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REPORT ON THE IMPLEMENTATION OF THE MASTER PLAN FOR  
COMBATING DESERTIFICATION AND FOR THE CONSERVATION  
OF NATURAL RESOURCES IN WEST AFRICA



SRDC/125

## **IMPLEMENTATION OF THE MASTER PLAN FOR COMBATING DESERTIFICATION AND FOR THE CONSERVATION OF NATURAL RESOURCES IN WEST AFRICA**

### **I INTRODUCTION**

1. Desertification affects 25 percent of the world's land surface and 900 million individuals in more than one hundred countries, especially in Africa -- a disaster continent with 66 percent of its land area affected and 73 percent of its agriculture degraded accompanied by long-term effects like the disappearance of its plant and animal species, drastic climatic changes, massive migrations, emergency aid to population victims.....

2. Since the beginning of the 70s, West Africa has fallen prey to the most severe recurrent periods of drought and the creeping desertification has been advancing at a quantum pace and has even reached, over the past few years, the southern zones of some coastal countries like Benin, Côte d'Ivoire, Nigeria and Togo.

3. In order to cope with this catastrophic situation, the Heads of State and Government of countries affected by the scourge established in September 1973, the Permanent Inter-States Committee for Drought Control in the Sahel (CILSS). Shortly after, the international community adopted in 1977 at Nairobi, the United Nations Action Plan for Desertification Control which formulated recommendations at the national, sub-regional and international levels and charged the United Nations Environmental Programme (UNEP) to ensure the follow-up and co-ordination of its implementation.

4. Quite recently, in June 1994, the Convention on Desertification was adopted following the decision taken by the international community at the Rio Summit in Brasil. Implementation of desertification control and the conservation of natural resources has become, more than ever before, a topical issue and the United Nations Economic Commission for Africa (ECA) has devoted itself to it. This explains why it decided to sponsor (with financing provided by the United Nations Development Programme -UNDP- in collaboration with UNEP) a study on the "Master Plan for the Co-ordination of Desertification Control Programmes and the Management of Natural Resources in the ECOWAS Sub-Region" (RAF/88/047; March 1993). This Master Plan has just been adopted by the organs of ECOWAS and the present report should be seen as a contribution to its implementation in accordance with the 1994/1995 of the work programme of the West African MULPOC of the ECA.

## II. THE DESERTIFICATION PHENOMENON - THE CLIMATE AND EXPLOITATION OF NATURAL RESOURCES IN WEST AFRICA

### 2.1. GENERAL INFORMATION ON DESERTIFICATION

5. In Africa in general and in the Sahel in particular, the desertification and drought phenomenon is not well understood due to lack of specialised scientific staff and adequate equipment. However, the AGHYMET Centre of CILSS as well as the JALDA of NBA have embarked on very promising research activities.

6. The great rivers in the Sahel, the Senegal and the Niger, normally have very irregular flows bordered with vast grazing areas and partially flooded plains as well as temporary off-season farms.

7. The low rainfall pattern in the Sahel also leads to three forms of disaster which get worse considerably in the sahelian and sahelio-sudanian zones :

- the shortening of rainfall period well below the minimum of two and half to three months with cyclical variations ;

- appearance of long frequent drought periods during the rainy season, early and violent rains, sparse and temporary vegetation ;

- worsening of the already sparse rainfall pattern, i.e. the distribution of the same amount of rain in the same region among areas with the most, least or no rains at all. In 1987, the sahelian and sahelio-sudanian zone was a good illustration of this phenomenon. The existence of persistent drought has had innumerable and diversified effects in the Sahel in terms of climatic zones.

8. Since water constitutes the source of life, its absence or inadequacy can cause death among living entities : human beings, animals and plants. Remoteness or scarcity of water leads to onerous construction of schemes in order to gain access to it and it is the women who bear the brunt of it since they have to move in search of it for the purposes of drinking, cooking, washing, watering of gardens and plants during the dry season.

9. A lot of effort is needed for the management and conservation of both surface and underground water. Water can cause erosion and degradation if rains become violent and it is this erosion which gives rise to the desertification process.

10. The main drought periods occurred in the 70s and 80s and served as a warning to the policy-makers in West Africa leading finally to the establishment of the CILSS.

11. The conference held on desertification by the United Nations at Nairobi (Kenya) in 1977 led to better understanding of the actual nature of this phenomenon despite the lack of general consensus on the definition of the concept. The creeping dunes on the edges of the Sahara should not be taken as the only cause of desertification.

12. Anywhere in the sahel with physical or chemical deterioration of the soil caused by human activity leads to the inability of the ecosystem to recover from long or short periods of drought and/or over-exploitation and leads consequently to desertification.

13. The entire sahelian zone could be threatened by desertification through persistent climatic imbalance as a result of interferences leading to irreversible drastic changes and modifications in the composition of the vegetation : disappearance of perrenial plants, thickets and tree cover, general reduction of the bio-diversity, physical deterioration of land, etc.

14. Desertification limits the natural potentials that can easily be exploited : it reduces production and makes it increasingly uncertain. Desertification can occur anywhere with indiscriminate exploitation of the natural vegetation and especially where the land is cleared just to extend farmlands in order to undertake inappropriate farming and animal husbandry with attendant soil erosion.

15. Drought is one of the main causes of desertification and vice-versa. Indeed, drought is caused by insufficient rains (in proportion to the average quantity) in a given area to enable the functioning of the eco-system with particular reference to the ecological balance that could be reversed through the degradation of water resources, soil, vegetation and wild life caused by man for his survival. Such deterioration is sometimes caused by drought or human activity or both in various degrees.

16. Since these problems must be overcome at all costs, the populations develop survival instincts which often lead inevitably to desertification.

17. One of such attitudes considered as general and the most pressing is the over-exploitation of the immediately accessible natural resources : indiscriminate cutting down of fuel-wood, saplings, un-systematic and excessive clearance of land, overgrazing and wandering of animals. Desertification is a complex phenomenon, resulting from the activity of several actors with implications in all areas of human behaviour giving rise to a chain reaction of cause and effect with impact on the constituent elements of the eco-system.

