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Mombasa Pipeline Board

*Report and Accounts
for
Financial Year Ending
30th June, 1973*

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*Report and Accounts
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MOMBASA PIPELINE BOARD

REPORT AND ACCOUNTS FOR THE FINANCIAL YEAR ENDED 30th JUNE, 1973

Address:—

P.O. Box 30521, Nairobi

Constitution of the Board

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

Chairman

T. C. J. Ramtu, M.A.

Vice-Chairman

Johnson Mweru, Esq.

Members

Rockie Mchinga, Esq.

Councillor R. S. Ali (Mombasa Municipal Council).

Deputy Director-General, East African Harbours Corporation, Mombasa.

P. Mwangola, Esq.

V. G. Matthews, Esq.

Permanent Secretary, Ministry of Agriculture, Nairobi.

Director of Agriculture, Ministry of Agriculture, Nairobi.

Secretary

E.A. Ngunya, B.Sc. (Civil) Eng., Director of Water Department, Government of Kenya.

There were four meetings during the year; and no changes in Board membership.

Members of Staff

O. S. Cege, B.E. (Civil), D.I.C. Engineer.

Angela Martins (Miss)—Personal Secretary.

Bankers

Kenya Commercial Bank, Government Road, Nairobi.

Auditors

Controller and Auditor-General, Kenya Government.

Systems Operated

The Board's bulk supplies are delivered by two major pipelines connected with their respective sources of supply. These are:—

1. The Mzima/Mombasa Pipeline, and
2. The Marere/Mombasa Pipeline.

The Mzima/Mombasa Pipeline, a 24-inch prestressed concrete pipeline which collects the supply at the Mzima Springs, conducting it through the arid country north-west of Mombasa and delivering it to the reservoirs at Mazeras 130 miles to the south-east. The reservoirs are three prestressed concrete tanks each with a capacity of six million gallons making a total of 18 million gallons. From the Mazeras Reservoirs this Mzima water is conducted by twin 21-inch prestressed concrete pipelines which convey the water in the first instance to the service reservoirs at Changamwe prior to discharge into the Mombasa reticulation system. These reservoirs have a capacity of some 6.5 million gallons.

The Marere Pipeline is a cement lined steel pipeline which takes its supply from the Marere Springs in the Shimba Hills 20 miles to the south of Mombasa. The water is conducted to the service reservoirs at Changamwe where it mixes with the incoming Mzima water. From Changamwe where the Board sells the water in bulk to the Ministry of Agriculture as the Water Undertaker, the water as mixed is reticulated into the Mombasa Water Supply.

There are a number of subsidiary lines to various parts of the north and south coastal regions which derive their supply from the above two major systems. These may be described as follows:—

(a) A North Mainland Supply which delivers water to the Mainland north of Mombasa including Nyali, Bamburi, Kisauni and Shimo-la-Tewa. It comprises a 10-inch main drawing Mzima water direct from the Mazeras Reservoirs and capable of delivering 775,000 gallons a day to twin reservoirs at Nguu Tatu 12 miles to the north-east. From here the water is reticulated to the several areas under the regime as referred to above. The reservoirs have a combined capacity of one million gallons.

In order to reduce to a minimum the difficulties caused by the not infrequent rupture of this pipeline resulting from soil movement in the unstable terrain through which the line is laid a six-inch pipeline has now been carried over the Nyali Bridge which links Mombasa Island with the North Mainland reticulation system only when that supply suffered interruption. As was anticipated in last year's Report it has been necessary to keep this pipeline in continuous operation in order to maintain supplies at an adequate level.

(b) A further pipeline originates at the Mazeras reservoirs, viz. the Mazeras/Kilifi Pipeline delivering water as far north as Kilifi. This six-inch asbestos cement pipe can deliver 350,000 gallons per diem and is regulated by three tank reservoirs of 100,000 gallons each at Ribe, Kaloleni and Mikirani. This is of course also Mzima water. If the economics of such an extension proves acceptable, it is possible that this line may be extended as far as Sokoke.

(c) On the South Mainland there are two subsidiary supplies taken from a single connexion to the Marere Pipeline near Kaya Bombo. A connecting pipe to the main pipeline conducts water to a 250,000-gallon tank reservoir on the Kaya Bombo Hill and from thence one branch pipeline supplies water northwards as far as Likoni and another conducts it southwards as far as Diani. The connecting pipeline is capable of delivering 450,000 gallons per diem to the two systems.

In the last year's report reference was made to the constant difficulties experienced in the various pipeline systems operated by the Board. It was mentioned that the Board appointed consultants, Messrs Scott Wilson

Kirkpatrick and Partners, to advise them on the question of major augmentation and a number of other problems, and a summary of the Consultants reports was given. During the financial year ending 30th June, 1973, the Board concentrated on the implementation of the Consultants recommendations.

