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REPUBLIC OF KENYA

Mombasa Pipeline Board

*Report and Accounts
for
Financial Year Ending
30th June 1971*



Mombasa Pipeline Board

Report and Accounts for Financial Year Ending 30th June 1971

KENYA NATIONAL ASSEMBLY
Accession: 10013247

Call No: 657-3 M.P.B



MOMBASA PIPELINE BOARD

REPORT AND ACCOUNTS FOR THE FINANCIAL YEAR ENDED 30th JUNE, 1971

Constitution of the Board

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

Chairman

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

Vice-Chairman

Johnson Mweru, Esq.

Members

Rockie Mchinga, Esq.,

Councillor A. N. Mwidau (up to 14th April, 1971) (Mombasa Municipal Council).

Councillor R. S. Ali, Esq. (from 15th April, 1971) (Mombasa Municipal Council).

The Deputy Director (Agriculture), Ministry of Agriculture, Government of Kenya.

The Director-General, East African Harbours Corporation (up to 2nd June, 1971).

The Deputy Director-General, East African Harbours Corporation (from 3rd June, 1971).

P. Mwangola, Esq., E.A. Railways Corporation, Nairobi.

The Permanent Secretary Ministry of Agriculture, Government of Kenya.

Secretary

O. S. Cege, B.E. (Civil) D.I.C., Director of Water Development, Government of Kenya.

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 Mrere/Mombasa Pipeline.

The Mzima/Mombasa Pipeline a 24-inch pre-stressed 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 pre-stressed 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 pre-stressed 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 Mrere Pipeline is a cement lined steel pipeline which takes its supply from the Mrere 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 1 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 across the Tudor Creek. This pipeline derives its supply from the Mombasa Mains and was originally installed to feed water into 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 prove 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 Mrere 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.

Reference was made in last year's Annual Report to the constant difficulties experienced in relation to the North Mainland supply. In spite of unremitting efforts by the Operating Agents, no really satisfactory or lasting solution was found. In the meantime rapid development in the areas of the Board's regimes, coupled with increasing consumption compelled attention to the problem of major augmentation of Mombasa's water supply. A review made early in 1968 of available statistics indicated that a major augmentation would be necessary by 1974 and that urgent assessment of the possibilities was required. Unfortunately it has become increasingly apparent that the engineering resources of the Board's Operating Agents are not adequate to cope with this and other problems with which the Board is now faced. With the consent of the Minister therefore, the Board appointed the British Consultants, Messrs. Scott Wilson Kirkpatrick and Partners to advise them on this question of major augmentation as well as on a number of other problems including the vexed one of the North Mainland supply. Terms of Reference for the Consultants were drawn up in consultation with the Director of Water Development, covering the Board's requirements and the timetable within which the Reports on these various problems had to be made available to the Board. In the upshot, the Consultants began work in June 1971 and submitted the first

Report at the end of July of the same year. This Report covered the immediate problem of the North Mainland supply and recommended as a short term solution the installation of a pumping system. This recommendation was accepted on the advice of the Director of Water Development and work to implement the Report was begun immediately. The Terms of Reference also cover the question of how the Larner Turner Johnson valves for automatic operation already installed in the Break Pressure Tanks on the Mzima Pipeline could be safely linked. Measurements by the Consultants disclosed that the discharge into the Reservoirs at Mazeras by the pipeline totalled some 6.5 M. gallons per day. Inasmuch as the intake at the Mzima headworks is 8.5 M. gallons per day, it would appear that there is a difference of 2 M. gallons a day between intake and output. There are some minor connexions along the length of the pipeline between Mzima and Mazeras but there is no doubt that the very large bulk of this difference represents loss of water to the Board. To the extent that the output at Mazeras could be increased by reducing this loss so the time available for major augmentation would be increased. Prior to the appointment of the Consultants, consideration had been given to the possibility of a dam on the Pemba river to provide the major augmentation required by 1974. In their Terms of Reference the Consultants are required to consider all possibilities in relation to a major source of supply including a second pipeline from the Mzima Springs. It may be noted that when the existing Mzima pipeline was installed in 1955/56, the ancillary installations along the length were duplicated in anticipation of a second pipeline in due course. In view of the excellence of Mzima water, the temptation of taking the relatively simple course of putting in a second gravity pipeline is obvious. In the absence of absolute reassurance geologically however the Board is not inclined to succumb to this temptation. Apart from the obvious vulnerability to long pipelines, the area of the Mzima Springs shows signs of quite recent seismic and volcanic disturbance and the consequences of a repetition of such a disturbance could be calamitous. The Board therefore, while not wholly ruling out a second pipeline if expert advice recommends it, is inclined to look for another source e.g. a dam on some suitable river such as the Pemba. At the time of writing this Report, investigations are proceeding.

