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SOME ASPECTS OF MILK MARKETING IN KENYA

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SOME ASPECTS OF MILK MARKETING IN KENYA

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The present discussion paper presents a rough summary of the main problems facing the dairy industry in Kenya as I see it.

I Stages of development of the dairy industry in Kenya:

The development of the dairy industry is marked by three phases:

A. the formation of the Kenya Cooperative Creameries Ltd, (KCC).

B. the installation of the Kenya Dairy Board (KDB) and its Rural Dairy Scheme.

C. the expected appointment of the Kenya Creameries Commission.

A. Formation of the KCC:

With the importation of pure bred European cattle the European settlers in Kenya started commercial milk production. For the year 1901 butter production is first reported on a farm near Nairobi. A few years later a co-operative creamery was built near Lumbwa. Exports of butter and cheese to London are reported for 1921. Creameries

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[1]I wish to express my gratitude to all persons who have given me valuable information and support in carrying out my research.

Any views expressed in this paper are those of the author. They should not be interpreted as reflecting the view of the Institute for Development Studies or of the University College, Nairobi.

in Naivasha and Nanyuki opened in 1925 and 1928 respectively.

These three creameries amalgamated in 1931 and formed the Kenya Co-operative Creamery Ltd. which was registered as the first co-operative society under the Co-operative Societies (Registration) Ordinance in 1932. New Creameries were built in Thomson Falls, Eldoret and Molo before the second world war.

After the second world war the KCC began purchasing butterfat and ghee produced by African farmers. At the same time the KCC intended to enter the fresh milk market in Nairobi. Negotiations with the Kenya Dairy Co-operative Association, which supplied 3-4,000 gallons per day to Nairobi, led to an agreement between the two producer organizations resulting in the establishment of a joint milk committee.

This joint committe representing KCC and KDCA members organised a contract system for the supply to Nairobi. The contracts were based on minimum quantities which the farmers were able to supply continuously. The unsold surplus milk was used for manufacture but the differential in the price paid for manufactured milk as compared with that for whole milk was shared among all suppliers.

Later on when these dry weather contracts seemed to be unsatisfactory, the KCC introduced the quota system because the farmers around Nairobi

could not produce enough milk to meet the full market demand in Nairobi. This system applied first to dairy farmers in the Nairobi, Nakuru and Naivasha areas and was extended later to Eldoret.

The KCC has some 2500 ordinary shareholders of which some 1800 are suppliers including more than 100 Dairy Cooperative Societies. The KCC owns 9 factories and is run by a board of 12 elected and 5 nominated directors.

B. Kenya Dairy Board and Rural Dairy Scheme:

In 1955 the Minister of Agriculture appointed a committee to consider whether some form of statutory control of the dairy industry was necessary. The committee's report recommended statutory control by a Dairy Industry Board. The main functions of the Kenya Dairy Board, which was established in 1958, are:

1. Organization, regulation and development of efficient production, marketing, distribution, and supply of milk products.
2. Improvement of the quality of milk.
3. Stabilization of producer prices.
4. Market Research.

The KDB is engaged in the registration of producers, allocation of quotas and contracts, licensing of retailers, price determination and control of retail margins. The main task for the KDB was to stabilize the dairy industry, i.e. to

balance the price variations on the world market and the internal market price, as the return from milk sold as whole milk is higher than from milk manufactured.

The KDB therefore, raises a producer's cess of 8 cents per gallon milk sold and a retailer cess in four cities (1.25 cents per gallon). In 1964/65 the cess brought in £183,000 of which £85,000 was remitted on milk used in manufacturing. The differential was used for the expenses of the KDB (£60,000) and a grant for a National Stock Raising Scheme (£20.000).

If one knows that the KCC as the biggest manufacturer and exporter in Kenya has paid £150,000 and received £126,000 in 1964/65 (in KCC's financial year), then one wonders about the stabilisation effect. Another criticism is that the KDB raises the same cess on all milk sold. Although the producers of cream have not the benefit of the whole milk sales at a higher rate, they are levied with the same amount.

In 1960 the Committee on the Organization of Agriculture had already recommended varying the cess raised by the KDB according to the utilization of the milk.

The KDB also took over the Rural Dairy Development Scheme which was set up in 1961 and appointed a director for the scheme. The Veterinary Department started marketing milk produced by Africans in 1927. The Mariakani Milk Scheme was created in 1930.