(i) *Augmentation of North Mainland Supply.*—The investigations by the Consultants which was carried out last year revealed that steps had to be taken immediately to increase the rate at which water could be supplied to the North Mainland area. The Consultants recommended the provision of a booster station at Bwagamoyo on the North Mainland pipeline and also provision of a larger diameter flexible connexions for Nyali Bridge pipeline. Adoption of these measures would result in an increase in water rate flow from the present 1,070,000 gallons per day to 1,600,000 gallons per day, and the system would then be able to meet all likely demands until at least early 1974.

The augmentation of the North Mainland supply consisted of construction of the booster station at Bwagamoyo and provision of a one million gallon butyl reservoir at Nguu Tatu and a 12-inch diameter pipeline from the reservoir to a point near Bamburi Cement works. The construction of the booster station has been completed but the contract for the reservoir has proceeded with somewhat mixed success. The earthworks and drainage for the tank were ready in March, 1973, and the tank was successfully installed and tested. As has been explained there has been considerable delays on this contract caused mainly by the pipe manufacturer having difficulty in obtaining raw materials for the manufacturing processes. However, deliveries of the pipes commenced in early June, 1973, and it is estimated that the job will be completed by mid July, 1973.

(ii) *Investigation into the possibility of augmenting the Marere Supply by boosting and harnessing local sources of water.*—In last year's Annual Report reference was made to the Consultants investigations into the augmentation of the Marere Water Supply. It was stated that the Consultants investigations had shown that the rate of flow in the pipeline could best be achieved by pumping treated water from the Pemba river into the pipeline together with harnessing selected local boreholes as a reinforcement during periods of low flow in the Pemba river. The implementation of these recommendations started last year and is now well under way. The commissioning of the Pemba river works started in early April, 1973, and as is always with this type of work minor snags prevented rapid progress of the work at first. However, by the end of May, 1973, the raw water pumps, the clear water pumps and the rapid gravity filters had all functioned and it was hoped that the works would be producing potable water by the end of June, 1973. Unfortunately, during the final stages of commissioning failures occurred in the pressure filters which are the last units before entry into the Marere pipeline. The manufacturers of the filters have undertaken to rectify this fault at their own expense and thereafter will give an unconditional guarantee for two years on the units.

At the time of writing this report no conclusive information has yet been received from the Water Department about the tested yield of the Marere boreholes which are intended as a supplementary augmentation.

(iii) *Examination of the Mzima Pipeline Break Pressure Tank System.*—In the last year's Annual Report it was stated that the commissioning of the break pressure tanks had not yet been effected and that the final report on

the alarm system had not been completed. During the financial year the Consultants submitted a report on alarm and telephone equipment already supplied but at present not working. The additional equipment was to be purchased from G.E.C.-Elliot who were the original suppliers of the alarm system. It also recommended the installation and commissioning of the modified system to be carried out by International Aeradio Limited who represents G.E.C.-Elliot in Kenya. The report further recommended that the supervision of the installation should be carried out by Kennedy and Donkin (Africa), who are sub-Consultants to the main Consultants. At the time of writing this report the Board had not decided whether or not to accept these recommendations.

As already mentioned elsewhere, the Consultants were asked to investigate the condition of the existing pipeline and make recommendations for improving the efficiency of the system. The Consultants have now studied the existing Mzima Pipeline and analysed all available records of bursts and leaks over the period between February, 1966 to May, 1971. Most of the problems experienced with Mzima Pipeline are attributed to the poor condition of many of the prestressed concrete pipes which formed the pipeline. Some of these pipes were probably defective when first installed and others have since been damaged due to excessive pressure surges in the pipeline and differential movements have also caused undue stresses on the pipeline. The Consultants recommended that the weakest sections of the pipeline as evidenced by the frequency of bursts and leaks recorded should be replaced as soon as possible with new sections of steel pipeline. It was estimated that the cost of renewing the weakest section of the pipeline would be in the region of £1m. The design of the Mzima Pipeline renewals and final estimate of cost should be ready early next year.

(iv) Report on a Major Augmentation of Mombasa Pipeline Board Supplies.— As stated in the last year's Annual Report, when the Consultants submitted the first draft report on the investigation into an additional source of water to provide the necessary immediate augmentation of the Mombasa Pipeline Board supplies it was found that the report did not give enough information on the Sabaki river scheme. The Consultants were therefore requested to carry out further studies on a regional basis. During the year the Consultants submitted a supplementary report on alternative schemes for supplying water to Mombasa and the North Coast. This report was studied by the Board and it was decided to adopt the Sabaki river scheme, coastal route as recommended by the Consultants.

The I.B.R.D. team visited Nairobi and the Coast in late November 1972. Before leaving, the team decided to finance either the Sabaki or the Mzima project, whichever the Kenya Government recommended. They considered that an overall scheme should include augmentation to distribution system, training of personnel, and the new Coast headquarters for water supply staff. However, the mission found that it was unadvisable to finance the renewals of the Mzima pipeline. It seemed reasonable therefore for the Treasury to seek alternative financing for this work so that it could start immediately. This would enable the Board to continue with their financial activities on the pipeline renewals as well as their current original works. A loan application to finance the Mzima pipeline renewals at an estimated cost of £1,400,000 has been submitted to the Government of Japan.