In the meantime the developments which the Board anticipated when the Mazeras/Kilifi line on the North coast was installed and the Kaya Bombo/Likoni/Diani lines were installed on the South coast have come virtually with a rush and it seems likely that the Board will be faced very shortly with the need to augment both these supplies. This question, as does of course the question of major augmentation for Mombasa, brings with it the question of finance in a major degree and at the time of writing possible sources of finance are being investigated.

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 continued to be the Minister of Agriculture.

The actual operation and the maintenance of the Board's systems is undertaken by the Water Development Division, Ministry of Agriculture, Government of Kenya acting as the Board's specifically appointed Agents. This Department through the year was headed by Mr. O. S. Cege, B.E. (Civil) D.I.C., Director of Water Development. The fees for these services by the Water Development Department are calculated in accordance with an agreed formula.

The Plan at Appendix I shows the layout of the systems operated by the Board during 1970/1971.

Finance

(a) Capital Account

The capital at charge on the 1st of July 1970 was K£5.195 million made up as follows:—

- (i) Mzima System—K£4.586 million.
- (ii) Mrere System—K£41.439 million.
- (iii) North Mainland System K£167,162.
- (iv) Mrere/Kaya Bombo System—K£199,680.
- (v) Mazeras/Kilifi System—K£200,513.

The capital is wholly borrowed or 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 D.C.O., the National and Grindlays Bank (now the Kenya Commercial Bank Ltd.) and the Standard Bank in respect of project (i) only. The three banks loaned as a consortium at 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 Mazeras/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 relented 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, two 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 23 years in equated instalments at 6 per cent. The same terms apply to the British Government loan.

The Mrere 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 Mrere 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, 1970. This meant of course the need for fresh negotiation to extend this loan beyond that date and in the event the two Corporations have jointly agreed to extend the Loan to the 31st December, 1973 at the previously agreed interest rate of 8 per cent.

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 extension 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£127,999.
- (ii) Mrere System—K£3,073.
- (iii) North Mainland System—K£6,994.
- (iv) Mrere/Kaya Bombo System—K£4,993.
- (v) Mazeras/Kilifi System—K£5,014.

The Capital remaining on charge at the end of the year on the 30th June, 1971 was K£5.047 million made up as follows:—

- (i) Mzima System—K£4.458 million.
- (ii) Mrere System—K£38,367.
- (iii) North Mainland System—K£160,168.
- (iv) Mrere/Kaya Bombo System—K£194,687.
- (v) Mazera/Kilifi System—K£195,499.

(b) Revenue

The Board's 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, 1971, compared with that ending 30th June, 1970. These figures are given in respect of the Board's principal regimes.

YEAR ENDED 30th JUNE, 1970

<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 gallon	Revenue K£	Consumption gallons	Revenue K£
2,321	532,335	251	49,391	26,000,000	9,647	56,000,000	21,134

YEAR ENDED 30th JUNE, 1971

<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 gallon	Revenue K£	Consumption gallons	Revenue K£
2,410	552,274	299	61,117	34,000,000	12,802	65,000,000	24,273

The figures above disclose the same story throughout, the story of ever rising consumption. Throughout the Board's regimes consumption has increased and is increasing, emphasizing the urgency of developing new sources of supply if difficulties over shortage are not to be encountered in the not too distant future. Some of the increases during the year were substantial, notably that in the North Mainland system where consumption has gone from 251 million gallons in the previous year to 299 million gallons in the year under report. This is an increase of some 20 per cent. The Mazeras/Kilifi section shows an even more substantial increase i.e. from 26 million gallons to 34 million gallons or nearly 30 per cent. These figures and those for the South Mainland disclosed clearly the appetite for water generated by putting water into areas hitherto unserved. The increasing

demand is of course a reflection of development catalysed by the installation of the water supply. This satisfactory result in producing new development is of course that intended by the Board in making the supplies available. What the Board now has to ensure is 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 this ever increasing demand.

