and those on the southern and eastern fringes of the Sahara desert, through the Ministerial Conference on desertification (COMIDES).

Afforestation and reforestation

67. In Burkina Faso, the Swedish International Development Agency (SIDA) contributed approximately \$980,000 during 1987 to provide technical support to two ongoing Swedish projects that aim at combating deforestation through the establishment of village woodlots and the distribution of fuel-efficient cooking stoves. These two projects are scheduled to end in mid-1989, but at the Government's request, UNSO has formulated projects for a further phase.

68. Also in Burkina Faso, a new project for the development of agroforestry through the regeneration of Acacia albida and other local species was launched at the end of 1987. Financed by Norway, this project aims at regenerating 11,000 hectares of Acacia albida and 300 to 400 hectares of diverse local species over the period of the next five years. It is also directed towards establishing an Agroforestry Unit within the Ministry of Environment and Tourism.

69. The Arab Gulf Programme for United Nations Development Organizations (AGFUND), in co-operation with UNSO with a contribution from its general resources, is supporting a six-year project for integrated village and family afforestation in the Bazega area of Burkina Faso. As of June 1987, 500 hectares had been planted with some 400,000 seedlings. Training in nursery and planting techniques had been provided to forestry and extension workers plus some 120 villagers. Approximately 260 women trained in the construction of fuel-efficient wood stoves had produced a total of 36,000 stoves. In 1988, UNSO financed the formulation of a forestry management plan for the Bazega area.

70. In 1986, the Government of Norway agreed to support a project for the regeneration of Acacia senegal plantations in Mali over a period of five years with a contribution of \$1.6 million. Project activities got under way at the end of 1987 with a pilot project for gum tree development in the Kayes region. While protecting and enhancing the soil, Acacia senegal yields gum arabic, which has a variety of commercial, industrial and pharmaceutical uses and is a valuable source of cash income and foreign exchange.

71. A joint SIDA/UNSO mission to the Niger was conducted in December 1987 to formulate a three-year extension to the agro-forestry development project in the Department of Dosso. Since the beginning of this operation, the project has been responsible for the natural regeneration of 300,000 seedlings of Acacia albida over an area of close to 6,000 hectares, and the artificial regeneration of 60,000 seedlings. During the present phase, initiated in January 1987 with an additional contribution from SIDA of close to \$2 million, activities are being extended to 30 villages to cover not only the regeneration of Acacia albida and other species, but also socio-economic and ecological studies of the area, research and development of appropriate technologies, the development of agro-sylvo-pastoral techniques, and training. Following an evaluation of the project in October 1987, SIDA agreed to finance a third phase to be formulated at the beginning of 1989. Also in the Niger, the second phase of project to establish and expand green belts around the city of Niamey continued in 1987 and 1988 with a contribution of \$442,003 from the Government of Norway. One of the outputs of the project has been the formulation of a management plan for the gum-tree belt for the five-year period 1989-1993. This document is being reviewed by the Government and UNSO.

72. A major project for afforestation and reforestation in the northern region of the Sudan entered its initial planning phase in May 1987. Financed by a contribution of \$2.8 million to the Trust Fund from the Danish International Development Agency (DANIDA), this project involves the establishment of shelter-belts around 40 villages and their adjacent farmlands. While testing both indigenous and exotic species for their growth characteristics and potential economic benefits, the project will provide protection to 2,500 hectares of small holdings on public land and 3,000 hectares in the Latti agricultural basin. Training for local personnel is included in the project.

73. Negotiations with the Government of Norway for a project on the restocking of gum tree belt areas in the Sudan's Darfur province were completed in 1988. Planting will take place around 200 villages at a cost of \$2.1 million, with financial contributions also from AGFUND and UNDP. Work is expected to begin in 1989.

74. In the Kordofan region of the Sudan, UNSO continued its support to three projects on various facets of desertification control. One project, which aims at restocking the gum-tree belt by reforestation through the planting of Acacia senegal, with funding from the Netherlands, is currently in its second phase. Another project, funded by DANIDA, seeks to encourage fuel briquette production and the promotion of improved cooking stoves to ease the pressures on fuelwood reserves by turning agricultural waste into briquettes. Both projects underwent terminal evaluation in 1988, and new phases are being planned. A third project, funded by Sweden, concerns the management of grazing resources and is aimed at conserving the vegetation resources needed for livestock production.

75. The thrust of UNSO's programme in Ethiopia is in the field of afforestation and reforestation, seeking to restore the degraded environment and to alleviate the chronic shortage of fuelwood. The country has witnessed a sharp reduction in its forest cover - from 40 per cent of the land area at the beginning of the century to 2.7 per cent today.

