

The Global Mechanism

# **Sudan Road Map for NAP Implementation**

**Consultant Report  
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## Abbreviations and Acronyms

AOAD:	Arab Organization for Agricultural Development
CBD:	Convention of Biodiversity
FAO:	Food and Agriculture Organization
FCCC:	Framework of the Convention of climate change.
GEF:	Global Environmental Facility.
HCENR:	Higher Council for Environmental and Natural Resources
IFAD:	International Fund for Agricultural Development.
IGAD:	Inter Governmental Authority on Drought and Desertification
MOAF:	Ministry of Agriculture and Forest.
MOAR:	Ministry of Animal Resources.
MOEPD:	Ministry of Environment and Physical Development.
MOER:	Ministry of External Relations
MOF:	Ministry of Finance
MOI:	Ministry of Irrigation
MOIC:	Ministry of International Co-operation.
NBI:	Nile Basin Initiative.
NAP:	National Action Programme.
NGOs:	Non-Governmental Organizations
NDDCU:	National Desertification, Drought Co-ordination Unit

NCCD: National Co-ordinating Committee for Desertification

UNCCD: United Nations Convention to Combat Desertification

UNICEF: United Nations Children Fund

## 1. General

### 1.1. Introduction

#### 1.1.1. Report Coverage/and Organization:

The preparation of the Road Map involved processes of dialoguing with the concerned governmental bodies and donors agencies in the country, assessment of the status of NAP, and extensive reviewal of literature. The NDDCU played an active role in the materialization of the above processes (Annex 11 and the bibliography) detail the grounds covered. As to contents and the sequence of the subjects discussed, reference is made here to table of contents.

#### 1.1.2. Definition of Land Degradation

Desertification causes inter-alia menacing of the natural resource bases, featuring in bio-physical symptoms of land degradation, which poorly impact on socio-economic conditions. It is estimated that an area of 650,000 km<sup>2</sup>, traversing the country from east to west, mainly between lats. 10° - 18° N., is severely affected by desertification, with the situation being further aggravated by the recurrent drought spells, Annex I, 4 maps.

#### 1.1.3. Problems of Desertification

Desertification and land degradation impact directly and indirectly on global warming/climate change, biodiversity and protection of international waters. Interventions to combat desertification are likely to impact simultaneously on the relevant GEF objectives:

- a. Global warming/climate change: there are indications that the heat in-storage capacity of dry lands due to loss of terrestrial vegetation affects local, regional and world temperature.
- b. Biodiversity: lost due to desertification, for species richness and genetic variety, are conditioned by rainfall, which is experiencing observed fluctuation.
- c. International waters: present vital supply to dry lands, and as being affected, it is essential to treat water systems and their catchment basins as integral units.

#### **1.1.4. Objectives of the CCD**

The United Nations Convention to Combat Desertification (UNCCD) was thus initiated, elaborated and signed (1994) to address the problems caused by desertification. Preparation of a National Action Programme (NAP) is to follow for the implementation of the convention. Certain approaches and principles were outlined to guide the preparation of the NAP: integration with the national development strategy, incorporation of the social and population dimension, adoption of a bottom-up approach to promote stakeholders participation, and drawing on the resources of international instrumentalities, such as Convention of Biodiversity (CBD), Framework of the Convention of Climate Change (FCCC) and the Global Environmental Facility (GEF) mechanism.

#### **1.1.5. Climate**

The climate of Sudan is wholly tropical. Conditions vary from hot desert in the north, through a belt of summer rainfall of varying intensity and duration, to an almost equatorial type of climate in the extreme south. Temperatures in northern Sudan are generally high, 30° - 40° C in summer, and 10° - 20° in winter. Harrison and Jackson (1958) broke Sudan into 3 major zones: Desert Zone, zero to 75mm. rainfall, Semi-Desert Zone 75 – 300 mm, Wood Land Savannah (with two sub-zones, low and high) 300 – 800 mm.

Rainfall, as conditioning eco-systems stability has declined continuously in the African Sahel Zone. This decline, coupled with prolonged misuse of natural resources and the occurrence of drought have magnified the desertification problem, with the process taking place in the arid zone bordering the desert (100 – 200 mm) and spreading south in arid and semi-arid areas up to 600 mm.

#### **1.1.6. State of Natural Resources**

##### **a. Soils:**

A basic economic resource, for on it depends agriculture and animal husbandry, the backbone of the Sudan economy. Despite its importance, it received limited attention in terms of study and assessment, for there is no complete map of soils, and what is available is a broad classification of soil types.

## b. Water:

Sudan falls in the arid zone, being characterized by water scarcity. Main sources of water are:

- Rainfall, with the amounts falling annually in the order of 250 milliards  $m^3$ , diminished by evaporation and evapotranspiration, resulting in a water deficit of 2000 mm per annum.
- Surface drainage, 4% of annual rainfall, 10 milliards  $m^3$ , forming seasonal streams, ponds, and filling hafirs and artificial dams.
- Nile system, yielding annual discharge of 84 milliard  $m^3$ .
- Groundwater, found under 50% of the country's area, in the form of basins - Nubian Sandstone and Um Ruwaba series Formations, and in shallow water aquifers of seasonal water courses. Also under 20% of the country's area of the Basement Complex Formation.

## c. Forests:

Total estimated acreage is 94 million hect. (World Bank 1984) making 37.5% of the total area of the country, with a productive figure of 45,5 million hect. Available statistics (1998) show that the forests area diminished to 64.4 million hect., 25.9% of the country area; as against what has been reserved, 9 million hect., 3.4% of the country's area. Consumption (17.8 million  $m^3$ , 1998) exceeds annual growth, estimated at 2%. Under current consumption rates, around 20 million  $m^3$  per annum, deforestation has already (2002) reached 500 thousand feddan per annum, which tells that, all of the country's forests shall be depleted by the year 2020.

## d. Wildlife

The diversity of ecological zones results in a wide variety of wildlife species. Setzer (1956) reported 91 genera and 24 species and sub-species, other than bats in the Sudan. Out of the thirteen mammalian orders in Africa, twelve occur in the Sudan. Cave and Macdonald (1955) stated that 871 species of birds were recorded in the Sudan, revised by Nicholous (1987) to 931 species.

Wildlife has disappeared from several areas of northern Sudan, due to the heavy use of natural resources. The protected and semi-protected reserves come to about 20.334 million feddan (natural parks, 8.210 million feddan, reserved areas, 11.800 million feddan, and sanctuary 3, 240 thousand feddan).

Wildlife conservation is constrained by the weaknesses suffered by the Wildlife Administration. These are evidenced in institutional instability, poor cadres, limited field presence, budget constraints; also by lack of research and the effects of recurrent droughts; adding to losses of biodiversity, estimated at 80% in Desert and Semi-Desert areas, and 60% in the Savannah area.

#### e. Mineral Resources

Sudan is rich in mineral resources. Mineral exploitation was known since the time of the pharos' dynasties, with iron and gold prospected. Marble and basalt are being mined since the beginning of the last century. Minerals of economic value, other than petroleum are: gold, chromite, bauxite, iron, gypsum, manganese, uranium, copper, etc.

Petroleum is assuming an economic role in the economy of the country, contributing at present 40% of the national budget. Petroleum exploration started in 1959 in a number of areas. Estimated current production from Unity, Hegleig and Adarbeil is 200 barrels per day, expected to effectively assist the economy, and enable developing the discovered oil fields.

#### 1.1.7 General Socio-economic Situation

The 1993 National Census gave a population of 25.89 million persons for the country, 21.27 million in the northern part and 4.3 million in the Southern part. The total population is estimated to be growing at an annual rate of 2.89%, and is projected at 32.8 million by the year 2003. 7.5 million of the population are classified as urban settled, 17.4 million as rural settled, and 0.7 million as pastorals, Annex 2.

Agriculture and livestock raising form the base of the economy, employing more than 60% of the active labour force, and contributing about 48% of the GNP (1997). The total area under cultivation is estimated at 42 million feddan, in the three main sectors: (irrigated 3.5 million, rain fed mechanized 11.5 million and rain fed traditional 27.0 million.). Constraints to agriculture could be summarized as follows:

natural and environmental hazards, declining soil fertility, shortage of irrigation water, changing agricultural policies, limited farmers' financial and technical capabilities, unstable pricing policies, crop losses due to pests and diseases, inadequate supporting services, inadequate agricultural practices, and rising cost of inputs.

The decline in agriculture, especially the traditional sector (44.3 percent of the land, providing only 14.3% of output, and accommodating about 60% of population) has impacted negatively on the rural economy: reflected in food insecurity, depressed incomes, impoverishment of social services, etc. Of the outcomes of this, is increased population migration, especially to the urban centres, where the situation is being further aggravated by massive internal population displacement, due to war in some parts of the country.

The above and other factors, have magnified the poverty situation in the country. Though difficult to measure, available statistics (1996) on household income point that 49.9% of households as ultra poor, with a range of 24% to 62% for the urban and rural areas, respectively. Annex 3 gives the performance of the economy.

#### **1.1.8 Institutional Arrangements**

Sudan adopted a federal system in 1992, with division of the country into 26 states (*wilayat*), 16 in the North and 10 in the south, with the states further divided into provinces (*muhafazat*) 94, and the provinces into locality councils (*mahaliat*) 548; with popular committees instated at the village level to complete the hierarchy. This four-tier system is intended to enable the citizens to share in power and to be involved in the decision-making processes. The states and the locality councils are legislated as corporate bodies, fully empowered to act as autonomous governments, in running their financial and developmental affairs. The States and the councils have legislative bodies of councilors, and in the case of the states a mini-cabinet of ministers, which through the (*Wali*) state governor, co-ordinate activities with the federal ministries.

The last 8 years experience of implementation of the federal system has brought to the surface the following constraints: high cost of running the system, limited budgetary support particularly to spend on development, and more so at the locality council level, inadequate trained cadre with mal-distribution of the personnel available, weak planning especially at the grassroot level, inadequate performance of social services (to name: education, health and water supply).

Of special mention, in relation to the use of natural resources, the division of resources between the centre and the states, with the latter granted power over their resources, has resulted in several cases in serious misuses; like the expansion of mechanized farming in marginal lands, tapping of forests resources to increase revenue, damming of seasonal streams without consideration to water shed-management, and the likes.