This scheme was followed by ghee schemes in South Nyanza and Machakos Districts and by Dairy Co-operatives in Nyeri District, where the first Dairy Union was formed in 1950. With the introduction of improved cattle into the African smallholdings the need arose for more Rural Dairy Centres. In 1963, the Rural Dairy Scheme became so popular that UNICEF was requested to assist. They agreed and provided equipment for large and small dairy centres, for the Naivasha Dairy Training School (which was built with funds provided by AID) and for the new Mariakani plant. UNICEF also contributed to the financial costs of maintaining a director for the Rural Dairy Scheme and to the costs of field assistants (there are now four field assistants under the scheme). Moreover, UNICEF pays a part of the salaries for the dairy managers trained in Naivasha. FAO has sent some dairy experts to assist in the Mariakani Milk Scheme, the Naivasha Dairy Training School and the formation of Rural Dairies.

Up to now UNICEF has provided equipment for 85 dairy centres. These centres are organized as Co-operative Societies. At the end of 1965, 128 Co-operative Societies were supplying milk to KCC (including the Settlement Co-operative Societies) and about an additional 25 were supplying to District Dairy Co-operative Unions (Nyeri, Meru, Kisii) and to the Marketing Board in Kisumu. At this stage of development which is marked by an increasing supply

of milk from new African producers - a number of problems arose in regard to the organization of milk marketing.

C. The Proposed Kenya Creameries Commission:

The two points which were the main causes for the dissatisfaction of the new producers are:

1. The price system.

The KCC which handled about 88 percent of the marketed milk (according to the KDB Annual Report 1964/65) pays three different prices for milk: the highest price on quota milk; a middle price on contract milk; and the lowest price on milk for separation. For cream the KCC pays a price which is a little more than on milk for separation. Because the quotas and contracts are restricted to a certain amount, new producers are getting less for their milk than old established dairy farmers.

2. The voting system in KCC.

The voting membership within the countrywide KCC is restricted to those farmers supplying more than 6000 gallons yearly. Therefore the African smallholder can become a KCC member only through a co-operative which has one vote, but up to several hundred producers.

To solve these problems, organize the dairy industry in accordance with the changed pattern of production, and find means to reach the plan target of doubling milk output a commission was set up under the chairmanship of the Hon. M. Kibaki, M.P. Its report published 21 December, 1965, recommended:

(a) that a contract system with a uniform price for all milk be implemented.

(b) that the price paid for butterfat be reviewed with a view to reduce the differential in prices paid for milk.

(c) that a Statutory National Corporation be constituted to be known as the Kenya Creameries Commission.

(d) that this Commission become the owner and manager of the KCC plants and absorb the KDB staff.

(e) that this Commission have powers to organize and control the whole dairy industry.

Legislation to set up the Kenya Creameries Commission was published in Kenya Gazette, and will be introduced to the National Assembly soon.

II Economics of the Dairy Industry in Kenya:

The marketed milk production, i.e. milk levied by the KDB, reached a peak in 1961/62 (July - June) amounting to about 52 million gallons. For the next years it dropped down. It was only 41 million gallons in 1964/65, which is a decrease of more than 20 percent. This drop was accompanied by a declining number of dairy cattle on large farms and an increasing number of grade cattle on both the small holdings in the Settlement areas and in the former reserves. The heavy fall of milk production in 1964/65 against 1963/64 was mainly caused by the drought in 1965. The reason that the marketed milk production declined so sharply is not that there was a lower milk yield per cow kept by African farmers (which has improved considerably in the last few years) but that there was a very small amount of milk marketed per cow. The following table gives the amount of milk (gallons) marketed per cow in different types of farms in 1964/65:

Large farms	188
Settlement Schemes	150
Small holdings, improved cattle	90
Small holdings, native cattle (Mariakani)	8

When looking at this figures, consider that 1964/65 was a very dry year and that the relationship between the figures is far more important than the actual figures.

The figures indicate that the amount of milk marketed per cow in the small holdings is only half of that in the large farms. The figures for small holdings with improved cattle may be underlined by the following statements:

1. According to the Annual Reports of the District Agricultural Officers in Nyeri and Kiambu 1964, milk marketed through co-operatives amounted to 1.1 million gallons in Nyeri and 1.3 mill. gallons in Kiambu. Divided by the number of improved cows (17,000 and 9,000) the yield per cow was 65 gallons (Nyeri) and 145 gallons (Kiambu).[1]

2. Figures from the Central Province Survey show a milk production of 279 gallons per improved cow in Kiambu and 145 gallons in Nyeri. Only two third of it is sold, the rest consumed which is equivalent to 20-30 gallons per capita per year.