76. In 1987, UNSO embarked upon a new five-year project (1987-1991), funded by DANIDA at a cost of \$5.4 million, which aims at the protection of parts of the Blue Nile catchment area in Ethiopia. The project area has been mapped and in-depth ecological and socio-economic impact analyses completed. Following modification of the project to take account of the findings of the analyses, major planting activities will be initiated in early 1989.

77. Since 1983, UNSO has been assisting in the establishment of two fuelwood plantations in Nazret and Debre Birhan, with DANIDA financing. By late 1988, a total of 4,120 hectares had been planted in Nazret and 2,850 hectares in Debre Birhan. In addition, a total of 181 kilometres of rural roads have been built in the two project areas.

78. Socio-economic studies have been carried out on both projects, highlighting their effects on the population and suggesting approaches to be used in the extension phases planned. Forest management plans have also been completed for both projects, as well as a manual on the management of fuelwood plantations; the manual has also been translated into Amharic and is being used at the various forestry training institutes in Ethiopia. In addition, all forestry technicians attached to both projects have undergone training in forest management, mapping, inventory and yield prediction, and two former project managers have received scholarships and are attending university courses leading to B.Sc. degrees in forestry.

79. A project for the establishment of fuelwood plantations to meet the needs of the town of Dese was completed in 1987. Financed by the Finnish International Development Agency (FINNIDA), this project succeeded in planting 1,226 hectares of fuelwood with a total production of 4.19 million seedlings, far beyond the original target area of 200 hectares. With the plantations well established, FINNIDA will continue the project on a bilateral basis.

UNSO tree seed projects

80. With the twin goals of conserving tree genetic seed resources and removing the constraints experienced in the tree-planting programmes in the region, UNSO formulated tree seed projects for Djibouti, Ethiopia, Somalia, the Sudan and Uganda during 1988. The documents have been reviewed by the Governments concerned, and UNSO expects DANIDA financing to be approved in early 1989.

81. In 1987, UNSO made a contribution of \$13,000 to assist the Government of Benin in the institution of a National Arbour Day intended to spread awareness of the importance of planting and protecting trees and to distribute 320,000 tree seedlings for planting. UNSO contributed \$20,000 for a similar project in 1988. UNSO also contributed \$20,000 in both 1987 and 1988 for a similar project in Togo. Some 800,000 tree seedlings were distributed each year.

Alternative sources of energy and fuelwood conservation

82. In Cape Verde, the objectives of the original outline of a pilot project for utilization of wind energy, funded by Denmark, were achieved by the end of 1987.

The project has been extended until 1989, with an additional contribution of \$280,560 from DANIDA to allow for a follow-up to the installation of the wind/diesel energy system specifically adapted to rural areas, for the testing of the system, and the training of more technicians. The extension will also allow for a smooth transition from the pilot project to a large-scale bilateral programme under negotiation for the utilization of wind energy in Cape Verde.

83. In Somalia, which, like Cape Verde, lies in the trade wind belt, a project for the utilization of wind energy for electrification began in November 1985 with financing from DANIDA. This project underwent quadripartite reviews in 1987 and 1988. In conjunction with this project, with DANIDA funding of \$142,568, UNSO launched a project in 1988 for measuring the wind régime in inland Somalia as a basis for planning future activities.

84. The design of efficient stoves produced locally was initiated in the Gambia through a project financed by DANIDA. By October 1988, some 40,000 stoves had been produced and sold and a centre for the manufacture of pottery stoves was established. In addition, potters, metal workers and field staff were trained, and a public awareness campaign on the advantage of using more efficient stoves is continuing throughout the country.

85. In the Sudan, through a project funded by DANIDA, fuel briquettes are being produced from ground-nut shells and the waste products of cotton production. This project, which includes the promotion and use of fuel-efficient cooking stoves, was reviewed in 1987 and a terminal evaluation took place in 1988.

86. In Senegal, a feasibility study financed by Denmark to assess the quantity and quality of the Niayes peat deposits, including the economic and technical aspects of their possible use for domestic fuel production, was completed in 1987; the component of the project promoting the use of improved cooking stoves was completed in 1988.

87. In June 1987, a World Bank mission visited Mauritania and proposed that a study concerning the nation's domestic energy strategy should be incorporated into the ongoing project for the distribution of improved cooking stoves. The Government of Norway provided the project with additional funds in the amount of \$216,000 to cover the costs of the study. In 1988, a World Bank study mission visited the country and developed a strategy for the household energy sector. A short-term action plan (1989-1990) is proposed with a total package of recommendations costed at \$2.5 million.

