

SUDAN

PROBLEM OF DESERTIFICATION OUTLINED

London AL-TADAJUN in Arabic No 40, 14 Jan 84 pp 45-48

[Article: "Hungry Sands Eat Up Vegetation, Leave Dessication and Extend Their Long Tongue to Man"]

[Text] The problem of desertification in Sudan is not a marginal one which is mentioned in passing in obscure places in the press, as though it were a forgotten subject. There has been a great deal of repeated discussion about it. to no avail.

The problem of desertification has begun to threaten one of the most valuable possessions of 17 countries in Africa, including Sudan. We mean land suitable for cultivation and grazing and agricultural land. Just as on the other hand, we know what distinguishes Sudan from most Third World countries.

Therefore, it is not true that the problem of desertification in Sudan is merely a topic everyone has been constantly discussing without conveying anything new worth embracing or pursuing in profound and continuous study. A great number of scientists and specialists are concerned with this increasingly complicated and grave problem today, and not just on a local or international level.

When it confirmed the danger of desertification, particularly in Africa, the UN assigned a body to become involved in it, study it and help implement programs to combat it. It is called the UNSO [as published].

The problem of desertification known in Egypt as "the advance of the desert," has begun to emerge through its impact on the environment, economy, society and recently even on literature, especially with respect to short stories and novels. Through these processes, we see that the concept of desertification and its manifestation in Egypt differ little from its appearance and actual presence in Sudan. This becomes clear for example in the story Hungry Sands. The words of its Egyptian protagonist suffice here:

'When I was a boy, my grandfather used to stop with me by the tamarisk trees which stretched out across from our field. Pointing with his index finger, he would say, 'These yellow sands have eaten up the village of my fathers and forefathers.' Then Grandfather would describe that: 'Tamarisk trees used

to surround my village on all sides. Beyond them was the desert. One morning we awoke and saw the yellow sands encircling the tamarisk trees like rings. We didn't realize that this ring of sand was stronger than a ring of iron. However, the desert began with the village guardians and shackled them before starting its infernal work. The people of the village weren't concerned about these yellow circles surrounding the tree trunks and infiltrating among them like vipers. The flowers in the field were still in bloom, with their red, yellow and white colors on a lush green background. But we awoke one morning and saw that sand had filled in the canals and closed up the wells. We were worried. We kept working until sunset striking with hoes and carrying sand until we had returned to the desert most of the sand it had loaned us. We slept the sleep of the dead, from weariness. Then we awoke to a tumult such as we had never heard before. It was the strong hot winds which blow two or three times per year. But we had never seen nor heard such a wind as this, whistling, deafening to the ears, a resounding cracking like thunder. We didn't know if it was night or day. We looked out from the small windows and saw only yellow, like the yellow of death. The winds nearly blinded us. We shut all the windows and locked every door, but the sand continued to come through to us inside our houses, as though it were boring right through the walls themselves. We couldn't breathe. We were drowned in a sea of sand. We were in the midst of a howling wind listening to houses crashing down and trees snapping. I don't know how long we remained in this state. However, I saw all my family die, their eyes bulging like those of people who have suffocated, wild terror gleaming in their eyes as they die. Suddenly I felt silence, a silence I can't describe, as if life on earth had come to an end, silence like a well in which you are afraid to breath so you won't hear the echo of your own breathing. I felt I was on the brink of insanity. I rushed to the door and tried to open it, but the sand which had penetrated through its cracks had made a barrier under it like a gate. I ran to the roof terrace of the house. I didn't see the ladder, but I did see a hill of sand heaped up on the bodies of my family. I looked and didn't find any roof to my house. However, for the first time since the period I don't remember, I saw the color of the sky. The roof had collapsed with the accumulation of sand on it. I felt as though I were emerging from the darkness of a tomb. What was I to do, with this sea of sand surrounding me? The desert with its armies had marched on our village."

As we may see, it is a splendid literary interpretation of the advance of the desert with its sands which is one cause, if not the most important one, leading to the imminent destruction of the world, as anticipated by the experts. However, the picture in real life isn't this hopeless gloom. Desertification in actuality is not entirely or even mostly an advance of sand. Desertification as it exists in Sudan and other African and non-African countries too means the destruction of agricultural cultivation and suffering from drought. It is good land being made barren, being condemned to death and ruin. This phenomenon of desertification, according to the expert Dr Muhammad Fathi 'Awadallah, has several manifestations:

First, scarcity of water or the poor use of it.

