Distr.: LIMITED

ECA/TNG/MULPOC/AGR.DIV/ICE/XIII/5
December 1996

Original : ENGLISH

UNITED NATIONS

ECONOMIC COMMISSION FOR AFRICA

REGIONAL OFFICE FOR NORTH AFRICA
OF THE ECONOMIC COMMISSION FOR AFRICA
(MULPOC)

Thirteenth Meeting of the Intergovernmental
Committee of Experts

Tangier, Morocco,
01 - 04 April 1997

MONITORING AND FOLLOW-UP OF PROGRESS IN DESERTIFICATION CONTROL IN NORTH AFRICA

TABLE OF CONTENTS

MONITORING AND FOLLOW UP OF PROGRESS IN DESERTIFICATION CONTROL IN NORTH AFRICA

I. INTRODUCTION

1. Drought and desertification are two important environmental problems which the six countries of the North African MULPOC(Algeria, Egypt, Libya, Morocco, Sudan and Tunisia)have fought relentlessly during several decades. As in most developing countries in the world, these two inter-linked phenomena have long and short-term consequences that ultimately bring about land degradation. In all the countries of the sub-region, one of the most severe impacts of desertification has been the reduction of the area under arable lands, pastures, forests and water resources.

2. Algeria, Egypt, Libya, Morocco, Mauritania and Tunisia which border the Sahara Desert have lost an estimated 0.6 million sq. km of fertile land during the last 50 years[1]. Tunisia is estimated to have lost 11,000 ha of land yearly from wind and water erosion.[2] In the five Arab Maghreb Union (AMU) countries, 70 million ha are in desertification prone areas. In Sudan it is estimated that sand dunes cover over one-third of its total land area. In Darfour, one of the driest regions of Sudan, deserts are advancing at about 7-10 km per year.[3]

3. In the long term, desertification has threatened national food security and rural living standards through its adverse impacts on agricultural productivity and farm incomes. It has also caused disruptive population movements, unfavorable water supply conditions and important economic losses.

4. The problem of desertification and the urgency to address it have generated serious concerns not only in the North African subregion, but also within the international community. The International Conference on Desertification convened by the United Nations in Nairobi, Kenya in 1977 was a landmark to put together international efforts towards desertification control. A second milestone was the United Nations Conference on Environment and Sustainable Development (UNCED) held in Rio de Janeiro, Brazil in 1992. Chapter 12 of Agenda 21 devoted to drought and desertification control reveals the importance given to such issue. Resolution 744(XXVIII) adopted by the ECA Conference of Ministers of Economic Planning and Development in May 1993 underlines the need for preventing and reversing desertification.

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1 FAO: Follow-up of the UNCED: Integrating Environment and Sustainability into Agricultural Policy Analysis. FAO(ESPC/NE/93/5); Rome, August 1993, p.8

2 Ibid; page.9

3 UN ECA Field Mission on Green Belts Rehabilitation and Conservation. ECA (Output 3b XV);Addis Ababa, 1993, p 6

5. Following the recommendations of (UNCED), the 47th Session of the UN General Assembly adopted Resolution 47/188 in December 1992 creating the Intergovernmental Negotiating Committee (INCD) to prepare by June 1994, a Convention to Combat Desertification in those countries experiencing serious drought and/or desertification particularly in Africa. The convention was adopted in Paris on 17 June 1994 and opened for signature on 14-15 October 1994.

6. Over 100 countries have signed the convention so far and it came into force 90 days after fifty countries had ratified it. It entered into force on 29 December 1996. In the subregion only Egypt, Sudan and Tunisia had ratified the convention by March 1996 [4]. Meanwhile, several regional, sub-regional and national conferences, meetings and workshops aimed at developing strategies, programs and projects to halt and reverse desertification and land degradation have taken place.

7. Within the sub-region, concern among countries of the Arab Maghreb Union (AMU) regarding the serious consequences of desert advancement and the associated environmental deterioration led them to draw up in 1992, a Maghrebine Charter on Environment and Sustainable Development to serve, among other things, as a basis for regional cooperation in desertification control. The AMU continues to accord great importance to the problem of desertification and through its Ministerial Commission in charge of food supplies security, seeks to formulate a Maghrebine strategy to combat desertification at the sub-regional level.

8. Among the recent initiatives taken in this regard, was the International Meeting on Desertification Control in the Maghreb convened in Rabat from 5-6 October 1994 by the AMU General-Secretariat. The meeting provided an opportunity to shed further light on the problem of desertification in the subregion, identify future AMU collaboration in addressing this problem and discuss international cooperation possibilities. The achievement of this objective was facilitated by a sub-regional study on desertification control in the Maghreb prepared by a group of Maghrebine experts under the aegis of the AMU General Secretariat.

9. The non-AMU countries (Egypt and Sudan), following Agenda 21, have also striven to combat desertification. During the last three decades, they have designed specific policies and tools on desertification control in prone areas and integrated them in their development programs and projects. The establishment of plantations in arid areas, and hundreds of km of shelterbelts and windbreaks to protect irrigation channels and sand dune fixation have been frequent activities in both countries.