(c) *Expenditure*

The Board's outgoings during the year fell under four 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 expenditure on new work and improvements, special maintenance etc.
- (iv) The cost of the Board and its staff.

These for the year under review were as follows:—

- (i) K£456,147.
- (ii) K£79,699.
- (iii) K£11,250.
- (iv) K£4,177.

It will be seen that as with previous years item (iv) is less than 4/5ths of 1 per cent of the total.

(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£671,085. With a total outgoing of K£551,223 the year's working disclosed an operating surplus of K£119,862. This is the amount therefore available from the year's working to be conveyed to the Reserve Fund and brings the total of that Fund as at the 1st July, 1971 to K£516,812. Reference was made in last year's Report to the many commitments which the Board might have to face and therefore the high desirability of building up this Reserve Fund which represents the Board's only immediate source of finance. Since those words were written the Board has been compelled to incur liability for substantial expenditure in respect of Consultants engaged to advise the Board on a number of problems including that of the major augmentation required by 1974. As has been stated elsewhere in this Report these Consultants have already been engaged and the work which is of such vital importance to Mombasa and the Coast Province is already well in hand. There is no doubt that the availability of the finance necessary to engage these Consultants from the Board's own resources made this immediate action possible in circumstances where delay could have had very serious consequences. These fees will greatly deplete the Board's Reserve Fund and unless the major part of this payment can be recouped from any capital loan raised to finance the construction of the major project or otherwise, the Board will face a repetition of the long and anxious process of building up again the Reserve to a healthy level.

(e) *Operation of the Systems*

(i) *The Mzima Pipeline.*—This pipeline which is reputed to be the longest gravitational pipeline in the world is constructed of pre-stressed concrete and conducts the water collected at Mzima Springs to the Reservoirs at Mazeras 130 miles away. The high pressures built up by the continuous drop in altitude along the pipeline's length are dissipated by a system of Break Pressure Tanks, ten such tanks being inserted at intervals along the pipeline. As mentioned in last year's Report, this system of Break Pressure Tanks has not proved very efficient in practice and undoubtedly has reduced the working capacity of the line. Although action to

improve the efficiency of the system by the installation of Valve Linkages is still in the process of being taken, this work has not yet been completed. From measurements taken it would appear that the wastage is well over 1 million gallons per diem and if the Board can utilize this water then there will be a corresponding reduction in time pressure in the need to provide a major augmentation source for Mombasa.

During the year there were a number of bursts on the pipeline, mainly due to water hammer fractures. For the most part these bursts were repaired in time to prevent interruption of supply to the consumers. In May however, three bursts occurred successively, each following the repair of the previous fracture. At the time of the third burst, the Reservoirs at Mazeras were virtually empty so that there was a shortage of water for some days in Mombasa. Fortunately, the Mrere pipeline continued to function well so that at least some water could be directed into the reticulation system and this served to reduce considerably the inconvenience to the public. Nevertheless, there were some areas which could not be commanded from Changamwe and there was undoubtedly regrettable inconvenience to the people living there. The occurrence of three bursts in quick succession is fortunately an extremely rare phenomenon and with the measures now being taken in regard to valve linkages such a possibility should be eliminated, altogether in the future.

(ii) *North Mainland Pipeline.*—This pipeline conveys Mzima water from the Reservoirs at Mazeras to the Mainland north of Mombasa, the regime covering Nyali, Bamburi, Kisauni and Shimo-la-Tewa. The pipeline leaves the Mazeras Reservoirs in a north-easterly direction to storage reservoirs on the hillside at Nguu Tatu, 12 miles from Mazeras. From the Reservoirs water is reticulated to the various areas referred to above.