18. Desertification tends to be regionalised. Analysis of this regionalisation trend in the Sahel is the basic difference between



the agro-climatic and the sensitive zones on the one hand, and the so-called "passive" zones such as the saharan and coastal fringes, and the "active" zones on the other hand due to bio-climatic factors in the sahel and the south of saharo-sahelian zone. This leads to the observation that desertification is recreated immediately by man in conditions that are favoured and exacerbated by drought.

## **2.2.THE CLIMATE IN WEST AFRICA AND DESERTIFICATION**

19. The dramatic effects of drought in the sahel, which have shown the risks involved in project design as well as the growing importance of the concept of global warming according to international opinion, are such that the climatic factors are currently considered as determinants for the evaluation of the availability and requirements in any water resources development scheme.

20. The following section deals with a brief analysis of the climatic elements at the sub-regional level and a presentation of the recent and future evolution of the climate in the sub-region in relation to the desertification process.

### **2.2.1 - Recent climatic evolution**

21. In contrast with other continents and even other regions of Africa, this sub-region has no prominent mountains, either in the east-west or north-south direction likely to break the trade winds. Consequently, the climate in West Africa is largely determined by the movements of the Inter-Tropical Convergence Zone (ITCZ). Therefore, the seasonal variations in the rainfall pattern in the sub-region are characterised by the occurrence of a wet season between July and September on the southernmost latitudes (between 12 and 16 degrees N) and from April to November further south.

22. Along the coast of the gulf of Guinea, (between 5 and 8 degrees N), the rainfall pattern is characterised by a slight bi-modal trend with double maxima in May and October separated by a short dry season in July and August.

23. The variability of the African rainfall is very high from one year to another and throughout the decade, especially in the tropical semi-arid and sub-humid parts of the continent (Hulme, 1992). This variability is an inherent feature of the African climate and it has been demonstrated that this situation has persisted over several centuries (Nicholson, 1978).

24. It was also observed that in Africa, rainfall anomalies present a clear spatial homogeneity both in single separate years and over decades. This was why Nicholson (1986) identified four

characteristic types of anomalies in rainfall distribution on the continent of Africa, namely :

- the dry north and south tropical fringes; wet equitorial regions;
- wet north and south tropical fringes; dry tropical regions;
- the entire dry continent;
- the entire wet continent.

25. It is estimated in this light that three factors are particularly important to the climatic changes in West Africa:

i) with the persistance of drought in the sahel there is a probability for the development of important repercussions in the flow of water courses to increase;

ii) large-scale meterological research activities provide results which tend to explain the drought mechanisms on physical basis;

iii) if the recent low rainfall pattern is effectively linked to the physical changes in the climatic system brought about by man's activities, then the persistence of this situation and its consequences could be more acute and potentially more serious than as it was before.

26. Research into the causes of drought in Africa was recently undertaken by the United Kingdom Meterological Bureau (Folland et al., 1991). This showed that there were strong correlations between anomalies in Surface Temperature of the Sea (STM) at the global level and the occurence of wet and dry periods in Africa.

27. In this case, the simulations using models numerical representation models of the climate were undertaken by the United Kingdom Meterological Bureau in which rainfall anomalies were simulated in the sahel over the last seven years : 1950, 1958, 1976, 1983, 1988 and 1990 (Rowell et al., 1991). In respect of these simulations, the model was initialized with special distribution of the STM effectively observed on the entire globe in each of the years without modifications in other parameters. Abundant rainfall in the sahel obtained through these simulations based on the anomalies of the June STM reinforces the idea that large-scale STM anomalies can alter the rainfall pattern in the sahel in a significant way.

### 2.2.3 - Future climatic evolution

28. During the last decade, a number of important attempts to model the climate were undertaken with the purpose of assessing the effects of the increase in the concentrations of carbonic and other greenhouse gases in the atmosphere on the future evolution of temperatures and rainfall. These research activities were based on

models drawn solely from the General Circulation of the Atmosphere (AGSM) but recent research focus on global circulation models with ocean-atmosphere interface. The general result of these experiences was that in order to double the concentration of greenhouse gases, the balanced average temperature of the earth could increase from 1.5 to 4.5 C. The best estimation of global warming was 2.5 °C (Houghton et al., 1990). There is uncertainty in the date of this global warming due to a number of factors.

29. The current level of knowledge of the drought mechanisms in the sahel as well as climatic changes likely to occur in West Africa in the future enables us to identify those factors behind the current drought which suggests that the drought could still continue for a certain number of years. The factors are as follows:

- the differential warming of the oceans especially in the southern hemisphere and the Indian ocean reflected by a spacial distribution of STM anomalies likely to lead to reduction in rainfall, especially in the tropical zone of North Africa. The cause of this differential warming in the two hemispheres is not clearly explained: it could be linked to the changes in the thermo-saline circulation in the Atlantic or to global warming caused by human activities.

- former bio-geophysical changes like the increase in the albedo and decrease of soil humidity in the sahel which lead to the persistence of drought tend to prevent the return to their former rainfall pattern;

30. Increase in the concentration of carbonic gas in the atmosphere which leads to the general warming at the lower strata of the atmosphere. Even if concentrations of carbonic and other greenhouse gases could be stabilized to current levels, it is likely that important changes could affect temperatures and current rainfall patterns in West Africa. It is therefore important to take this vulnerability into consideration in the evaluation of availability and requirements of water resources in the subregion.

## **2.3 - EXPLOITATION OF NATURAL RSURCES IN WEST AFRICA**

### **2.3.1 - Exploitation of soils**

31. In the sahelian zone of West Africa, land is exploited for either agricultural or grazing purposes. Forestry is a secondary activity. In the sudan and sudano-sahelian zones, environmental degradation and low agricultural productivity due to erosion are aggravated through over-exploitation of the natural ecosystem resulting from ever-increasing population growth in relation to available resources. This over-exploitation is reflected by:

- reduction of the fallow period and crop rotation system: the former fallow lands for the purpose of recovering their structure

and fertility are now cultivated each year most often without crop rotation. This over-exploitation leads to their impoverishment which is rarely compensated through the use of fertilizing elements. This situation forces the farmers to expand the cultivated land areas to include marginal land leading to low output and accelerated soil degradation. Currently the extension of cultivated land is the most important factor in the degradation of farmlands.