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[4] Impact, Newsletter of the Climate Network Africa, March 1996, Nairobi, Kenya.

10. Despite all the policies, programs and projects implemented by member states within the framework of the Nairobi plan of action, Agenda 21, etc, drought and desertification remain a veritable scourge in the subregion. The issue is why these interlinked problems remain intractable and strong. Such intractability underlines the need to keep both issues under constant examination with a view to galvanizing co-operative and sustained action to combat the roots of both phenomena. This calls for constant monitoring, follow-up and exchange of information on progress made in desertification control in the subregion.

11. It is in this context that the MULPOC has prepared this report for presentation to the 13th Meeting of the Intergovernmental Committee of Experts of the Tangiers MULPOC to be held in March 1997. The report briefly reviews the problem of desertification, its nature, causes and extent in the North African subregion, assesses the progress achieved so far to combat it and presents some of the major problems that have constrained progress in this field. It then attempts to identify opportunities for collaborative action in the fight against desertification.

II. CAUSES, EXTENT AND ESTIMATED COST OF DESERTIFICATION IN NORTH AFRICA

12. Climate changes and the impact of unsustained human activities on productive land, forest and grassland ecosystems are the main driving forces of desertification. The consequences are many. It was only recently that the Convention to Combat Desertification (CCD), recognized the physical, biological and socio-economic effects of desertification, the great role of technology and the involvement of the local populations in fighting and minimizing this phenomenon.

13. Recurrent and prolonged drought has been a major determinant of the soils and vegetation, capacity of production and the quality of the environment in the subregion during several decades. Unbalanced and uncontrolled human activities through multiple uses of the natural resource base have accelerated the adverse impact of climate on the environment. The increasing demand for land by a population growing at 2.4 percent per year during this decade adds more pressure on the natural resources.

14. Inappropriate systems of exploitation of agricultural lands, poor management of forests (e.g. forest cover does not exceed 8 percent in the subregion), [5] grasslands overgrazing and water misuse have given rise to land degradation. In most countries, but particularly in Sudan, clearing of extensive Acacia formations for agriculture and grazing and extraction of timber and fuelwood has resulted in extensive deforestation. It is estimated that about 20 million ha of forests and woodlands will disappear between 1988 and 2000 in that country. Similarly, annual clearing of natural forests is estimated to proceed at 60,000 ha in the Maghreb countries [6].

15. The ultimate effect of excessive pressure on the natural ecosystems has led to long-term degradation processes such as water and soil erosion, leaching, soil compaction, salinity, water logging and pollution. Worst still in many countries, such degraded land is supporting a human and livestock population beyond its carrying capacity, thus accelerating these degradation processes.

16. As indicated earlier, Algeria, Egypt, Libya and Tunisia which border the Sahara Desert have been particularly susceptible to desertification, losing an estimated 65 million ha of fertile land during the past 50 years. In Algeria, of a total land area of 238 million ha, about 200 million ha are occupied by the Sahara Desert while 20 million ha of the 38 million ha in the

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[5] ECA, Field Mission on Green Belts Rehabilitation and Conservation, (Output 3b XV);Addis Ababa, 1993, p.3

[6] ECA; Report on the State of Management, Conservation and Exploitation of Indigenous Forests in North African Countries.(JEFAD/FADPPS/88/9);Addis Ababa, February 1988, p.3

north of the country are arid and semi-arid and vulnerable to desertification processes[7]. In Egypt about 13 million ha are affected by desertification. Of the 11 million hectares of land in Tunisia, 6.3 million hectares comprise desert and bare rocks with sand dunes, amounting to 3.2 million hectares, while 60% of cultivable land is threatened by erosion[8]. Forests only cover 0.6 million ha. In Morocco, deforestation is estimated at 31,000 ha each year and annual soil erosion varies between 2000 t/km^2 in the Riff mountains and almost 750 t/km^2 in the High Atlas. . In the Sudan, where the desert occupies over 63 million ha, desertification affects 1.6 million ha of irrigated farmlands, almost 9 million ha of rainfed croplands and 100 million ha of rangelands.

17. According to the data, 24.4%, 80.6% and 93.8% of the subregion's irrigated, non-irrigated and pasture lands respectively are affected by desertification. What remains to be known is whether the degree of deterioration of such lands will, in the long-term, permit any kind of agriculture, including grazing or forestry. Preserving the germ plasm of natural vegetation of grasslands, ligneous vegetation and of forests could be of great utility for an eventual revegetation of the marginal lands.

18. Progress in evaluating the losses caused by desertification has so far been very little. The main obstacles have been: (i) the difficulty of assessing the food production losses caused directly by desertification and (ii) the insufficiency of data to calculate **ex-situ** socio-economic and environmental damages. Data on migration costs of rural people leaving behind them degraded agricultural lands rarely are available. On the other hand, those concerning infrastructure conservation e.g. railways and roads as well as removal of sand are better known in the sub-region. According to ECA [9] the **on-site** yearly losses are estimated at US $ 410 million at 1990 prices, and the **off-site** losses at US $ 600 million. For comparative purposes, the value of agricultural imports in the six countries of the region reached US $ 8496 millions in 1990.