In January, 1973, the Kenya Government decided to take over full responsibility for the major augmentation of the Coast Water Supply and all subsequent administration of the project was to be handled by the Water Department of the Ministry of Agriculture.

During the year the Board felt that its commitments had increased substantially and there was an urgent need to raise water rates. The Board also agreed that there was need to unify water rates in the Coast region. To assist the Board, the Minister for Agriculture approved a general bulk water rate increase with effect from 1st July, 1973, as follows:—

- (a) All those consumers who have been paying Sh. 4/60 per thousand gallons and less were in future to pay Sh. 5/60 per thousand gallons.
- (b) For those connexions where the Board was charging Sh. 6/- per thousand gallons the charge was to be reduced to Sh. 5/60 per thousand gallons.
- (c) For Marere/Kaya Bombo and Mazeras/Kilifi schemes the water rate was to remain Sh. 7/50 per thousand gallons.
- (d) In the case of Kisauni Limited, Nyali Limited and Bamburi Cement Company Limited, it was to be noted that the bulk water rate charges were in accordance with their contracts with the Board and were therefore to be exempted until their contracts expired when the rates will be increased to Sh. 5/60 per thousand gallons.

The Minister also authorized the Board to raise a minimum monthly water charge equivalent to 2,000 gallons at the prevailing water rate with effect from 1st April, 1973.

The Mombasa Pipeline Board was established 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 has been the Minister for Agriculture. The actual operation and maintenance of the installations is undertaken by the directorate of Water Department, Government of Kenya, acting as the Board's agents. The fees for these services are calculated in accordance with an agreed formula.

The plan at Appendix "A" shows a layout of the systems operated by the Board during 1972/73.

Finance

(a) CAPITAL ACCOUNT

The capital at charge on the 1st July, 1973, was K£4,889 million made up as follows:—

- (i) Mzima System—K£4,322 million
- (ii) Marere System—K£35,171
- (iii) North Mainland System—K£152,731
- (iv) Marere/Kaya Bombo System—K£189,394
- (v) Mazeras/Kilifi System—K£190,185.

The capital is wholly borrowed on loan capital, the creditors being the Government of Kenya for projects (i), (ii) and (iii) and the East African Railways and Harbours Corporation, Barclays Bank International, the Kenya Commercial Bank Limited and the Standard Bank in respect of project (i) only. The three banks loaned as a consortium a total of K£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 new South Mainland project and the Mazaras/Kilifi project referred to under (iv) and (v) have been financed partly by a loan made by the Israeli Government to the Kenya Government and re-lent to the Board, partly by a loan from the British Government and partly from the Board's own resources. The terms of the Israeli loan are interest at 6 per cent and a period of seven years. In recognition of the fact that seven years is an impossibly short life in respect of projects of this kind, the Government of Kenya in relending extended the period to 25 years. Even 25 years is a short period in relation to such projects and this has inevitably had its effect on the charges which have necessarily had to be made to the consumers for the water from these new supplies. Of the 25-year term, four years were taken up in construction. The Board was not permitted to capitalize the interest during this construction period and the need to find funds to pay interest during a period of no revenue also had its effect upon the water tariff. The loan is being repaid over the remaining 21 years in equated instalments at 6 per cent. The same terms apply to the British Government loan.

The Marere project and the North Mainland project were financed by loans from the Government of Kenya. These are being repaid by equated instalments of interest and capital, the details of which can be seen in the Accounts. Repayment in respect of the Marere project commenced in 1958 and in 1962 in respect of the North Mainland project.

It will be observed that the loan of K£500,000 made in respect of the Mzima/Mombasa Project by the then Railways and Harbours Administration (now the separate Railways Corporation and the Harbours Corporation) was referred to in the last Annual Report as having been extended until the 31st December, 1973. This means, of course, that there is a need for fresh negotiation to extend this loan beyond that date.

Loans totalling K£2,170,000 made by the Kenya Government in respect of the Mzima/Mombasa project fell due for repayment, partly on the 31st December, 1968, and partly on the 1st January, 1969. The negotiations by the Board for further renewal led to the loans being extended until the 31st December, 1974, with a small upward adjustment of interest. It is likely that the current financial year will see the opening of preliminary discussions on the possibility and the terms and conditions of extensions beyond 1974. Since the original renewal, a major factor has entered into the calculations. Reference has been made above to the employment of consultants in respect of a number of problems which confront the Board (in particular the question of Major Augmentation of Mombasa's water supply). The fees for these consultations and Reports are likely to be very substantial and if they have to be met from the Board's Reserve Fund (which is in effect the Board's Sinking Fund) the ultimate repayment of the outstanding Government of Kenya loans financing the Board's Mombasa/Mzima project is likely to be deferred beyond earlier expectations. A substantial proportion of this total fee is accounted for in the cost of locating and designing the works for the Mombasa Major Augmentation. If the Board is permitted to

regard this as part of the overall capital cost then it will be possible to recoup the Reserve Fund from any capital loans raised to cover the project. In these circumstances the deferment referred to above will be minimized.