- overgrazing on lands: the scarcity of grazing land and the increase in the density of cattle population lead to overgrazing. This is aggravated through the intensive trampling by the cattle which also destroys the vegetation cover giving rise to erosion. This over-grazing can lead to the disappearance of the best fodder species replaced often by other species without any nutritive value.

- excessive felling of trees: in order to meet the increasing small- or large-scale need for fuel-wood, the felling of trees, wood-lots or the removing of the bark of trees are done at such a rapid pace that quick regeneration is virtually impossible. This leads to gradual disappearance of the tree cover giving rise to savana vegetation or arid sahelian steppes as well as to soils exposed to water and wind erosion;

- uncontrolled bush fires: this practise considered as useful by herdsmen and farmers can lead to excessive erosion if it is not done with precaution. The resultant vegetation cover is normally incapable to stop run-offs ; the soil is subjected to lashing rains. Furthermore, the stripping of the land, warming and loss of organic matter also lead to soil degradation.

### **2.3.2 - Zones mostly threatened by desertification in the subregion**

32. All the agro-climatic zones of West Africa and the sahelian region in particular are subject to specific degradations in the general degradation process.

#### **2.3.2.1 - The saharo-sahelian zone**

33. Wind erosion is carried out by general movement of dunes and desertification of flatlands. This phenomenon is aggravated by water erosion and animal husbandry. Their effects include:

- disappearance of grazing lands and forests;
- the threat of dryness and silting up of the oases and dry-farming areas;
- scarcity and difficulty of access to water;
- migrations towards the south that could to the disappearance of human activities;
- man's dependence on food aid.



### **2.3.2.2 - The sahelian zone**

34. The causes here are similar to those in the saharo-sahelian zone. In addition to the general and temporary movement of sand, desertification of rocky areas can lead to the following:

- excessive degradation of pastoral and forest resources;
- limitation of water resources and degradation of soils leading to lack of interest in dry farming;
- concentration of agriculture in arable lands and alluvial plains which become over-exploited;
- emigration caused by lack of resources, urban growth and social dislocation.

### **2.3.2.3 - Sudano-sahelian and sudan zones**

35. Erosion caused by water and wind is enhanced through clearing of land, tree felling and the cultivation of cash crops. Desertification is also caused through contiguous rings (Rochette, 1988). Water is lost through run-off and evaporation. The soils become exhausted and lose their structure. Their effects include :

- the reduction of exploitable resources, leading to insufficiency of food and energy;
- over-exploitation of remaining resources;
- destabilisation of the ecosystems;
- emigration, urbanisation, lack of community, family and village solidarity.

### **2.3.2.4. - Southern sudano-guinean zone**

36. There are spontaneous installation zones from dry regions. These zones are demarcated by "pioneer fronts" (Rochette, 1988). Land clearing and tree felling along these "pioneer fronts" are the main causes of desertification, degradation of soils and water resources in these resources. The effects include :

- destabilisation of eco-systems ;
- creation of settler farmers (especially in respect of cash crops like cotton and groundnuts);
- commercial deforestation to meet urban needs.

37. Certain zones, (due to their geographical, demographic and

agro-climatic characteristics) are especially sensitive to desertification :

- the saharian fringe : immediate proximity, the edge of the sahara creeping southwards ;
- the coastal fringe in the south (Mauritania, Senegal, Gambia) : desertification is manifested through movement of sand dunes along the coast, the lowering of the water tables containing fresh and salty water;
- high density population zones divided into 2 sub-groups :
  - \* contrasting region :
    - general and rapid erosion of soils,
    - total and advanced degradation of vegetation cover ;
    - loss of water through run-off towards the external central plateau in Burkina Faso (middle Dallos valleys in Niger).
  - \* ancient groundnut and cotton basins (plains and plateaus):
    - soil erosion and exhaustion,
    - stripping and ageing of wooded parks.

38. Such regions are found in Senegal (Sine Saloum), the centre of Mali (San-Tominian), Burkina Faso (Central Plateau), in the centre-south of Niger (Ader Doutchi Maggia).

- the degradation of arable plains and fluvial zones are characterised by :

- . limitation of floods and lowering of water tables
- . disappearance of forests and shoals
- . acute recession of flooded pastures and off-season crops (middle and lower valleys of the river Senegal, the middle delta valley of the Niger, the three Voltas, lakes, permanent and temporary ponds.

- the zones of agricultural "pioneer fronts" : agricultural activity is accompanied by indiscriminate land clearing and excessive clearing of land (Upper and Middle Casamance, East of Senegal, the Sikasso and Segou regions in Mali, south of Burkina Faso, Say-Torodi areas in Niger).

#### **2.2.3.3. Deforestation/Tree felling and attempts at reforestation in the sub-region**

39. Forests in West Africa have been destroyed through the axe and

fire leading to the loss of important resources in favour of agriculture. Deforestation was considered as an act of civilisation over a long period. Massive and disorderly exploitation of the tropical forests is a recent phenomenon with serious consequences to the populations living in the forest.

40. Currently, the degradation of tropical forests is irreversible due to climatic conditions and some social factors ; the soil becomes sterile or it is lost through erosion while animal and plant species disappear causing human suffering.

41. Excessive exploitation of the forests is one of the main socio-economic phenomena in contemporary Africa : reduction of forest as an asset, very rapid degradation of the environment. Forestry policies in the sub-region therefore tends to put a stop to this degradation and rehabilitate the degraded areas by involving the population in decision-making.

42. Man is to blame for this due to his exploitation methods which contribute to the degradation of the natural resources and agricultural potential with the resultant pockets of desertification.

43. Many studie and activities have been undertaken which underscore the the magnitude of the problem, its complex nature for better understanding of the diversity of the situation and proposal of adequate solutions. But the local situation differs from one area to another since there is imbalance between fuel-wood resources and demand for them.

44. Dependence on fuel-wood is very pronounced, with 56 % of total energy coming from wood and charcoal. The situation in the sahelian subregion is a case in point.

45. The problem of deforestation and deterioration of tropical forests is posed in terms of the environment, food security, agriculture, drought and desertification control.