19. Whatever the value of total damage attributed to desertification, it is evident that countries of the sub-region would need to invest enormous resources to reverse the actual trend of desertification and allied effects. It is in this context and for obvious cost/efficiency reasons that the promotion of sub-regional co-operation could yield very good returns.

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7 Union du Maghreb Arab;La Lutte Contre la Désertification Au Maghreb. Secrétariat Général, Rabat 1993, p.131

8 UMA,ibid,pp.110/111

9 ECA, Field Mission on Green Belts Rehabilitation and Conservation (Output 3b XV); Addis Ababa, 1993 p.8

20. Improving management and incorporating sustainable land-use methods are goals that land policies and strategies should pursue in order to lessen desertification. Likewise, the provision of access to and the utilization of, appropriate technologies as well as public and private awareness of the need for land conservation could achieve the same goal. Rural poverty and the need for economic survival of rural people often explain why some land resources of the subregion have been heavily overexploited and degraded.

21. Any strategies and programmes aimed at slowing down and reversing the desertification process in the subregion must, therefore, attack some of its major root causes and, in particular, poverty.

III. POLICIES, STRATEGIES AND PROGRAMMES ADOPTED FOR DESERTIFICATION CONTROL IN NORTH AFRICA

3.1 National Policies, Strategies and Programmes

22. Awareness of the pernicious effects of desertification led the countries to the identification of integrated policies, the identification of clear objectives and the selection of strategies to meet anti-desertification targets of each country. Certainly, the guidelines from conventions have been of great utility in this endeavour.

23. Algeria for example has adopted a two-pronged strategy which addresses the problems of desertification and at the same time responds to the needs of the population affected by the phenomenon. A major pillar of this strategy is the adoption and promotion of a global and coordinated approach to integrated development aimed at the protection, conservation and rehabilitation of the vegetative cover of the land and infrastructures and the establishment of a mechanism for monitoring desertification. To this end, the programme of intervention adopted involves action aimed at protecting the natural resources base against all forms of degradation and actions to rehabilitate and improve the productive potential of the degraded zones.

24. To this end, Algeria launched in the 70s the Green Belt programme in the high potential but desertification-prone Sahara zone covering an area of 3.5 million ha. The 1500 km length and 20/40 km wide green belt includes the establishment of pilot range areas, plantations of shelterbelts and forests, and the establishment of tree and fruit plantations. Other programmes included sand dune fixation, watershed rehabilitation, setting up of forestry nurseries, sanitary forestry surveys as well as oases protection and rehabilitation. In addition, terracing to protect agricultural soils against erosion has been a salient policy in the country.

25. In Egypt desert land reclamation has been a consistent and efficient policy during at least two decades. Among its achievements stands out the reclamation of 0.4 million ha for agriculture from desert. Fixation of coastal and inland sand dunes through planting drought-resistant species constitutes another strategy to prevent desertification. In fact the country has been reclaiming 150,000 ha. per year from the desert through the establishment of shelter belts, wind breaks, woodlots and street trees. The country also uses treated sewage water to irrigate trees. Agricultural productivity in areas protected by shelterbelts has increased 30 percent on average. An integrated and environmentally sound policy consists in the rehabilitation of oases by using the Nubbin sand-stone water reservoirs. The afforestation policy aims to combat desert encroachment, maintain the biological balance and boost timber wealth in compliance with the Earth Summit in Rio.

26. Libya's desertification control strategy is based on the rational exploitation of her water resources, adoption of efficient agricultural production techniques including utilization of adequate fertilizers, control of degradation in zones prone to desertification and the rehabilitation of affected lands. Within this strategy framework projects were implemented involving

afforestation and sand dune fixation; projects for rangelands and grasslands vegetal cover improvement; projects for water and soil conservation and erosion control and projects for integrated agricultural development.

27. Morocco initiated a soil conservation strategy in 1949 which was followed up by the launching of the National Plan for Desertification Control elaborated by the Ministry of Agriculture and FAO, the "erosion" programme in 1970. The latter was launched to evaluate the impact of erosion on the big hydraulic zones. It was shown that 12.5 million ha of agriculture and grazing lands were threatened by erosion in the area under study (Souss-Massa-Moulouya dam).

28. Further, a watershed series of studies enabled the Forestry Service to draft master plans for several watershed zones and in particular for those of Loukkos and Tassaout. Globally, the main elements of the plan were the mobilization of water resources through the creation of dams and small farm lakes, planning and improvement of pastures, control of wind and water erosion, continuation of forestry activities including forest planning, reforestation (so far 530,000 ha have been planted), the creation of national parks and biological reserves as well as the rehabilitation of rangelands and sand dune fixation, about 30,000 ha.

29. Tunisia's strategy for desertification control leans mainly on the following two pillars: (i) protection of agricultural lands and infrastructures against sand encroachment and (ii) rational utilization of water for irrigation. These aim at afforestation and reforestation , halting the advance of the desert through sand dune fixation, rehabilitation of marginal lands and establishment of shelterbelts and windbreaks along the corridors of the centre and the south of the country [10]. Rehabilitation of oases and improving their production and productivity has been another policy objective.

