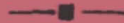


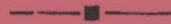
E. W. HOPKINS.

SUDAN GOVERNMENT

RURAL WATER SUPPLIES  
AND  
SOIL CONSERVATION BOARD



REPORT FOR YEARS 1946-47



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SUDAN GOVERNMENT

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REPORT FOR YEARS 1946-47



## SUDAN GOVERNMENT

# REPORT OF THE RURAL WATER SUPPLIES AND SOIL CONSERVATION BOARD FOR 1946 - 1947.

In 1942 His Excellency the Governor-General appointed a Soil Conservation Committee to report on the situation in the Sudan with regard to soil erosion and desiccation, and the availability of rural water supplies for the human and animal population.

The findings and recommendations of that Committee were embodied in "Sudan Government—Soil Conservation Committee's Report, 1944."

The Report was accepted by the Governor-General's Council at its 525th Meeting as the basis for future policy in soil conservation. Council also approved the five-year programme of work outlined in the Report and allocated the sum of £E. 300,000 for the carrying out of that programme.

The formation of a Rural Water Supplies and Soil Conservation Board was approved, whose function would be to advise on all matters relating to soil conservation and rural water supplies, and to act as custodian of the programme suggested by the Committee. The Board was constituted as follows:—

- Director of Agriculture and Forests. (Chairman).
- Civil Secretary or his representative.
- Financial Secretary or his representative.
- Director of Economics and Trade or his representative.
- Director, Sudan Veterinary Service.
- Government Geologist.

Two Sudanese Members nominated by H.E. the Governor-General

The Board held its first Meeting on 16th. October, 1944 and in the period to 30th. September, 1947 twentyseven Meetings were held.

A further £E. 80,000 has been allocated to the Board for its first five-year programme, bringing the total funds available for that programme to £E. 380,000

The Chief Conservator of Forests was added to the Board during 1947.

The Board published its first report in 1946 in which it dealt with its progress up to 30th. September, 1945. The present report covers the period from that date to 30th. September, 1947.

## II. ORGANISATION.

### A. Funds.

The Financial Secretary has now delegated to the Board financial authority and responsibility to operate its own budget, subject to certain limitations. He has also authorised the Board to utilise such portion of the Agriculture and Forests' Stores and Materials Current Account as the Director of that Department has agreed to earmark, thus relieving the Board from financing a stores and materials current account from its own funds.

The following statement shows the funds expended prior to 30th. September 1947, and the balances for use during the remainder of the five-year period. They are as follows :—

	Expenditure to 30.9.47	Balance for period 1948-50	Totals for five years.
	£E.	£E.	£E.
1. <i>Personnel and Services.</i> (i.e., recurrent expenditure all Sections) ... ..	12,182	39,875	52,057
2. <i>Heavy Equipment.</i>			
(a) Soil Conservation Section ... ..	19,528	11,552	31,080
(b) Drilling Section ... ..	10,000	13,969	23,969
3. <i>Projects</i> (See p. 25 of the Soil Con- servation Committee's Report, 1944)	25,124	144,890	170,014
4. <i>Unallocated Funds</i> ... ..	1,956	20,924	22,880
5. <i>Province Rural Water Supply Programme</i> ... ..	12,087	67,913	80,000
TOTALS ... ..	80,877	299,123	380,000

It will be seen that the total funds available for the five-year programme have been increased by £E. 40,000 since the Annual Report, 1945; that amount having been made available by the Central Government from its Development Budget.

Of the balance of £E. 299,123 the sum of £E. 151,461 has been approved for expenditure during the 1947/48 season.

## B. Soil Conservation Section.

The Section has now obtained a European surveyor on short term contract, Sudanese assistant surveyor, and a Clerk. The posts of Assistant Soil Conservation Officer and Deputy Assistant Soil Conservation Officer still remain vacant; suitable applicants still not having been found.

Suitable office accommodation has been found, and the Section has been equipped with topographical and hydraulic instruments.

Much of the machinery shown in the 1945 Report as on order has arrived, and the Section now has :—

- 6 Carryall Scrapers.
- 2 Rooters.
- 1 Compressor and jack hammer.
- 1 Autopatrol Grader.
- 1 Angledozer.
- 1 Sheepfoot Roller.
- 2 Concrete Mixers.

Orders have also been placed for a combined dragline shovel type excavator, for delivery late 1947, and four automatic tilting gates with an opening of 5 metres. They will be established on future stream diversion schemes.

### **C. Geological Survey and Drilling Section.**

Of the posts shown on p. 3 of the 1945 Report, the following have been filled :—

#### *Geological Survey.*

Government Geologist.

Geologist.

1 Laboratory Assistant.

2 Clerks.

#### *Drilling Section.*

1 Drilling Engineer.

5 Drillers.

The Drilling Section operates according to the instructions of the Board, and all drilling is charged for at the rate of £E. 2.500 m/ms. per foot drilled (whether lined or not) pending ascertainment of detailed costs over a complete working season.

During this period the Board ruled that the Drilling Section should operate continuously and to full capacity, utilising the staff and machinery available.

Exploratory bores on a site not previously drilled are charged to the Board's allocation for exploratory drilling. Duplicate bores to ensure a satisfactory supply and a safe stand-by are charged to the Public Works' Budget as the authority responsible for the operation of water supply. The Board is consulted on any question of increasing the output in a pumping station as by drilling supplementary bores and fixes the maximum desirable for any water-yard, bearing in mind the carrying capacity of the land and the nature of the underground supply. The Director of Works provides for the maintenance of the assessed maximum output from pumping stations by requesting new bores when this is considered necessary. The necessity for a duplicate bore at most water points has been emphasized, and implicitly accepted in framing the drilling programme for 1946/7 save in "close pattern" areas where a single bore can be adequate for the supply at stations close to an alternative water-supply.