Second, man's calumny against the land, his depletion of the soil.

Third, overgrazing.

Finally, the advance of the sand.

All these warnings lead most certainly to the radical destruction of the plant environment in the ground and adversely affect man and his way of life. Here arises the frightening menace of desertification. It is a constant danger if these conditions are present, and it continues to become increasingly grave as the days go by. We now ask what the nature of desertification in Sudan is. How does one confront the problem while it is threatening good, usable lands? What area has actually been turned into desert? What hope is there of stopping this menace which threatens to lay waste to vast areas?

We find the answers to these and other questions of AL-TADAMUN in conversation with the national coordinator of the program to combat desertification in Khartoum, Faruq Hasan Ahmad.

He said, "The office of national coordination was set up in 1972 to confront the danger of desertification. Certain Sudanese ministries and organs participate in it, including the Ministry of Agriculture with its two agencies for natural resources and animal resources. The departments of forests and grazing land are included in the agency for natural resources. The Ministry of Energy and Mining also participates and is represented by the departments of energy and rural water. The agricultural research agency participates through its research departments on forests, grazing land and soil retention. Added to all of these is the Ministry of Foreign Affairs."

Faruq Hasan Ahmad explained to AL-TADAMUN that all these institutions drafted their own projects and proposals to combat desertification in Sudan, and subsequently to reclaim land which has been laid to waste and ruined. These projects included other concepts and programs drafted by the regional ministries. From all these programs came the plan named "the national program to combat desertification in Sudan." That is what Sudan is striving to implement.

Faruq Hasan Ahmad had figures on land transformed into desert in Sudan, an area of 100,000 square kilometers, located between 10° N and the Egyptian border. It includes areas in the center and north of the two provinces of North Darfur and North Kordofan. Not long ago these areas which have turned into desert were grazing lands and savanna forests rich with "Acacia Senegal" trees which produce the famous gum arabic. Also located in these areas were plantations producing oil seeds.

According to Faruq Hasan Ahmad, desertification in these vast areas resulted from the poor use of natural resources, not from natural factors alone, as some believe. Desertification occurred in Sudan in the first instance as a result of over grazing, the cutting down of trees, poor exploitation of both ground and surface water and intensive cultivation in marginal areas bordering on the desert. Added to this, naturally, were the effects of the drought which became more acute during the 1970's.

The provision of drinking water, for which a great deal of money and effort has been expended, has caused an increase in the number of inhabitants and their livestock in specific places. This is in contrast to the inhabitant's former way of life which was entirely nomadic. This concentration around new water sites and the overexploitation of natural resources ruined the land. It became completely denuded. Then it was exposed to wind and water erosion. This in practical terms is what is called "desertification." Desertification in Sudan does not mean the advance of the desert alone. The desert was formed originally millions of years ago under established climatic conditions. Desertification means the creation of desert conditions which do not produce anything. This does not mean, naturally, that there is no advance of desert sands. Sudan has experienced that in its northern borders located originally on the edge of the great desert.

The result of desertification in Sudan are not limited to the loss of valuable natural resources, the most important of which is agricultural land. There is in addition a decline in animal resources due to the scarcity of grazing land. Then there is the migration of people from their traditional areas of other remote parts to settle down, and this creates problems of a new kind requiring in turn various exorbitantly expensive solutions.

The national project to combat the phenomenon of desertification in Sudan, as Faruq Hasan Ahmad remarked to AL-TADAMUN, has not remained frozen, with no additions possible. Rather, it has remained open to the incorporation of the greatest number of projects, especially those which are planned according to natural, climatic, economic and social conditions on a local scale and which might be omitted in the draft national model project. For example, when UN delegations made numerous visits to the different regions of Sudan, officials presented them with certain local projects established in accordance with the conditions of these regions. These projects were added to the national program.

In the last 2 years certain projects to combat desertification in Sudan have been financed with foreign technical assistance through the UN which is represented by its office, UNSO [as published]: The UN has given it the task of helping 17 African nations south of the Sahara in their programs to combat desertification worldwide by obtaining international financing and technical help from nations and international bodies participating in programs to combat desertification throughout the world. Each year these nations and bodies are invited to meetings called the "Advisory Group to Combat Desertification." All the projects submitted by nations concerned are reviewed. One of the nations or international bodies chooses the project it wants to finance, according to its desires and willingness to participate.