88. In the Niger, the World Bank executed a project on behalf of UNSO with financing of \$343,441 from Norway and \$20,000 from the United Nations Development Fund for Women. The project included studies on alternative domestic sources of energy, construction of prototypes of improved cooking stoves and studies on the role of women in marketing fuelwood. The recommendations resulting from these studies were incorporated into the formulation of a household energy strategy for the Energy II programme financed by the World Bank.

89. Since 1987, projects for the manufacture and deployment of fuel-efficient stoves have been under way in Mauritania (at a cost of \$667,000, of which \$504,923 was contributed by the Government of Norway and \$50,000 by the United Nations Development Fund for Women); in Burkina Faso (with a 1986 contribution of \$885,000 from SIDA); for the region of Kayes in Mali (with \$450,000 from Norway and \$40,000 from the United Nations Development Fund for Women); and for the Sudan, as a component of the fuel briquette project (financed by DANIDA with an additional contribution of \$43,841). The introduction of new types of stoves requires arrangements for their local manufacture and for the training and deployment of extension agents to demonstrate their advantages.

Rangeland management and water resources

90. In Senegal, a new centre for the monitoring of ecosystems and the movements of pastoralists in the more arid northern region of the country continued its operations with funding from DANIDA. The centre significantly intensified its activities, approaching a level which could enable it to serve as an example for similar activities elsewhere in the region. In 1988, DANIDA provided the project with additional funds amounting to \$189,000 for supplying supplementary equipment. UNSO and the Government are now considering the expansion of the activities of the centre.

91. A second phase of the project for the integrated development of the lake zone of Mali is aimed at the large-scale regeneration of bourgou pastures. The bourgou, Echinick oa stagnina, is one of the principal sources of forage for the livestock of the region. The project also aims at the prevention of overgrazing on graded rangelands in the rich inland delta region.

92. In the Gambia, a rangeland rehabilitation and livestock water development project funded by UNDP and UNEP was completed in 1987. This project received the enthusiastic support of the local communities, with both men and women actively participating in its activities of afforestation around watering points.

93. Ongoing in the Sudan, with funding by SIDA, was a project aimed at sustaining and improving the productivity of rangelands around livestock watering points.

94. In Djibouti, in June 1988, UNSO concluded the first phase of a project financed by UNSO, AGFUND, UNEP, UNDP and FAO for the management of natural resources and fight against desertification in the coastal plain of the country. During the second half of the year, the Government and UNSO, with the support of UNEP, formulated the second phase of the project which is costed at about \$1.2 million and expected to go on until mid-1992.

95. UNSO is also supporting projects involving the construction of small earth dams, ground water development and water conservation for irrigation, household use and livestock. The aim of an ongoing project in the Gambia, financed by Australia with the participation of the United Nations Capital Development Fund, is to construct a diversion weir and irrigation scheme on the Profu Bolon, a tributary of the Gambia river. In Togo, UNSO contributed \$61,560 for preliminary technical and socio-economic studies of 30 existing dams, which identified actions needed for their rehabilitation.

Soil protection and sand dune stabilization

96. Efforts to stabilize moving sand dunes, which are perhaps the most apparent manifestation of advanced desertification, are proceeding in a number of areas in the region. In 1986, the largest such projects were under way in Mauritania, Senegal and Somalia, using vegetative methods, supplemented by mechanical means, of stabilizing both coastal and continental dunes.

97. In Mauritania, moving sand dunes, both coastal and inland, are widespread and threaten roads, towns, oases and agricultural land. UNSO has been supporting a nation-wide programme of sand dune stabilization. During the first phase, completed in 1986, 850 hectares were stabilized in 15 inland sites. Research and tests were carried out on plant species and the physics of wind and sand movements, as were consciousness-raising and training programmes. Plans for sand dune fixation in 103 additional sites, along with integrated programmes for three zones, were also prepared, most of them along or near the Route de l'Espoir. Following an in-depth evaluation mission, UNSO obtained from DANIDA a contribution of \$5 million for phase II, which started in 1987 for a four-year period. Centred in the south of the country, where agriculture is possible, the second phase of the programme integrates agro-sylvo-pastoral development with sand dune stabilization. It has thus taken on the character of integrated land management, although its principal focus remains the control of moving dunes. These large-scale operations have been supported by contributions from the Government of Mauritania, the Government of Algeria, DANIDA, UNDP, UNCDF and WFP.