The federal experiment is going on, however yielded to revision, starting with amalgamation of the locality councils into bigger entities.

## **2. The Symptoms of Desertification**

The symptoms listed below are intrinsically related; with the same applying to the symptoms and the causes.

### **2.1. Sand dune Formation and Movement**

The sand cover (Qoz lands) extends over a wide belt, from Sudan/Chadian border across the country up to the White Nile in the east. The sand is of Nubian sandstone genesis, deposited by wind during the Neolithic period. It is identified under 5 types of formations: sand sheets, complex dunes, longitudinal dunes, traverse dunes, and moving sands.

The meager rainfall received over most parts of the sand zone, up to 300 mm per annum, with the disturbance of the vegetation cover, and the occurrence of wind erosion, lead to extensive sand movement, causing dune formations, loss of cultivable lands, depleation of pastures, burial of water sources, menance to settlements, and increasing aridity in the areas affected. The problem is further intensified by the fact, that the sand belt falls within the desert front, therefore advancing the creeping of the desert to the south.

### **2.2. Land Degradation and Loss of Vegetation**

The phenomenon shows presence in all ecological zones, impacting adversely on the bio-physical elements, and the resource usage. It diminishes eco-systems regenerating capacities, and renders them vulnerable to more degradation. Degraded lands are prone to aridity, for their decreased efficiency in cycling the available moisture; and with that, their inherent potential becomes reduced, for: climatic amelioration, practicing of farming, livestock raising, and forestry production.

### **2.3. Deforestation**

Up to 1996 (Lebon's land use map of the Sudan) there seems to have been little evidence of over use of land, except in the heavily populated areas, and the immediate neighbourhood of small towns and villages. Since then, forests depletion has continuously escalated, to reach alarming rates, especially during the last 10 years.

The on-going deforestation is taking a North-South trend, evidenced in the shift of the productive gum belt to the south, also the mechanized farming activity, and in the increasing distance in supplying the major urban centres with fuel wood. Such pervasive deforestation has caused substantial erosion and reduced water retention capability along many water courses in central Sudan.

### **2.4. Loss of Soil Fertility**

It is experienced under all ecological zones. Other factors taken into consideration, it retards the regeneration of the natural vegetation cover, by affecting its intensity and species composition. It also decreases crop productivity, which is evidenced under different farming systems, as proven by comparative crop yields statistics, under different time series. The immediate impact of this is depressed return from farming, triggering chain effects of household impoverishment, population instability, and increasing poverty.

### **2.5. Frequent Droughts**

Drought is a conjectural climatic event, resulting from either a deficit of the annual rainfall or bad distribution thereof, so that vegetation, natural or cultivated, does not reach its maturity (Anon – 1983). The immediate consequences of drought include food deficit, livestock losses, nutritional deficiencies and human displacement and/or mortality. Drought frequency in Sudan is very high: The country experienced 5 major waves of drought: 1888 – 89, 1913 – 14, 1933 – 39, and 1951 – 53. The last wave came in 1982 – 85, with more spells, like in 1990 ad this year 2001. Its severity is mostly pronounced in the marginal areas, North Darfur and North Kordofan and the Red Sea Hills, all falling within the zone of 300 mm annual rainfall and less. The impact of the drought is not limited to those parts directly affected, but extends to other areas, leading to land degradation.

## 2.6. Climate Change Issue

Sudan is a country of fragile ecosystems, affected by desertification and drought, especially its northern parts, which are quite vulnerable to changes in temperature and precipitation, the assessment of which is very crucial. Assessment is being attempted under the Climate Change Issue Project (financed by GEF, - Higher Council for Environment and Natural Resources) in relation to three national sectors, agriculture - forestry, human health (malaria) and water resources. Kordofan State was chosen as a case for studying the three sectors, using two climate scenarios (year 2030 and year 2060); a baseline scenario predicting a future in absence of climate change, and a climate change scenario predicting a future under plausible conditions of green house gas concentrations.

The findings of the assessment raise concern about Sudan's security under changing climate. The three sectoral assessments suggest that, under even modest changes in climate, the country faces significant threats in terms of food – security, export crop production, human health and availability of water.

## 2.7. Loss of Bio-diversity

One definition of bio-diversity is “the variety of living things in this planet”, while “biological resources are the totality of genes, species and ecosystems that have actual or potential value to people.”( Mc Neely et.al. 1990). Sudan dry land ecosystems contain a rich biota of plants and animals, which have been threatened by the adverse effects of drought and desertification. As the dry lands contribute significantly to the bio-diversity, food production and the (GDP), conservation of bio-diversity in these lands for sustainable development becomes of high priority. To meet such objectives, it is imperative to capitalize on global, regional, sub-regional and national experiences, so as to make full use of strategies that pertain to combating desertification for enhancing dry lands development. Of the efforts to address biodiversity are the two projects Gireigikh Community Based Range Management project, and Biodiversity in Dindir National Park, financed by GEF and UNDP; with a proposed Jebel Marra Multi spectrum Biodiversity in the pipeline.

### **3. Root Causes**

#### **3.1. Biophysical Causes**

##### **3.3.1. Inappropriate Land Uses**

These reflect in many discrepancies, major among them, is that the country has no Land Use Map to guide the uses of its resources. Planning in the field of land use has continued to be sectoral, fragmented, and in many cases based on political and administrative decisions. The inappropriateness of land uses could be traced to: uncontrolled use of the land as a communal property under traditional farming and pastoralism, massive expansion of mechanized farming, crop intensification under irrigated schemes, depletion of forests, overgrazing of the rangelands, mal-distribution of rural water supply sources, etc. These, and others impacted negatively on the natural resources of the country.

##### **3.3.2. Overgrazing**

Reported since the mid-thirties, and with time magnified in size and effects. The causes are many: uncontrolled use of the range resources, increased livestock numbers beyond the carrying capacity of the range, inappropriate distribution of drinking water sources, leading to pressures at certain sites, interruption of the grazing cycles by the war incidence leading to over concentration of animals at accessible places, repeated grazing of the same range by more than one type of animal i.e. cattle in the rainy season, camels in the dry season, drought occurrence which reduces the range potentialities of the affected areas, etc.

##### **3.3.3. Deforestation**

The causes are biophysical as well as human. Of the eminent ones are: drought effects leading to the desiccation of the tree cover, being more pronounced in the northern marginal areas, soil erosion, burial of cultivable land, streams and surface water bodies, damage by locust resulting in thinning of cover following from defoliation of leaves, clearance of trees to make for cultivations, cutting of forests for the production of fuel wood and building material, felling of hashab to sell as fuel wood in years of depressed gum prices.

### **3.3.4. Inappropriate Agricultural Practices/ Land Mining**

These exist under the three types of agriculture:

Traditional rain-fed farming: extensive cultivation of marginal sandy soils, felling of trees to establish farms and for combating birds, overcultivation under all types of soils, encroachment on wadi banks and opening of the wetter soils leading to destruction of vegetation, collapse of the traditional crop rotations founded on resting the land, or use of fallow and hashab to restore soils fertility, and recently the introduction of tractors onto sandy soil with its high vulnerability to wind erosion.

Mechanized farming: destruction of the tree cover over large areas, 11.5 million feddan, soil depleation through continued cultivation by monolithic crops, especially sorghum, with no established crop rotation, reduction of the productive capacity of the soil, through the extensive use of the wide disc, which results in soil compaction and poor retention of moisture, opening such large areas to the risks of water logging and wind erosion.

Irrigated agriculture: complete eradication of the natural vegetation cover to make place for the irrigation activity, prolonged farming of the land which results in depleation of soil nutrients, extensive use of fertilizers with their hazardous effects on the environment, misuse of irrigation water leading to soil compaction and salanization.

Of the factors that accelerated land degradation, is the weakening of the native administration (1967 and on) through complete abolition or liquidation of some of its functions, for the native administration had a strong control over the use of natural resources e.g. the Sheik's Ordinance Law of 1927.

### **3.3.5. Droughts/Disasters**

Both pose natural and human hazards. From the previous accounting, drought causes ecosystem degradation of various forms, associated with dilapidation of the economic bases. Of the natural hazards resulting in disasters are flooding by rivers and seasonal watercourse. The lands falling on the Nile and its tributaries are continually under the threat of flooding, with its disastrous effects of accelerated river gulleying, *hadam*, drowning of crops, destruction of settlements and infrastructure, and interruption of the life of the population.

The ongoing war, in a number of areas in the country, creates disastrous situations including, burning of large tracts of land in course of fighting, planting of earth-mines, butchering of game, massive cutting of valuable tree species for sown wood, concentration of population at secured sites with over pressure on land resources, and displacement of population with heavy impact on the recipient places.

#### **4. Policy Barriers**

##### **4.1. CCD in Macro Economic Policies**

A reviewing of the country's macro-economic policy was portrayed in Annex 3. It is clear from the account given, that in spite of the fact that, Sudan has a long history in exploration of the desertification issue, going back to the beginning of the 1930's, with related conceptual developments, and a large experience of varied programs (Annexes 4 & 5), combating desertification and the mitigation of drought effects do not feature out as definitive policy lines in the macro economic policy of the country. Reading through Annex 3, reveals a clear emphasis on the trickle-down effect of the adopted policies, applying also to agriculture as the most related activity to resources utilization.

In addressing the poverty situation, while more than 60% of the population of the country live in the rural areas as farmers and pastorals, depending on the land resources, and with their so many problems highlighted in the previous sections, poverty tackling came as segmental, urban-biased and unsustainable.

##### **4.2. Political Commitment, Short Term Vs. Long Term Vision, and Sustainability Provision**

The three areas fuse into each other. The government political commitment to combating desertification is there, as may be judged on grounds of the announced 10 Year National Strategy, some stated sector policies, political bureau involvement in public deliberations on the issue of desertification, and the support to the technical departments programmes, through the allocation of annual budgets. However, the commitment looks as unsuccunit, lacking in areas of conceptualization, wholistic treatment, visualization of effective solutions, and integrative actions; all culminating in weak programming, and poor sustainability of activities.