Previous Annual Reports have referred to the trouble that this pipeline has occasioned. It traverses a hilly country with unstable soils and crosses a number of water courses. In times of heavy rain, fractures of the pipeline by soil movement or water inundation are frequent. The remedy attempted by the Board of putting an emergency pipeline across the Nyali Bridge has already been referred to. The growing consumption, particularly in the Nyali area has meant that this pipeline has had to be used continuously. Even with this addition however, supplies have from time to time fallen below requirement. The Consultants referred to in the earlier part of this Report have examined this problem and as an interim solution have recommended that the supply be boosted by the installation of pumps. This recommendation is now being implemented but there seems little doubt that in the long term, a major augmentation (in the nature of another pipeline) will be necessary.

(iii) *Mrere Pipeline.*—The headworks of this pipeline are at Mrere in the Shimba Hills where the water from a number of springs is collected and conducted by a pipeline to Changamwe. The delivery volume is 2 million gallons a day. As stated in previous Reports the Board attaches the highest importance to this system. Although it is somewhat antiquated, it is a valuable standby to Mombasa in the event of a prolonged interruption in the supply of Mzima water. In these circumstances, continuous work is in progress on the various installations pertaining to this system. In addition, of course the water supply on the South Mainland coastal area from Likoni to Diani depends entirely upon the efficient operation of this line and consequently no chances can be taken in relation to its operation.

(iv) *The Mazeras/Kilifi Pipeline and the Kaya Bombo South Mainland System.*—In previous reports covering the Mazeras/Kilifi system reference has been made to the slowness with which the forecast of consumption were being approached. In the year under review much of the previous lee way was made up and as with other regimes of the Board the problem now is going to be how long the existing pipeline will be able to meet the increasing demand. Similar remarks apply to the

Kaya Bombo/South Mainland installations. Here as with the North Mainland, the inauguration of the supply has provoked considerable building activity, particularly in respect of hotels. It seems probable that not many years from now the whole capacity of the Mrere pipeline will have to be devoted to consumption demands on the South Mainland. Mombasa will probably be served largely by the new major source of supply, particularly if this takes the form of a storage dam in the country south of the town. This would enable the diversion of more and more Mzima water to the north as the demand for water in that area increases.

(v) *The Mazeras Reservoirs.*—These comprise three pre-stressed concrete tanks each with a capacity of six million gallons. They are fed by water from the Mzima Springs 130 miles away to the north-west by the Mombasa/Mzima Pipeline. They in turn deliver water to the service reservoirs at Changamwe by twin 21 inch pipelines. They also deliver water direct to the pipelines serving the North Mainland and the Mazeras/Kilifi System. The reservoirs of course represent the first line of defence against a shortage of water in Mombasa in the event of a break in the major pipeline between Mzima and Mazeras.

(vi) *The Changamwe Reservoirs.*—There are six pre-stressed concrete reservoirs at Changamwe having a total capacity of 6.5 million gallons. Although the prime functions of these reservoirs is to serve the Mombasa Water Supply the 6.5 million gallons capacity provides a further safeguard against interruption of the water supply to Mombasa following any failure in the conducting system. In the reservoir system at Changamwe the Mzima Water is mixed with the incoming Mrere Water before reticulation to the Mombasa Water Supply. It is at this point that the Board sells the water in bulk to the Mombasa Water Undertaker, the Ministry of Agriculture, charges being made in accordance with the readings on a special Sparling meter.

(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.

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, 1971**

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. NJOROGI,
Controller and Auditor-General.

Nairobi,
1st February, 1972.