The Board agreed on the need for pilot bores for recording levels of the watertable in important well-fields, El Fasher being cited as a case where this was desirable.

The Board is required to give its technical opinion on any water supply project financed from sources other than the Board's funds.

During the period under review the following machinery was obtained by the Drilling Section :—

- (a) Three heavy percussion drilling rigs mounted on lorries, with a complete kit of spares ; spare engines have been ordered. Although these machines are second-hand they are in a condition equivalent to new machines.

- (b) Two light rotary core drills with complete equipment for coring to 600ft. These are new machines. One of these belongs to the Soil Conservation Section, but is staffed and operated by the Drilling Section.
- (c) One new heavy percussion drilling rig was delivered in Port Sudan before September 30th, 1947. This machine was ordered by the Department of Agriculture and Forests, and will be operated by the Drilling Section.
- (d) One heavy rotary drill, capable of eight-inch bores to 1000 ft. This machine is not yet being used because there is insufficient staff and transport to operate it on the work for which it is designed.
- (e) Sufficient drilling, fishing and special tools for allowing four percussion drills to operate for their effective life (five years' continuous use or ten years' normal use).
- (f) Sufficient tools and equipment for six drillers to operate in the field.
- (g) Sufficient well-casing to allow the Drilling Section to operate for two years after September 30th, 1947, at present rate of work.
- (h) Five ten-ton diesel lorries for mounting new rigs and for maintaining supplies to rigs in the field from rail-head.

It should be noted that the purchase of the equipment from the British Army disposals has resulted in a saving in expenditure over what was expected and in a considerable saving in time. If the material had been ordered from U.S.A. or from the U.K. in 1945, delivery would have been in 1948/49.

Two worn-out rigs with non-standard tools accumulated over the past twenty years by the Public Works Department were taken over. Orders had already been placed by the Public Works Department for two new rigs, to replace these old rigs, in 1945; these are expected to be available in 1948.

### III. REPORT ON WORK UNDERTAKEN.

#### NORTHERN PROVINCE.

##### (1) *Shendi Town Perimeter.*

The Board approved a proposal submitted by District Commissioner, Shendi for the protection of Shendi Town Perimeter and supplied the barbed wire necessary for the project from the stocks he held by it.

#### KASSALA PROVINCE.

- (a) The preliminary reconnaissance of the Khor Arba'at delta has been carried out by the Soil Conservation Officer in conjunction with Chief Conservator of Forests and proposals for spreading flood water for cultivation purposes have been put up for consideration, by the Province and the Department of Agriculture and Forests.
- (b) In the Gedaref area the local authorities have continued the contour bunding work which was started by the Assistant Geologist. A preliminary survey has also been made in the Gedaref area where gully erosion is developing in a dangerous manner. The Board has provided a further £E. 800 for further soil conservation works in this area.

- (c) The newly obtained carryall scrapers were first employed in the excavation of a large hafir on the Khor Abu Fargha. This hafir has a depth of over six metres in good clay and a capacity of over 250,000 cubic metres. Hafirs have also been excavated in the southern Butana.

The team employed consisted of 3 carryalls and one rooter and dug 5 hafirs totalling 50,000 cubic metres in 29 days, travelling 350 kilometres and servicing itself with fuel and water.

- (d) The possibility of establishing experimental enclosures fenced against grazing in the Karora Hills and in J. Elba was studied by the Chief Conservator of Forests at the Board's request.
- (e) The Board provides ££. 400 annually for expenditure in connection with the 'national' grid firelines. The work is carried out annually on behalf of the Board by the tractors and implements of the Mechanised Crop Production Scheme in the open plains and by the Chief Conservator of Forests in the acacia bush country.
- (f) The Board approved an experiment in the use of an Auto Patrol self propelled grader for the construction of low earth terraces between the Butana Bridge and Sarsareib where breaks in existing cultivation terraces are causing erosion and the inland extension of Kerrib conditions. The object of the experiment is to ascertain the costs per kilometre of terrace (a) on old terrace lines, and (b) on new terrace lines.
- (g) The Board provided ££. 2,200 for further soil conservation works at Erkowit Hill Station during 1946, which were carried out under the direction of the Chief Engineer, Sudan Railways. On completion of the work at Erkowit, a report thereon was submitted by Chief Engineer, Sudan Railways to the Board. As the work requires periodic inspection and maintenance, the Board appointed a committee to assume responsibility for the annual inspection of the soil conservation works at Erkowit; the committee being constituted as follows:—

Chief Engineer, Sudan Railways—Chairman.

(With the agreement of General Manager, Sudan Railways).

Government Geologist.

Soil Conservation Officer.

Secretary, Rural Water Supplies and Soil Conservation Board.

#### KHARTOUM PROVINCE.

- (a) *Perimeter Control of the Three Towns and Provision of Fodder.*

(See p. 8 of Annual Report, 1945).

The Board has given considerable time and thought to the proposals for controlling the perimeter of the Three Towns and to establish fodder farms at Khartoum North and Omdurman, and has to report failure to make progress with these projects. The municipalities concerned have evinced no signs of agreement with the proposals to establish fodder farms, and have declined to take any action in limiting the town goat population which is destroying the perimeters. The Board have therefore, reluctantly abandoned for the time being the fodder farm projects, knowing that to create extra forage without placing a ceiling on town animals will be no solution of the problem.