During the year under review capital repayments were as follows:—

- (i) Mzima System—K£146,546
- (ii) Marere System—K£3,323
- (iii) North Mainland System—K£7,910
- (iv) Marere/Kaya Bombo System—K£5,610
- (v) Mazeras/Kilifi System—K£5,633.

The capital remaining on charge at the end of the year on the 30th June, 1973 was K£4,720 million made up as follows:—

- (i) Mzima System—K£4.175 million
- (ii) Marere System—K£31,848
- (iii) North Mainland System—K£144,821
- (iv) Marere/Kaya Bombo System—K£183,784
- (v) Mazeras/Kilifi System—K£184,552.

(b) REVENUE

The Board revenue accrues almost entirely from the bulk sale of its water. Below are set out the comparative figures of consumption and revenue for the year ending the 30th June, 1973, compared with that ending 30th June, 1972. These figures are given in respect of the Board's principal regimes.

YEAR ENDED 30th JUNE, 1972

<i>Mombasa and District</i>		<i>North Mainland</i>		<i>Mazeras/Kilifi</i>		<i>South Mainland</i>	
Consumption million gallons	Revenue K£	Consumption million gallons	Revenue K£	Consumption million gallons	Revenue K£	Consumption million gallons	Revenue K£
2,798	642,043	283	58,289	40	15,138	90	33,743

YEAR ENDED 30th JUNE, 1973

<i>Mombasa and District</i>		<i>North Mainland</i>		<i>Mazeras/Kilifi</i>		<i>South Mainland</i>	
Consumption million gallons	Revenue K£	Consumption million gallons	Revenue K£	Consumption million gallons	Revenue K£	Consumption million gallons	Revenue K£
2,659	623,678	298	63,821	40	15,077	90	34,077

These figures show a normal rise in consumption for all areas apart from Mazeras/Kilifi where the consumption figures have gone up by 40 per cent reflecting rise in consumption in Kilifi itself and the new reticulation to the Rural Water Supply Scheme Tezo-Roka. The Board must now ensure that it is not overtaken by events set in train by its own action. In other words constant vigilance will be necessary to ensure that supply keeps pace with the ever increasing demand.

(c) EXPENDITURE

The Board's outgoings during the year fell under four headings as shown here below:—

- (i) The service charges on payments of the outstanding capital loans—K£454,849.

- (ii) Fees paid to the directorate of Water Department in respect of operation and maintenance of the Board's installations—K£106,992.
- (iii) The expenditure on new work improvements, special maintenance, etc.—K£153,208.
- (iv) The cost of the Board and its staff—K£15,236.

(d) FINANCIAL RESULTS FOR THE YEAR

The Board's overall revenue comprising the income from the sale of water and certain minor sources such as house and meter rents totalled K£761,456. With a total outgoing of K£729,785, the year's working disclosed an operating surplus of K£31,671. This is the amount, therefore available from the year's working to be conveyed to the Reserve Fund and brings the total of the Fund as at the 1st July, 1973 to K£814,583.

(e) OPERATION OF SYSTEMS

(i) *Mzima Pipeline*.—The pipeline between Mzima and Mazeras has been operated successfully during the year. Apart from a few leaks no major bursts have occurred. The flow in the pipeline has been kept between 7.2 and 7.4 million gallons per day throughout the period. The Kwale County Council has still not taken action to distribute water from the five tanks constructed for them and this causes considerable hardship for the people in the area as overflows from the Break Pressure Tanks have been cut off.

The sections between Mazeras and Changamwe have had a number of leaks mostly concentrated on the section that is to be replaced with steel pipes. Because of the rains the Water Department has not been able to start this replacement and they have asked for a re-vote of funds for 1973/74 financial year.

(ii) *North Mainland Pipeline*.—This pipeline has operated without major difficulties. Bursts were reported and repaired in November, 1972 and February, 1973. Both caused interruptions in the supply although every effort was made for quick repairs. Another disruption was caused by the diversion at Nguu Tatu for the new reservoir. The pumping station at Bwagamoyo continued to be a source of problems but as the new engine has arrived we hope to have an end of this as soon as it is installed. Even with the booster station there has been difficulties in meeting the peak demand and all further development of hotels and industries should be discouraged in the area until the major augmentation is in operation.

(iii) *Marere Pipeline*.—No difficulties have been experienced with this pipeline. The heavy rains in November, 1972 caused discolouration of the water for some time but the situation was back to normal immediately. A few badly corroded pipes have been replaced in anticipation of the commissioning of the Booster Station at Mile 8. During the year the Consultants in co-operation with the Provincial Water Engineer, Mombasa, started the commissioning of both the Pemba treatment plant and the Mile 8 pumping station. At the time of writing this Annual Report the commissioning had not been completed.