46. The collection of fuel-wood and deforestation two closely-linked phenomena, but the relationship is more complicated than that. Fuel-wood is a forest product and its excessive consumption contributes more or less to the exhaustion of forest resources. Deforestation is the result of a mismatch between population growth and available natural resources, increased need for new farmlands, farming methods, animal husbandry techniques, bushfires, wood consumption and growth of villages.

47. According to an FAO study, extensive agriculture accounts for 70 % of deforestation in Africa against 50 % in Asia and 35 % in Latin America. Annually, deforestation affects 7.8 million hectares of dense humid forests and 3.8 million hectares of dry forests and wooded savannas. The land is irreversibly degraded, agricultural

production becomes stagnant, the forest is attacked destroying its regenerative capacity through the ever-increasing rural populations practicing extensive agriculture leading to the shortening of fallow periods and soil impoverishment and the search for new lands.

48. It is estimated that more than 15 million hectares of dense forests were cleared from 1960 to 1985 in Côte d'Ivoire, Nigeria and Ghana to make way for coffee, cocoa, oil-palm and hevea plantations as well as food crops needed to feed the plantation workers.

49. The destruction of the tropical forests endanger many species including genetic resources, increases the atmospheric temperature, contributes to the advancing of the desert, reinforces the greenhouse effect and widens the hole in the ozone layer.

50. Conservation of the forest implies the striking of a balance between agriculture, forests and man. The limitation of its degradation is linked to the external economic and political orientations in the forestry sector : improvement of farm methods, identification and demarcation of the village lands that could support permanent agriculture, regeneration of degraded soils and introduction of integrated agricultural systems leading to the production of both agricultural and forestry products.

51. In the Sahel, widespread animal husbandry has also led to the over-exploitation of lands, with serious consequences for the regeneration of forests giving rise to environmental degradation, especially around water points and migration paths.

52. The forests of Africa are dwindling despite their extremely important role of protection, regulation production for both the natural environment and social welfare and development. The example of Sierra-Leone is a case in point : two centuries ago, 75 % of the country was covered by forests. Uncontrolled exploitation for the purpose of supplying the British market reduced the forest cover by 38 % with attendant consequences for the entire country. The only remaining forest is the Gola forest close to the Liberian border. But it was felt that a sawmill constructed with German capital would be met with stiff resistance (D. Samake).

53. Destruction of the tropical forests can be measured : each year, 0.6 % of the tropical forests disappear in America, 0.61 % in Africa, 0.60 % in Asia according to Fao sources in 1982. These are the only estimations made in respect of dense forests.

54. It is estimated that each year in the world, deforestation affects 0.60 % of the dense and open forests. Thus, 10 % of the tropical forests will disappear by the year 2000. Exploitation of forests, farming on baked land and animal husbandry exhaust the soil ; erosion is intensified and the genetic heritage is



impoverished. In FAO reports, the term "deforestation" is used to mean the total clearing of trees and the use of the land for other purposes. Man's intervention may start from partial modification to total transformation in both quantitative and qualitative terms. The destruction of the forest is inimical to the biological potential as well as the protective and regulatory potential of raw materials. Deforestation, which is man-made through traditional farming methods constitutes an ecological disaster.

55. In order to reduce the rate of destruction and make forest conversion less harmful in the long-term for man in the tropical environment, it is important for this conversion to guarantee the development possibilities while at the same time preserving the forest zones for ecological and socio-economic purposes.

56. Henceforth, there is the need for sustainable development of tropical forests and natural resources within the framework of the many action programmes. This is why in Africa especially, it is very urgent to co-ordinate efforts with those of industrialised countries of the North with the aim of protecting the endangered tropical forests and promote forestry research.

57. Various joint activities are needed to implement the international measures and joint global strategies developed at Rio in order to rehabilitate the damaged forests.

58. Reforestation means the planting of trees in the treeless region, on abandon lands and uncultivated fields or in areas where low quality species are replaced with more productive ones. The aim is to rehabilitate areas devastated by man, animals or natural phenomena such as winds, floods and other climatic disasters.

59. Afforestation on the other hand is the planting of trees especially in the arid regions of the sahel. The Third World countries and especially in Africa, most of the forest have almost been destroyed through over-exploitation. Plants are needed to replant these zones since forest are indispensable to the quality of life and life itself.

60. Reforestation aims at protecting and replenishing the fertility of exhausted soils and abandoned lands in order to halt the advancing desertification.

61. Several countries in Africa have, over the past years, paid particular attention to the possibility of satisfying the need for wood due to the protection and management of the natural forest, reforestation through empowerment and active colaboration of the rural communities.

62. In Mali for example the second phase of a forestry project financed jointly by the World Bank and France has undertaken a rural forestry operation in the Koulikoro region including

agropastoral management pilot operations by the village communities and tree-planting in the rural areas.

63. This operation was especially based on the organization of the rural folk through village cooperatives and other traditional associations for the purpose of managing, protecting and exploiting the village lands through the active participation of the community members.

64. Although this project passed through difficult moments, it was profitable in the sense that the community was involved in the management of the natural forest (open forest, and wooded savanas). It is important to incorporate sectoral programmes of community reforestation into other rural development programmes: village water supply, food self-sufficiency and primary health care. Reforestation within the framework of rural forestry programme should henceforth be considered as part and parcel of this overall development programme so as to further involve the rural cooperations.

65. If there is any economic gain in the commercialization of wood in West Africa, felling of trees without replanting can lead to the disappearance of vast tropical forest whose role is crucial in desertification control.

### **III OVERVIEW OF THE STRATEGIES, PLANS AND PROGRAMMES FOR COMBATING DESERTIFICATION AND FOR THE CONSERVATION OF NATURAL RESOURCES IN WEST AFRICA**

66. In a study forming part of the multi-sectoral assistance project by the ECA/UNDP to the ECOWAS (Project, RAF 88/047), various strategies and desertification control programmes and plans as well as the conservation of natural resources were reviewed in the West African sub-region. The document describes their multiplicity, diversity and on-going prospects. The important features of this presentation are as follows :

#### **3.1 - Multiplicity and diversity**

67. Following the drought years starting from 1968 which afflicted the economies of the subregion, the African countries members of the CILSS intensified with assistance from the international community desertification and drought control.