Not only the higher home consumption in the small holdings but also the ease with which milk can be sold to neighbours influences the amount of milk sold to the societies. These sales outside the controlled market, are quite common in all the districts where grade cattle were introduced into smallholdings. Because of the greater prevalence of cash crops, there is a larger injection of cash into the economy which encourages sales in the following areas: Central Province, Meru, Embu, Elgeyo, Nandi, Kipsigis, Kisii. These direct sales presently amount to 15-20 per cent of the total milk production.

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[1] The differential causes a higher total milk yield and higher payment by Co-operatives in Kiambu district.

Therefore the change in ownership of grade cattle from large to small farms resulted in a decreasing amount of milk available for the dairy industry, but was accompanied by an improvement of diet among the African families. In addition from the farm management point of view, milk cattle are more suitable for small holdings because they are a labour intensive enterprise. The dairy industry however, may take the opposite view because the output of milk from the small holdings is much lower.

The milk marketed by KCC or sold under KDB licence amounted in 1964/65 to only one-third of the estimated total production which was in the region of 125 million gallons, namely 42 million gallons on large farms, 7 million gallons on Settlement schemes,[1] 9 million gallons on small holdings with grade cattle[1], 67 million gallons from native cattle.[1] The milk which was marketed in 1964/65 consisted of:

32 million gallons from large farms
4.5 million gallons from Settlement schemes
4.5 million gallons from small holdings, of which about 1 million gallons came from native cattle in Kwale and Kilifi Districts.

About half of the marketed milk is delivered as cream to the KCC factories. Of the remaining 20 million gallons of milk, one-quarter was sold under KDB licence, the rest to the KCC factories. The KCC sold three-quarters of its milk intake as fresh milk and used the rest for making

[1] The total milk production in these cases excludes the milk which is consumed by calves.

butter, cheese, sweetened condensed skim milk, and milk powder.

Sweetened condensed skim milk and skim milk powder were sold locally i.e. in E. Africa, whereas butter, ghee, cheese and whole milk powder were also exported outside E. Africa.

For these items in 1964/65 sales outside E. Africa as a percentage of total sales were:

butter	33
ghee	47
cheese	18
whole milk powder	91

The total sales of the KCC in 1964/65 exceeded £5 million of which more than 40 percent were sold outside Kenya and about 16 percent outside E. Africa, mainly butter and ghee. Half of the sales revenue comes from fresh milk and about 61 percent of the revenue is paid out to the suppliers.

Table 2 shows that the dairy industry in Kenya is primarily involved in the production of butter and ghee. The manufacturing of milk, i.e. the production of cheese and whole milk products, didn't expand much up to February 1965. The amount of milk separated amounted in 1962/63 and 1963/64 to 2 million gallons per year and in 1964/65 to 2.5 million gallons. The skim milk from this separation was used for making condensed skim milk and skim milk powder.

One reason for adjusting the dairy industry on a butterfat basis was the long distances between producers and factories keeping in mind that the transport of milk costs about 10 times as much as the transport of butterfat. Another was that many of the European farmers producing milk were situated in areas where the deliveries of cream was far more profitable than deliveries of milk under a quota or contract system.

The change of milk production from the large farms to the small holdings is partly also the change from lower potential areas to higher potential areas which are better suited to the milk economy. On the other hand many of the new farmers have not yet recognised the value of skim milk either as human food or as feed for calves or pigs.

With the changing pattern of the intake - more milk and less butterfat - the KCC had to provide new manufacturing facilities because the fresh milk market expanded less than the milk intake increased. So the KCC built a new spray dryer plant at Nakuru (where the milk is manufactured into butter, whole milk powder and skim milk powder) with a capacity of at least 14,000 gallons per day.

The only dairy product not manufactured on a large scale in Kenya (if one excludes baby food which contains milk powder) is condensed whole milk. The imports of this item to E. Africa in 1964 amounted to more than 7 million lbs. with a value of £400,000. If Kenya would produce more condensed or evaporated whole milk it could therefore manufacture an additional 2 million gallons of milk. The

sales revenue would be about Shs.1/15 per lb. of condensed milk or more than 4 Shs per gallon manufactured milk, resulting in a possible payout to the suppliers in the region of 2 Shs per gallon which is higher than the return from butter and skim milk powder to the industry. The KCC considered building the plant near Nyeri but found that the available production was not large enough to make the project feasible.