#### **4.3. Land Use Policies/Practices Overlap and Conflict in Policies and Programmes**

Arising from the above omissions, the existing land use policies stand as sectoral, founded on the initiatives of the technical departments that are lead by previous action trends. This is shown by: agriculture, with concerns about production; animal resources with priority for veterinary care; irrigation with emphasis on regular supplies of irrigation water; crop farming (within irrigated schemes) with attribute to success of the annual rotation; rural water supplies with interest in the provision of more water sources; forestry with inclination towards conserving what exists and promotion of gum arabic production. The exercise could be extended to include the other technical units that have dealings with the desertification problem. Attempts at co-ordination of activities usually assume mechanical modalities, rather for the purpose of official mechanization of programmes; and in that, the internal processes leading to correction of situations are very much overlooked.

Adversities of inappropriate land use practices were highlighted before. In absence of innovated alternatives, the effects of such practices shall in time magnify the problems of land degradation. There exist a great potential for improving on practices, on the results of trials attempted under different programmes, Annex 4. However poor dissemination of attained results, coupled by constraints to replication, have hampered the adoption of these practices on a larger scale.

#### **4.4. Population Policies**

Policies in this field concentrate on: the up-keep of the population in terms of maintaining its natural increase (for birth control is banned according to the country's Islamic inclinations). In areas of development the following assumed priorities in the government programs: upgrading of local economies to expand food production and improve incomes; and advancement of the welfare aspects in areas of education, health, rural water supplies, etc. On the negative side, the population suffers from natural and social calamities, that cause a lot of confusion, of which desertification and drought with their effects on production systems, and the on-going war in several areas are the most prominent. Out-migration and heading to towns have become the most accessible solutions to a large segment of the rural population. Greater Khartoum present population is estimated at 7 million persons; while, in 1955/56; it was 224 thousand persons, 1973: 1.3 million persons, 1983: 2.7 million persons. Second to towns, are the irrigated schemes, and under both

situations, excessive population leads to considerable problems at the recipient places.

In absence of futuristic policies, that are guided by structural goals, of balancing the relationship between the population and the attainable resources, the current uncontrolled situation is apt to continue, with the result, more chaos.

#### **4.5. Sectoral Policies and Programmes**

In absence of a comprehensive rationale of well stated goals and integrated actions, sectoral policies are most expected to supersede; which has actually been the state of affairs since the independence of Sudan in 1956. All long term strategies and plans (10 Year Plan 1960 – 70, the 5 Year Plans 1969 – 1983, and the 10 Year National Strategy 1992 – 2002) were all founded on sectoral premises, hence lacking cohesiveness and the wholistic look.

The sectors set targets are usually translated into plans and programmes by the concerned technical authorities. In the process, border areas of related activities are seldomly considered, and with the human dimension given little attention, the outcome is top-bottom, emphatically technical, and with much overlapping, Annex 6.

#### **4.6. Public Awareness, Sensitization, and Stakeholders Participation**

For the felt-effects of drought and desertification, and since the famine disaster of 1984, awareness about the causes of the two phenomena and their complications have been strongly raised, to a participative level among all stakeholders: the government, the public and the donors community.

The severities inflicted have entered popular poetry, in the memory as anecdotes, officially deliberated in scientific and policy forums, documented in researches and studies, and motivated groups to form NGOs; with certain programs being implemented here and there; some of which with strong community involvement.

Much of the future work is needed in the area of sensitization, which requires addressing the issue at the scale the problem is taking, which entails a more strong national role, in setting policies, that are wholistic in objectives, integrating the production, the welfare and the environmental

dimensions, to ensure the sustainability of activities. Policies need to be transformed into plans and programs, that are area specific, of wide spectrum, and from which communities as stakeholders derive benefits.

## **5. Institution Barriers**

### **5.1. Institutions, Technical Capacities**

CCD activities are co-ordinated at the national level by the NDDCU, under MOAF. NDDCU occupies a very low position in the vertical set-up of the MOAF; a unit within a department of secondary importance. Its poor institutional structure and budgetary impoverishment, render it as incapable to promote the CCD objectives. The weakness of the national policy in interpreting the CCD into action plans and programs, through evolving the right conceptual frames, building the essential visions, channeling the roles and responsibilities, and conglomerating the inputs of the different stakeholders, left the stage for dispersed and unco-ordinated activities, of the specialized technical departments, and whatever under the donors/NGOs assistance programs.

The technical capacities of the government are constrained by weaknesses at the States level, lack of orientation within the CCD scope, the reigning biophysical thinking, and the budgetary inadequacies. As to donors/NGOs programs, though may be better with regard to the above constraints, they suffer problems of sustainability on the termination of the assistance support.

### **5.2. Status of Social Services Including Health**

Sudan infra-structure of social services is of a reasonable coverage, save the southern region and some of the remote areas. With the implementation of the federal system, which shifted the responsibilities of the running and the expenditure on the services to the states and the locality councils, and with the latter's inadequacies in areas of planning, management and availing of finances, the services performance has considerably deteriorated, especially in those parts with weak economic bases, including the desertified and drought stricken areas.

Shortcomings of performance are exemplified in maintenance problems, poor working environment, flight of cadre, insufficient supplies and running budgets. A positive development in making for the gap in performance, is the emergence of strong community participation, through mobilization of resources, as a most practical instrumentality in

addressing the encountered problems. This could be capitalized upon in future, if the CCD scope is translated into area development programs, encompassing the environmental and socio-economic dimensions.

### **5.3. Co-ordination, In Country/Donors**

Co-ordination suffers from the many eminent gaps cited under the previous sections. The absence of the NAP puts the government in a weak position to pull together the different actors. The lack of foreign assistance limits the prospected donors to the UN system, the regional organizations, and some of the foreign NGO's.

The UN and regional organizations acting within their mandates and presenting focal points for certain activities, work in isolation of each other; while the NGOs are mostly concentrating on humanitarian relief. There is a good potential in some foreseen donors finances, which can be tapped through effective co-ordination of activities and preparation of innovative projects; however the technical departments role in this regard is short of realizing that.

## **6. The Road Map**

### **6.1. NAP Status**

Emphasis in the forthcoming discussion shall be on exploring the features of the Road Map, leading to the preparation of the NAP. An attempt at preparing of the NAP was made before, with a document to this effect produced in April 1998; however not endorsed, for not yielding the required output. Of the three phases leading to NAP preparation, i.e. launching the NAP process, implementing the first NAP forum agreements, and full launching and implementation of the NAP process, Sudan in reality has only achieved phase one, involving the creation of the institutional frame work NDDCU as the focal point, issuing of a report assessing the national experience in CCD, and conducting the awareness campaigns: States Workshops, a specialized Workshop and a National Forum.

The States Workshops were held in 13 states, on criteria of being the ones mostly affected by desertification and drought. Three papers were synonymously presented at each workshop, discussing; previous experience in combating desertification, division of roles between stakeholders, and states' programs priorities in combating desertification. The conclusions of the workshops emphasized the participation between

stakeholders as a promising mechanism, the essentiality of co-ordination between the government agencies and the NGOs in promoting the UNCCD objectives, and the need to inform all stakeholders of the ensuing steps.

The Specialized Workshop was held in Khartoum, under the slogan “towards a unified strategy for implementation of the NAP”. Issues discussed at the workshop covered: status of CCD implementation, the relationship between NGOs and the government, and some crucial issues such as in areas of: participation, education, communication, research, funding, traditional knowledge, monitoring and evaluation. A consensus was reached by the workshop on the theoretical framework for the implementation of the NAP.

The National Forum, brought together representatives of the 13 States, besides stakeholders at the federal level. Six topics were addressed as leading towards the NAP: institutional framework, programs priorities – management issues and co-ordination, capacity building, indigenous knowledge science and technology, monitoring and evaluation, and the funding mechanisms. Of these, the establishment of a funding mechanism was highly emphasized. The following possible sources being suggested to be tapped for funding, nationally: allocation of 2 – 5% of the agricultural sector revenue, linking CCD with poverty policies to draw on Zakat resources, and community participation; internationally: support would prospect exploring debt for development conversion (Swap), donation pledges, loans through bilateral and multi-lateral agreements, and NGOs contribution.

The other activities moved by the NDDCU covered working with the States to prepare their CCD programs, with responses received from 11 States, as summarized in Annex 7, also preparation of a 5 year training program at local universities for capacity building.

## **6.2. Existing and Potential Financial Mechanisms/Initiatives**

One of the outcomes of the NAP's absence is a fragmented form of performance, which reflects on the existing and potential financial mechanisms, and the initiatives that could be tapped for the CCD implementation. Nationally, while political commitment is expressed by the government, it has not been transformed into solid programmes with budgetary allocations, due to the eminent gaps in conceptualization and organization, mentioned previously.

The Ministry of Finance, as could be depicted from Annex 3 is not committing direct funds for CCD programmes, outside the technical ministries (MOAF, MOAR, MOEPD, MOI) annual budgets allocations, which may cover activities that have linkages with CCD; with the states revealing a similar situation. Except for the UN system and the NGOs especially those working on development activities, Annex 8, which could be considered as potential donors, there exist limited opportunities of other financial mechanisms, more so, in the area of bilateral and multi-lateral assistance.

### **6.3. Donors' Profiles**

The following are the profiles of prospected donors.

#### **6.3.1. IGAD:**

(Two desks) one in Ministry of International Co-operation and the other in the Ministry of External Relations, assuming a mechanical form of co-ordination, while MOAF is supposedly the acting technical focal point.

#### **6.3.2. UNDP**

UNDP through its large programme of ADSs – ARSs Projects (1989 – 2001) of integrated area development, could claim to have covered a lot of grounds within CCD scope, if taken in its wider context of improvement of the rural economies and supporting of environmental conservation activities.

UNDP is going through a shift in focus at present, by assisting the government in: policy, environment, sustainable rural development, poverty alleviation, and support to peace and IDPs. Supporting the government in preparation of strategies and action plans in all above areas including CCD, shall facilitate unifying and co-ordinating the activities of the various units.