30. Within the framework of this strategy, Tunisia undertook several desert control programmes and projects between 1970 and 1992. From this date the main lighthouse has been Chapter 12 of Agenda 21. These included the development and strengthening of its data base on desertification, inventory of natural resources (soil, water, forests and grazing lands), studies on land degradation process and the construction of dams and small farm lakes. Others include the establishment of forest plantations and pastures, planting and tending of shelterbelts and sand dune advance monitoring. Within the same strategy, capacity-building in research, extension and training programmes were set up. Legislation was up-dated and encouragement of popular participation in land conservation programmes enhanced.

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10 Plan de Développement Economique et Social (1992-1996): Developpement Agricole et Securité Alimentaire. Ministère de l'Agriculture, Tunis, Aout 1992, pp 39-42.

31. Sudan's main strategy to combat desertification has been traditionally based on the protection of irrigated lands and water channels against sand encroachment, the control of sand advancement in the most arid zones and the conservation of forest cover. The latter declined by 1.1% between 1981-90[11] mainly as a result of felling of trees for fuelwood and a shift from forestry to agriculture. In 1985, a National Plan to combat drought and desertification was prepared. In 1991, Sudan prepared Guidelines for the National Action Plan for combating desertification and in 1993, prepared Sudan's five-year Programme for the Convention on Drought and Desertification. Awareness workshops on the convention were also held in 1995 in which the five-year programme was presented. A project concept has now been prepared and submitted to UNDP for consideration for funding.

3.2 Regional programmes, projects and activities on desertification control

32. In this report, regional programmes and projects on desertification control refer to those relevant activities undertaken jointly by all or some of the member states with or without the involvement of countries outside the sub-region. They also refer to programmes and projects covering all or part of the North African sub-region. These include the major activities undertaken within the framework of the Plan of Action on Desertification Control adopted at the UN Conference on Desertification Control and other Programmes/actions undertaken to date on desertification control within a co-operative framework.

33. The activities undertaken in this regard are grouped into five categories according to their objectives and areas of interest:[12]

a) Activities aimed at strengthening the knowledge base on desertification

34. These activities aim at strengthening the information base needed for programming development actions in the regions affected by desertification and comprise studies, analysis of information and research on problems specific to arid regions. The information generated by these activities is used for preparing technical assistance or national investment projects.

35. About 30 of such activities involving UMA member countries were implemented. A few of them include:

(i) The international programme for the management of arid and semi-arid pastures in Africa and in the Middle East (EMASAR);

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11 The Economist Intelligence Unit, EIU, 1995-96, Country Profile, p.24

12 UMA; Op. cit, pp 33-48

(ii) Management of water resources in the Maghreb (Project RAB/80/001);

(iii) Management of water in rain-fed agriculture(Project RAB/88/015);

(iv) Pilot cartography project on measurement of soil erosion in the coastal zones of the Mediterranean (PAP/CAR);

(v) Project on Technologies for the management/administration of water resources (RAB/89/015);

(vi) Regional project on sand dune fixation (RAB/86/034).

36. During the AMU regional meeting held in Tunis 8-11 November 1995 it was recommended to create the following four main programme components:(i) a data bank on desertification; (ii) a network to monitor the ecosystem; (iii) a study centre and (iv) a follow-up unit on desertification in the Maghreb countries. As a consequence, a working group on desertification has been established.

b) Activities related to desertification control

37. These activities aim at defining, identifying and/or adapting techniques and/or methodologies for responding to common problems such as crop pests, management of pastures or monitoring of desertification.

Included in this category of activities are:

(i) Project IPAL in the arid zones (one of the integrated projects supported by UNDP to implement the Plan of Action on Desertification Control);

(ii) Project (RAB/84/018) on desertification control, phase I (RAB/84/018);

(iii) Regional pastoral development project (RAB/84/025);

(iv) Development of current technologies for the administration of water resources, phase II (RAB/89/003);

(v) Regional network for additional irrigation and improvement of water utilization in agricultural production (RAB/90/005);

(vi) Programme for the control of desertification in northern Sahara by satellite.

c) Activities related to institutional support

38. These consist mainly of technical assistance projects aimed at assisting concerned countries in adapting and harmonizing their institutional frameworks for a better control and combat of desertification and environmental processes.

39. The projects in this category were relatively few and included a project of technical assistance on environment in the Mediterranean (Project METAP);a project of assistance to the Centre for Environment and the development of the Arab region and Europe (RAB/91/016; and a project for strengthening the administration and management of agronomic research in the Arab countries (RAB/89/027) and the Mediterranean Forest Action Programme.

d) Activities related to co-ordination of efforts on desertification control

40. These were often complementary activities designed to improve the flow of information and knowledge base of the participating countries through training, exchange of scientific and technical information and experiences and establishment of a data base network.

