

G1185

I Clerk Asst. IV

Roborters

NO.

Mombasa Pipeline Board

Report and Accounts for Financial Year Ending 30th June 1968

PRINTED BY THE GOTTRN IT PRINTER, NAIROBI

Mombasa Pipeline Board

Report and Accounts for Financial Year Ending 30th June 1968

KENYA NATIONAL ASSEMBLY Accession: 10013245

Call No: 657.3 MPB



MOMBASA PIPELINE BOARD

REPORT AND ACCOUNTS FOR THE FINANCIAL YEAR ENDED 30TH JUNE 1968

Constitution of the Board

During the year under review, the Board was constituted as follows:-

Chairman

V. G. Matthews. Esq. C.M.G., O.B.E., B.Sc.

Vice-Chairman

Johnson Mweru, Esq.

Members

The Under Secretary Ministry of Natural Resources, Nairobi.

The Hon. Rockie Mchinga, M.P.

The Permanent Secretary, Ministry of Works and Communications, Uganda.

J. E. Musembi, Esq., Chief Ports Manager, E.A.R. & H., Mombasa.

Councillor Isaac Kamau Ndirangu.

The Deputy Director (Agriculture), Ministry of Agriculture, Nairobi.

E. T. Mwamunga, Esq.

Secretary

R. Barrett, Esq., C.ENG., M.I.C.E., M.I.W.E., Director of Water Development, Government of Kenya (until September 1967).

O. S. Cege, B.E. (Civil), Director of Water Development, Government of Kenya (from September 1967).

Systems Operated

The installations operated by the Board remained substantially as recorded in the Report for the year ended 30th June 1967. In brief, these are the Mzima/ Mombasa pipeline with a capacity of 8,000,000 gallons *per diem*, piping water to Mombasa by gravity flow from the Mzima Springs 140 miles to the north-west, the Mrere pipeline with a capacity of some 2,000,000 gallons *per diem* piping water 27 miles from the Shimba Hills to Mombasa via Changamwe, and the North Mainland pipeline some 12 miles in length, with a capacity of 775,000 gallons a day, which connects with the Mzima/Mombasa pipeline between Mazeras and Changamwe and which supplies the Mainland north of the Tudor Creek as far as Shimo-la-Tewa.

In addition to the pipelines both existing and under construction there are three storage reservoirs at Mazeras on the Mzima system each with a capacity of 6,000,000 gallons and two for the North Mainland system at Nguu Tatu, these having a combined capacity of 1,000,000 gallons. The service reservoirs in respect of the Mombasa supply are at Changamwe and here the waters of the Mrere and Mzima systems mix. At this point the Board sells the water in bulk to the Water Undertaker, i.e. the Director of Water Development. The water is measured by a Sparling Meter specially designed to be accurate at all flow rates, including in particular the low flows that occur from time to time. In respect of the Mombasa supply the Water Undertaker is billed against the readings of this meter. In the case of the North Mainland scheme the metering system is located below the Nguu Tatu Reservoirs.

There are a number of minor water supplies from connexions along the Mzima/ Mombasa and the Mrere pipelines which are operated by the Director of Water Development. These supplies are listed in the "Statement of Water Supplied" in the Accounts at the end of the report. They operated satisfactorily and without incident throughout the year.

In the Annual Report for 1966/1967, reference was made to the Board's decision to extend its supplies both to the South Mainland coast area and to Sokoke on the North Mainland. As was also recorded in that Report construction was initiated on the 22nd March 1967. It is disappointing to have to report that progress has not come up to expectations. The slowness in the construction of the project has resulted partly from delay in delivery of materials from overseas and partly from the abnormal rains which have fallen over the whole operational area for prolonged periods. The difficult conditions of working have caused some trouble with the contractor and this has further aggravated the situation. It is hoped however that both schemes will be in operation before the end of 1968.

The Mombasa Pipeline Board administers the projects herein described under the authority of the Mombasa Pipeline Board Act (No. 19 of 1957), which makes the Board responsible in the discharge of its functions to the Minister for the time being in charge of water. During the year under report this was the Minister of Natural Resources until January 1968. From that time onwards the relevant Minister is the Minister for Agriculture.