UNDP as the GEF implementing agency in absence of World Bank representation in Sudan, would give attention to the land degradation issues as originating in governance, and as one of the roots of poverty, with a look towards focussing more on aspects that have global additionality.

UNDP, from experience, recognizes that the sustainability of developmental activities poses a problem in the Sudan, especially at the community level, an issue it shall address in its future efforts.

#### **6.3.3. GEF:**

UNDP acting as its focal point, financed and co-financed with UNDP a number of projects: Climate Change, Bio-diversity (Dindir National Park) and a sub-regional project for Red Sea, with Jebel Marra (biodiversity - multi-spectrum development) in the pipeline.

#### **6.3.4. IFAD:**

IFAD is implementing at present two projects, North Kordofan Rural Development Project (NKRDP) and South Kordofan Rural Development Programme (SKRD) with the White Nile Project concluding its activities. The two projects' ends achievements show similarities, in boosting agricultural production in crops and livestock, improvement of the services infra-structure, including community services, building capacity in management and organization, and enhancing the environment through ecological conservation measures. A main thrust of the two projects is the nesting of activities within the locality councils, and in the community organizations to be structured in the two areas. Beneficiaries' priorities in interventions formulation, and their contribution of resources, with their full involvement in the management of activities, are being endorsed as the mechanisms of implementation.

Under the two projects, target group universes of 500 village councils, 90% of rural locality councils, and 40% of town council populations, 118000 households, or 696,000 people overall (NKRDP); and 30 locality councils, 262 community groups, 26,200 households and about 130,000 people overall (SKRD), shall be reached by the projects interventions. In relation to the NAP, the implementation of the two projects shall have positive effects in checking desertification, and reducing the poverty situation in two of the country's regions.

#### **6.3.5. FAO**

Focuses on food production supported by range improvements; and on poverty reduction; for the enhancement of food security shall lead to a better utilization of resources.

FAO sees that the government is concerned about the issue of land degradation, for it has already been approached by MOAF to assist in a 25 years strategy for the rehabilitation of deteriorated areas; also to assist in a 25 years strategy for agriculture, which FAO is considering to include in its programmes. FAO views it as of its responsibilities to see that the government adopts the globalization of the convention.

FAO is attempting to work with three ministries: Agriculture, Animal Resources and Irrigation. The ministry for Environment, through the Higher Council for Environment and Natural Resources, is considering preparing a national environment strategy. FAO would support the exercise once it is sure that all above four stakeholders would be involved in its implementation. FAO is also invited to assist in a project to combat sand encroachment in the western part of the country, 600 thousand population, which it views to be tackled under a sub-regional context.

Of the poverty issue, FAO looks at it as not inclusive of agriculture only, but requires the involvement of many sectors and entails teamwork.

#### **6.3.6. Nile Basin Initiative**

The Initiative is focused on the Nile Basin as a great resource, by initiating co-operative development that brings mutual benefits to the regions' countries. Receiving donors' approval for support in June 2001, the Initiative could be used as an effective instrumentality in promoting the CCD objectives. Through its seven shared vision programmes and Eastern Nile Subsidiary Action programme (more so, Nile Transboundary Action Programme) it offers a platform for addressing the key issues of the CCD: institution strengthening, land and water conservation, environmental education and awareness, wetlands and biodiversity conservation, and basin wide water quality monitoring.

Using the initiative as an umbrella, the Sudan could formulate shared projects with Egypt on combating *haddam*, river gulleying, and sand encroachment; and with Ethiopia, on water-shed management to check siltation and erosion by water.

#### **6.3.7. UNICEF**

Within its child centered activities, two of the UNICEF programs WES (Water and Environmental Sanitation) and the Friendly Village Initiative feature out as offering potential for combining efforts with CCD programmes. The first is a community-based programme for the

provision of clean water supplies, through the installation of hand pumps, supported by an environmental health component. While the second, targets improvements of village life, through implementing a wide range of interventions, chosen on community priorities. Both programmes are based on effective community organization, participation and training.

#### 6.3.8. AOAD

Environmental concerns present an important field, in the activities of the organization. A publication was produced recently addressing the environmental issues. As regards Sudan, the organization's achievements are not to expectation. AOAD supported a consultancy on *haddam*, and very recently, has been approached by the MOAF to assist in the preparation of a national plan on desertification, planned to start soon (September 2001). In preparing this plan, it is seen as pertinent to harmonize it with the NAP, to minimize overlapping as much as possible.

#### 6.3.9 NGOs

The NGOs experienced two phases in their development, a relief mobilization phase 1984 – 86 in the aftermath of 1984 drought, and a rehabilitation/development phase 1986 up to 1992, and by then most NGOs started reducing their activities, with some even left the country. As of 1995 on, the emphasis of many NGOs has been shifted to humanitarian relief. The recent years have also witnessed the rise of many national NGOs. With some carrying out developmental programmes (Annex 8).

A positive development in relation to CCD, is the organization in 1994 of the NGOs National Coordination Committee on Desertification (NCCD) comprised of 8 national NGOs. The NCCD is an interim steering committee and is part and parcel of the global RIOD. The overall objective of the NCCD is combating desertification and mitigating the effects of drought. The specific objectives include: raising public awareness, mobilization of communities, activation and empowerment of NGOs and CBOs, and to act as a mechanism for coordination between the national and international NGOs.

→ 6.3.10.

### 6.4. CCD Proposed Activities

Annex 7 summarized in a matrix, the CCD proposed activities, as initial submissions made by 11 out of the 13 States, being identified as showing symptoms of desertification. The proposed activities, as they stand, could

only be taken as broad projects ideas, that are lacking in planning substance; which clearly points out that the NAP process is still constrained, with very limited progress being achieved.

Studying the matrix, reveals clearly that the biophysical outlook dominates the forwarded proposals. This is to be corrected, through adopting a wholistic approach, Annexes 9 and 10, to enable the formulation of development based programmes, that entice the States and the beneficiaries communities to effectively participate in the planning and implementation of these programs. Following from this, the NAP could be feasibly prepared.

## **6.5. Funding the CCD:**

As could be depicted from the current situation, no readily available finances exist to fund the CCD activities, neither way, nationally or internationally. The prospects of funding lie in harnessing the positive climate in government circles towards the CCD, especially in relation to the MOAF; and in streamlining the potential donors' finances through the UN system, the regional organizations, and the active NGOs.

MOAF is showing interest in the following developments:

- The outcome of the Road Map.
- Reached an agreement with AOAD to fund a consultancy, for the preparation of a national plan to combat desertification and mitigate drought effects (already contracted for).
- Opened discussions with FAO, to assist in projects that address land degradation issues and sand dune encroachment.
- Looking forward for a vigorous involvement in the Poverty Reduction Strategies, as a stakeholder in areas of production and food security, by proposing projects for funding.

State Minister (MOAF) promised:

- To take steps towards CCD in-house organization, by forming the National Council for Policies on Desertification, the Steering Committee for the Technical follow-up, and the Donors Forum, Annex 11.
- To support the establishment of the Desertification Fund, by exploring the following possibilities. MOAF is to put seed money, to

solicit private sector funding, levy a fee on renewal of mechanized schemes licenses, channel money accessed from confiscated forests products, explore with MOAR the possibility of levying a tax on export livestock, and with Zakat Chamber to contribute finances to the fund.

MOIC has a potential in promoting assistance funding for CCD, through submission to donors of well-prepared projects. MOIC is also keen on the promising scheme and the proposed guidelines, Annexes 3 and 4.

## **6.6. Recommendations Leading to NAP Implementation**

1. MOAF is to adopt the Road Map Report as a working document.
2. MOAF is to initiate discussion around the Road Map Report at the National and States level, with NDCCU organizing the forums.
3. The outcomes of the workshops are to be exposed by the media for a wide dissemination.
4. MOAF is to hasten the institutionalization of the CCD National Policy Council, the Steering Committee, the Donors' Forum, and the establishment of the National Desertification Fund.
5. NDDCU is to adopt the guiding principles suggested in Annexes 9 & 10, and organize the study teams, to assist the states in the preparation of their CCD Programs, which shall form the platform for the NAP.
6. NDDCU shall have access to national finances and assistance funds to spend on preparing the states CCD programs and the NAP.
7. The States programmes and the NAP, shall receive backstopping from the National organs, proposed to be institutionalized.

with the issue of desertification. The country is not short in concepts about the problem equally in experimenting on its solutions. On the organizational side, many previous attempts were being tried to address its manifestations, with the trend/continuing, as exemplified in the currently

### Annexes

existing institutions, that have dealings with CCD. Very essential in these concerns is the availability of scientific cadres to move activities, and in this regard Sudan has abundance of academically qualified persons and scholarly expertise who could effectively contribute to the promotion of the CCD cause.

The questions that need to be addressed for achieving effective implementation of CCD, within the current situation of the country boil down to the following:

- a. A need for a fresh look.  
There is a lack of orientation, as to desertification causes and implications, for it is still held as a bio-physical phenomenon, hence requires bio-physical solutions to achieve natural conservation goals. Inspite of some of the efforts

## Annex (2): Some Population and Education Indicators

	1993	1996	2000
Total population (000)	25733		31081
Population density (k2)	9.8	10	
Percentage urban population	29.3	30	33.3
Sex ratio (Males per 100 females)			101.5
Population under Age 5 (% of total)			16.6
Population under Age 15 (% of total)			43.32
Population 60& over of total)			3.87
Literacy rate 10+			
Both sexes	53.4		
Males	66		
Females	40.3		
Crude Labour participation rate			
Both sexes	32.1		
Females	40.8		
CBR 1 (1998 - 2003)	37.8		
CDR 2 (1998 - 2003)	11.5		
Natural Increase Rate Per Thousand (1998-2003)	26.3		
IMR 3 (1993)			
Males	134		
Females	115		
Life Expectancy at Birth (1993)			
Males	52.5		
Females	55.5		
TFR (Total Fertility Rate (2003)	5.7		
Net enrolment ratio (boys) 1995 - 98	41.9%		
Net enrolment ratio (girls) 1995 - 98	37.4%		
Number of population per school (1996)	625		
Number of population per school (1999)	657		
Intake annual growth rate (1994-95)	1.25		
Intake annual growth rate (1994-96)	-2.29		
Percentage drop out from basic education (boys)	49.2%		
Percentage drop out from basic education (girls)	42.8		

Source: (1) UNFPA (United Nation Population Fund-Sudan)  
 Population Data Sheet For Sudan By States-2000, CBS, Central Bureau of Statistics- Khartoum.  
 (2) States Encyclopaedia, Indicators on Education, States Support Funds, 1998.