III The Regional Marketing Situation:

This section examines briefly production and consumption of milk by district excluding the Northern Frontier Districts but including some of the semi arid areas inhabited by pastoralists.

The sources for such an examination are limited and therefore the figures given are incomplete. But nevertheless the attempt should be made to show the situation as clearly as possible. Figures are available from the intake of the KCC factories, the milk cessed by the KDB for certain areas, from the Settlement Department Annual Report, from the Annual Reports of the District Agricultural Officers and District Veterinary Offices. But no reliable figures are obtainable for the milk produced and marketed from native cattle with exception of the Mariakani Milk Scheme and the ghee sales in South Nyanza.

From Table 3 it is evident that the main market for fresh milk is Nairobi, although the sales figures for Nairobi include 400,000 gallons sold to Mombasa and Dar-es-Salaam. The second larger market is Eldoret from whose factory nearly three million gallons milk were transported

to Uganda. Nakuru includes sales to Kisumu and Kericho as well as to some small plants. Further it is evident that in Nairobi milk is manufactured into cheese. Nearly one-quarter of the total milk intake is moved from other factories to Nairobi. From the transport point of view it should be cheaper to leave the milk in Nakuru and produce the cheese at that factory considering that 1 gallon milk gives only one lb. of cheese.

The marketing situation by district is shown in Table 4. It indicates that the main deficit areas are Nairobi, Mombasa (where fresh milk for consumption is required), Laikipia, Nakuru (with 5 manufacturing plants) and Eldoret. In addition it is evident that the surplus of milk in the African districts available for export is very small, except some districts in Central Province, Kilifi, Kwale and South Nyanza. Milk for the market is mainly produced in the former scheduled areas, from both the large farms and Settlement schemes.

The table does not consider milk sales from small-holders (both with grade and native cattle) to their neighbours - but it might be said that these sales have a long tradition and one finds sales within a certain tribal area as well as sales from pastoralists to agriculturalists in certain markets.

As mentioned above, the sales of milk outside the controlled market in the Central Province amounted to 15-20 per cent of the total milk yield per grade cow. From smallholdings with native cattle in the Central Province about 30 percent of the milk production was sold nearly all

of it to neighbours. The development of the Mariakani Milk Scheme where the milk is supplied from native cattle only shows that up to 60 percent of the milk production can be brought into the commercial economy. But - and this is evident from the Mariakani Milk Scheme too - the target is not only to introduce marketing facilities and collect the milk. Most of the areas with a large native cattle population where the milk should be marketed are much better suited to beef production. With the organised collection of milk the cattle owners are going to keep females only and slaughter nearly all the male calves at an early age. On the other hand the collection of milk on a large scale takes away the essential food for children and for calves leading to malnutritution and starvation. Therefore in my opinion the collection of milk from remote areas must be combined with further educational work in cattle husbandry and management and with the provision of substitute foodstuffs and other items.

IV The Milk Price System:

There are different prices paid to the producers for milk and butterfat. Milk prices vary according to:

A. Milk Prices

1. the type of supply, either to KCC or as licenced producer
2. the place
3. the pool, in which one supplies.

1. Licensed producers deliver to retailers or consumers directly. Their prices are fixed by the KDB, in some areas as maximum prices and in others as minimum prices not less than 2/50 per gallon (since May 1965). In June 1965, there were 453 licenced producers who sold 5 million gallons in 1964/65.

Licensed producers are allowed to sell in the smaller townships and rural areas only. In 1963 the KDB withdrew all producer/retailer licences in Nairobi, Nakuru and Kitale and in 1965 in Mombasa. Those producers were allocated quotas for deliveries to KCC and received a financial compensation.

The prices the KCC pay to their suppliers are fixed by the directors of the KCC in accordance with the KDB and the Ministry of Agriculture. The KCC milk prices vary from place to place.

2. According to the last stipulation the producer milk prices in Nairobi, Kisumu, Thika and Mombasa include a geographical premium, as the producer around these towns cannot supply the full amount required.

The premium amounts to 35 cents per gallon in Nairobi

20 cents per gallon in Kisumu

10 cents per gallon
in Thika
65 cents per gallon
in Mombasa.

This premium is supposed to correspond to the costs for transporting the milk from upcountry to those markets. In fact the premium for milk delivered to Nairobi is higher than the costs for transporting milk from Nakuru or Naivasha to Nairobi. The costs are about half the premium. Thus it is cheaper for the KCC to purchase milk in Naivasha or Nakuru and sell it in Nairobi. On the other hand the farmer supplying Nakuru or Naivasha gets a price less than the price paid in Nairobi minus transport costs.