The actual operation and maintenance of the installations is undertaken by the Director of Water Development, Government of Kenya, acting as the Board's specifically appointed agents. The fees for these services are calculated in accordance with an agreed formula.

The plan at Appendix I shows the layout of the systems operated by the Board, the dotted lines showing pipelines projected or under construction.

Finance

(a) Capital Account

The Capital at charge on the 1st July 1967, was £5.245 million made up as follows:—

- (a) Mzima system—£4.923 million.
- (b) Mrere system—£49,966.
- (c) North Mainland system—£185,736.
- (d) New Construction-£86,596.

The capital is wholly borrowed or loan capital, the creditors being the Government of Kenya for all three projects, the Uganda Government for the Mzima project and the East African Railways and Harbours Administration, Messrs. Barclays Bank D.C.O., the National and Grindlays Bank, and the Standard Bank also in respect of the Mzima project only. The three Banks loaned as a consortium a total of £1,350,000 the repayment of which is guaranteed by the Government of Kenya. This loan is covered by an issue of registered bonds. The loans and guarantee by the Government of Kenya are secured by a debenture issued to the Government by the Board. The loan from the Uganda Government was made to the Kenya Government and reloaned by that Government to the Board. The amount of each loan and the various rates of interest are as shown in the appended accounts.

The loans for the Mrere project and the North Mainland project are being repaid from revenue by equated instalments of interest and capital. Repayment commenced in 1958 for the Mrere project and for the North Mainland project in 1962.

In respect of the Mzima system, it is proposed that final redemption of the balance of the loans then outstanding shall be effected in 1995 when the assumed 40-year life of the major asset expires. To cover the period between that year and the dates when the original loans fall due for payment, it is intended to negotiate renewal of the original loans, or to seek fresh ones if necessary. The original banks' loan of £1,350,000 fell due for repayment on the 1st July 1965, but as a result of negotiations during the previous year the Banks agreed to renew the loan subject to repayment being made by ten annual equated instalments of capital and interest at 7 per cent commencing on the 1st July 1966. These instalments amount to £192,150 each and both the capital as well as the interest element being financed from current revenue result in an inevitable slowing down in building up the Reserve Fund. Conversely of course the Reserve Fund will be relieved of the necessity of finding the full capital repayment in 1995. The repayment to the Banks will be completed by the 1st July 1975.

(i) Capital repayments during the year were as follows:-

- (a) Mzima system—£104,485.
- (b) Mrere system—£2,732.
- (c) North Mainland system-£5,815.
- (ii) The Capital remaining at charge at the end of the year on 30th June 1968 was £5.326 million made up as follows:—
 - (a) Mzima—£4.819 million.
 - (b) Mrere—±47,234.
 - (c) North Mainland-£179,921.
 - (d) New Construction (work in progress)-£280,412.

The first instalment, i.e. one-third of the Uganda Government loan which originally totalled £1 million became due for repayment on the 4th December 1965, and in accordance with the understanding existing since the Board's inception, the Government of Kenya made that repayment. The second and third instalments fell due on the 4th December 1966 and 4th December 1967 respectively and were similarly paid by the Government of Kenya. It was always recognized that the original loans raised to finance the Mzima project were very short-term in respect of such a project—but finance being then scarce the position had to be accepted. In consequence it was also accepted that short of imposing a prohibitive water tariff the Board would be unable to repay these short-maturity loans on due date, and that the Government of Kenya would have to carry the Board in respect of these early repayments until the Board could meet the obligation at the end of a period related to the life of the asset. As a result of these repayments therefore the Kenya Government has become a capital creditor to the Board for an additional $\pounds 1,000,000$.

With reference to the loan from the East African Railways and Harbours Administration totalling £500,000, last year's report recorded that the Administration had agreed to extend the loan until the 1st April 1968 with the possibility of further extension thereafter. Since that Report was written further negotiations have taken place and in the upshot East African Railways and Harbours have intimated willingness to extend the loan until the 31st December 1968 on which date final repayment will be required. Here too intervention by the Government of Kenya will be necessary in due course.

(b) Revenue

The Board's recurrent income naturally accrues from the bulk sale of water, the selling price of which during the year (apart from a few unimportant exceptions) remained at Sh. 4/10 per 1,000 gallons for Mombasa Island and District and Sh. 4/50 in respect of the North Mainland.