Through a new culture of understanding that the implementation of CCD would serve environmental as well as developmental objectives. Of the steps toward achieving this the endorsement of the ROAD MAP by MoAF as a focal point, and yielding it to a wide discussion at the centre and the states level, to clearly bring out the magnitude

### Annex (3): Macro Economics

The economy of the Sudan was in a turmoil between 1990 and 1997. This was caused by a conglomeration of interacting factors, the most paramount of these are:

- An urgent policy, to reshuffle the economic set up, and enter into open door economy, starting with a rapid action of privatization of the public sector.
- Decentralization dragged the government into huge expenses.
- Civil war and social unrest, which is demanding huge human and financial resources, besides the displacement of big numbers and their settlement around cities.
- Spiral inflation, which was a direct result of imbalances between exports and imports, government revenue and expenditure, distortions in fiscal and monetary policies, compounded with severe fall in sectorial productivity due to weakness of infrastructure, drought and desertification and weakness of developmental policies.

- Complete isolation of the country from the international community, especially the effective economic centres.
- Sudan embarked on a reform program during the period 1977 – 2000, which yielded considerable gains. The economy responded positively to these reforms, and the following major successes were achieved:
  - Stabilization of the economy, which is reflected by the stability of consumers prices, and exchange rates over the last three years.
  - Inflation was curbed down, from 133% prior to 1977, to 12% in the year 2000. The rate of inflation is now estimated at 8%.
  - Monetary policies were changed, to induce producers to borrow, with many barriers being removed to enable banks to operate more freely, and the service charges to consumers were reduced from 48% per annum to a maximum of 15%. (The question that remains is whether banks, given their limited financial capacities, inflated administrative expenses, and low operational efficiency, can cope with these low rates).

iii. According weight to the specificity of each area at the programming phase through mapping poverty at country level.

- G.O.S is revising the local government structure to reduce expenses.
- Fiscal policies were changed radically, by removal of severe irrelevant taxes, which were a major disincentive to producers, in all sectors and at all levels.
- Government revenue is increased by 40% when petrol entered in the economy as a new source in 1999.

There is much to be done, to embark on real development, and alleviation of poverty in which a great majority of the people are living. (80 – 90 %). Current policy is adopting a trickle down effect, for improvements on the overall economy would impact positively on the different population segments including the rural sector, where the majority of the population live and earn their living. In absence of focused targeting, the presently followed poverty policies feature out as urban biased and short of attaining wholistic goals. Further reforms are needed in the following areas:

- The G.O.S of Sudan should try to get out of the whirlpool of daily and short term needs, that deplete its financial resources. With the high priority given to investment in infrastructure, such as electricity roads etc, the government is to spend more to improve civil amenities, such as health, drinking water, education, and the other community services.

- The outlook to natural resources, prevailing in most LDCs, as a source of supply of raw material, should be changed. Resources should be considered as a base for long term development.
- This warrants drastic changes in policies and programmes, especially at the state level.
- Of the measures to be taken in relation to above are: prohibition of horizontal expansion of agriculture, search for alternative renewable energy sources such as photo voltaic devices, gas, furnace etc, to lift the heavy dependence on biomass which contributes 87% of national energy consumption.
- The above measures shall result in rationalization of resource use, especially soil and water to stop the deterioration, and ultimately lead to development and poverty alleviation.

Many threats are still hovering over the economy:

- Serious deterioration in physical and human capital is undermining the growth in the agriculture sector.
- The fragile and under capitalized banking system, which with its static and supply-oriented policies, does

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- The fragile and under capitalized banking system, which with its static and supply-oriented policies, does

## 6.6.2. Organization and Building Institutional Capacities.

Future actions in moving CCD need to bring changes in the institutional structure to assure effective co-ordination in the roles and responsibilities of the different actors. The present situation tells that things are falling apart. We already addressed the philosophies and approaches, by targeting a wholistic tackling, which entails co-ordinated actions. This is attempted in Annex (II) which was developed from the results of discussions, with key figures, assuming positions in fields related to CCD. The very details carried by each of the proposed structures (a) (b) and (c) need not be endorsed, however some forms of the three recommended bodies should be essentially considered.



is not short in concepts about the problem, equally in experimenting on its solutions. On the organizational side, many previous attempts were being tried to address its manifestations, with the trend/continuing, as exemplified in the currently

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existing institutions, that have dealings with CCD. Very essential in these concerns is the availability of scientific cadres to move activities, and in this regard Sudan has abundance of academically qualified persons and scholarly expertise who could effectively contribute to the promotion of the CCD cause.

The questions that need to be addressed for achieving effective implementation of CCD, within the current situation of the country boil down to the following:

- a. A need for a fresh look.  
There is a lack of orientation, as to desertification causes and implications, for it is still held as a bio-physical phenomenon, hence requires bio-physical solutions to achieve natural conservation goals. Inspite of some of the efforts

that integrating, the physical and the human dimensions, more so the works of the UN organizations and the NGOs, the bio physical look is still superseding at all levels: the policy-maker, the execution agencies and the public at large. This needs to be corrected through a fresh look toward CCD as a multi-dimensional effort, aimed at enhancing the environmental conservation and equally at bringing development to the affected areas.

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This lack of interpretation of CCD within the above premises, pushes CCD into a low position in government priorities hence in receiving support finances. Though the devastating effects of desertification, <sup>which are</sup> pronounced in population uprooting, community instability, mass migration, collapse of local economic bases, occurrence of poverty, etc. are stressed as synonymous of the phenomenon, the treatments adopted are looked at separable of the causes. Therefore the linkages between the two needs to be strengthened,

### Annex (3): Macro Economics

The economy of the Sudan was in a turmoil between 1990 and 1997. This was caused by a conglomeration of interacting factors, the most paramount of these are:

- An urgent policy, to reshuffle the economic set up, and enter into open door economy, starting with a rapid action of privatization of the public sector.
- Decentralization dragged the government into huge expenses.
- Civil war and social unrest, which is demanding huge human and financial resources, besides the displacement of big numbers and their settlement around cities.
- 2. Spiral inflation, which was a direct result of imbalances between exports and imports, government revenue and expenditure, distortions in fiscal and monetary policies, compounded with severe fall in sectorial productivity due to weakness of infrastructure, drought and desertification and weakness of developmental policies.

preparation of the strategy is in progress being envisaged to take form through four steps: (i) definition of poverty and its indicators with ranking at country level (ii) formulation of policies to address poverty (iii) identification of strategies to implement policies, and (iv) guided by the above, preparation of action programmes for implementation. The first three steps were completed, with a documentary paper produced on each. In relation to CCD, the strategy paper covered both the productive activities in areas of agriculture, livestock raising, industry, and man-power; and the social welfare spheres in areas of water supplies, education and health. In the discussions leading to the strategies formulation, focus was given to following issues:

- i. Current problems of each of above sectors.
- ii. The spatial dimension, as well as time frames for programming.

- Complete isolation of the country from the international community, especially the effective economic centres.
- Sudan embarked on a reform program during the period 1977 – 2000, which yielded considerable gains. The economy responded positively to these reforms, and the following major successes were achieved:
  - Stabilization of the economy, which is reflected by the stability of consumers prices, and exchange rates over the last three years.
  - Inflation was curbed down, from 133% prior to 1977, to 12% in the year 2000. The rate of inflation is now estimated at 8%.
  - Monetary policies were changed, to induce producers to borrow, with many barriers being removed to enable banks to operate more freely, and the service charges to consumers were reduced from 48% per annum to a maximum of 15%. (The question that remains is whether banks, given their limited financial capacities, inflated administrative expenses, and low operational efficiency, can cope with these low rates).

iii. According weight to the specificity of each area at the programming phase through mapping poverty at country level.

iv. Modalities for implementation of strategies, with division of roles, between government, private sector, and civil societies.

vii. Drawing assistance from foreign financial resources in executing strategy.

vi. Functional structuring of activities as to address poverty, and at <sup>the</sup> same time serve in promoting the macro economy.

viii. Prioritization of activities according to set criteria.

c. CCD Strategies

On reviewing the modulated strategies, it clearly emerges out, that they meet at many angles with the prospected strategies of the CCD; Annexes (9 and 10). A highlighting of the concepts and issues, embraced by the two annexes point to the following :

i. According to solving the poverty problem a high priority in areas affected by desertification.

ii. Founding planning of poverty eradication programmes on community's perceived priorities and solutions.

- G.O.S is revising the local government structure to reduce expenses.
- Fiscal policies were changed radically, by removal of severe irrelevant taxes, which were a major disincentive to producers, in all sectors and at all levels.
- Government revenue is increased by 40% when petrol entered in the economy as a new source in 1999.

There is much to be done, to embark on real development, and alleviation of poverty in which a great majority of the people are living. (80 – 90 %). Current policy is adopting a trickle down effect, for improvements on the overall economy would impact positively on the different population segments including the rural sector, where the majority of the population live and earn their living. In absence of focused targeting, the presently followed poverty policies feature out as urban biased and short of attaining wholistic goals. Further reforms are needed in the following areas:

- The G.O.S of Sudan should try to get out of the whirlpool of daily and short term needs, that deplete its financial resources. With the high priority given to investment in infrastructure, such as electricity roads etc, the government is to spend more to improve civil amenities, such as health, drinking water, education, and the other community services.

- ✓ iii. Integration of the natural resources conservation activities with the production ones, to achieve balanced rural development
- iv. Co-ordination of the inputs of the different actors, i.e. the community, the Locality Council and the State.
- v. Translating of national goals into local ones through functional structures at different levels.
- vi. Founding of all above on the specific characteristics of different areas, to be attained through mapping country-wide.

Points of conjunction between the two, PRS and CCD, need not be stressed further and by creating a working relationship between the two, both programmes can benefit from each other, especially CCD, for the PRS is under the Ministry of Finance and Economic Planning, where any merging in programmes would secure finances for CCD.

not appear to be capable of supporting the private sector.