NET REVENUE ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1971

1969/70		EXPENDITURE		1969/70		INCOME	
K£ s. cts.	K£ s. cts.	K£ s. cts.	K£ s. cts.	K£ s. cts.	K£ s. cts.	K£ s. cts.	K£ s. cts.
64,150 15 43	To INTEREST CHARGES:	55,190 16 43	By Balance brought from Revenue Account ..	526,817 13 90	4,895 11 70	563,542 08 05	
60,000 00 00	(i) Bank Loans (K£1,350,000)	60,000 00 00	(ii) Kenya Loan (K£1,000,000)	4,475 12 00	Reserve Fund Investments ..		
33,698 12 55	(ii) E.A.R. and H. Loan—(K£500,000)	39,999 19 95	(iii) Kenya Loan (K£2,170,000)	9,541 01 90	Cash on Deposit with Cereals and Sugar Finance Corporation ..		
101,037 13 40	(iv) Kenya Loan (K£2,170,000)	116,875 00 00	(v) Kenya Loan (K£70,277)	—	Profit on Redemption of Investments ..	15,351 08 05	
1,775 15 20	(vi) Kenya Loan—North Mainland Scheme (K£210,000)	1,657 11 60	(vi) Kenya Loan—Mrere/Kaya Bombo and Mazeras/Kilifi Schemes ..	308,074 19 88		3,350 03 05	
10,757 09 28		10,340 00 50					
23,517 02 65		24,011 11 40					
294,937 08 51							
2,954 10 35	To LOANS REDEEMED:	3,072 13 95	Annual Instalment—Kenya Loan, Mrere Supply ..				
6,576 05 02	Annual Instalment—Kenya Loan, North Mainland Scheme ..	6,993 13 80	Annual Instalment—Bank Loans ..				
119,625 08 97	Annual Instalment—Kenya Loan, Mrere/Kaya Bombo and Mazeras/Kilifi Schemes ..	127,999 04 57					
129,156 04 34		10,006 12 85		148,072 05 17			
9,362 09 10	To Loss on Devaluation of Pound Sterling ..						
135,675 13 51	To Transfer to Loan Redemption Fund ..			135,675 13 51			
107,378 05 85	To balance, being net operating Surplus carried to Net Revenue Appropriation Account ..						
K£676,510 01 31		K£ 717,919 12 66		676,510 01 31		K£ 717,919 12 66	

NET REVENUE APPROPRIATION ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1971

EXPENDITURE		1969/70		INCOME	
1969/70		K£ s. cts.	K£ s. cts.	1969/70	
K£ s. cts.				K£ s. cts.	
1,176,269 10 31	To Balance as at 1st July, 1970	1,231,177 19 17	107,378 5 85		
135,675 13 51	Balance brought from Net Revenue Account	135,675 13 51	1,231,177 19 17		
26,611 01 20	Financing the cost of rehabilitation of the Mzima/Mrere and North Mainland Scheme installations and contribution towards construction of Mrere/Kaya Bombo and Mazaras/Kilifi Schemes	6,214 06 30			
		K£	K£		
<u>K£1,338,556 05 02</u>		<u>1,373,067 18 98</u>	<u>1,338,556 05 02</u>		<u>K£ 1,373,067 18 98</u>

**LOAN REDEMPTION FUND
STATEMENT OF FUND FOR THE YEAR ENDED 30th JUNE, 1971**

EXPENDITURE		1969/70		INCOME	
1969/70		K£ s. cts.	K£ s. cts.	1969/70	
K£ s. cts.					
1,628,108 02 12	To Balance as at 30th June, 1971	1,763,783 15 63	1,492,432 08 61		
			135,675 13 51		
		K£	K£		
<u>K£1,628,108 02 12</u>		<u>1,763,783 15 63</u>	<u>1,628,108 02 12</u>		<u>K£ 1,763,783 15 63</u>

STATEMENT OF INVESTMENTS AS AT 30th JUNE, 1971

Nature of Stock	Amount of Stock	Cost Price	Quotation (Middle Market Value)	Market Value as at 30th June, 1971
	£	£	Per cent	£
4½ per cent Nyasaland 1971/78	3,263.78	3,229.36	69	2,252.01
8½ per cent East African Railways and Harbours 1975	60,657.78	60,797.51	96	58,231.47
Joint Consolidated Fund Deposit	5,419.81	5,419.81	100	5,419.81
	£	£		£
	<u>69,341.37</u>	<u>69,446.68</u>		<u>65,903.29</u>