Below are set out the comparative figures of consumption and revenue for the year ended 30th June 1967 and for that ended 30th June 1968:—

Year Ended 30th June 1967

Mombasa and	l District	North Mai	nland
Consumption	Revenue	Consumption	Revenue
million gallons	£	million gallons	£
2,090	428,216	179	36,922

Year Ended 30th June 1968

Mombasa and	l District	North Mai	inland
Consumption	Revenue	Consumption	Revenue
million gallons	£	million gallons	£
2,083	426,914	189	38,673

The drop in consumption for Mombasa and District may be attributed mainly to the abnormally prolonged and heavy rains during the year under report. Furthermore consumption for the year 1966/1967 was markedly above the level predicted in the long-term assessment of 1964. The figure for 1967/68 is actually back on the prediction curve. It seems therefore that the upswing noticeable in 1966/67 does not represent a permanent trend (*see* page 4 of the Annual Report of the Mombasa Pipeline Board for the year ending 30th June 1967).

(c) Expenditure

The Board's outgoings fall under three headings : ---

- (i) The service charges on and repayments of the outstanding capital loans.
- (ii) Fees paid to the Directorate of Water Development in respect of the operation and maintenance of the board's installations.

(iii) The cost of the Board and its staff.

These for the year under review totalled respectively :--

(i) £405,998.

(iii) £2,593.

⁽ii) £82,510.

The sum total of these three items is $\pounds 491,101$ of which (iii) (cost of the Board and its staff) represented only just over one-half of one per cent. Notwithstanding that the policy is framed by and administration is effected through the Board, the fraction of cost attributed to the Board itself in the price to the consumer is thus extremely small and this in spite of the ever growing complexity of the administration.

Operations of Systems

(a) The Mzima Pipeline

The major pipeline serving Mombasa consists of a 130-mile-long prestressed concrete gravity pipeline from the source at Mzima to Mazeras Reservoirs. Along this length of pipeline there are 10 break-pressure tanks and the flow is controlled automatically by valves operating on the down-stream control principle. Twin pipelines convey the water from the Mazeras Reservoirs to the service Reservoirs at Changamwe from whence the water is reticulated to Mombasa. The maximum capacity of the pipeline in optimum conditions is 8,000,000 gallons *per diem*.

The year was characterized by a series of bursts in the pipeline, particularly in the section between Voi and Mazeras. In one period three bursts followed in quick succession, resulting in the near exhaustion of the reservoirs at Mazeras and Changamwe and a shortage of water in Mombasa. Throughout this period the Mrere pipeline continued to deliver some 2,000,000 gallons a day at Changamwe. This incident highlights the necessity of maintaining the Mrere pipeline and its installations in a high condition of efficiency, a matter which is referred to under the appropriate heading below. Investigation of the bursts on the Mzima pipeline give reason to suppose that some of the bursts at least were the result of corrosion. As will be seen from previous Reports the Board has spent considerable sums on rehabilitating the cathodic protection system and the succession of bursts notwithstanding this rehabilitation made it necessary to consider whether or not the cathodic protection system is functioning efficiently. A firm of International Consultants, Messrs. Spencer and Co. of London were therefore instructed to make a thorough investigation. At the time of compiling this Report the results of these investigations have not been communicated to the Board.

In the meantime the Board came under considerable pressure from the various peoples living along the length of the pipeline for individual connexions for cattle watering and human consumption. As the Mzima pipeline was designed as a conducting pipeline and not as a distributing pipeline a multiplicity of connexions could seriously jeopardize the stability of the pipeline and therefore Mombasa's water supply. It was necessary therefore firmly to resist this pressure and in this matter the Board was wholly supported by the Government of Kenya.

The apprehension that notwithstanding the existence of the cathodic protection system, corrosion exists in the pipeline to a greater or lesser extent caused the Board to give serious consideration to the early laying of a second pipeline even though such a supplementary pipeline would not be justified on consumption figures alone. At the time of compiling this Report the matter is still being considered. The question at issue for the Board's Technical Advisers, is whether or not the Mzima Springs should form the source of the supplementary supply or whether other sources should be investigated (e.g. the Sabaki River). Although the Mzima water is an excellent water from every point of view the question is whether or not it is wise to rely wholly upon the Mzima Springs for the major portion of Mombasa's water supply. At the time of writing, this dilemma has not been resolved. In the meantime work on installing the pressure relief valves is near completion and this will provide protection against water hammer and surge in the pipeline.