- A comprehensive reform program would be vital, especially for developmental specialized banks. Credit policies and modalities should be streamlined to meet medium and long term credit demands.
- Weak administrative capacity of civil servants, who are underpaid, frustrated and untrained, calls for comprehensive civil service reform, including intensive training.
- The issue of unsustainable foreign debt, which is estimated between 20 – 24 billion dollars, at the end of 1999, should be addressed and negotiated with lenders.

In conclusion, it can be assumed that, if these threats were addressed, the fiscal and monetary policies and the general economic policies, advocated by the G.O.S shall create conducive environment for small producers. Such policies should be sustained and deeply rooted with continuous rectification.

### 6.6.3. CCD Proposed Plan 2002-2011.

In fleshing out the proposed plan, it is only practical to give it some detail for the foreseeable future, possibly up to <sup>the year</sup> 2006, for things become blurred after that.

Most important in this regard is to start some effective action and thereafter activities shall roll. With this premise the following actions are suggested with costs given for each activity, when pertinent.

Year	Activity	Cost (if applicable) Thousand SUD Dinars
2002	1. Endorsement of ROAD MAP BY MOAF	
	2. Organization of a national workshop by MOAF (NDDCU) bringing together national and states representatives to discuss ROAD - 50 participants for 2 days, with media exposure	5000
	3. Establishment by MOAF of the 3 proposed bodies Annex (II)	
	4. Support to NDDCU	

Local  
SUD Dinars  
ooo'

Equiv.  
US \$  
ooo

Foreign  
US \$  
ooo

Annex (4): Citation of Some of Sudan's Experiences in Areas of Resource Development, Combating Desertification, Checking Land Degradation and Mitigation of Drought Effects

1898 : Parsons - Martini Grazing Convention: An agreement between Colonel Parsons Pasha, Governor of Suakin, for the Government of Egypt, and Commander Ferdinando Martini for the Government of King of Italy, to organize the entry of tribes with their animals into the two territories, effectuated through the payment of grazing fees per head of livestock. The agreement was kept effective up to 1937.

1920 : Sudan Famine Code of 1920: a set of regulations for prevention and amelioration of famine.

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1942 - 56: Soil Conservation Committee, and Soil Conservation Section of the Department of Agriculture: worked towards the improvement of land use situations, with regard to soil erosion and desiccation and availability of water supplies for the human and animal population.

1948 : Totihill, J.D (editor) Agriculture in the Sudan (28 separate authors). The book was intended to help the reader to understand the varied sorts of agriculture practiced in the country, and give a picture of the progress or otherwise made in the agricultural activities of the country from 1898 - 1942.

1952 : Stebbing, E.P. The Creeping Desert In The Sudan and Elsewhere In Africa. MC Corquyadale & Co. (Sudan), LTD.. One of the early publications on the issue of desertification, that succeeded in drawing attention to the recurring phenomenon, and ensuing conceptual developments that influenced policies and action programmes, especially in the area of forestry.

Equ. Us \$

1955 : Harrison, M.N., Report on a Grazing Survey of the Sudan, with Recommendations for Development and Improvement. In preparing the report, Harrison who was a pasture research officer, combined effort with J.K Jackson who was a Silviculturalist, to produce a classification and a map of vegetation of the Sudan, with description of the Sudan Zones, being still in use.

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1956 - 65: Department of Soil Conservation and Land Use, a period that laid strong grounds for interdisciplinary work of the water engineer, the agriculturist and the socioeconomist, on issues of land resources utilization. Desertification and land degradation received high concerns in the department programmes, and a good number of bilateral projects were implemented to this end.

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1966 - 69: The National Water Corporation, established as a successor of the Dept. of Land Use and Soil Conservation, and of a big magnitude to combat the thirst problem in the country, being pushed as a national policy priority. Through large funds mobilization, and technical and manpower strengthening, the Corporation was able to implement large programmes of

Year	Activity	Cost (if applicable)
2010	4.1. Staff appointment	SUD Dinners 000'
	- 12 cadres, 6 specialists with Masters degrees in related sciences (natural resource management, cartography and remote sensing, information technology, monitoring and evaluation, rural economy) and 6 graduates	2,880 000 (annual salaries)
	- Expatriate staff for one year to assist NDDCU in establishment	
2011	4.2. Equipment	
	- 2 Vehicles	16,000 000
	- 4 Computers	100,000
	- Complete Remote sensing laboratory	
2012	4.3. Office running expenses (fuel, stationary, travel to states, etc)	6,000,000

Equiv. US \$.  
000'

Foreign  
US \$  
000

water provision, with felt effects of amelioration of the thirst problem; also resulting in the opening many areas in the country for development.

1960 - 62: The Philosophical Society of the Sudan; organized special sessions on problems of land use and issues of pastoralism.

1964 : Barbour, K.M., The Republic of the Sudan, A Regional Geography: an attempt to gather together the findings of many Scientists and other Scholars, to throw light on such topics, as the distribution of settlements, and regional variations in agriculture and animal husbandry, and the gradual spread of a cash economy throughout Sudan. It proved to be a valuable textbook to university students of geography and the related subjects, referred to up to now.

1965 : Lebon, J.H.G., Land Use in the Sudan; a publication on the status of land use under different eco-systems, pointing to the problems of desertification and land degradation.

1962 - 67: Land and Water Use Survey in Kordofan Province, the Sudan. United Nations Development programme; gathered data on the land and water resources of Kordofan province, Savannah belt; with a view towards planning the use of these resources, to best meet the present and future needs of the people of this area.

1972 - 74: Southern Darfur Land Use Planning Surveys; investigated the physical resources and the economic, social and political ones, produced a development map concentrating on balanced use of resources for improvement of rain-fed agriculture, development of the livestock industry, and flood irrigation. 150

1976 - 86: Sudan Desert Encroachment Control and Rehabilitation Programme (DECARP) founded on studies of desertification, formulated into projects, supported in implementation by seminars, workshops and training programmes. Implementation was constrained by finance limitations. Projects turned to be spotty and execution was dominated by the bio-physical emphasis.

1983 : Eastern Africa Country profiles. International Development Program, Clark University; an Introduction to development issues in the Sudan, through a general overview of the country, people, economy, culture and resources; a summary analysis of the current development issues facing the country, and an assessment of the distribution of poverty in Sudan. 160

1981 - 84: Restocking of Gum Belt (followed by other phases) executed through UNSO, FAO, and the NFC, covering an area 5000 sq.km in central Kordofan. The project centres around the planting of *Acacia senegal* and production of gum Arabic by farmers on individual holdings as both a desertification checking and rural development measure, founded on the shared philosophy of government responsibility and community forest.

1984 - 85:	ETMA (Environmental Training and Management in Africa – Environmental Management in Sudan) financed by USAID. The study covered 6 areas in the country, by overviewing the desertification, land degradation and drought effects. The studies developed schemes of bio-physical and socio-economic indicators of desertification and land degradation, and proposed activities for eco-systems rehabilitation.
1984 - 86:	Hydrogeological Studies and Investigations in Northern Sudan, for Combating Desertification, executed by Bonifica Geoexpert Roma, and the NWC, financed by the Italian Ministry of Foreign Affairs, Department of Development Co-operation, and supervised by UNDP. The project concentrated on exploring the ground water potential in the Northern State, phenomenon of sand encroachment on agricultural lands and basins, hazards caused by sand movement on river banks, and measures to check sand movement and the use of groundwater for irrigation development.
1977 :	Agricultural Development in Jebel Marra Area (FAO), with the objective of assessing the agricultural and water resources of the area, and preparation of a plan of development. → 135,000
1992 :	Jebel Marra Rural Development Project (Phase I and II) EEC, improvement of traditional crop and livestock production through raising agricultural output, levels of food security and farm incomes of traditional small-holder production.
1988 - 2001:	ADSs, ARSs, implemented by UNDP, on philosophies and approaches of Integrated Rural Development, with emphasis on improvement in areas of traditional agriculture, range management, nomadic pastoralism, agro-forestry, capture culture fisheries and small scale enterprises, institutional support in fields of community organization, rural credit, delivery of services, and strengthening of community facilities: water supply, education, health, etc
1983 - 1992:	El Odiya Management of Grazing Resources Around Permanent Water Supply Sources (Phase I): concentrated on protection and rehabilitation of range resources according to set land use plans and development interventions, financed by UNSO, UNDP and Govt. of Sudan. → 25,962,000
1995 - 2000:	Gircigikh Community Based Rangeland Rehabilitation for Carbon Sequestration and Bio-diversity, financed by GEF and at a later stage by UNDP; now presented for extension to GEF and Near East Foundation.
1979 - 1992:	KADA (Kassala Development Area) an integrated rural development project, which focused on issues of land use planning, land and water resources) agriculture and irrigation activities, small scale enterprises, provision of services, with full involvement of communities, financed by the Netherlands government.
	Past IFAD's Operations in the Sudan. → 300
1979 - 85:	The Southern Region Agriculture, covered the three southern regions, purposed to build the institutional framework to improve crop production.

livestock development, and research and extension services, to improve standard of living of about 6000 small farmers and pastoralists.

1979 : The ICARDA Nile Valley Project: through a grant by IFAD for (ICARDA) to finance research in Northern Sudan and Egypt, aimed at increasing faba bean production, being an important ingredient of the diet of the poorer sections of the Sudanese population, especially the urban masses.

1982 – 88: New Halfa Irrigation Rehabilitation Project (World Bank, IFAD, ) designed to rehabilitate ongoing New Halfa Scheme of 330,000 feddan, by providing means to increase agricultural production, and improve the standard of living of 22,000 tenant families and 55,000 migrant labourers.

1988 – 92: Western Savannah Project (IFAD, World Bank, ODA) Phase II: covered most of South Darfur, designed to improve the livelihood of a poor and vulnerable segment of the population, and arrest the severe environmental degradation which is accelerating in this drought prone area; through construction and rehabilitation of wateryards, expanding and improving the efficiency of veterinary sciences, and combating desertification and deterioration of range lands.