3. KCC pays three different prices for milk:

a) the highest on quota - milk (formerly designated pool I)

b) a middle price on contract-milk (formerly designated pool II)

c) the lowest price on milk for separation (formerly designated pool III)

a) This milk is used for human consumption and gives therefore the highest return to the dairy industry.[1]

[1]The second argument for the higher price is that a farmer supplying quota milk has higher production costs in order to maintain a steady supply.

Because the demand for fresh milk is nearly the same throughout the year, but the production varies from season to season the KCC introduced the quota system. In the beginning quotas were obtainable for all farmers. The farmers had to qualify for a quota by supplying continuously in the dry season. The quotas were based on his deliveries in this season from 1st January to 30th April. If the deliveries fell below his quota for a certain period he was penalised by a permanent reduction of his quota. With the expanding fresh milk market and a changing pattern of production, quotas were allocated to new farmers and to those whose proportion of quota deliveries was below the average of the area. Then existing quotas became negotiable, i.e. the KDB purchased and sold quotas at £10 per gallon.

b) If the farmer had a quota he was also able to supply milk for pool II. This pool was redesignated as contract milk in June 1965. The deliveries of contract milk are restricted to the dairy industry's requirements for manufacturing but the producer is allowed to drop 25% below his contract without being penalised. Most of the contracts are allocated to new farmers.

c) The milk for separation earns the lowest payment and a farmer may deliver as much as he wants for this purpose. But because the payout for cream is better and the farmer retains the skim milk, most of the milk in excess of quota and contracts is delivered as cream. The present prices for milk supplied to the main markets are shown below (Shs. per gallon).

	Quota	Contract	Milk for Separation
Nairobi	2.75	2.25	1.35
Nakuru, Naivasha	2.40	1.90	1.00
Eldoret	2.28[1]	1.90	1.00
Mombasa	3.05	-	-

3. The quotas and contracts are controlled by the KCC/KDB joint Quota Committee, which in 1964/65 held 21 meetings. For the four KCC factory areas there were at the end of 1965 a total of 36,210 gallons of quota milk per day and 12,824 gallons of contract milk per day. Individual farmers held 25,222 gallons of quota and 4,893 gallons of contract milk, co-operatives had 10,988 gallons of quota and 7,931 gallons of contract milk.

[1] The Eldoret quota is made up of three quarters top price milk and one quarter manufacturing milk.

B. Butterfat Prices

Cream delivered to the KCC is paid on a butterfat basis (the milk is paid on gallonage). There are three grades of butterfat paid at a uniform price at all creameries. After three months the KCC pays a quarterly bonus. Together with the final pool payment, which is also made for milk and amounted to 3% of the initial payment in 1964/65, the average payment per lb. of butterfat in 1964/65 was sh. 2/96, or nearly 1/20 per gallon of milk. There is still another differential between milk and cream prices. Whereas the producer has to pay the transport of milk up to the creameries door, the KCC pays railage (and in some cases road transport too) from the nearest railway station.

Because there is no limit for deliveries of cream and milk for separation, its supply shows much greater seasonal variations than the milk supply. This system has led to a partition of dairy farming, to the milk and to the cream "economy."

C. Discussion of Quota system

The following are the significant features of the quota system:

1. From the point of view of the dairy industry the restriction of whole milk supply by quota and contracts is the easiest way to control the market.

2. Similar advantages apply to established farmers, who are in possession of quotas.

3. The new producer is handicaped as he can earn or purchase quotas only as the market expands or other farmers give up their milk supply.

4. The quota system represents a monopolistic price and supply system. The dairy industry is able to force the consumers to pay a higher price than they otherwise would pay if the market were free[1]. The high consumer prices and the supply control promote illegal sales.

5. Belshaw has said that:

"To the extent that internal demand is not inelastic at lower prices, monopolistic control with a quota system will reduce total revenue to the potential industry, but will tend to maximize revenue of existing producers. With lack of evidence concerning the relevant elasticities, it is a possibility that the Kenyan dairies produce marketing structure has this effect".[2]

Up to now nobody knows if there is any price elasticity of demand for milk in Kenya. But some sales experiences of the KCC show that this is quite possible. The KCC started sales

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[1] On the other hand, in a country with great seasonal variations of milk production like Kenya, the maintenance of a steady supply has advantages for both the producer and consumer.