68. Between 1985 and 1991, almost eight years of desertification control plans and natural resource management have been developed in the subregion. From 1985 to 1989, two strategies were adopted by the Heads of State and Government of the CILSS, namely:

- regional strategy for drought control and development adopted at Nouakchott in 1985;

- the revised strategy of drought control and development known as the Nouakchott strategy.

69. Later, a conference of experts organized by the CILSS adopted " the Segou orientations" whose objective was to evaluate after four years the applicability and operational nature of the two strategies while proposing the consideration of its important issues related to drought and desertification control.

70. The regional strategy for drought and desertification control (RSDDC) which was considered by the States as the fundamental strategy for drought, desertification control and development in the subregion led to the development of national desertification control plans (NDCP) started in 1986 in the sudano-sahelian zone of the CILSS.

71. Since that date, four other natural resources management and planning exercises have been, or are being developed in the ECOWAS States. These plans have their own strategies, objectives and programmes and they are sponsored and supported by partners in cooperation. These include:

- the environmental action plan (EAP) sponsored by the World Bank;
- the tropical forestry action plan (TFAP) supported by FAO and UNDP;
- the strategy of the International Union for the Conservation of Nature (IUCN), started by IUCN itself;
- the natural resources management plan / village land management, sponsored by the World Bank, UNDP and USAID.

72. The justification given for the design of all these plans was that the development programmes implemented in the subregion over the past twenty five years have not led to the expected results: desertification for example has continued to advance everywhere and has even reached the southern part of the zone. Such failures can be attributed to ineffective strategies due mainly to the sectoral nature of approach which was aimed essentially at implementing ad-hoc and in-coherent measures to combat bushfires, reforestation, etc. and more especially to the fact that such measures were not integrated into the logical scheme of things over the long term.

### 3.2 - Future prospects

73. In its desertification control effort and conservation of natural resources, the CILSS has been at the helm of affairs in refining, over the years, its national and sub-regional strategy. Before reviewing the salient issues contained in the recent Master Plan of the ECOWAS an attempt will be made to point out later in

the study not only the future prospects of the CILSS made known at the International Symposium held at Niamey, but also the Convention on desertification which was adopted recently last June. Finally, we shall point out the experience in the on-going desertification control within the framework Of the NBA JALDA project financed by Japan.

### **3.2.1. Future prospects of the CILSS**

74. In the speech delivered on 14 October 1991 at the opening of the international symposium held at Niamey, the Executive Secretary of the CILSS pointed out rightly that there were two major problems in the Sahel and also in the sub-region :

- the multiplicity of plans and programmes leading to overlappings and even competitions in actions, etc.
- the non-consideration of the social and environmental impact in the evaluation of activities.

75. It was in light of this that resolutions that were made placed special emphasis on the harmonisation and integration of plans and strategies in the social and economic development in the sense :

- of adopting in each country of the Sahel of a single integration framework ;
- of budgetary programming of integrated activities in agreement with partners in development.

### **3.2.2. Prospects after UNCED - International Convention on desertification**

76. As part of the preparations for the United Nations Conference on Environment and Development (UNCED), African countries held three meetings in Cairo, Abidjan and New York to adopt a common position on environment and development.

77. During these meetings an African programme on environment was developed including strategies and priority action programmes. African countries came up with a set of about 20 priority programmes which were presented at the Rio Conference in Brazil. This reflected the common African position which represented the points of view of all bodies concerned (Governments, Non-Governmental Organisations , Women and Children's Associations, etc.).

78. If the priority action programmes of the various States and especially those of the sub-region are analysed, it can be observed that they match with those adopted jointly by the African countries. This shows some consistency in the definition of priority concerns of the various African countries. Furthermore,



issues concerning bio-diversity, the ozone layer climatic change were at the forefront of the discussions.

79. Chapter 12 of Agenda 21 adopted at the Rio Conference emphasising the global nature of desertification, was a great leap forward in the international awareness of this scourge and the need for a concerted action at the international level. It contains recommendations for action at the national, regional and international levels in the following six specific and interrelated areas :

a) reinforcement of basic awareness and development of information control systems while paying attention to the economic and social aspects of the eco-systems;

b) combating of soil degradation through conservation and re-forestation;

c) development and reinforcement of integrated management programmes towards the eradication of poverty and the promotion of alternative livelihoods in areas threatened by desertification;

d) establishment of global desertification control programmes and their integration into national development plans and environmental development strategies;

e) development of aid plans for drought victims and environmental refugees;

f) encouragement and promotion of popular participation, environmental education with emphasis on desertification control and management of drought effects.

80. Agenda 21 also emphasised the need for co-ordination and co-operation at the international level and recommended the strengthening of sub-regional institutions like the AGHRYMET, ACMAD, CILSS, etc.

81. Chapter 12 of Agenda 21 (paragraph 12.40) also recommended to the United Nation's General Assembly to establish an Inter-Governmental Negotiation Committee to prepare an International Convention for desertification control in countries affected by drought and desertification especially in Africa.

82. At the fifth session of the Inter-governmental Negotiation Committee on Desertification (INCD), an international agreement was finalized in Paris on 18 June 1994. Indeed, delegates of more one hundred governments arrived at a compromise on the mode of financing linked to the implementation of the United Nation's Convention on desertification control.

83. The Convention was supposed to be submitted for signature in

the Autumn of 1994; it's implementation would be based on the ratification by fifty countries, the process which would take about 1 to 2 years to complete. The Convention will put in place a network of local projects, national action programmes, regional and international cooperation to combat desertification and promote exchange of information, research and training.

84. Although there were no new financial resources, the Convention wanted to make it an obligation for the industrialized countries to mobilise resources to finance these activities. The role of the NGOs in the implementation of the Convention was also found to be very important; An international network has already been put in place to coordinate their efforts.

85. Two resolutions were adopted towards the development of the Convention:

- emergency action for Africa, which emphasises partnership of the African countries concerned and donor countries;
- the organization of the 6th session of the INCD was planned for January 1995.

### **3.2.3 JALDA (Japan Agricultural Land Development Agency) - Desertification control**

86. The project was implemented within the framework of the Niger Basin Authority made up of 9 member countries.

87. Activities undertaken in the context of this project include two stages :

- one general study for agricultural development in river Niger basin;
- one specific study on desertification control in the Niger basin.