41. The projects in this category were relatively many and included the green belt trans-Saharan project in North Africa, a project that started in 1977 and supported by Algeria, Egypt, Libya, Mauritania, Morocco and Tunisia; a project for promoting exchange of information and knowledge on desertification issues (FP/1700-82-08); a regional workshop on sustainable development (RAB/89/029); project on sand dune fixation and afforestation (RAB/89/034) and the regional project for the development of pastures, phase II (RAB/90/001). The other two important projects include the Regional Centre for Remote Sensing in Tunis and the project on the control of Bayoud in date palms, phase II (RAB/88/024).

42. In addition, other projects such as the Green Belt and Remote Sensing projects were initiated and financed with or without initial external financial support and reflect the will of participating member states for regional co-operation in desertification control.

e) Activities in integrated development

43. These were mainly investment projects generated through national initiatives and involve activities encompassing the partial or entire dimension of the desertification problem and include bilateral co-operation projects for the development of marginal and degraded regions with potential natural resources.

44. The implementation of these projects was principally aimed at improving the living conditions of the people and protecting the natural resources through harmonious and sustainable development approaches. These projects include the integrated development project of the Oued Melleque Basin; the project for the improvement of pastures and livestock in the El Oaara region and the project for the integrated planning of the Oued Barbara Basin. The results expected at the end of these projects were to include the development and viability of production systems and ensure sustainability of the resource base.

IV. STRUCTURES AND INSTITUTIONAL MECHANISMS FOR DESERTIFICATION CONTROL

45. With few exceptions all countries of the region have been working since the Nairobi conference in the 1970s in re-shaping their institutional framework to meet the new demands of their societies first as well as the new conventions and other agreements for preventing and combating desertification. The main framework consisted of new structures for programming and follow-up of and research and training in desertification control activities. In some countries, specialized committees were established and existing structures were progressively adapted to deal with desertification and environmental issues. Other components of the institutional framework consisted of new or updated forestry codes, improved water management codes and laws protecting agricultural lands, aquifers, and bio-diversity, as well as those governing the creation of institutions responsible for various desertification monitoring and control activities.

46. Considering the nature and complexity of desertification control activities, responsibility for their implementation including those related to research, training and extension in countries of the sub-region is co-shared by several institutions according to their areas of competence. In the majority, if not all, of the countries the various divisions of the Ministry of Agriculture and Agrarian Reform viz: crop production, soil and water conservation and animal and forest resources were given high responsibility for desertification control. The Ministry of Environment is also taking on increasing responsibilities in this domain; the Ministry of Interior and Information as well as many agricultural research and training centres carry out studies on desertification-related problems.

47. These include the Institut de Recherche Agronomique des Régions Arides in Tunisia (IRA), l'Institut National de Recherche Forestière (INRF) in Algeria and the Centre des Recherches Agricoles and l'Office National des Investissements et Etudes Agricoles in Libya. Relevant Institutions in Morocco include l'Institut National de la Recherche Agronomique (INRA), la Station dc Recherche Forestière(SRF), Centre National de Télédetection (CNT) etc. In Egypt there is the Desert Research Centre which was established in 1939 and reorganized in 1990 into four divisions and include seventy laboratories, a number of green houses, nurseries and lysimeters, a tissue culture laboratory, a Geographic Information System (GIS) computer Centre and a Satellite Receiving Station.

48. At the sub-regional level, some of the activities undertaken to combat desertification were aimed at: (i) providing institutional support and co-ordination to national and regional programmes and projects. In this connection some regional organizations were created and some research institutions strengthened.

V. PROGRESS ACHIEVED IN DESERTIFICATION CONTROL IN NORTH AFRICA

49. The progress achieved in desertification control through the implementation of activities and projects discussed above can be measured by the use of indicators which show for example, the extent to which soil productivity has improved, the expansion of arable land and pastures, the area planted with forest trees, the area of sand dune fixed, the investment in water erosion control, etc. Unfortunately, as data on most of these indicators are hard to come by, this report focuses on the extent to which the various projects were implemented and the results achieved.

5.1 Projects Implemented and Terminated

50. Most of the projects allied to the Plan of Action on Desertification and Financed through the regular programme of the UNDP have ended. A list of these projects is given in Annex 1.

5.2 Projects still under implementation

51. Many projects allied to the Nairobi conference are still under implementation. A list of some of these projects is provided in Annex 2.

52. A number of regional projects for desertification control recommended by some commissions established after the Nairobi conference are also under implementation. These include the regional centre for remote sensing in Tunisia and the MED-Campus programme supported by the EU aimed at setting up a network of higher institutions for high-level training and research on the causes, mechanisms and the consequences of desertification. This latter involves Algeria, Belgium, Spain, Morocco and Tunisia.

5.3 Progress achieved in Desertification Control

53. Significant progress has been achieved during this decade through (i) the strengthening of the information base on the state and nature of desertification and (ii) the preparation of technical and economic papers and reference manuals. Both have contributed in improving the training of relevant manpower for the preparation of regional projects and in supporting national activities in desertification control.

54. Activities aimed directly at controlling desertification and financed to a large extent by international or multilateral institutions have mainly led to the identification of technical solutions to specific problems or to the transfer and adaptation of technologies to local conditions, training of manpower or trainers at different levels and identification and preparation of projects.

