

**NATIONAL REPORT OF SUDAN PREPARED FOR THE IDNDR  
MID-TERM REVIEW AND THE 1994 WORLD CONFERENCE ON  
NATURAL DISASTER REDUCTION**

**I. OVERVIEW AND EXECUTIVE SUMMARY**

Sudan is a disaster vulnerable Country. Drought, floods and locust infestation are the main disasters facing the country. These disasters have a major effect on social and economic situation. Sudan was stricken by drought during 1967-1973, followed by a more severe one during the period 1980 - 1984. Successive years of drought in certain parts during 1984 - 1987 have caused severe shortage of food, social disruption and widespread health problems. Vulnerability of drought is high as the drought severity increases. The vulnerable population are mainly in the following areas:

- Northern Kordofan;
- Northern Darfur;
- Red Sea Hills; and
- Butana Plain (Central Sudan).

Desert-locust invasion occurs perennially and causes serious economic damages in the absence of effective control. Suitable rehabilitation projects are executed according to local conditions so that the affected people can resume their normal livelihood. In the drought affected areas, deep bores are drilled for drinking beside using water for producing stable food, e.g. millet, sorghum.. etc. Dams and earth embankment are constructed for water harvesting to increase flood irrigated area for crop production and improvement of grazing. Seeds and agricultural hand tools are provided for the people. In some areas where nomads lost their livestock, restocking of animals is practiced, where each family is provided with few heads of cows, sheep or goats. Afforestation has been encouraged to stop further deterioration of soil and to combat desertification. The Government of Sudan established an institution to deal with disasters, the which is the "Relief and Rehabilitation Commission" including an Early Warning System Unit".

The main objective of this institution is to expedite emergency, rehabilitation and recovery and to ensure timely, appropriate and effective assistance. The Early Warning Unit of Relief and Rehabilitation Commission addresses itself to a systematic and regular monitoring of food situation arising out of environmental changes. Little research on disasters has been carried out in Sudan. It is hoped that the country and other African Countries will benefit from the "Multi-Disciplinary Centre on Disasters" which the Organization of African Unity (OAU) agreed on its establishment in Khartoum (Sudan).

## **II. RISK ASSESSMENT**

### **a. Hazards Assessment**

#### **1. Drought:**

The most important disaster that threatens the Sudan is **DROUGHT**. Vast areas in the desert belt (northern Kordofan, N. Darfur, Red Sea Hills and Northern Province) had been subjected to severe desertification. As a consequence, large number of people had left and became displaced in other areas.

The drought risk map can be divided into two main distinct regions; the region above N. Latitude 14°, where rainfall does not exceed 200 mm in most cases, and the majority of soils are sandy, where their water retention capacity is low, hence, short dry periods of only a week may result in a reduced crop yields. Variability of severity of drought below this latitude depends mainly on the conditions of rainfall, amount and distribution (see map).

Drought, under Sudan condition, can be described as; meteorological drought, where rainfall reduction for specified season below the long-term average occur. The agricultural drought, which is an impact of the meteorological drought, where moisture falls below the crop water requirement and hence, crop yield decreases or fails. Both types of drought strike the area and this is mainly due to low precipitation, dry spells drought in these areas depend on the intensity of rainfall.

#### **2. Desert-Locust:**

Desert-locust invasion occurs perennially and causes serious and persistent economic damages in the absence of effective control. Two breeding seasons were recognized in Sudan.

##### **(i) The Summer Breeding Season:**

During the period May/June to September/October, breeding takes place in the Western States of Sudan, where favourable conditions prevailed. The resulting swarms move eastern-wards to invade the Central, Eastern and Khartoum States, endangering the agricultural crops.

##### **(ii) The Winter Breeding Season:**

From October to April, the locust located around the Red Sea Coast and East Africa, where conditions are favourable for breeding. The resulting swarms may move inside the country and threaten the winter crops.

**b. Vulnerability Assessment:**

Due to prevalence of drought in the above mentioned areas, vulnerability of drought is high as the drought severity increases. The vulnerable population can be mainly grouped into:

- Northern Kordofan residents;
- Northern Darfur residents;
- Red Sea Hills residents;
- Butana Plain residents; and
- Populations who are immediately affected by drought during poor rains, (see graph).

Since most of the populations in these areas depend on agriculture, and animals during drought periods, they loose their crops and partly their animals under severe drought conditions. The phenomenon of displacement becoming prominent, people search for pasture and places where food is available. This takes place mainly immediately after sparse rainfall or failure of the rainy season. Depending on the intensity of drought, the following impacts may also be faced in these areas:

- Drop in the income of farmers and agricultural laborers;
- Decrease in the prices of livestock as farmers are forced to sell because the need to buy food;
- Increase in the prices of staple foods;
- Force people to sell assets to get cash (liquidity);
- Migrating in search of employment opportunity; and
- Increased inflation within the area.