#### **a) General study for development in the Niger basin**

88. The aim of this study was to understand, on the one hand, the actual state of desertification in the Niger basin and on the other hand, to propose global control measures against this phenomenon in respect of agricultural development.

89. The study was conducted by the Japan Agricultural Land Development Agency (JALDA - English acronym) and financed by the Japanese government in the amount of about one million Yen.

90. It was implemented over a period of five years (1985-1990) with assistance from Japanese experts and collaboration by an NBA expert. Several missions were made to member countries for data collection. The final report was disseminated among member

countries.

b) Specific study on desertification control

91. In the general study mentioned above, a "basic concept for desertification control measures" was identified.

92. This concept focused on a certain number of proposals and approaches aimed at enabling the populations concerned to cope with the desertification phenomenon within the framework of sustainable development. To this end, this study was aimed at developing a number of important multi-disciplinary measures relevant to the local conditions and livelihoods while involving protection and stabilisation activities of land as well as activities linked with agricultural practices like vegetable production, water resources management, rural populations, transport and infrastructure, energy, education and training.

93. This study was also financed by the Japanese government in an amount of 1 billion Yen over the five-year period, 1990-1995.

94. Initially, the study focused on a land area of about 200 km<sup>2</sup> in the region of Torodi (Department of Tillabery) in Niger. An experimentation zone of 100 ha was rehabilitated on river Goroubi (tributary on the right bank of the Niger) located at 70 km west of Niamey. The JALDA centre is composed of :

- 1 building serving as offices ;
- 1 room serving as store (storage of equipment and materials)
- 2 village wells and one spillway - meteorological and hydrological observatories and;
- experimentation farms for rice, fruit trees, fodder and vegetables, and ;
- soil protection tests.

95. In addition to soil protection measures, monitoring of the spread of desertification in the zone would be undertaken through remote sensing. Agricultural paths within the experimentation plots were rehabilitated and plans were made to construct a road to open up the zone. Finally, the project financed its entire operations including its staff.

96. On-going experimentations needed close co-operation from national agencies (ONAHA, INRAN) or regional agencies (AGHRYMET, ICRISAT, HYDRONIGER).

97. It must be noted that the general study proposed similar experimentations on 55 other sites in the Niger basin whose financing is being sought.

#### **IV. IMPLEMENTATION OF THE MASTER PLAN FOR COMBATING DESERTIFICATION AND FOR THE CONSERVATION OF NATURAL RESOURCES IN WEST AFRICA**

##### **4.1. ECOWAS Master Plan for combatting desertification and management of natural resources**

98. As stated in the preamble of the ECOWAS Master Plan for the coordination of desertification control programmes and management of natural resources which was developed by consultants under the auspices of the ECA, UNDP and UNEP, this Master Plan is not a new plan for combatting desertification but a coordination plan against desertification and management of natural resources undertaken in the ECOWAS subregion. From this point of view, the plan does not contain any innovations with respect to programmes and projects, but it attempts rather to ensure coordination and harmonization of activities undertaken in the subregion in this domain while emphasizing the dire need for the priority implementation of activities at the grassroots level in the fields of water, livestock, energy and forestry with a bottom-up approach while establishing a grassroot's administrative unit throughout the country (district, canton, subprefecture, etc..).

99. In an attempt to involve experts from member states and those from the various inter-governmental and international organizations in the review of conclusions and recommendations of the study conducted by consultants from the ECA, UNDP and UNEP, the ECOWAS Executive Secretariat organized a seminar at Ouagadougou in Burkina Faso from 14 to 16 March 1994.

100. In order to achieve the set objectives of the ECOWAS Executive Secretariat which is the promotion of concerted and coordination activities in desertification control, the strategy of the Master Plan was focussed on the following elements:

- political commitments through a political decision to be taken by the conference of Heads of States and governments;

- strengthening of the ECOWAS Executive Secretariat which should play a catalytic role in the effective implementation of the Master Plan for the economic integration of the subregion;

- establishment of a subregion consultative committee needed for the coordination of the various desertification control plans, strategies and programmes;

- strengthening the cooperation links among the ECOWAS, IGOs, NGOs and funding agencies as well as international organizations like the CILSS which has played a leading role in this domain. The UNEP and the ECA sponsored the study with financing provided by the UNDP.



101. As part of the implementation of the Master Plan, four priority action areas were adopted, namely:

- the water domain;
- soils domain;
- forestry and energy domain;
- animals domain.

102. The choice of activities to be undertaken is based on the following guidelines :

- a) integration of activities aimed at promoting a better horizontal integration ;
- b) complementarity of projects with ecological specificities
- c) acceptability of projects by the populations.

103. The components of minimum priority action programmes selected on the basis of recognised intervention areas are as follows :

1. Integrated management of drainage and river basins ;
2. combating the invasion of rivers and lakes by floating weeds ;
3. Establishment and management of forest reserves
4. Monitoring of the ecosystems and evaluation of the desertification phenomenon
5. Development of meteorological infrastructure and co-operation in the field of meteorological applications;
6. Inventory of water resources and the making of a sub-regional map of hydro-geological resources.

104. During the 17th meeting of the ECOWAS Commission on Agriculture, Industry and Natural Resources held in Lagos, Nigeria from 14 to 18 June 1994, the ECOWAS Master Plan was discussed by the representatives of member States , IGOs, NGOs and international organisations like the ECA. The meeting approved the Master Plan and a resolution was adopted in this respect for submission to the Council of Ministers and the Summit of Heads of State and Government of member countries.

#### 4.2. Implementation of the Master Plan for combating desertification and conservation of natural resources

105 As was stated in the paragraph above, the ECA and the West African MULPOC were involved right at the beginning in the preparation, discussions and adoption of the West African Master Plan. Therefore, the work programme of the ECA provided for the participation of the West African MULPOC in the implementation of the Master Plan for combating desertification and conservation of natural resources in the sub-region.

106. In the process of implementing the Master Plan for combating desertification and conservation of natural resources, it would be of great importance to avoiding the wasting of effort and energy in the sub-region. This is why one cannot help commending the establishment of a sub-regional Consultative Committee advocated by the ECOWAS and which will be an appropriate instrument for the co-ordination of the various plans, strategies and programmes for combating desertification and conservation of natural resources.