(b) North Mainland Pipeline

This pipeline conveys Mzima water from the Reservoirs at Mazeras to the Mainland north of Mombasa, including the Nyali, Bamburi and Shimo-la-Tewa areas. From its source at Mazeras to the storage Reservoirs at Nguu Tatu is a distance of 12 miles.

As referred to in previous Reports the terrain through which the pipeline passes is hilly and contains several sections of the very unstable black-cotton soil. Almost from the time the pipeline was brought into operation in 1962, times of heavy rain have caused the pipeline to give great trouble in the way of breakages and bursts. In spite of the re-laying of certain sections, the duplicating of river crossings and the expensive maintenance of the difficult road of access, breakages and bursts have from time to time during the year resulted in an interruption of supply to the consumers. As the North Mainland is a developing area, particularly from the tourist angle, it became desirable for the Board to consider what steps were necessary to safeguard this water supply to the consumers. The Nguu Tatu Reservoirs have a combined capacity of 1,000,000 gallons and when the pipeline first came into operation this represented some four days supply. At the present rate of consumption this is now less than two days supply and one of the questions raised is whether or not this storage capacity should be increased. It has been concluded however that no amount of storage capacity (which is in any case very expensive to construct) could guarantee the continuity of supply if the pipeline were out of commission for a prolonged period. The Board therefore decided to install an alternative route of supply by means of a six-inch pipe crossing the Nyali bridge and drawing water from the Mombasa mains. The necessary negotiations to effect this were completed with Messrs. Nyali Ltd. during the year. It should be recorded here that the Board greatly appreciated the co-operative attitude shown by Messrs. Nyali Ltd. This system which will require a booster pump on the Nyali side of the bridge will provide an alternative supply and should be able to satisfy all reasonable demands during interruption of the normal supply line.

At the time of compiling this report installation of the emergency supply line is in hand.

(c) The Mrere Pipeline

This is a concrete lined steel pipeline some 27 miles long piping water from the Mrere Springs in the Shimba Hills to the Changamwe Reservoirs. It was constructed in 1923 and some deterioration has inevitably taken place. In view however of the concern felt about the condition of the Mzima pipeline, the Mrere system has assumed an even greater importance than hitherto. It is the policy of the Board therefore not only to maintain this system to a high degree of efficiency but also to improve the supply and if possible increase it. For this purpose funds have been provided for improving the headworks and redesigning intakes. In particular the fouling of the springs by surface run-off during storm conditions will be reduced to the minimum. This has become imperative because this pipeline will now become the source of the water supply along the South Coast from Likoni to Diani and the device of wasting soiled water following storm conditions will no longer be available. The connexion for the South Mainland supply will be from the pipeline at a point close to Kaya Bomba Hill, the connecting pipe running straight to Reservoirs on the hill itself. From there the water will be piped north to Likoni and south as far as Diani.

(d) The Mazeras Reservoirs

These comprise a battery of three pre-stressed concrete tanks each with a capacity of 6,000,000 gallons. The total demand below the Reservoirs is just under

6,000,000 gallons *per diem*. Of this some 2,000,000 gallons *per diem* is supplied by the Mrere pipeline discharging at Changamwe. Consequently the Reservoirs represent some four days' supply if account be taken of the off-take necessary to supply the North Mainland. The Reservoirs functioned normally and without incident during the year.

(e) The Changamwe Reservoirs

There are six Reservoirs at Changamwe having a total capacity of 6.5 million gallons. Here the waters of the Mzima line arriving from Mazeras and of the Mrere line arriving from the Shimba Hills mix. From here the water is fed to the distribution main and ultimately reticulated throughout Mombasa after chlorination.

During the course of the year it was necessary to initiate the re-construction of the roofs of two Reservoirs. Otherwise the Reservoirs functioned without incident during the year.

(f) Secondary Water Supplies

These secondary water supplies are set out in the "Statement of Water Supplied" in the accounts forming part of this Report. They operated successfully during the year.