98. In Senegal, an integrated programme for the stabilization of secondary dunes and the protection of basins in which farming is practised was extended to the end of 1988. The programme involved the fixation of both coastal and inland sand dunes, the construction of wind-breaks, the regeneration of dior soils, the protection of roadways, the establishment of plantations around communities and training of counterpart personnel. An UNSO formulation mission visited the country in April and May 1988 and formulated a second-phase project for three years.

99. In Somalia, over 1,200 hectares of moving sands were stabilized in the area of Shallambod, where massive dunes had been encroaching upon town and village settlements. The dunes were successfully fixed through vegetative techniques, with plantings of euphorbia, cactus, commiphora and various trees. The experience gained in Shallambod is being applied to two other projects now being carried out to stabilize coastal dunes around Brava and Adale. The Brava project underwent terminal evaluation in 1988, and a second phase is being contemplated.

100. In Cape Verde, soil protection in the Sao Joao Baptista Valley is the focus of an ongoing integrated programme including groundwater development financed by Norway. The programme entered its second phase in 1987 in accordance with a master plan that contains provisions for the full participation of local communities.

Integrated land management

101. In October 1986, a three-year project was launched for the integrated development of the Lake Faguibine system in Mali. With a contribution of

\$1.9 million from Norway, plus \$125,000 from UNDP and \$276,000 in food rations from WFP, the project aims at achieving self-sufficiency in food through fishing, livestock-raising and intensified agriculture. In the initial phase a feasibility study was carried out to collate current knowledge of the lake's ecosystem and determine the best available methods to control the lake's water supply system in various circumstances. At the same time, sand dune stabilization was undertaken along the channels feeding the lake, as was biological protection of the channels, combined with actual channel-clearing works to improve the flow of water. In 1988, the feasibility study was completed. Its highly positive conclusions provided the basis for the formulation of activities for the second phase from 1989 onwards, including the draining of the Kondi channel (which by itself will ensure adequate annual replenishment of the lake), the continuation of biological protection and channel-clearing work, and the implementation of a number of follow-up studies.

102. As part of its new initiative to adopt a holistic and integrated approach to land management, UNSO, together with the Government of the Niger and in co-operation with CARE - an international non-governmental organization - developed a project during 1987 for integrated land management in the country. Funding was secured from DANIDA in 1988 in the amount of \$8,428,634. This project will be implemented by CARE in co-operation with the Nigerian Forest Service and represents the first occasion on which UNSO is co-operating with a non-governmental organization in this type of nature and on a scale of this magnitude. The project aims at improving agricultural and agroforestry practices through extensive environmental awareness programmes, the use of ecologically sound agronomic practices in mechanized farming, the protection of forest reserves, the restocking of plantations and the strengthening of governmental forestry services - all of which will contribute to environmental protection in the country.

103. In Mali, a six-month feasibility study was conducted with contributions of \$155,000 from UNSO and \$278,000 from UNDP to investigate action needed for the implementation of the "Green Belt Programme". This project, which is one of the main components of the Malian National Plan of Action to Combat Desertification, covers a large area extending from the border with Mauritania through Tombouctou and on to Gao, with a loop around Mopti and Segou. Although the term "green belt" indicates an emphasis on tree-planting, the project embraces a full spectrum of land management actions.

104. In Burkina Faso, a \$5 million contribution is being sought for a project for the development of the Sebba region, which will form part of a larger integrated development programme for the Sahelian region of the country.

105. During the period under review, UNSO has made commendable progress in providing technical and financial assistance for desertification control activities in the 22 countries of the Sudano-Sahelian region, in significantly strengthening its programming and operational thrust towards addressing the issues of prudent management of natural resources, environment and ecology, and in conceiving its activities on the basis of the concept of sustained and sustainable development. At the same time, UNSO has refined its operational modalities and, in that context, undertook measures to strengthen its field level activities and its co-operation with UNEP, as manifested by the establishment of its new Regional Office at Nairobi.