(iv) *Mazeras/Kilifi Pipeline*.—No serious troubles have been experienced with this pipeline. As stated in last year's Annual Report this pipeline is approaching its design capacity and a proposal for additional pumping equipment at Mazeras and Ribe has been prepared. The additional equipment has been ordered and will be installed as soon as it arrives.

(v) *Mazeras Reservoirs*.—Because of the heavy demand in the tourist season we have experienced difficulties in keeping a safe level at Mazeras. Rationing from 6.00 p.m. till 6.00 a.m. has had to be done at least three times, late December, 1972, late February, 1973 and 31st March, 1973, for about a fortnight each time. The chlorination equipment has been in full working order apart from a minor electrical fault.

(vi) *Changamwe Reservoirs*.—No major problem has been experienced with this reservoir. Reservoir No. 5 has been out of operation during the year as the work on lining of the reservoir has been going on. Chlorination has been maintained during the period although the equipment is still causing trouble from time to time.

(vii) *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 throughout the year.

T. C. J. RAMTU,
Executive 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, 1973**

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

The attached 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. NJORGE,
Controller and Auditor-General.

Nairobi,
18th February, 1974.

MOMBASA PIPELINE BOARD
REVENUE ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1973

	1971/72	EXPENDITURE		1971/72	INCOME	
	K£ s. cts.	K£ s. cts.	K£ s. cts.	K£ s. cts.	K£ s. cts.	K£ s. cts.
		PIPELINE BOARD—HEAD OFFICE:				
	6,533 6 40	Chairman's Remuneration ..	3,999 19 80	949,242 4 05		
	2,178 6 30	Staff ..	4,975 7 60	848 2 40		
	190 5 55	Cost of Official Entertainment ..	87 8 05	1,480 15 85	736,647 3 55	737,387 8 40
	232 10 00	Incidental Expenses ..	62 0 55		740 4 85	982 6 00
	589 16 80	Travelling Expenses and Allowances of Members ..	838 8 55	45 1 80		76 2 20
	25 0 00	Expenses of Audit ..	25 0 00			
	72 14 90	Bank Charges ..	68 5 25			
	734 0 85	Maintenance and Running Expenses of Board's Transport ..	915 3 25			
	1,050 0 00	House Rent ..	1,866 0 00			
	290 13 80	House Allowance (Staff) ..	732 0 00			
	—	Provision for Gratuity ..	1,666 13 35			
	<u>11,896 14 60</u>			15,236 6 40		
		MAINTENANCE AND OPERATION OF PIPELINES:				
		Reimbursement to the Ministry of Agriculture—				
	60,161 17 05	(i) Main Pipelines ..	73,608 4 70			
	6,656 3 75	(ii) North Mainland Scheme ..	12,404 17 85			
	4,005 19 95	(iii) Marere/Kaya Bombo Scheme ..	5,920 12 35			
	5,290 17 05	(iv) Mazaras/Kilifi Scheme ..	6,127 1 55			
	16,191 0 50	Extraordinary Maintenance and Renewals ..				
	9,745 8 70	Hire Charges of Vehicles ..	8,931 9 60			
	<u>102,051 7 00</u>			106,992 6 05		
	837,668 2 50	Balance carried to Net Revenue Account ..		616,217 4 15		
	<u>K£951,616 4 10</u>			<u>K£ 738,445 16 60</u>		<u>K£ 738,445 16 60</u>

NET REVENUE ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1973

1971/72		EXPENDITURE		1971/72		INCOME	
K£ s. cts.		K£ s. cts.		K£ s. cts.		K£ s. cts.	
45,603 13 59	INTEREST CHARGES:						
60,000 0 00	Bank Loans (K£1,350,000) ..	35,345 8 78		837,668 2 50	Balance brought from Revenue Account ..	616,217 4 15	
40,055 1 85	Kenya Loan (K£1,000,000) ..	60,000 0 00			INTEREST RECEIVED:		
116,875 0 00	E.A.R. & H. Loan (K£500,000) ..	40,000 0 00		5,276 15 30	Reserve Fund Investments ..	5,024 5 00	
1,534 13 45	Kenya Loan (K£2,170,000) ..	116,875 0 00		16,965 6 75	Cash on Deposit with Cereals and Sugar Finance Corporation ..	15,760 5 45	
9,896 1 81	Kenya Loan—North Mainland Scheme (K£210,000) ..	1,406 16 95			Cash on Deposit with East African Building Society ..	2,226 0 00	
23,411 3 45	Kenya Loan—Marere/Kaya Bombo and Mazaras/Kilifi Schemes (K£400,193) ..	9,423 19 55					
		22,774 15 00					
297,375 14 15				285,826 0 28			23,010 10 45
3,195 12 10	LOANS REDEEMED:						
7,437 12 49	Annual Instalment—Kenya Loan—Marere Supply ..	3,323 8 60					
	Annual Instalment—Kenya Loan, North Mainland Scheme ..	7,909 14 75					
136,959 3 57	Annual Instalment—Bank Loans ..	146,546 6 41					
10,607 0 80	Annual Instalment—Kenya Loan Marere/Kaya Bombo and Mazaras/Kilifi Schemes ..	11,243 9 25		169,022 19 01			
158,199 8 96							
135,675 13 51	Transfer to Loan Redemption Fund ..			135,675 13 51	Provision for Loan Redemption carried to Net Revenue Appropriation Account ..		135,675 13 51
404,335 1 44	Balance, being net Operating surplus to Net Revenue Appropriation Account ..			184,378 15 31			
K£995,585 18 06		K£ 774,903 8 11		995,585 18 06		K£ 774,903 8 11	