(g) New Development

The two projects, i.e. a pipeline from Mazeras to Kilifi and thereafter possibly to Sokoke and the supply from the Mrere pipeline to Likoni along the south coast to Diani referred to in the Annual Report for the year ending 30th June 1967 continued under construction during the year. As referred to on a previous page however, progress has been disappointing.

V. G. MATTHEWS,

Chairman, Mombasa Pipeline Board.

CERTIFICATE OF THE CONTROLLER AND AUDITOR-GENERAL, KENYA, ON THE ACCOUNTS OF THE MOMBASA PIPELINE BOARD FOR THE YEAR ENDED 30TH JUNE 1968

Revenue Account			 	Statement No. 1
Net Revenue Account			 	Statement No. 2
Net Revenue Appropriation	Accou	nt	 	Statement No. 3
Capital Account			 	Statement No. 4
Balance Sheet			 	Statement No. 5
Statement of Water Supplied			 	Statement No. 6

The above accounts have been examined in accordance with section 13 of the Mombasa Pipeline Board Act (Cap. 373). I have obtained all the information and explanations I have required and as a result of my audit, I certify that in my opinion the accounts are correct.

D. G. NJOROGE, Controller and Auditor-General.

Nairobi, 9th November 1968. REVENUE ACCCOUNT FOR THE YEAR ENDED 30th JUNE 1968

		466,313 8 80 542 4 65						K£ 466,855 13 45
Income	K£ s. cts. or Year: 465,586 14 15 	:						Κ£
	BY ACCRUED REVENUE FOR YEAR: Sale of Water	Rents received						
1966/67	K£ s. cts. 465,138 16 30 698 10 25	465,837 6 55 65,682 12 85						466,519 19 49
	K£ s. cts.		2,592 12 15			76.273 15 20	387,989 6 10	K£ 466,855 13 45 466,519 19 49
ITURE	K£ s. cts. 1,750 0 00 52 16 05	141 14 25 260 13 80 152 10 60 25 0 00 38 13 45	171 4 00		57,049 1 55	8,717 16 30 10,506 17 35	Account	K£
EXPENDITURE	To Preline Board—Head OFFICE: Chairman's Remuneration Cost of Official Entertainment	S L S	Maintenance and Running Expenses of Board's Trans- port.	MAINTENANCE AND OPERATION OF PIPELINES: Reimbursement to the Min- istry of Natural Resources on Account of Maintenance	and Operation Expenses— (i) Main Pipelines (ii) North Mainland Sch. J Extraordinary Maintenance	and Renewals Hire Charges of Vehicles	Balance carried to Net Revenue Account	
1966/67	K£ s. cts. 1,750 0 00 254 3 00	126 12 05 181 11 55 25 0 00 40 16 40	01 1 061	2,568 4 10	48,858 14 35 18,376 13 14	11,303 0 00	78,538 7 49 385,413 7 81	K£466,519 19 40

1966/67 Income	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	07	51 135,675 13 51 Provision for Loan Redemp- tion carried to Net Revenue Appropriation Account 135,675 13 51 Balance being Net Operating Loss carried to Net Revenue 135,675 13 51
EXPENDITURE	K£ s. cts. K£ 80,350 10 30 8,913 4 65 26,234 6 05 10,2,154 2 20 1,998 13 20 11,519 1 58 46,794 10<70	nstälment-Bank 10	Transfer to Loan Redemption Fund Balance being Net Operating Surplus carried to Net Revenue Appropriation
1966/67	K£ s. crs. 87,664 10 00 23,739 14 55 101,875 0 00 2,103 14 45 11,866 2 83 26,684 19 30 26,684 19 30 26,684 19 30 26,684 19 30 26,684 19 30 5,467 11 63 5,467 11 47	97,650 0 00 105,744 2 57	135,675 13 51 13,942 11 86