CAPITAL ACCOUNT FOR THE YEAR ENDED 30th JUNE, 1971

EXPENDITURE	Assets as at 30th June, 1970	Expenditure during the year	Total to 30th June, 1971	INCOME	Loans as at 1st July, 1970	Received during the year	Total to 30th June, 1971
	K£ s. cts.	K£ s. cts.	K£ s. cts.		K£ s. cts.	K£ s. cts.	K£ s. cts.
To ASSETS:							
Mzima and Mrere Instal- lations	5,155,654 17 41	2,348 16 90	5,158,003 14 31	BY LOANS RAISED:	1,350,000 00 00	—	1,350,000 00 00
North Mainland Scheme	234,304 09 44	3,118 07 75	237,422 17 19	Bank Loans	500,000 00 00	—	500,000 00 00
Mrere/Kaya Bombo Scheme	200,125 04 10	496 00 00	200,621 4 10	E.A.R. and H. Corporation	2,170,000 00 00	—	2,170,000 00 00
Mazeras/Kilifi Scheme	200,825 01 25	308 01 65	201,133 2 90	Kenya Loan	70,277 00 00	—	70,277 00 00
				Kenya Loan—North Mainland Scheme	210,000 00 00	—	210,000 00 00
	K£ 5,790,909 12 20	6,271 6 30	5,797,180 18 50	Kenya Loan—Ex-Uganda	1,000,000 00 00	—	1,000,000 00 00
				Kenya Loan—Mazeras/Kilifi Scheme	200,512 17 85	—	200,512 17 85
				Kenya Loan—Mrere/Kaya Bombo Scheme	199,679 19 15	—	199,679 19 15
					K£ 5,700,469 17 00	—	5,700,469 17 00
				BY CAPITAL RECEIPTS:			
				Sale of Assets	3,731 00 57	—	3,731 00 57
				Recovery of damaged valves	1,589 00 00	—	1,589 00 00
				Contribution from the Admiralty for the North Mainland Scheme	2,750 00 00	—	2,750 00 00
				Refund of Consultant's Fees	180 03 00	—	180 03 00
				Refund on Installation of tele- phone at Nguu Tatu	—	57 00 00	57 00 00
					K£ 8,250 03 57	57 00 00	8,307 03 57
				By Contribution from Net Revenue Appropriation Account for the rehabilitation of the Mzima/ Mrere and North Mainland Schemes installations and con- tribution towards construction of Mrere/Kaya Bombo and Mazeras/Kilifi Schemes			
					82,189 11 63	6,214 06 30	88,403 17 93
					K£ 5,797,180 18 50		5,797,180 18 50

STATEMENT OF WATER SUPPLIED—1970/71

Conn. No.	CONSUMER	Number of Gallons Supplied	Rate per 1,000 Gallons	Amount	Total Value of Water Supplied
			K. Sh. cts.	K.£. s. cts.	K.£. s. cts.
MWS	MINISTRY OF AGRICULTURE:				
—	Mombasa	2,123,850,700	4 60	488,485 13 25	
—	South Mainland Water Supply	64,227,100	7 50	24,272 13 25	
	Mazeras/Jaribuni Water Supply	16,801,600	7 50	6,300 12 00	
	Kilifi Water Supply	17,328,200	7 50	6,501 17 25	
2.	Voi	35,427,100	4 10	7,262 11 05	
7.	Mariakani	18,652,100	4 10	3,823 13 55	
15.	Kwale	7,752,100	4 10	1,589 01 55	
17+75	Mazeras	6,474,500	4 10	1,327 05 35	
41	Kinango	4,613,800	4 10	945 16 55	
25	Bachuma	1,529,300	2 00	152 18 60	
78	Matuga Holding Ground	238,700	7 50	89 10 25	
46-51, 68 and 71	North Mainland Water Supply	128,224,400	4 60	29,491 12 90	570,243 05 55
40	MINISTRY OF WORKS: Road Construction Unit—Mackinnon Road	238,000	4 60		54 14 80
3	EAST AFRICAN RAILWAYS CORPORATION:				
4	Maungu	23,738,700	4 60	5,459 18 00	
6	Mackinnon Road	21,453,200	4 60	4,934 04 70	
35	Sambuuru	30,959,500	4 60	7,118 07 90	
53-59	Manyani	427,500	4 60	98 06 45	
	Landhies	2,132,000	4 60	490 07 10	18,101 4 15
1	PRISONS DEPARTMENT:				
45	Manyani Camp (Mbololo Hills Prison)	25,012,600	4 60	5,752 17 90	
	Shimo-la-Tewa Prison	28,234,000	4 60	6,493 16 40	12,246 14 30
16	COUNTY COUNCIL OF KWALE:				
19	Sambuuru	725,700	2 00	72 11 40	
53	Mwanda	318,800	2 00	31 17 60	
54	Mgalani Water Dip	143,200	4 60	32 18 70	
63	Mwachi	32,200	4 60	7 08 15	
64	Mwachinga	290,100	4 60	66 14 35	
	Mwalungani	10,900	4 60	2 10 25	