NET REVENUE APPROPRIATION ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1973

1971/72		EXPENDITURE		1971/72		INCOME			
K£ s. cts.		K£ s. cts.		K£ s. cts.		K£ s. cts.			
1,246,971	4 88	Balance as at 1st July, 1972	1,116,547	6 65	404,335	1 44	Transfer from Net Revenue Account	184,378	15 31
135,675	13 51	Balance brought from Net Revenue Account	135,675	13 51	1,116,547	6 65	Balance as at 30th June, 1973	1,220,552	10 00
138,235	9 70	Financing the cost of rehabilitation of the Mzimba/Marere Pipelines, North Mainland Scheme and Marere/Kaya Bombo and Mazeras/Kilifi Schemes	152,708	5 15					
K£1,520,882	8 09		K£ 1,404,931	5 31	1,520,882	8 09		K£ 1,404,931	5 31

**LOAN REDEMPTION FUND
STATEMENT OF FUND FOR THE YEAR ENDED 30th JUNE, 1973**

1971/72		EXPENDITURE		1971/72		INCOME			
K£ s. cts.		K£ s. cts.		K£ s. cts.		K£ s. cts.			
1,899,459	9 14	Balance as at 30th June, 1973	2,035,135	2 65	1,763,783	15 63	Balance as at 1st July, 1972	1,899,459	9 14
K£1,899,459	9 14		K£ 2,035,135	2 65	1,899,459	9 14	Transfer from Net Revenue Account	135,675	13 51
								K£ 2,035,135	2 65

STATEMENT OF INVESTMENTS AS AT 30th JUNE, 1973

Stock	Amount of Stock	Cost Price	Quotation (Middle Market Value)	Market Value as at 30th June, 1973
	K£ s. cts.	K£ s. cts.	Per cent	K£ s. cts.
4½ per cent Nyasaland 1971/78 ..	3,263 15 60	3,229 7 25	72	2,349 18 40
8½ per cent East African Railways and Harbours 1975 ..	66,110 0 80	62,696 7 48	99	65,448 18 80
	K£ 69,373 16 40	65,925 14 73		67,798 17 20

CAPITAL ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1973

EXPENDITURE	Assets as at 30th June, 1972	Expenditure during the year	Total to 30th June, 1973	INCOME	Loans as at 1st July, 1972	Received during the year	Total to 30th June, 1973
	K£ s. cts.	K£ s. cts.	K£ s. cts.		K£ s. cts.	K£ s. cts.	K£ s. cts.
ASSETS:							
Mzima and Marere Instal- lations ..	5,285,359 4 76	112,526 3 40	5,397,885 8 16	Bank Loans ..	1,350,000 0 00	—	1,350,000 0 00
North Mainland Scheme ..	244,869 6 74	40,200 12 15	285,069 18 89	E.A.R. and H. Corporations Loan ..	500,000 0 00	—	500,000 0 00
Marere/KayaBomboScheme ..	204,054 13 80	481 9 60	204,536 3 40	Kenya Loan ..	2,170,000 0 00	—	2,170,000 0 00
Mazeras/Kilifi Scheme ..	201,133 2 90	—	201,133 2 90	Kenya Loan—Marere Supply ..	70,277 0 00	—	70,277 0 00
	K£ 5,935,416 8 20	153,208 5 15	6,088,624 13 35	Kenya Loan—North Mainland Scheme ..	210,000 0 00	—	210,000 0 00
				Kenya Loan—Ex-Uganda ..	1,000,000 0 00	—	1,000,000 0 00
				Kenya Loan—Mazeras/Kilifi Scheme ..	200,512 17 85	—	200,512 17 85
				Kenya Loan—Marere/KayaBombo Scheme ..	199,679 19 15	—	199,679 19 15
					K£ 5,700,469 17 00	—	5,700,469 17 00
				CAPITAL RECEIPTS:			
				Sale of Assets ..	3,731 0 57	500 0 00	4,231 0 57
				Recovery of damaged valves ..	1,589 0 00	—	1,589 0 00
				Contribution from the Admiralty for the North Mainland Scheme ..	2,750 0 00	—	2,750 0 00
				Refund of Consultant's Fees ..	180 3 00	—	180 3 00
				Refund on Installation of tele- phone at Nguu Tatu ..	57 0 00	—	57 0 00
					K£ 8,307 3 57	500 0 00	8,807 3 57
				Contribution from Net Revenue Appropriation Account for the rehabilitation of the Mzima/ Marere Pipelines, North Main- land Scheme and Marere/Kaya Bombo and Mazeras/Kilifi Schemes ..	226,639 7 63	152,708 5 15	379,347 12 78
					K£ 5,935,416 8 20	153,208 5 15	6,088,624 13 35