### **III MITIGATION ACTIVITIES**

Sudan Rehabilitation Projects are executed according to local conditions, so that the affected people can resume their normal livelihood and depend upon themselves. In the drought-affected areas, deep boreholes (wells) are drilled for drinking beside using water for producing staple food e.g. sorghum, millet etc.. Dams and earth embankment are constructed for water harvesting to increase flood-irrigated area for crop production, improvement of grazing and growing plant soil cover. The population in these are provided with seeds and agricultural hand-tools and other agriculture inputs to enable them to cultivate their lands. In some areas, nomads lost their livestock during the prolonged years of drought. Here the restocking of animals is practiced where each family is provided with few heads of cows, sheep or goats. After some years, every family will be able to pay back to the project equal number of animals which are given to new families. In some affected areas, local handicrafts are being encouraged as income generating activity to supplement the basic need purchasing power. Near the rivers and tributaries, fishing

equipment are provided so that people can improve their diet (protein) and earn money by selling fish in nearby markets i.e. food security and income generating activity. To stop further degradation of soils and to combat desertification, afforestation has been encouraged. Laws were approved by legislation authorities to protect forest (the most important one is to keep upto 10% of each agricultural scheme under forest).

### **Preparedness**

A specialized agency was created within the structure of Government to deal with Disasters and Mitigation, that is "Relief and Rehabilitation Commission" as a central body with offices in the regions. Joint Assessment Missions from Government, UN Agencies and NGOs tour the whole country every year to assess needs, pre-harvest prediction. According to these assessments, plans are put in advance to respond to food shortages if any. Plans are also drawn for transport, storage and other logistics matters. Meanwhile, rehabilitation projects needed in the areas are proposed to keep people in their places.

Large stores were constructed in the provinces to store grains as "food security". To minimize losses of crops caused by locust infestation, pests and plant pathology the administration of plant protection of the Ministry of Agriculture and Natural Resources has been enforced and equipped with cars, radios, insecticides etc.. to move promptly to cure the situation.

### **Awareness and Training**

Articles concerning disasters are common in local Newspapers and Magazines. Central and State Radio Stations and T.V. broadcast speeches and films together with advises to local people especially during the time of disaster occurrence. Seminars and workshops are organized at provincial level to train local leaders and government officials. NGOs are active in organizing these seminars and workshops.

### **Issues**

Research challenge (Science - Technology Social). Little has been done in Research dealing with disasters in Sudan. It seems that this is common in the African Continent, which led the Organization of African Unity (OAU) too adopt a resolution to create "African Disaster Centre" in Khartoum, Sudan. The process of establishing this centre is going on. Nevertheless, recognizable research was carried out in desertification, environment and ecology by Environmental Studies Institute, Khartoum University.

### **Cost Effectiveness**

The country as a developing one is in need of foreign aid to be able to construct Rehabilitation Projects.

### **Responsibilities/Enforcement**

Clear responsibilities of the Government Agencies working in the Disaster should be worked-out beside coordination among them, NGOs and private sectors.

### **IV. WARNING:**

The Government of Sudan established a number of institutions regarding DISASTERS. These include:

- (i) Relief and Rehabilitation Commission
- (ii) High Council for Environment and Natural Resources
- (iii) Coordinating Unit for Drought and Desertification
- (iv) Civil Defence Department
- (v) Meteorological Department
- (vi) Coordination Council for Disaster
- (vii) Early Warning System.

Their main objectives is to expedite emergency, rehabilitation and recovery and to ensure timely, appropriate and effective assistance. The Early Warning Unit at Relief and Rehabilitation Commission (RRC) to a large degree, addresses itself to a systematic and regular monitoring of food situation arising out of environmental changes. This is achieved by the timely and better flow of information. The Unit focuses upon indicators of food production and availability and use the Food Balance Sheets at State level in which estimates of food production, imports, exports and consumption are combined to produce an estimate of the aggregate shortfall/surplus that needs to be made up.

The Unit reports on meteorological situation on decadal basis, agricultural crop marketing and other indicators such as nutritional status, so that they are better able to provide "early warning" information and would have enabled Government respond and suffering of drought impacts might have been avoided.

The Unit provides essential assistance to the Government for monitoring food conditions and reporting to policy and decision makers on the overall situation. The unit:

- prepares and releases monthly Bulletin with emphasis on regional coverage;
- prepares and releases Ten-Day Weather and Crop Bulletin on weather and crop conditions throughout the crop season; and
- prepares and releases special reports as warranted on an ad-hoc basis.

## **REDUCTION OF THE IMPACT OF DROUGHT**

The Government of Sudan takes a number of actions to counteract drought conditions or lessen their impact in these areas. These include:

- Improvement of water resources management by digging new wells and improving the existing ones in northern Kordofan, northern Darfur and Red Sea Provinces.
- Efforts were directed to construct catchment dams in the area, especially in north Kordofan and north Darfur; namely El Semailh Flood Scheme.
- The seed and tools, sorghum and millet are timely distributed in the area to allow the affected people to grow their food crop. It is worth mentioning that seeds of drought resistant crops are being distributed.
- Desertification measures have been taken that restrict deforestation such as forest laws (10% of the land must be under forest), tree planting and construction of wind breaks are actions to have been taken for combating drought.