NET REVENUE ACCOUNT FOR THE YEAR ENDED 30th JUNE 1968

N	1966/67	K£ s. c.ts. 774,994 1 27 135,675 13 51 Transfer from Net Revenue 70 340 16 93 Financing the cost of rehal		K£930,910 11 71		1966/67	K£ s. cts. 1,221,081 1 59 Balance at 30th June 1968	K£1,221,081 1 59			Save 1	
NET REVENUE APPROPRIATI	EXPENDITURE	To Balance at 1st July 1967 Balance brought from Net Revenue Account Transfer from Net Revenue Account Financine the cost of rehabilitating the Mzima'	Mrere and North Mainland Scheme installations	K£	LOAN REDEMPTION FUND STATEMENT OF FUND FOR THE YEAR ENDED 30th JUNE 1968	Expenditure	:	K£	STATEMEN	Nature of Stock	Savings Bonds 1960/70 3 % Nyastand 1971/78 44 % Eonversion Stock 1969 34 % Funding Stock 1966/68 3 %	3
ION ACCOUNT		K£ s. cts. 916,967 19 85 135,675 13 51 5,007 10 05	17,158 5 15	K£ 1,074,809 8 56	LOAN REDEMPTION FUND		K£ s. cts. 1,356,756 15 10	1,356,756 15 10	STATEMENT OF INVESTMENT AT 30th JUNE 1968	Amount of Stock	£ 5. d. 24,647 1 03 3,263 15 07 1,258 11 09 40,311 13 05	69,481 2 00
FOR THE YE	1966/67	K£ s. cts. 13,942 11 86 916,967 19 85		930,910 11 71	TION FUND	1966/67	K£ s. cts. 1,085,405 8 08 135,675 13 51	1,221,081 1 59	TENT AT 30th	Cost Price	£ 5. d. 20,738 11 03 3,229 7 03 1,201 19 00 34,088 10 10	59,258 8 04
REVENUE APPROPRIATION ACCOUNT FOR THE YEAR ENDED 30th JUNE 1968	Income	By Transfer from Net Revenue Account By Balance at 30th June 1968			30th JUNE 1968	INCOME	Balance at 1st July 1967 Transfer from Net Revenue Account		UNE 1968	Quotation (Middle Market Value Value) Value	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	66,109 17 01
		ount K£ s. cts. 1,074,809 8 56		K£ 1,074,809 8 56		E	K£ s. cts. 1,221,081 1 59 unt 135,675 13 51	K£ 1,356,756 15 10				

CAPITAL ACCOUNT FOR THE YEAR ENDED 30th JUNE 1968

	to e 1968	s. cts.	0 00	00 0		00 00	6 45	16 80	3 25	0 57 0 00	3 00	3 57	37,399 2 08	8 90
	Total to 30th June 1968	K£	1,350,000	500,000	70,277	210,000	146,747	142,261 16 80	202,412 16 95 5,589,286	3,731 1,589	2,750 180	8,250	37,399	K£ 5,634,935
	ived year	s. cts.				1.1	60,151 0 15	142,261 16 80	2 16 95				17,158 5 15	K£
	Received during year	K£	1				60,15	142,26	202,41				17,1	
	s at 1967	s. cts.	00 0		00 0	00 0	6 30		6 30	0 57	0 00	3 57	16 93	
	Loans as at 1st July 1967	K£	1,350,000	500,000	70,277	210,000 666,667	86,596 6 30	I	K£ 5,386,873	3,731 1,589	2,750	8,250	20,240 16 93	
			:			ment	odmo	koke	K£	: :	theme	K£	venue r the zima/ nland K£	
			:	::	Supply	Repay	Kaya B	ras/50	1	Valves	ontribution from the Admiralty for the North Mainland Scheme efund of Consultant's fees	Total Capital Receipts	Approriation from Net Revenue Approriation Account for the Action of the Mizinal Micree and North Mainland Scheme installations	
	OME		:	Loan	Mrere S	Uganda	Mrere/H	-Maze	Raise	s: aged	h Main sultant'	ul Rece	rom North North	
	INCOME	D ATCET	ans	Loan nd H. I	oan-l	Loan-le	le	Loan-	Total Loans Raised	VECEIPT Assets y of Da	e Nortl of Cons	Capita	Approviation from Net Approviation Accoun- tenabilitation of the Arere and North Scheme installations	
		Du I ourse D areas.	Bank Loans	E.A.R. and H. Loan	Kenya Loan-Mrere Supply	Scheme Vander Vorum Manualu Scheme Kenya Loan-Uganda Repayment	Kenya Loan-Mrere/Kaya Bombo Scheme	Kenya Loan-Mazeras/Sokoke Scheme	Total	CAPITAL RECEIPTS: Sale of Assets Recovery of Damaged Valves	Contribution from the Admiralty for the North Mainland Scheme Refund of Consultant's fees	Total	Contribution from Net Revenue Approriation Account for the rehabilitation of the Mizima/ Mrere and North Mainland Scheme installations K.	
			-				_	<u>×</u>		CAL		_		
	Total to th June 1968	s. cts.		1 12 86	210,491 15 89	140,800 5 50	5 8 9(35 8 90
	Total to 30th June 1968	K£		16,306 2 90 3,135,321 12 86	210,49	140,00	2 10 5,634,935 8 90							K£ 5,634,935
	ture year	s. cts.	000	2 90	2 25	16 80	2 10							K£
	Expenditure during year	K£		16,306	852	00,151 0 15 142,261 16 80	219,571							
		s. cts.		966	13 64		6 80 2							
	Assets as at 1st July 1967				209,639 13	80, /09 3								
	Asse 1st J	K£		\$119,015	209		K£ 5,415,364							
			Mazima and Mrere Instal-	cheme) ···	Mazeras/Sokoke Scheme (Work in Progress)	K.							
	DITURE		Mrere	North Mainland Scheme	(Work in Progress)	oke S	S							
	EXPENDITURE		a and	Main	rk in P	as/Soko	Total Assets							
		Accre	Mazima	North N	(Wo	Mazer. (Wo	Tota							
'		IE	-											