BALANCE SHEET AS AT 30th JUNE, 1973

1971/72		LIABILITIES		1971/72		ASSETS	
K£ s. cfs.		K£ s. cfs.		K£ s. cfs.		K£ s. cfs.	
4,888,962	3 06	CAPITAL ACCOUNT:				CAPITAL ACCOUNT:	
35,105	16 09	Outstanding	4,719,939	4 14		Capital Expenditure as per Capital Account	
		Kenya Loan, Marere	38,429	4 69			6,088,624
57,269	7 39	Kenya Loan, North	65,179	2 05			
698,518	16 81	Mainland Scheme	845,065	3 22			
20,613	13 65	Kenya Loan, Marere/					
		Kaya Bombo and	31,857	2 90			
		Mazeras/Kilifi Schemes					
8,307	3 57	Capital Receipts	5,700,469	17 00			
226,639	7 63	Contribution from Net Revenue Appropriation Account	8,807	3 57			
			379,347	12 78			
234,946	11 20		6,088,624	13 35			
1,763,783	15 63	REVENUE ACCOUNT:					
135,675	13 51	Loan Redemption Fund as at 1st July, 1972	1,899,459	9 14	1,116,547	6 65	Net Revenue Appropriation Account
187,613	6 79	Add Provision for 1972/73	135,675	13 51	65,925	14 73	Investments—Crown Agents*
		Sundry Creditors			6,399	16 95	Less Provision for Loss on Devaluation of Pound Sterling
							6,399
					361,619	3 25	Sundry Debtors
							Cash:
							On deposit with East African Building Society
					400,000	0 00	On deposit with Cereals and Sugar Finance Corporation
					149,380	8 25	At Bank
8,022,489	4 13		8,262,107	14 83	8,022,489	4 13	
							1,220,552
							10 00
							59,525
							17 78
							358,540
							4 65
							152,226
							0 00
							125,000
							0 00
							257,638
							9 05
							8,262,107
							14 83

*The middle market value of investments as at 30th June, 1973 was K£60,171-9s.-75cfs.

I. G. MWANIKI,
Chief Accountant,
Mombasa Pipeline Board.

T. C. J. RAMTU,
Executive Chairman,
Mombasa Pipeline Board.

STATEMENT OF WATER SUPPLIED—1972/73

Conn. No.	CONSUMER	Gallons	Rate per 1,000 Gallons	Amount	Total Value of Water Supplied
			<i>K. Sh. cfs.</i>	<i>K.£ s. cfs.</i>	<i>K.£ s. cfs.</i>
	MINISTRY OF AGRICULTURE:				
	Main Pipeline	2,386,655,200	4 66	548,930 13 85	
	South Mainland Water Supply	90,854,000	7 50	34,070 5 00	
	Mazeras/Jaribuni Water Supply	18,687,200	7 50	7,007 14 00	
	Kilifi Water Supply	98,131,000	1 64	8,069 6 35	
2	Voi Water Supply	37,940,200	4 10	7,777 14 85	
7	Mariakani Water Supply	103,157,000	1 00	5,195 02 40	
15	Kwale Water Supply	10,385,400	4 10	2,129 00 20	
17475	Mazeras Water Supply	8,181,400	4 10	1,677 03 85	
41	Kinango Water Supply	6,002,400	4 10	1,230 09 90	
25	Bachuma Water Supply	1,293,300	2 00	129 06 60	
78	Matuga Holding Ground	109,000	2 00	43 16 00	
46-51, 68 & 71	North Mainland Water Supply	127,737,900	4 60	31,486 05 60	647,746 18 60
40	MINISTRY OF WORKS: Road Construction Unit—Mackinnon Road	215,700	4 60		49 12 15
3	EAST AFRICAN RAILWAYS CORPORATION: Maungu	98,190,000	1 00	4,953 18 65	
4	Mackinnon Road	19,691,300	4 60	4,528 19 95	
6	Samburu	125,550,000	1 00	6,318 12 40	
35	Manyani	811,800	4 60	186 14 25	
55-59	Landhies	2,358,900	4 60	543 10 85	16,531 16 10
1	PRISONS DEPARTMENT: Manyani Camp (Mbololo Hills Prison)	32,488,500	4 60	7,398 16 00	
45	Shimo-la-Tewa Prison	34,782,000	4 60	7,999 17 20	15,398 13 20

STATEMENT OF WATER SUPPLIED—1972/73—(Contd.)