107. As has rightly been pointed out by the CILSS (May, 1992), "the strategy for combating desertification is not a network of orientations....this strategy is first of all one of managing natural resources in order to contribute significantly to sustainable development of countries". Since the fundamental objectives are food security, energy security, contribution to human-centred and sustainable socio-economic development, the CILSS which has rich experience in the field, places emphasis on six basic issues which need to be adopted for the implementation of the Master Plan :

a) the active and voluntary participation of the populations. This is to re-affirm the empowerment of communities and organisations in the management of their village lands while enabling them to participate fully in combating desertification and conservation of natural resources of their countries since they play a front-line role in the improvement of the productive potential at the individual, family and collective level.

b) the global approach includes :

i) the taking into consideration of all sectors in order to ensure the development and pre-eminence of a single factor, i.e. multi-sectoriality ;

ii) integration of activities of these various sectors instead of a mere juxtaposition ;

iii) permanent dialogue and co-ordination of activity.

c) management of the village lands and territories. This must

be based on good knowledge of the physical, economic and socio-cultural environment while considering their evolutive and dynamic nature since that has well been dealt with by the CILSS in its publication entitled Management of village lands : concepts and operationalisation, 1991.

d) strengthening of institutional support and services. This should be reflected through:

- improved land legislation and regulatory texts for combatting desertification and natural resources management;

- improvement in the performance of technical support services of the State (organization and methods of work, equipment and adequate staff);

- improved efficiency of regional services while considering the transnational dimension of desertification.

e) improvement of research, training (including the rural folk). In order to achieve this, research activities should :

- give high priority to the development of drought-resistant plant and animal species;

- conduct studies on desertification, ecosystems and appropriate control methods;

- intensify information and technical and scientific exchanges;

- give the required importance to local experience.

108. With respect to training, it should meet two basic needs in desertification control, namely:

- training of rural actors in the understanding of the drought and desertification phenomena and in appropriate methods and techniques;

- production of skilled man power in all the disciplines concerned with environment, management of village lands and territories.

f) strengthening and coordination of assistance.

109. It should be pointed out that conservation and rehabilitation of the environment are a long-term activity with rather slow profitability. Therefore the problem of recurrent responsibilities must be seen as a way of supporting the activities undertaken for a purpose of achieving technical and financial autonomy.

110. As regards coordination of assistance, it should be done at the national and subregional levels in cooperation with the subregional consultative committee proposed above and in close collaboration with all the actors.

4.3 - Modalities for implementing the Master Plan  
The CILSS strategy in the context of a  
subregional approach

111. In this section, we shall recall briefly the modalities for implementing the strategy for combatting desertification and conservation of natural resources stated in the pamphlet published by the CILSS (CILSS, Ecology - Environment Service, May 1992) and whose effective implementation will be of very great importance for the subregion.

A - At the National level

112. The implementation of the CILSS strategy refers to the National Desertification Plan /Management of Natural Resources (NDCP, MNR) or an equivalent plan that could be given any other designation based on national decision.

113. The NDCP/MNR of the CILSS is a diagnostic document for the rural environment containing national strategies supporting the LCD activities. It is also a programming document outlining the programmes ( in the short, medium and long term) to be implemented for the management of natural resources and sustainable development.

114. The programmes developed on the basis of the six fundamental strategies do not focus only on technical activities. They make room also for measures to be implemented at the institutional and organisational level (land legislation measures, decentralisation, institution-building, etc.). Activities to be undertaken concern both the ecological rehabilitation activities and research activities aimed at improving the socio-economic conditions of the populations. These have to do with real development programmes which integrate the following sectors : agriculture, livestock, forestry, water-supply, health, literacy, etc. with planning as the pivotal sector.

115. Furthermore, the NDCP/MNR ( or its equivalent ) must be integrated into the social, economic and political development strategy of the country. In other words, it must constitute one of the basic documents that would contribute to the social and economic development of the country.

116. In the adopted approach, the CILSS suggests the following, namely to :

- 1) refrain from opting for the hasty conduct of too many



studies for the creation of numerous dossiers aimed at mobilising funds to the tune of several tens of billions francs.

117. According to the CILSS document, desertification does not relent in its advance but success can be achieved only through well-conceived and programmed activities both in time and space. The impact of any activity is not measured in terms of financial outlay. Modest activities sustained by firm political will, consistency of effort and commitment understood by all are worth than expensive, huge projects that are almost always poorly managed. There is the need rather for a "step-by-step approach" and dynamic programmes with focus on macro-economy and financing ;

2) consider the PLDP/CN as the basic document to guide management of natural resources. It is a reference document for the definition, formulation, execution, follow-up and evaluation of related projects.

3) accompany the provision of funds with legal, institutional and organisational measures (decentralisation, land tenure, promotion of local savings, etc.) ;

4) refrain from using two juxtaposed approaches with one approach leading to project dossiers of the five-or three-year plan, and the other approach to LCD project dossiers. Indeed, everything must be done to ensure that the LCD projects form part of the economic and social development plan.

118. In the Sahel, the environment serves a useful purpose if only it can guarantee sustainable development, including rural development. It has also been suggested by the CILSS that national projects depart from the classical approach and show the following characteristics :

- they are presented as programmes integrating various other projects with similar central objective in a given geographical area ;

- the basic activities are those linked with the management of village lands based on territorial management ; they are multi-sectoral.

- they do not lend themselves only to financial assistance but also to institutional and other measures (see, 3 above).

- they embrace all activities already being implemented or those yet to be started in the areas under consideration while ensuring harmonisation of their objectives, complementarity and functional integration ;

- the already cited programmes are multi-donor programmes based on the search for permanent co-ordination and consultations

from the local level to the national level through the involvement of rural communities and partners in co-operation ;

- these are not ad-hoc programmes, they constitute long-term commitments from 15 to 20 years with phases spanning 3 to 5 years;

- the approach is continuous with activities being defined and improved as new requirements unravel on the basis of acquired experience and skills.