It is noteworthy that there are more than 50 nations affected by desertification throughout the world. Seventeen of these are in Africa. All these nations have submitted many projects at these meetings. In the last 2 years Sudan has submitted more than 13. Clearly, implementation of projects to combat desertification in Sudan will be extremely slow-paced in view of limited financing and the threat of desertification itself which consumes grazing and crop land. Also, only a limited number of projects receives aid each year. If the present situation continues, with one or two projects being chosen for

each nation annually, then it will take Sudan another 80 years at least to be able to finance the projects already incorporated in its national program, not to mention those being planned now or those planned in the future. The latter are the most important, because they are long-term projects. In this situation, which cries out to the world for a helping hand, social problems arise which are contained mercilessly inside the country, perhaps more effectively than desertification itself is contained. Changes in living conditions affecting natural resources have caused desertification and have then been branded by it. We see these changes in attempts to settle nomadic owners of livestock since the beginning of the 20th century, even though one of the advantages of itinerant grazing is the balanced use of grazing areas. The proliferation of animals in such a confined area as this, bordering on the Sahil, has caused and continues to cause a great decline in natural resources, through the concentrated use of lands with low yield (land lying in the African Sahil). The "African Sahil" is a term meaning the climatic and vegetal belt lying directly south of the Great Sahara.

If we follow the size of population and animal resources (factors affecting the soil) in Sudan since 1917, we find that over a period of 60 years, the population increased sixfold. Animal resources increased at an ever faster rate. The number of cows increased 21 times over the 1917 figure; camels, 16 times; lambs, 12, and goats, 8. During the same period grazing land dwindled, and its yield of grass and trees decreased due to overexploitation. As a result of the population increase in the Sahil region of Sudan and a fluctuation of between 100 and 600 millimeters there in average annual rainfall, the number of villages is increasing, and they are becoming more densely populated. According to 1977 statistics in Darfur (western Sudan), 40 percent of all villages have sprung up since the beginning of this century. Most of these villages have been built around surface and ground water wells. New villages have been built near the old ones. Each one is surrounded by a ring of cultivated land. A satellite photograph clearly shows, especially in the region of al-'Ubayyid and Bara, the proliferation of agricultural villages with their encircling rings which have turned into desert, appearing as white halos completely devoid of plant life. In the period between 1970 and 1973 inhabitants of the sahil abandoned a number of their villages, fleeing the desertification which encircled them. They fled south where they erected new villages replacing the old.

From a study of this phenomenon in the region of a Sudanese tribe known as 'al-Zaghawah' in Darfur, it is clear that the people of this tribe abandoned 475 of their villages out of a total 804 during this period.

Certain projects proposed to combat desertification are currently being financed through foreign technical assistance. One of these on-going projects concerns the development and exploitation of ground water reservoirs in northern Sudan. It is being carried out at a cost of \$5 million through the UN program on environment and financed by Italy and Kuwait. Nearly \$3 million has been proved so far to finance the project.

The goal of this project is to study and exploit ground water reservoirs in the northern region in order to increase acreage in regions far from the Nile

and to stabilize sand dunes. Implementation of the first agricultural phase of the project began during the 1981-82 season.

There is also a project to develop a gum arabic belt. Its goal is to plant "Acacia senegal" trees in regions of central Sudan which are exposed to desertification. Implementation began in July 1971. A grant of \$1.5 million has been provided for this project by the government of the Netherlands. A survey of the region of western Kordofan is being conducted, as the second stage of the project. It will be financed by the European Common Market and Belgium.

Among projects currently being implemented to combat desertification in Sudan is one known by the name, the "project for grassland belts around water sources, cities and villages." Sweden is providing financing of \$900,000 for it. The implementation phase began in August, 1982, and it will take 3 years to complete. The World Council of Churches has allocated \$3 million to another project to plant trees in irrigated agricultural projects in the northern region to prevent desertification. One of the projects included in the plan of 1982-83 and mid-1984 to combat desertification in Sudan is the stabilization of sand dunes. Planning for it has been completed, and sources of its financing have been determined (the first stage). It includes the region of central North Darfur Province. Its cost of \$1 million is covered by a grant, also from Sweden.