55. The implementation of programmes described in Section 5.3 and projects related to institutional support has assisted in identifying sectoral policies and strategies for goals achievement, suggesting structural and managerial reforms, identifying and preparing investment projects of priority and mobilizing financial resources for identified programmes and projects, among other activities.

56. As regards the implementation of programmes and projects related to coordination of efforts on desertification control, these have led to the creation of some regional organizations and the strengthening of some national research institutions that provide institutional feed-back to national and regional programmes and projects. Among other achievements are: (i) the establishment of specialized information and data exchange network,(ii) a qualitative strengthening of managerial capacity involved in desertification control, (iii) publishing of technical information and bulletins ,(iv) the issuing of manuals on desertification control and (vi) the enrichment of knowledge on approaches in desertification control.

5.4 Problems and constraints in Desertification Control in North Africa

57. Due to the multi-sectoral nature of the desertification process and to the number of institutions that intervene in its control, the preparation of programmes and projects has not been without problems. Among the most general **planning problems** were:

(i) Inadequate capacity in planning and programming and difficulties in including anti-desertification plans and projects into broader National, Regional and Sectoral development plans and programmes. This has resulted in the inexistence of desertification consolidated frameworks;

(ii) Difficulties in assessing the full socio-economic benefits generated by long-term environmental activities and the financial difficulties encountered in undertaking projects of this nature. In particular there is a gap of knowledge about the valuation of the indirect-use and on regulatory "environmental" services of most -desertification control projects. An alternative to the well known cost/benefit analysis (CBA) can be the Cost Effectiveness Analysis, (CEA);

(iii) Poor co-ordination on the one hand, among the concerned heads of planning institutions and on the other hand, among the regional and sub-regional institutions and the agencies of the countries involved in desertification control. This has resulted in the identification of a large diversity of projects, many of them being among those recommended in the Nairobi Plan of Action; and

(iv) Inadequate commitment to the projects in the majority of cases except by the concerned services and institutions.

58. The above-mentioned difficulties in particular, the diversity of projects have added more complexity to their implementation and monitoring. Also, many projects and programmes were not borne out of the initiatives of the countries concerned nor from identified common problems but were initiated because of opportunities offered for financing. These projects were, therefore, perceived differently and with different degrees of acceptance by the concerned countries. In addition, the fact that some of them were financed by international and aid organizations did not evoke the level of interest and commitment from the recipient countries needed for their success.

59. Among the problems encountered in **the preparation and implementation of regional projects** are:

(i) poor knowledge regarding the socio-economic and environmental conditions in the countries of the sub-region and insufficient commitment of the countries concerned in terms of the financial resources needed to initiate joint programmes and projects;

(ii) insufficient exchange of information and data base on resources availability (e.g. technical, manpower and financial) to identify and implement priority projects;

(iii) reliance of most of the activities on desertification control on national institutions for support, a situation which has resulted in unequal impacts of the activities in the countries due to disparities in the institutional framework in these countries;

(iv) unsatisfactory communication among the research and technological centres of the subregion in the diffusion of highly efficient techniques to halt or minimize the negative impact of desertification e.g. on drought- resistant species for afforestation, systems for aquifers replenishing, low cost sand dune fixation technologies and on shelterbelts design and tending; and

(v) inadequate and unsustained financing which affected without exception every stage of implementation of most desertification control activities and projects due to the long-term nature of most of these projects and to their low economic rentability.

VI. PROPOSALS FOR FURTHER ACTION

6.1 At the country/field level:

60. (a) A number of commendable achievements have been accomplished by all the countries concerned. However, there is obviously a need for more consolidated and integrated effort involving an effective and dynamic partnership between the public and private sectors including the local communities living in the affected areas. To achieve this objective, national action programmes integrated in other national policies for sustainable development should be formulated where they do not exist yet. Also a central coordinating unit should be established as a chapeau to harmonize the resources and activities of:

(i) various divisions/departments of diverse ministries, interior, information, environment, etc.), national institute/research centres involved in the desertification control programme;

(ii) the scientific community, non-governmental organizations; and

(iii) the local communities in a comprehensive and sustainable way.

(b) An awareness campaign on the concerned issues for all stockholders needs to be intensified with the assistance of UNDP/UNSO, the secretariat of the Convention to Combat Desertification (CCD) or through bilateral assistance -- as being currently done in various countries in Africa. The purpose for the awareness campaign is to first mobilize all the resources available, and consequently to facilitate the integrated approach to tackle the enormous problems of desertification.

(c) Achievements to combat desertification in one part of the country must be replicated, with appropriate modifications and adaptation, in other parts of the country, through a nationwide programme of desertification control, under the promotive action of the national coordination body.

(d) Timely and reliable data base must be established through national cooperative effort complemented by sub-regional/regional assistance.

6.2 At the sub-regional level

61. As the problems of desertification control cut across national borders, a linkage of different national efforts through sub-regional action is necessary. This linkage, to some extent, already exist with a number of projects, both implemented and terminated, or still on-going. However a more rational and systematic linkage is required to pool and share resources, expertise and experience.