119. It is suggested that in each country, a National Desertification Control Committee should be established and existing organs strengthened in order to be able to carry out follow-up and evaluation activities as well as orientation in the area of LCD/MNR

#### B - Sub-regional and regional activities

120. At the sub-regional level, the CILSS has proposed three types of activities to be undertaken to sustain effort at the States' level and to consolidate the gains :

- inter-sahelian assistance : even if the sahelian States are faced with the same challenge, the approach and procedures differ from one country to another with differences occurring in the capitalisation of experiences and the level of success in resolving problems. A cross-exchange of experiences and know-how should improve the performance of activities. This inter-sahelian assistance can be realised through training courses, study trips, short-term sahelian expert assistance, networking that enables the creation of links among the various contributors at both the national and local levels (projects, provincial services, etc.), the publication and dissemination of bulletins, books and the like. This assistance does not exclude the opening up to the rest of the world and to benefit from the existing pool of skills and know-how at the international level.

- reflections : in the area of LCD development new avenues must be examined carefully, analyses and reflection continuous in order to discern the loopholes, identify mistakes made and search for new approaches, etc.

- major regional projects : these focus on activities that include the transnational dimension of the phenomenon. They are activities that cannot be undertaken by a single country, or those which form part of harmonised national components and which constitute a set of complementary and synergetic projects.

121. This pragmatic approach by CILSS could contribute immensely to the co-ordinated efforts in combating desertification in the sub-region.

#### 4.4 - Organisational frame-work for the sub-regional desertification control action programmes

122. According to article 4 of the International Convention on Desertification Control, "African member countries.....can delegate the following responsibilities to the competent sub-regional organisations, namely :

a) charge them to assume the functions of liaison centres in respect of preparatory activities and to co-ordinate the implementation of sub-regional action programmes ;

b) charge them to assist in the preparation and implementation of national action programmes ;

c) charge them to facilitate the exchange of information, provide experience and know-how and to give advice on the review of domestic legislation ; and

d) entrust them with every responsibility connected with the execution of sub-regional action programmes".

123. As will be noticed later, this organisational frame-work for the sub-regional desertification control action programmes is addressed particularly to the sub-regional organisations in West Africa involved in this catastrophe, including the CILSS, ECOWAS and NBA which have already undertaken activities in this area.

124. Therefore, co-ordination is necessary within the sub-regional Consultative Committee as advocated by the ECOWAS, and where the CILSS in its capacity as agencies specialised in the field will have a dominant role to play.

125. In addition to the concerted action of member countries of the ECOWAS and CILSS, international and non-governmental organisations as well as the funding agencies should participate actively in these consultations. This is in line with the approach advocated by the International Convention on Desertification Control which has just been adopted. The role played in this area by the ECA, FAO, UNEP and the UNDP needs no further comment and it is also known that the World Conservation Alliance (IUCN) has developed a special programme for the Sahel, which focuses on the conservation of nature by improving food security and extending the temporal horizon of the local population.

## V - CONCLUSIONS AND RECOMMENDATIONS

### 5.1. - CONCLUSIONS

a) The recurrent bouts of drought of the 70s and 80s combined the action of man and cattle have had catastrophic effects on the environment and the socio-economic development of Africa in general and the West African sub-region in particular. Consequently, the desertification process which was hitherto confined to the saharo-sahelian zones is currently afflicting the southern parts of coastal countries in West Africa.

b) In the face of such a situation, the member States mostly affected in the subregion together with the international community mobilised themselves in the 70s and established the Permanent Inter-States Committee for Drought Control (CILSS) in 1973 and adopted, at Nairobi in 1977, the United Nations Action Plan for Desertification Control.

c) Various strategies, plans and programmes for combating desertification and for the conservation of natural resources have been started in the sub-region, albeit without much success due to lack of co-ordination and adequate resources.

d) However, with the new prospects offered by the national and sub-regional programmes of the CILSS, the NBA's JALDA programme and the ECOWAS Master plan for the co-ordination of desertification control programmes and conservation of natural resources, it is only normal for one to expect more vigorous and concerted action to completely stamp out if not lessen the most disastrous effects of this scourge.

e) the outcome of the recent adoption of the international convention on desertification, even if it has not met the expected aspirations, could stimulate, by and large, the efforts of countries in the sub-region towards that end.

### 5.2 - RECOMMENDATIONS

#### a) At the national level

126. At the level of member countries of the sub-region, desertification control activities and conservation of natural resources could be embodied in the following recommendations:

1. improvement in the drawing and conservation of underground water and in the water tables in order to maximise its use during the rainy and dry seasons while emphasising the conservation of nutritional elements ;



2. protection, restoration and management of the environment in terms of the needs and production systems of the populations and reforestation with emphasis on polyvalent local species : management of spaces and village lands at all levels by the communities and individuals with sustained assistance for training and organisation ;

3. promoting the empowerment and productive activities of women in view of their participation and role in such activities ;

4. sensitization and mobilisation of the populations for their voluntary and responsible participation in desertification control activities ;

5. monitoring the advance of the desertification through the establishment of data bases.

b) At the sub-regional level

1 The implementation of the desertification control plan and conservation of natural resources is long-term activity which requires an unflinching political will on the part of the decision-makers, voluntary participation of the populations and co-ordination of activities at the level of governmental and non-governmental organisations as well as the international community. This is why it is recommended to establish once and for all a sub-regional consultative committee advocated by the ECOWAS.

2 In spite of the lack-lustre results obtained so far after the adoption phase of the international convention on desertification control, member States of the sub-region must take advantage of satisfactory arrangements made by the donors to mobilise funds needed for the implementation of the master plan in respect of co-ordination.

3. The implementation of the master plan lies first and foremost on member States, but due to the very transnational nature of the desertification phenomenon, it goes without saying the subregional IGOs like the CILSS, NBA and ECOWAS which have long been involved in this important activity need to collaborate closely in order to channel and utilise judiciously the external assistance as well as domestic contributions. The sub-regional consultative committee could be the appropriate frame-work for this collaboration to which will be invited the NGOs and international organisations like the ECA, UNEP, FAO, ACMAD, etc. not forgetting, of course, the funding agencies.

**ANNEX - LIST OF MAIN REFERENCE DOCUMENTS**

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9. NBA/JALDA : General presentation of the study results for the 1992 fiscal year, and future directions of study, May 1993 - Japan Land Development Agency (JALDA) ;
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