One project under study will exploit surplus ground water to increase the size of agricultural land in the region of Saq al-Na'amah in North Darfur. The project now depends on a detailed study by a special UN commission and is similar to the project to reclaim "al-Qardud" lands (in other words, lands which have hardened through soil erosion) which is also awaiting a detailed study.

These projects cannot have a real impact on the problem of desertification in Sudan because of the vastness of the region affected and the living conditions associated with desertification. Approximately 48 percent of Sudanese territory located north of 14°N is either the desert or semi-desert, and 29 percent of the territory located between 10°N and 14°N is savanna. In other words, 77 percent of the territory of Sudan is covered by savanna, semi-desert or desert. With its plant and climatic make-up, this portion of the country is of extreme importance to the nation's economy.

Nevertheless, the situation in Sudan is preferable by far when compared to that in neighboring African countries. We can see this from the extent to which nations of the African Sahil (in other words, nations of the climatic and vegetal belt lying south of the Great Sahara) have been affected by desertification. Average annual rainfall there fluctuates between 100 millimeters in the north and 600 millimeters in the south. This belt makes up a great portion of many African nations. From west to east, they are Mauritania, Senegal, Mali, Upper Volta, Niger, Chad, Sudan, Ethiopia and Somalia.

These countries have been affected in recent years, between 1969 and 1973 in particular, by severe drought, causing thirst, want, famine, the exodus of tribes and tremendous economic, social and political problems.

A UN report has revealed that approximately 630 million inhabitants of countries suffering from drought are threatened by the danger of desertification. Research has also indicated that the desert is expanding throughout the world by thousands of [square] kilometers. The rate of expansion of this dangerous phenomenon is most evident in the southern portion of the Great African Sahara which has witnessed over the past 50 years the transformation of nearly 650,000 square kilometers of productive land into black desert. That area is three times larger than Great Britain.

The problem of desertification in Sudan which has subjected vast areas of usable land to ruin was recognized by the agencies concerned nearly 30 years before the drought crisis existed. Attempts began in 1944 to combat desertification in Sudan through measures of a special committee known as the 'Land Use Committee.'

These measures provided for a belt of trees around al-'Ubayyid, the capital of Kordofan, to protect it from sand storms in the dry season and to lay out grazing land around the city. The committee recommended that similar belts be created in certain large cities such as al-Kuhud, al-Fashir, Umm Rawabab and Bara.

Between 1944 and 1956 there existed an agency for soil protection. Aside from finding more water sources in agricultural areas, its most important function was to draft programs to protect the country's natural resources and continue to create belts of trees as part of soil protection and as a means of combating wind erosion around principal cities. However, this effort failed, due to many intervening factors. Between 1956 and 1965 another agency became prominent, the Agency for Rural Land and Water Use. One of its functions was to draft programs to protect soil and combat the advance of the desert in northern Sudan. In its time this agency began promoting implementation of the first of its soil protection programs. It composed a team of experts and technicians in the fields of agriculture, grazing and forests to undertake a general survey covering what was then known as "the problem area," the area lying between 10°N and 16°N, stretching from the Nile in the east to the western borders of Sudan with Chad.

The problems of concern in this rectangle are the decline in agricultural productivity due to the reduction of soil through wind and water erosion and the destruction of the plant cover (in other words, desertification). One of the tasks given these specialists was to find solutions to the problem of water in order to alleviate pressure at the permanent water sites. The first signs of desertification and even the advance of the desert were beginning to appear around them, especially in Haleit, Umm Kaddadah, Umm Badir and Bara.

Then the scope of study was enlarged with the participation of foreign expertise. All of this led to a recommendation to create farms, research stations and experiments in various environmental sectors of the "problem area" in order to protect and develop natural resources and combat agents of wind erosion, or desertification to be more exact.

These recommendations have not been applied in their entirety, because this agency was turned into a body to provide for water and rural development in 1976. All its efforts were focused on creating sources of water, without concern for the protection of soil and natural resources themselves. These vast efforts dealt successfully with the problem of water, but on the other hand, contributed toward desertification in an unexpected manner.

Clearly, the burden of desertification is one Sudan has borne over many years. However, it is a burden which has of necessity required participation in a broad, worldwide campaign. It is a heavy and harsh burden, and it will grow steadily worse if left to local efforts.

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CSO: 4504/181