1982 : The Stock Route Project: the project targeted providing 59 wateryards, to be constructed on two livestock routes from Nyala to Omdurman. It emphasized the conservation of the range along the stock routes, through the monitoring of natural grazing conditions.

1983 – 94: ✓ Northern Region Rehabilitation Agricultural Project (NRARP): sought to increase the productivity and income of 40000 farm families (240,000 people), by providing farmers with improved irrigation services and facilities, improved agricultural credit and other support farm services, to increase cropping intensity and boost food production.

1986 – 96 (Phase I): Northern Province Irrigation Rehabilitation Project (NDRIP): aimed at improving the production capacities of pump irrigation schemes, being important sources of food and primary sources of livelihood for the small farmers of the Northern Region, and by rehabilitating the irrigation schemes, financing farm inputs and strengthening farm support services

1989 – 98: En Nahud Co-operative Credit Project (ENCCP): aimed to increase the agricultural production, income and food self-sufficiency of 16,400 drought affected rain-fed farmers. The project addressed the major constraints to increased agricultural production, such as agricultural degradation, the lack of inputs, inadequate crop husbandry, and farming practices.

1992 – 99 (Phase II): Northern Province Irrigation Rehabilitation Project followed objectives of NPRIRP, of assisting small scale farmers at schemes, by rehabilitating irrigation water pumps and distribution networks, and by providing credit and inputs through ABS.

1992 – 99: Southern Roseires Agricultural Development Project (SRADP), aimed at improving small holder semi-mechanized agriculture and other supporting agrarian activities, through co-operative formation, provision of credit and delivery of agricultural services, with emphasis on the poorer or destitute

segment of the population, with inclusion of the nomadic households and the rural women in the project area.

1995 – 2001: White Nile Credit Project: (Project is concluding) would support private sector, small farm families and fishermen (8000 families) in the White Nile province who are constrained by shortage of inputs by providing credit for small capital items, seasonal crop credit, fishing gear and small scale enterprises.

## Annex (5): Major Legislation in Fields of Environment, Desertification and Land Degradation

2001 : Environmental Policy Act.

1989 : The National Forests Corporation Act.

1989 : The Forests Act.

1984 : The Civil Relations Act.

1981 : The Wildlife Conservation Force Act.

1975 : Public Health Act.

1975 : Environment Health Act.

1974 : The Survey Department Organization Act.

1974 : The Pesticides Act.

1973 : Animal Diseases Free Zone Act.

1970 : The Unregistered Land Act.

1961 : The Water Hyacinth Act.

1954 : The Fresh Water Fisheries Act.

1948 : The Rabies Act.

1937 : The Marine Fisheries Act.

1936 : The Wildlife Protection Act.

1932 : The Central Forests Act.

1932 : The Provincial Forests Act.

1930 : The Town Re-planning Act.

1930 : The Land Acquisition Act.

1927 : The Sheikh Ordinance Law.

1925 : The Land Settlement and Registration Act.

## Annex (9): Rural Poverty as Perceived by Village Communities

(From the findings of surveys in many parts of the Sudan)

### 3 Step Exercise

#### Step One: Who is the poor?

- i. Cultivates a small holding, concentrating on food crops.
- ii. Hires himself during the rainy season.
- iii. Credits his labour for cash during the dry season, to do farm work during the rainy season.
- iv. Because of (ii) and (iii) does not sufficiently attend his farm.
- v. Because of (ii) and (iii) ends up with a poor harvest.
- vi. Does not own livestock.
- vii. His home is made of one hut, lacking repair.
- viii. Eats one meal a day, and of poor ingredients; and possibly does not kindle a fire in his home for days.
- ix. His dress and that of his family members consist of that on their bodies.
- x. Does not send his children to school, and does not visit health facilities.
- xi. Receives *zakat* (charity money).
- xii. Can not borrow money for not possessing any liabilities.
- xiii. Can not carry long distance migration, for his family needs the daily support he can avail.
- xiv. Of low voice in community affairs.

Calculated on villagers' estimates, the poor make about 10 – 20 % of the village heads of households.

#### Step Two: Who is the rich?

- 1. Cultivates a large area, growing both food and cash crops.
- 2. Hires others to farm for him.
- 3. Reaps a good harvest.
- 4. Owns livestock.
- 5. His home is made of many huts.
- 6. Eats two meals a day, including meat on market days.
- 7. Reasonably dressed; also his family members.

8. Sends his children to school and visits health facilities.
9. Runs income-generating activities outside agriculture.
10. Financially well-off and extends credit to others.
11. Of high mobility and has connections with nearby centres.
12. Has leadership capabilities, and is involved in village affairs.

**Calculated on villagers' estimates, the rich make about 5 – 10% of heads of households.**

**Step Three:**

What about the rest of households?

They make the middle segment (about 70% of village households), carrying traits of poor and rich, with more inclination towards poverty.

**Conclusion:**

The above listed universes of poverty, as schemed by the rural population, fall straight within the spheres of resource utilization and for the satisfaction of basic needs. No mention of access to community services for example, was made in the above rating of poverty symptoms, which emphasizes that poverty is a relative phenomenon, and on this premises mapping poverty at the country level, would assist in revealing its dynamism, as it is expected to take different shapes from one situation to the other.

On considering effective remedies to the above listed poverty causes, the NAP could contribute substantially to influencing the states CCD policies for designing the most pertinent programmes.

## Annex (10): Guidelines For Translation of CCD Activities into States' Development Programs, in Preparation of the NAP

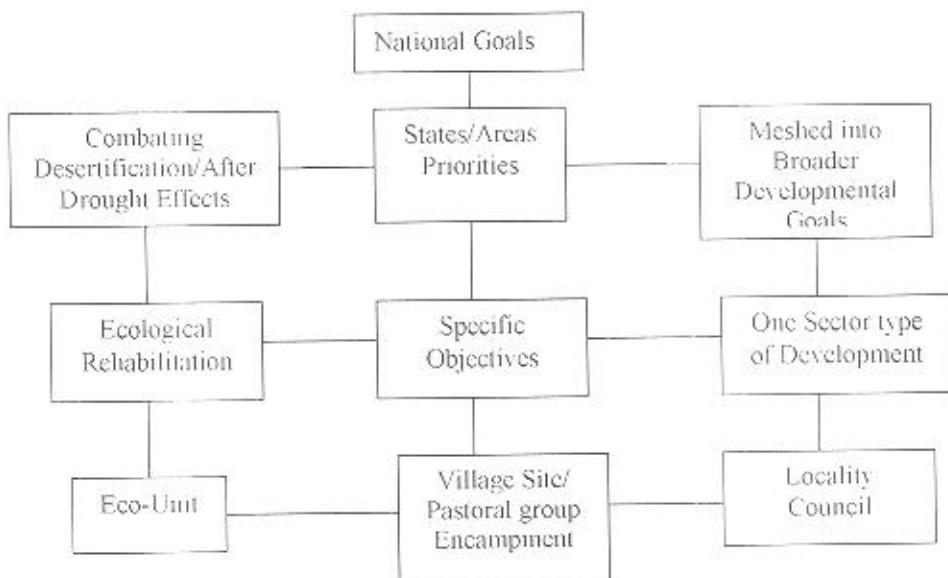
### 1. Priorities for Program Formulation

- Increase food crops production.
- Improve rangelands
- Build a market oriented livestock economy.
- Expand small business enterprise.
- Provide water, for drinking and agricultural uses.
- Rehabilitate displaced population.
- Care for population well-being.
- Improve infra-structure.
- Cater for adequate renewable energy supply and/or alternatives.
- Conserve the environment.

### 2. Many Scales

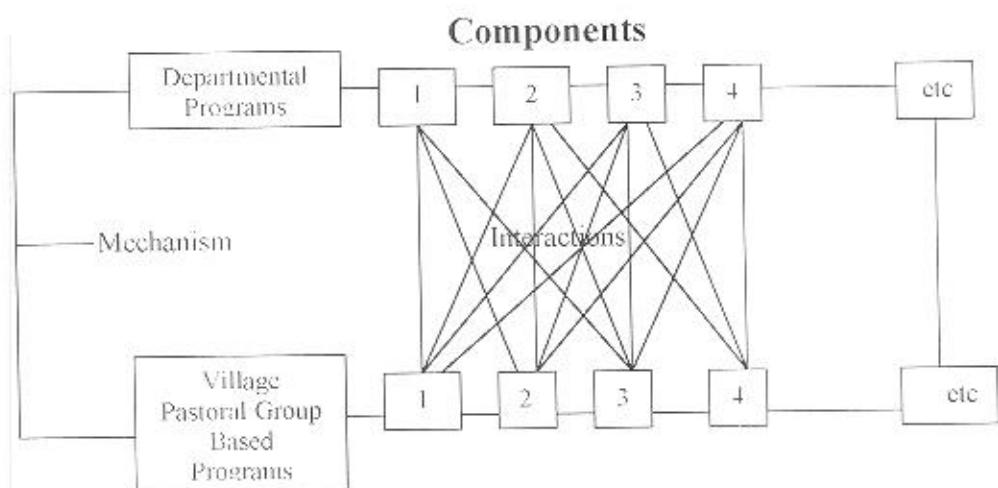
Rural reconstruction from grassroots, to be:

- founded on village and pastoral groups' habitats, economies and social structures;
- based on community priorities, initiatives, organization, and tapping of eco-unit resource potential;
- with individual programs to have a multiplier effect, for achievement of broader objectives: site activities translated into area and states priorities, and into national goals.