62. Effective sub-regional cooperation will help in the tackling of the problems and constraints as identified in Section 5.4, i.e. the problems related to planning and programming, and preparation implementation of regional projects, as existing expertise and experiences in one country may be used to help other countries of the sub-region.

63. In particular, a common sub-regional action programme involving all countries of the sub-region should be prepared and implemented with support from bilateral and multi-lateral assistance. More effective participation is required from UNDP/UNSO, the secretariat of the CCD, UNEP and its Desertification Control Programme Activity Centre, the African Ministerial Conference n the Environment (AMCEN) and its Committee on Dry and Arid Lands, together with other regional and sub-regional organizations.

6.3 At the regional level

64. A regional action programme (RAP) to combat desertification in Africa is called for by the Convention and the Regional Implementation Annex for Africa. At the initiative of the Secretariat of the Convention, the RAP is being prepared in cooperation with relevant regional organizations including the Organization of African Unity, the AMCEN secretariat, the African Development Bank, the UNDP/UNSO, UNEP and ECA. The RAP will constitute the overall framework for actions to combat desertification in the region.

65. A regional coordinating unit (RCU) for the implementation of the Convention in Africa is also being established, as it is also established in other regions. The RCU, once operational, will be the important catalyst for action to combat desertification in Africa.

66. In preparation for the first meeting of the Conference of Parties (COP)to the CCD (September 1997), as well as for the Special Session of the General Assembly (June 1997), a Pan-African Ministerial Conference is being scheduled to be held in Ouagadougou in March 1997. All African countries should participate in force in these preparatory works. In particular, those countries who have not yet ratified or acceded to the CCD should proceed to do so quickly to give Africa a strong voice in the implementation of the CCD, as only the parties to the Convention can participate in the work of the COP in full rights.

67. ECA, in its Medium-Term Plan for the period 1992-1997, has implemented clustered activities exploiting the linkages and relationships between food and agriculture, population, the environment which are central to strategies for the alleviation of poverty, and consequently

human survival in Africa. The same concern is being carried over into the next Medium-Term Plan (1998-2001), under sub-programme 2 Enhancing food security and sustainable development. ECA continues its activities to improve the capacities of member States for quality food security and sustainable development policy analysis and planning, and will use its convening power -- clout to bring together high-level officials in a variety of forums, to raise awareness and the importance of the nexus issues.

69. Also, the programme Food Security and Drought Management of theme 4 Urgency on Survival Issues of the UN System-Wide Special Initiative on Africa, constitutes a good framework as it will address issues of food security and drought management by promoting control of land degradation and desertification, improvements in soil quality and strengthening women's access to credit, extension and land ownership.

70. Finally, greater support of international community to the undertakings and commitments of Governments is needed to give further impetus and increased consideration to key strategic requirements and issues related to the effective implementation of several provisions of the Convention to Combat Desertification, which impose extra national and international obligations on the technical, legal, administrative and financial institutions of African countries.

6.4 The Role of the Tangier MULPOC, AMU and FAO

71. Within the framework of the national, subregional and regional actions suggested above and in co-operation with UNDP/UNSO UNEP and other relevant institutions, the ECA MULPOC, AMU and the FAO Regional Office for the Near East and North Africa (Cairo) should assist member states of the subregion to build on the progress achieved in the many areas of experience acquired during project implementation in the past avoiding unnecessary costs and trying to show the environmental benefits that desertification control may generate.

72. They should work together in an integrated and collaborative plan mainly to help countries in their efforts to implement the United Nations Convention to Combat Desertification (CCD). The main aim of such effort should be to promote processes and activities to combat desertification and/or mitigate the effects of drought within the main climatic zones of the subregion. Their activities could be planned as follows:

a) Framework for Long term activities

(i) Cooperate with the countries of the sub-region in the preparation of a framework for subregional action programmes and in facilitating the integration and coordination of the national strategic activities for sustainable development within an overall subregional framework.

(ii) Act as catalyst and foster sub-regional exchange of information and experiences available in the research centres of the countries to avoid overlapping of activities and to improve sub-regional research investment opportunity costs.

(iii) Contribute to the support of long term research and training in anti-desertification programmes particularly those aiming at identifying the best local drought and multipurpose species for rangelands, sand, and oases rehabilitation.

(iv) Foster local capacity building and improve scientific cooperation with a particular focus on climatology, meteorology and bio-diversity, water basin management, sand dune dynamics, early warning systems and forest sustainability. Capacity building in the environmental legal field is also very important to enable professionals dealing with Environmental Conventions to understand and take appropriate decisions on policy, legal and institutional issues relating to drought and desertification contained in these conventions.

(v) Assist national Desert Research Centres in mobilizing financial and other resources to implement their national priority research programmes and identify a few centres with excellent facilities (e.g. the Desert Research Centre in Egypt) to serve as sub-regional training and research centres for regional desertification control activities.

b) Framework for Short term activities

73. In the short term, it would be desirable that these institutions put in place a mechanism whereby:

(i) they and member states together with concerned donors review periodically progress achieved on desertification control and re-examine the objectives attained by each project and programme as well as the main lessons learnt during project planning and implementation.