Conn. No.	CONSUMER	Gallons	Rate per 1,000 Gallons	Amount	Total Value of Water Supplied
			K.Sh. cts.	K.£ s. cts.	K.£ s. cts.
	COUNTY COUNCIL OF KWALE:				
16	Samburu	791,700	2 00	79 03 40	
19	Mwanda	107,400	2 00	10 14 80	
53	Mgalani Water Dip	86,400	4 60	20 00 65	
54	Mwachi	251M3	1 00	12 13 10	
63	Mwachinga	352M3	1 00	177 01 80	
64	Mwalungani	345M3	1 00	17 09 45	
65	Lutsangani	11,000	1 00	2 10 55	
83	C.C. of Kwale	793M3	4 60	40 01 00	
93	Gwachemi	46,600	6 00	13 19 60	
18	Mrs. Betty Daneu	558,900	4 60		373 14 35
21	Mr. Jaackan N. Mwabaki	145,700	4 60		128 10 95
23	Mr. Samuel Chidsugwe Nguma	94,700	4 60		33 10 20
24	Kenya National Parks—Isavo East	7,740,900	4 60		21 15 60
29	East African Oil Refineries	97,286,300	4 60		1,780 08 15
39	Taita Ranching Co. Ltd.	1,838,600	2 00		22,375 16 90
42	Kisauni Ltd.	11,535M3	3 75		183 17 20
43	Bamburi Portland Cement Co. Ltd.	43,479,200	3 25		474 13 10
44-70 & 91	Nyali Ltd.	91,857,900	3 75		7,065 07 30
5	Project Manager UNDP/FAO	492,600	4 60		17,223 15 95
52	Mr. Burusi Tsuma	42,950	4 60		113 06 05
61	Kenya Meat Commission	935,800	4 60		10 07 65
62 & 74	Kenya Safari Lodges and Hotels	69,138M3	1 00		215 04 60
26	Kanwar Store	444,200	6 00		3,466 12 90
67	Provincial Veterinary Officer, Mombasa	7,279M3	1 00		133 05 20
69	Mr. Raymond Sydney Mayers	37,395M3	1 00		367 17 45
72	Mr. Yusuf Ali Mwatsahu	114,200	4 60		1,883 06 65
73	Mr. J. L. Karuiru	36,000	4 60		26 05 35
					8 05 60

STATEMENT OF WATER SUPPLIED—1972/73—(Contd.)

Conn. No.	CONSUMER	Gallons	Rate per 1,000 Gallons	Amount	Total Value of Water Supplied
			K. Sh. cts.	K. £ s. cts.	K. £ s. cts.
76	Mr. Ikonge Mwangunda	2,324M3	1 00		117 03 80
77	Mr. Chuphi Ng'ala	216,600	6 00		64 19 60
79	Headmistress, Taru Harambee Secondary School	1,799M3	1 32		115 06 50
80	Mrs. Mnyazi Kombo	81,300	4 60		18 14 00
81	Mr. William Kombo	28,200	6 00		8 09 20
82	Mr. Kazungu Nyanze	50,660	6 00		11 04 80
84	Mr. Kahindi Ngowa				
85	Kenya National Parks—Tsavo West	7,700	4 60		1 15 40
86	Mr. Mvuu Lembi	111,200	6 00		33 07 20
87	Mr. Salim Abdallah	34,400	6 00		10 06 40
88	Mr. Chengo Mazarakwe	154,500	6 00		46 07 00
89	Mrs. Mary Lucas	47,600	6 00		14 05 60
90	Mr. Mwinji Hamisi Juma	454M3	1 64		37 08 30
92	Major O. N. Wanyoike	698M3	1 32		43 07 90
94	Bachuma Graziers Scheme	853,880	6 50		256 02 80
96	Mr. T. C. J. Ramtu	229M3	1 32		15 00 20
98	Kenya National Parks—Tsavo	1,029M3	1 32		67 17 80
99	Kenya National Parks—Tsavo East	20,300	6 00		6 01 80
100	Mr. Patrick M. Nzomo	55,400	6 00		16 12 40
102	Joseph Fosi Charo	47,400	6 00		14 04 40
103	Mr. Stephen Mwalilo Menza	111M3	1 32		5 09 55
104	Mrs. Margaret Samuel	9,300	6 00		2 15 80
105	Mreje Gereza	81M	1 32		5 06 10
106	Kenya National Park East	1,870M3	1 32		123 12 35
		3,026,023,690			736,647 3 55
		123,230,989			
		<u>3,149,254,679</u>			<u>736,649 00 10</u>

NOTE:
 (1) Water consumed in Gallons = 3,026,023,690
 (2) Water consumed in Cu. Meter = 560,701M3 (9.1M3 = 2,000 Gallons)