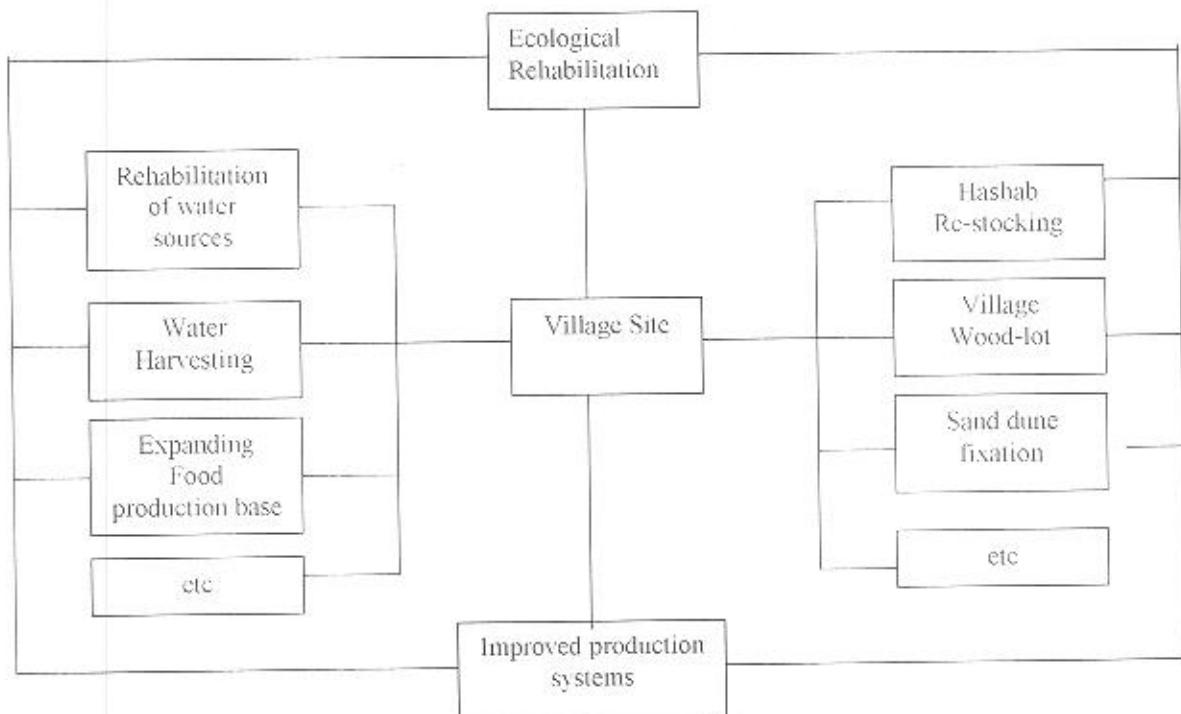
### 3. Definitive, but Fusing Roles

Fusing roles of different technical departments and community based activities.



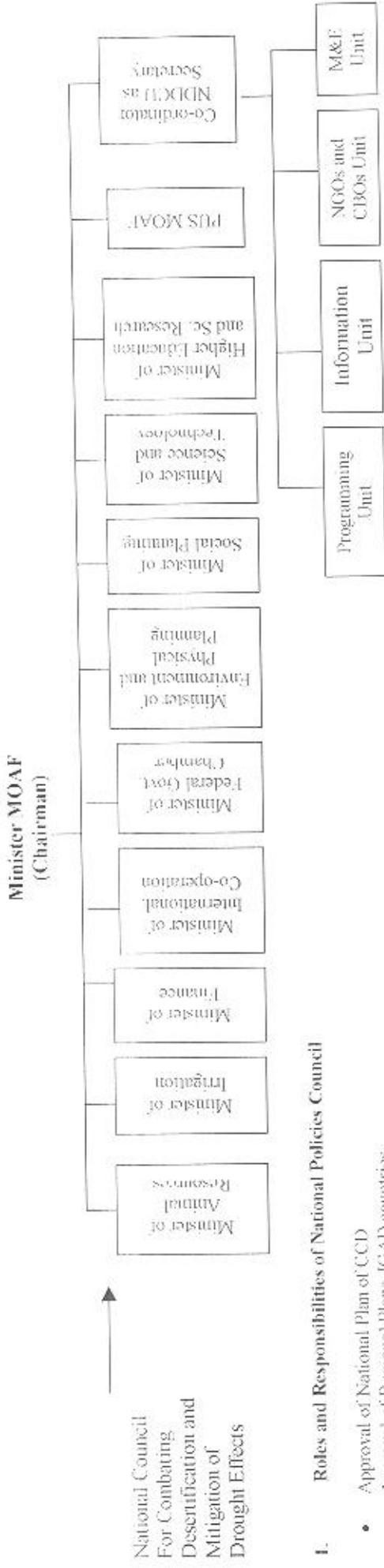
### 4. Integrated Resource Use

Arising from action at many scales, ecological rehabilitation should assume a focus in individual programs implementation.



## Annex (11)

### (a) Proposed National CCD Policies Council (with NDDCU elevated in hierarchy)



#### 1. Roles and Responsibilities of National Policies Council

- Approval of National Plan of CCD
- Approval of Regional Plans, IGAD countries
- Approval of National budget CCD Programs.
- Supervision of CCD National Fund.
- Soliciting Finance assistance for CCD.
- Assessment of performance at national level.

#### 2. Roles and Responsibilities of NDDCU

NDDCU is the National Focal point for the co-ordination of the CCD activities at national, regional and international levels. Its roles and responsibilities could be highlighted as follows

- Collection and updating of information in areas of natural resources and human aspects
- Contribution to strategic planning in fields of agricultural development, by addressing issues of land degradation
- Act as secretariat for the National CCD Policies Council, the Steering Committee, and the Owners Forum
- Act as a focal point for the states by availing technical advice for programs preparation, and co-ordination of programs into NAP.
- Organization of training of endures and CIOs.
- Follow-up of programs execution at states level, and conduct M&F assessments.

## (b) Proposed Donors' Forum

Minister MOAF Chairman

Donors, Focal Points

UNDP

FAO

UNICEF

Arab Organization for Agricultural Development

IGAD Desks (Ministry of International Co-operation and Investment and Ministry of External Affairs)

NBI (Ministry of Irrigation)

UNESCO Chair on Water

HAC

IFAD National Co-ordination Unit

Higher Council for Environment and Natural Resources

HAC, acting for NGOs  
NDDCU, acting as Secretary

### Roles and Responsibilities

- Act as round table for co-ordination of donor's activities and programmes.
- Mobilize donor's assistance

(b) **Proposed National CCD Steering Committee**

- PUS MOAF, Chairman
- NDDCU Co-ordinator as Secretary
- With membership of:
  - PUS Ministry of Animal Resources
  - PUS Ministry of Irrigation
  - PUS Ministry of Finance
  - PUS Federal Government Chamber
  - PUS Ministry of Environment and Physical Development
  - PUS Ministry of International Co-operation.
  - Director General Natural Resources Corporation
  - Secretary Higher Council for Environment and Natural Resources.
  - Director General Agricultural Development and International Co-operation (MOAF).
  - States Representatives.

**Roles and Responsibilities**

- Preparation of NAP, based on States plans.
- Approval of NAP budget.
- Assessment of performance at the State level.
- Avail technical advice to National CCD Policies Council.
- Act as executive organ to CCD National Fund.

**Annex (12): Persons Met**

1. **FAO:** Abdallah Tahir Ben Yahiya (Res. Rep.)  
Salah Mudathir Ahmed – Programme Officer
2. **HCENR:** Nadir Awad, Secretary General
3. **MOAF:** A/El Gabar Hussein, State Minister.  
Ahmed Mohamed Ali Dingil, Director General Agricultural Development and International Co-operation.
4. **MOER:** Dr. El Tigani Salih Fideil, State Minister.  
A/El Aiziz Marhoum.
5. **MOAR:** A/Rahman Mukhtar, Mohamed Sir El Khatim,  
Hassan Mohamed Hassan. Omer Kara, Hassan Khatab.
6. **MOI:** Osman El Tom, NBI.
7. **MOIC:** Mohamed El Mubarak Yousif, Yasin Isa (Technical assistance desk – IGAD.).
8. **MOF:** El Sheikh El Melk, International Co-operation.
9. **NCCD:** Mohamed A/El Gadir, Adil Mohamed Ali, Izat Mirghani Taha, El Tahir Mohamed, El Tahir Mohamed Magzoub, Representatives NGOs..
10. **NDDCU:** Hashim Mohamed El Hassan (Co-ordinator)  
Yousif Yaghoub  
Fathia Salih
11. **UNDP:** Amir Baker, Programme Officer.

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البيئة والموارد الطبيعية	- القطاع (١)
السكان	- القطاع (٢)
الحكم الاتحادي (ولايات)	- القطاع (٣)
الاقتصاد والتعاون	- القطاع (٤)
الزراعة	- القطاع (٥)
الثروة الحيوانية والمراعي	- القطاع (٦)
الغابات	- القطاع (٧)
المياه والإصلاح	- القطاع (٨)
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  - PUS Ministry of Environment and Physical Development
  - PUS Ministry of International Co-operation
  - Director General Natural Resources Corporation
  - Secretary Higher Council for Environment and Natural Resources
  - Director General Agricultural Development and International Co-operation (MOAF)
  - States Representatives

### Roles and Responsibilities

- Preparation of NAP based on States plans
- Approval of NAP budget
- Assessment of performance at the State level
- Avail technical advice to National CCD Policies Council
- Act as executive organ to CCD National Fund

(a) Proposed National CCD Policies Council  
(with NDDCU elevated in hierarchy)



1. Roles and Responsibilities of National Policies Council

- National Council for Combating Desertification and Mitigation of Drought Effects
- Approval of National Plan of CCD
- Approval of Regional Plans, IGAD countries
- Approval of National budget CCD Programs
- Supervision of CCD National Fund
- Selecting Finance assistance for CCD
- Assessment of performance at national level

2. Roles and Responsibilities of NDDCU

NDCCU is the National Council's secretariat for the coordination of CCD activities, national 'work' programme, and its implementation. Its responsibilities will be highlighted as follows:

- Coordinating and monitoring of intervention in areas of water, resources and human aspects
- Contribution to strategic planning in fields of natural and developmental, by addressing issues of land degradation
- Act as secretariat for the National CCD Policies Council, the Steering Committee, and the Donors Forum
- Act as a focal point for the states by providing technical advice for programs preparation and coordination of programs into NAP
- Organization of training of cadres and CBOs
- Follow-up of programs execution at states level, and conduct M&E assessments

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HAC, acting for NGOs,  
NDRC, acting as Secretariat

**Roles and Responsibilities**

- Act as round table for co-ordination of donor's activities and programmes.
- Mobilize donor's assistance.

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