STATEMENT OF WATER SUPPLIED—1970/71—(Contd.)

Conn. No.	CONSUMER	Number of Gallons Supplied	Rate per 1,000 Gallons	Amount	Total Value of Water Supplied
65	Lutsangani	7,800	4 60	1 15 90	229 12 80
83	C.C. of Kwale	60,100	4 60	13 16 45	262 16 90
18.	Mrs. BETTY DANEU	1,142,800	4 60		7 08 55
21.	MR. JACKAN N. MWABAKI	32,300	4 60		50 12 40
23.	MR. SAMUEL C. NGUMA	220,100	4 60		1,154 16 95
24.	KENYA NATIONAL PARKS—TSAVO EAST	5,021,100	4 60		75 03 60
26.	KANWAR STORES	250,600	6 00		18,457 15 30
29.	EAST AFRICAN OIL REFINERIES	80,251,200	4 60		83 19 00
39.	TAITA RANCHING CO. LTD.	839,400	2 00		251 15 00
42.	KISAUNI LTD.	1,342,700	3 75		8,653 19 65
43.	BAMBURI PORTLAND CEMENT CO. LTD.	53,255,300	3 25		16,225 04 30
44 and 70	NYALI LTD.	86,534,500	3 75		93 00 75
5.	PROJECT MANAGER, UNDP/FAO	405,500	4 60		30 00 25
52.	MR. BURUSI TSUMA	130,500	4 60		331 15 00
61.	KENYA MEAT COMMISSION	1,442,400	4 60		1,917 19 80
62 and 74	KENYA SAFARI LODGES AND HOTELS	8,339,100	4 60		496 16 95
67.	PROVINCIAL VETERINARY OFFICER, MOMBASA	2,160,200	4 60		454 10 95
69.	MR. RAYMOND SYDNEY MAYERS	1,976,300	4 60		19 04 55
72.	MR. YUSUF ALI MWATSUHU	83,600	4 60		04 15
73.	MRS. HELEN WANJIRU MEIGO	900	4 60		83 02 10
76.	MR. IKONGE MWAMGUNDA	361,300	4 60		14 02 00
77.	MR. CUPHI NGALAA	47,000	6 00		821 03 20
79.	M/S. PUT SARAJEVO	2,737,200	6 00		17 16 45
80.	MRS. MYANZI KOMBO	77,500	4 60		11 02 00
81.	MR. WILLIAM KOMBO	37,000	6 00		14 01 40
82.	MR. KAZUNGU NYANZE	46,900	6 00		5 17 00
84.	MR. KAHINDI NGOWA	19,500	6 00		3 09 95
85.	KENYA NATIONAL PARKS—TSAVO WEST	15,200	4 60		19 08 20
86.	MR. MVUU LEMBI	64,700	6 00		1 11 20
87.	MR. SALIM ABDALLAH	5,200	6 00		19 06 40
88.	MR. CHENGO MAZARAKWE	64,400	6 00		11 15 80
89.	MRS. MARY LUCAS	39,300	6 00		
		<u>2,806,346,600</u>			<u>650,465 11 35</u>