(ii) resources (e.g. economic, technical, logistical, human and legal) are sufficient for the full achievement of the objectives and targets set in the programme/project.

(iii) for the Maghreb countries, new activities are designed and implemented within the framework of the suggested national, subregional and regional activities and in particular, the UN Convention to Combat Desertification, (CCD), bearing in mind the socio-economic conditions of each country and the heavy reliance of populations on natural resources for subsistence. In this connection the UMA Secretariat, the Tangiers MULPOC and FAO should assist countries in the implementation of this convention and in particular to design adequate institutional and legal framework and to disseminate the scientific knowledge and information in this domain.

(iv) Assist the non-UMA countries to follow a similar scheme as the Maghrebine countries. Both the UMA and non-UMA countries should strive to improve their efficiency to combat desertification and drought in their countries and they should:

- continue with the sand dune fixation and stabilization programmes, particularly in threatened villages and irrigated agricultural land and transport infrastructures. The dissemination of information on the best cost/benefit systems utilized for sand dune fixation, including sand dune mechanized planting both in rich and poor clay sand soils should be of great utility;

- persist in the protection and rehabilitation of watersheds prone to desertification/soil erosion through programmes aimed at:

  * **implementing integrated development/community forestry and livestock management activities**

  * **ensuring macro-watershed management and rehabilitation for water harvesting**

  * **minimizing sheet and gully erosion and**

  * **conserving watershed germ plasm**

- re-generating vegetation and sustainable management of rangelands, natural pastures and oases, including the production and conservation of germ plasm;

- facilitating the recharging of underground aquifers and controlling water quality and the correct utilization of such water;

- the scientific design, establishment, tending and whenever necessary rehabilitation of shelterbelts and green belts. For the first, special consideration should be given to tree spacing, appropriate mixture, permeability and species density as well as to thinning;

- protection and rehabilitation of the natural woodlands e.g. acacia woodlands, shrub and steppe vegetation of the arid zones, specially those growing in the desert borders; and

- afforestation and reforestation in arid and semi-arid zones as well as ensuring sustainability in forests bordering the most arid zones.

74. One of the main conclusions of this brief analysis is that desertification has a colossal dimension in the sub-region. Therefore, to cope efficiently with the problem, the provision of adequate financial and skilled human resources is needed. Countries of the region could and should strive to improve substantially the economic and environmental returns of their anti-desertification activities by reducing costs through: (i) applied research; (ii) new and efficient technologies, know-how and even patents and (iii) efficient administration. Substantial savings could be achieved by circulating among countries, information, data base and field experiences of their research and technology centres. Upgrading of training and specialization could help them to reduce administration and managerial costs.

75. But what would help the countries most would be the establishment of a clear, long-term strategy for desertification control within the UN CCD and its articulation in a long-term comprehensive national plan.

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ANNEX 1

LIST OF PROJECTS IMPLEMENTED

(a) Project on Water Resources of the Maghreb (RAB/80/011);

(b) Control of Bayoud, phase I (RAB/84/081) involving Algeria, Morocco and Tunisia;

(c) Project on Management of Water in Rain-fed Agriculture (RAB/88/015);

(d) Development of Pastures (RAB/84/025);

(e) Technology for the Planning and Management of Water Resources (RAB/86/011);

(f) Fixation of Sand Dunes (RAB/86/034);

(g) The Regional Workshop for Sustainable Development (RAB/89/029 involving all Arab countries).

Projects (b) to (f) involve Algeria, Morocco, Tunisia and some Arab countries in the Middle East.

ANNEX 2

LIST OF PROJECTS STILL UNDER IMPLEMENTATION

(a) Projects on the control of Bayoud of Date Palm, Phase II (project RAB/88/024) concerning Algeria, Morocco and Tunisia;

(b) Development of Current Technologies in the Management of Water Resources, Phase II (RAB/89/003) concerning Algeria, Morocco, Tunisia and two other countries of the Middle East;

(c) Technical Assistance on the Mediterranean Environment (project METAP, RAB/89/020) involving Algeria, Morocco, Tunisia and seven other mediterranean countries;

(d) Strengthening of the Planning and Management of Agronomic Research in the Arab Countries (RAB/89/027);

(e) Sand Dune Fixation and Afforestation (RAB/89/034) involving Algeria, Morocco, Tunisia, Sudan and Somalia;

(f) Pasture Development, Phase II (RAB/90/001) concerning Algeria, Morocco, Tunisia and three other Arab countries of the Middle East; regional network for extra irrigation and improvement of water management in agricultural production (RAB/90/005) concerning Algeria, Morocco, Tunisia and five other Arab countries;

(g) Project CEDARE: Assistance to the Centre for Environment and Development in the Arab Region and Europe (RAB/91/016) involving all the Arab countries;

(h) Seminar on Policies and Administration of Domestic Energy in Arab countries (RAB/92/004) for all Arab countries.