W£ 7.	K£ 7.118,570 1 80 6,759,533 12 34 (6,109-17-1d). *The Middle Market Value of these Investments on 30th June 1968 was £66,109-17-1d.	,118,570 1 8 these Investme	161 4	$\mathbf{K} \mathbf{f}_{\mathbf{z}}^{T}$
REVENUE ACCOUNT: 5, Net Revenue Appropriation Account 1, Investments: 1, Investments: 1, Cown Agents* 1, Stundry Debtors 1, Cash: 1, At Bank 1, On Deposit with 208,838 18 55 On Deposit with 90,000 0 00	5,415,364 6 80 916,967 19 85 59,258, 8 34 43,030 10 25 224,912 7 10 100,000 0 00			EVENUE ACCOUNT: Loan Redeminion Fund as at 1st July 1967 1,221,081 1 59 <i>Add</i> Provision for 1967/68 13 51 Sundry Creditors
	10 5.415.364 6 80	5.634.935 8 9		
	8	37,399 2 08	:	:
	1	8,250 3 57	:	:
	Y	5 589 286 3 25	202,135 10 00	202,13
			23,042 2 04	23,042

8 56

1,074,809

5,634,935 8 90

298,838 18 55 K£ 7,118,570 1 80

BALANCE SHEET AS AT 30th JUNE, 1968

F

CAPITAL ACCOUNT: Capital Expenditure as per Capital Account 5,634,935 8 90

5,415,364 6 80

S. Cts.

S. Cts.

К£

S. CIS.

LIABILITIES K£ .. 5,334,030 9 71

Loans: Outstanding ... Redeemed— Kenya Loan, Mrere

CAPITAL ACCOUNT:

S. Cts.

1966/67 K£

1966/67 K£

ASSETS

S. Cts.

K£

Senior Accountant. F. M. D'SOUZA,

Mombasa Pipeline Board. 18th October 1968.

1

18th October 1968.

Mombasa Pipeline Board.

V. G. MATTHEWS,

Chairman.

*The Middle Market Value of these Investments on 30th June 1968 was K£56,665-11-80 cts.

