

Introduction

Western Sudan consists of the regions of Kordofan and Darfur with a total area of 850,000 km² and a population of 6,186,993 (11% of which is in the city). There are three basic types of social system: (1) the nomadic societies of pastoral people in the north (camel herders) and in the south (cattle herders); (2) the village societies of cultivators settled in the middle belt; and (3) the homestead societies of cultivators in the south (Nuba Mountains).

One common aspect of the social structure is that the family connections and obligations regulate many social activities. The authority belongs to a person who is usually the descendant of the pioneer settler in the area. His major duties are to maintain public security and collect taxes. A son inherits land and social position from his father. The rainy season in this part of the country signifies heavy work for most of the people.

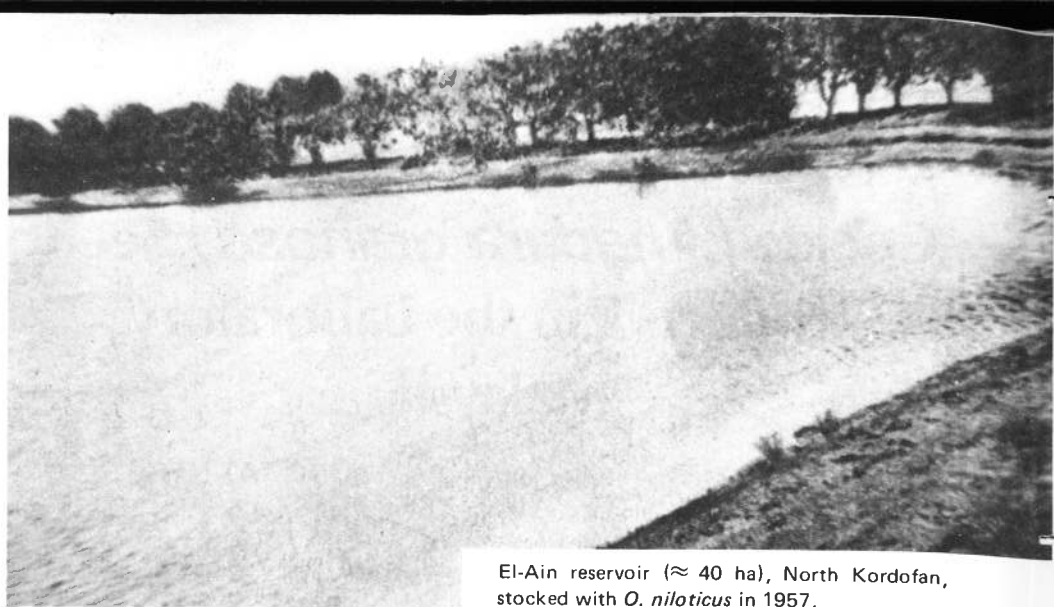
Critical Food Situation

The diet in these two regions was rather ample and the people subsisted chiefly on sorghum or millet which are high in carbohydrates but low in protein. Lately the food situation in these regions has deteriorated significantly. Among the root causes of the situation are the heavy exodus of the young rural people to urban centers and the drought that lately hit some parts of the two regions.

To alleviate this critical food situation, several projects have been started. Among these is the construction of dams for water conservation. At present, there are nearly 500 reservoirs in both regions. These were mainly constructed to collect and retain run-off water during the rainy season, thus providing water for irrigation, livestock and human needs during the dry season. Some of these reservoirs were stocked with *O. niloticus* to provide animal protein.

Reservoir Stocking

Since 1957, approximately 1,550 ha of western Sudan reservoirs were stocked with *O. niloticus*. This program was carried out by the fish culture extension service headquartered at Khartoum. The main objectives of the program were to provide



El-Ain reservoir (≈ 40 ha), North Kordofan, stocked with *O. niloticus* in 1957.

Fish Culture in Western Sudan

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animal protein and to create job opportunities.

Unfortunately, the target people showed very little interest in utilizing these water bodies for fish. No efforts on large-scale production have ever been made; rather, very small-scale production was practiced by the minorities who came into the country from west Africa and took up permanent residence in these areas.

The poor response of the people was attributed to the unawareness of the practical fishing procedures and the idea that fishing is generally looked at in these areas as an inferior job. Consequently, the Fisheries Administration (Animal Resources, Ministry of Agriculture) led several programs to let the interested people know how to fish and to make them recognize the advantages and values of fish in economy and nutrition. These programs were executed by carrying out fishing operations in El-Turda reservoir (north Kordofan) and in Keilak lake (south Kordofan), and people who had already showed interest in fishing were employed in order to strengthen their confidence and to develop their skills. The people willing to adopt fishing were unfortunately faced with the problem of obtaining fishing equipment at an affordable cost. Since there were no possible means

then to secure this basic requirement, the people were highly discouraged.

As a result of the poor fishing operations, these water bodies are today crowded with a large number of small or stunted unmarketable species.

The changing attitude of the people in western Sudan towards fish constitutes a major factor which strongly stimulates the development of a new strategy for fish supply in this area.

The market for fresh fish is good in north Kordofan while in south Kordofan and Darfur fish are highly preferred sun-dried. Fresh fish is usually transported by train from Kosti, at the White Nile, to north Kordofan. However, the shortage of fish transportation facilities and the distance between the production center and the consumption area (≈ 250 km) does not assure regularity and quality of the product.

The outlined problems suggest that the best alternative for supplying fish in the western region of the country may be the development of fish farming. However, under the economic and cultural conditions of the target regions, no private sector will be expected to invest in fish farming. This suggests a direct involvement of the government in establishing a series of pilot fish farms in both regions. This program could be integrated with animal and plant production efforts in the two regions. This program should mainly focus on demonstrating the economic and nutritional importance of fish culture. A detailed feasibility study is required to answer precisely whether fish culture in this part of the country is an effective strategy leading to improved economic and nutritional status. ●