Table 1. Projects for desertification control, 1987 and 1988

Recipient country/ project title	Contributions to the trust fund (United States dollars)*		Total project value	Donor
	1987	1988		
Burkina Faso				
Technical support for fuel-efficient cooking stoves and for village plantations in Boulkiemde and Sanguie b/	983 333 e/	16 000 d/	999 333	Sweden
Integrated development of the Sebra region	-	5 000 000 d/	5 000 000	Denmark
Cape Verde				
Utilization of wind energy a/, b/	12 500 c/	280 560 c/	293 060	Denmark
Ethiopia				
Establishment of fuelwood plantation in Debre Birhan a/	12 800 c/	-	12 800	Denmark
Establishment of fuelwood plantation in Nazret b/	-	91 000 c/	91 000	Denmark
Fuelwood plantations in the north-western zone b/	-	202 660 c/	202 660	Denmark
Gambia				
Feeder roads in the Gambia b/	-	526 662 c/	526 662	Gambia

* National currency contributions have been converted into United States dollar equivalent amounts by using the United Nations rate of exchange in effect on the date of payment. Unpaid pledges have been recorded in United States dollars using the United Nations rate of exchange in effect on 31 December 1988.

Table 1 (continued)

Recipient country/ project title	Contributions to the trust fund (United States dollars)*		Total project value	Donor
	1987	1988		
Mauritania				
Improved cooking stoves a/	216 126 g/	-	216 126	Norway
Niger				
Construction of priority feeder roads, Mayahi-Kornaka a/	6 744 331 g/	-	6 744 331	AfDB
UNSO/CARE land management programme in the Niger	-	8 428 634 g/	8 428 634	Denmark
Pilot project for the development of the agro-forestry department in Dosso	1 000 000	-	1 000 000	Sweden
Technical support to the agro-forestry department in Dosso	983 333 g/	-	983 333	Sweden
Senegal				
Pilot project for regeneration of saline soils a/	37 645 g/	-	37 645	Canada
Feeder road programme in the Casamance a/, b/	1 000 000 g/	1 052 000 g/	2 052 000	Italy
Feeder road programme in Senegal b/	-	59 584 g/	59 584	Senegal
Somalia				
Wind measurement	-	142 568 g/	142 568	Denmark

Table 1 (continued)

Recipient country/ project title	Contributions to the trust fund (United States dollars)*		Total project value	Donor
	1987	1988		
<u>Sudan</u>				
Fuel briquette production and promotion of improved cooking stoves <u>b/</u>	-	43 841 <u>c/</u>	43 841	Denmark
Afforestation and reforestation in the Northern region of the Sudan <u>b/</u>	-	234 995 <u>c/</u>	234 995	Denmark
UNSO/CARE South Kassala land management project	-	6 700 300 <u>c/</u>	6 700 300	Denmark
Restocking of the gum-tree belt in Northern Darfur	-	1 721 696 <u>c/</u>	1 721 696	Norway
<u>United Republic of Tanzania</u>				
Establishment of a drought and desertification control division	-	323 629 <u>c/</u>	323 629	Norway
Total	10 990 068	19 824 129	30 814 197	

- a/ Additional funding approved in 1987 for ongoing activity.
b/ Additional funding approved in 1988 for ongoing activity.
c/ Earmarked resources.
d/ Trust fund contributions under standing trust fund agreement.
e/ Management services agreement.

Table 2. Summary of total resources mobilized in 1987 and 1988
 (United States dollars)

	1987	1988	Total
Earmarked project resources mobilized	8 023 402	19 808 129	27 831 531
Trust fund project resources mobilized	1 000 000	16 000	1 016 000
Pledges to UNSO general resources	6 834 870	7 582 571 a/	14 417 441
Total resources mobilized through the trust fund	15 858 272	27 406 700	43 264 972
Management services resources mobilized	1 966 666	0	1 966 666
Total	17 824 938	27 406 700 a/	45 231 638

a/ Does not include \$1,414,784 pledged in November 1988 for 1989.

Table 3. Summary of total resources mobilized in 1987 and 1988
 for the desertification control mandate

(United States dollars)

	1987	1988	Total
Earmarked project resources mobilized	279 071	18 169 883	18 448 954
Trust fund project resources mobilized	1 000 000	16 000	1 016 000
Pledges to UNSO general resources	6 834 870	7 582 571 a/	14 417 441
Total project resources mobilized through the trust fund	8 113 941	25 768 454	33 882 395
Management services resources mobilized	1 966 666	0	1 966 666
Total	10 080 607	25 768 454	35 849 061

a/ Does not include \$1,414,784 pledged in November 1988 for 1989.

Notes

1/ Report of the United Nations Conference on Desertification, Nairobi, 29 August-9 September 1977 (A/CONF.74/36), chap. I.

2/ See Official Records of the General Assembly, Fortieth Session, Supplement No. 25 (A/40/25), annex.

3/ Ibid., Forty-second Session, Supplement No. 25 (A/42/25 and Corr.1), annex I.