1967/68	Consumer of Rate per Total Value of Gallons 1,000 Amount Water Supplied Gallons	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Orks: 400,472 7 30 action Unit—Provincial Engineer (Coast) 133,900 4 10 27 9 00 27 9 00	VAYS AND HARBOURS: 22,330,600 4 10 4,577 15 50 20,227,000 4 10 4,577 15 50 20,227,000 4 10 4,290 5 20 20,227,000 4 10 4,248 0 60 4,82 13 50 920,000 4 10 188 12 00	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	OF KWALE:
	Number of Gallons Supplied	1,831,266,100 24,424,800 17,198,1000 6,388,700 5,388,700 5,383,400 61,851,500 2,576,800				
	CONSUMER		incial Engineer (Coast)	Easr AFRICAN RAILWAYS AND HARBOURS: Maungu Mackinnon Road Mackinnon Road Marburu Manyani Landhies		
1966/67	Amount	K£ 5. <i>cts.</i> 373,290 10 10 6,517 14 60 3,529 16 65 1,722 12 00 1,722 12 00 1,721 18 85 13,147 18 85 13,424 1 25	35 18 35	4,454 9 35 3,679 17 90 4,745 9 35 132 5 55 29 2 60	12,817 18 60 6,743 13 10	153 15 80 35 7 40 11 0 60 8 6 50
1966	Number of Gallons Supplied	1,820,929,300 31,793,800 11,218,700 5,963,900 58,432,000 58,432,000 58,432,000 58,600	175,200	$\begin{array}{c} 21,729,100\\ 17,950,700\\ 23,148,600\\ 645,300\\ 142,100\end{array}$	62,526,500 29,971,800	1,537,900 353,700 53,800 40,600

STATEMENT OF WATER SUPPLIED

STATEMENT OF WATER SUPPLIED-(Contd.)

-

	Amount Total Value of Water Supplied	s. crs. K£ s. crs. 5 14 20 5 140 35 6 2 60 12,626 2 6 360 12,626 2 6 5,631 6 5,631 6 9 5 14,85 8 9 8 9 6 372 18 75 31 25 31 25 31 25 31 25 31 25 93 13 25 93 31 25	K£ 465,586 14 15
1967/68	Rate per 1,000 Gallons	K.Sh. cts. K£ 6 00 54 6 00 12,626 135 5,631 3 75 5,631 3 75 5,631 3 75 13,075 888 4 10 372 4 10 372 5 688 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7	
	Number of Gallons Supplied	574,100 61,590,900 61,590,900 161,800 30,033,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 69,737,300 60,737,200 70,7000 70,7000 70,7000 70,7000 70,7000 70,7000 70,7000 70,7000 70,700000000	2,271,436,600
	CONSUMER	MINISTRY OF AGRICULTURE AND ANIMAL HUSBANDRY: Bachuma	
1966/67	Amount	K£ s. cfs. 130 5 00 14,764 4 10 5,973 9 10 5,973 9 10 23 12 15 57 3 35 57 3 57	K£465,138 16 30
196	Number of Gallons Supplied	964,400 964,400 72,020,500 1,613,000 31,856,200 58,514,400 115,000 115,000 117,6000 117,6000 117,6000 117,6000 117,6000 117,6000 117,6000 117,	2,270,161,300

GPK 5016-400-1/69

G . OFULA DATE.23.11.66 WATER DEVELOPMENT DEPARTMENT HEAD OFFICE 2.9.69 MOMBASA PIPELINE BOARD 30.8.68 DATE OF AGRICULTURE DATE FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING M 41/10/A REFERENCE DRAWINGS DRG. No. DESCRIPTION PLAN OF INSTALLATIONS V SUPT. ENGINEER URBAN WATER SUPPLIES P. W. Bugdale AS SHOWN DIRECTOR A Cape MINISTRY CHECKED BY. DRG. No. SCALE : BPT. No.9 X-X-X-+ 11/2 Break Preassure Tank and No. [] ΘO RESERVOIRS Pipelines Under Construction Railway Nguu Tatu Reservoirs International Boundary National Park Boundary LEGEND Changamwe Reservoirs Mazeras Reservoirs 2 Secondary Roads Seasonal Rivers NORTH MAINLAND Water Pipelines INDIAN 7 Main Rivers Main Roads Diani Beach Ы S OMBASA Likoni 0 each CS? R Gazi anga Ramis MRERE INTAKE R 06404 Ndavaya PIPELIN RERE PIPEI Vitengeni + + + + + + + PROPOSED MAZERAS-SOKŮK <u>י</u> Bamba I N'E THSOD Mockimon Rood BPT6 100 40 MILES. t A ZIMA " Bautonoo" + ATIONA SAVO Z BPT.4 ¥ AST PAR 30 SCALE :-1:1,000,000 10 20 30 4 2 ш N F Z S + RIVER ш 4 20 ≥

APPENDIX. 1.