[2] Belshaw, D.G.R., Agricultural Production and Trade in the East African Common Market, Makerere University College, Note 5 to Table 3.

of skim milk some years ago with the result that in those areas the sales of whole milk dropped down considerably. Therefore, the question of price elasticity demands a detailed investigation.

The Kibaki Commission has come to the conclusion that the existing quota system is not acceptable. The Commission has made the recommendation that the present payout system be replaced by a contract system with an uniform price for all milk. This should be done after a transitional period where no further quotas will be issued, but where contracts should be allocated for the expanding fresh milk market thus narrowing the gap between the quota and contract prices. The full conversion to contracts should be implemented when there is enough milk to ensure the fresh milk market in the dry season and when the manufacturing facilities are available to handle the increased intake of milk in the rainy season. Without these facilities the new contract system will not work efficiently.

The average payout for all milk supplied to KCC was Sh. 2/17 per gallon in 1964/65. Meanwhile the KCC has increased the payout considerably, bringing the average payout to about 2/30 per gallon. With the last price increase the KCC already has narrowed the differential between the milk prices by raising the contract price more than the quota price.[1]

[1] The milk and butterfat payout is pooled, i.e. the prices for butterfat and contract milk are higher than the return from manufacturing, whereas the price for quota milk is less than that realized from fresh milk sales.

The Kibaki Commission also suggested that the differential between the prices paid for milk and butterfat be reduced. This difference was nearly 1/- per gallon in 1964/65 (2/17vs. 1/20). But one must consider the value of skim milk retained by the farmer (which was about 60 cents per gallon for the KCC in 1964/65) and the lower transport costs.

When the contract system replaces the quota system, one form of supply control will be substituted for another. The contracts then will be allocated to the farmers producing milk at that time but for the new farmers who want to go into milk production, new contracts will have to be created. So the Kenya Dairy Commission after a short time will have the same difficulties with the distribution of contracts as the joint Quota Committee had with quotas. The only distinction will be the uniform price for all milk delivered.

If the Kenya Creameries Commission reduces the differential between the prices for milk and butterfat, this may be a good stimulus to keep dual purpose races of cattle. But before equalizing the prices, one must know the value of the skim milk to producers. (This is probably between sh.-/50 and 1/20 per gallon.)

On the other hand, if one equalizes the two prices and has a contract system for milk (which allows a drop as much as 25% below the contract)

but no restrictions for butterfat supply, then the danger arises that those farmers who have a good use of skim milk might change from milk to butterfat supply.

To avoid these dangers, there are three possibilities:

1. keep a little gap between milk and butterfat prices
2. increase the milk price in the dry season
3. vary the contracts from season to season (which may help only if there is a gap between the prices).

Possibilities 2 and 3 are already used by the KCC. In the long run the only way to balance the deliveries seems to be a seasonal price system.

V Dairy Co-operatives in Kenya

Milk produced in the African smallholdings is marketed mainly through Dairy Co-operative Societies. An exception is the Mariakani Milk Scheme which is run by the Veterinary Department but already a Co-operative Society has been formed there. This society will take over the Scheme after the UNICEF loan is repaid.

About one third of the dairy cattle population in Kenya is held by small farmers and more butterfat should be marketed from remote areas. Special attention must be given to the Dairy Co-operatives, both from the dairy industry point of view and from the income point of view.

Apart from the assistance given to the societies in the field of marketing by KDB, FAO and UNICEF, the Dairy Co-operatives are under the supervision of the Department of Co-operative Development which controls bookkeeping and assists in co-operative matters.

During my stay in Kenya I have visited some 30 Dairy Co-operatives and Settlement Co-operatives. Quite a number of co-operatives have achieved a good standard of management, especially in the Central Province. Their success seems to depend on the following points:

1. Able management of the society
2. Sufficient milk intake from a small area
3. Close supervision and extension work by the Government
4. Standard of education and farming in the area
5. Type of milk sales, which influences the milk price.

Table 5 gives a rough idea of the payout and costs of different types of co-operatives. The table indicates that the sales revenue per gallon of milk depends on the utilisation of milk, i.e. whether the milk is sold as whole milk under quotas and contracts or as cream, and on the place where the co-operative is situated, i.e. in which factory area or at a location with possibilities of local sales.

The variations of the costs per gallon are caused mainly by the size of the society. The transport costs(which depend chiefly on the amount of milk transported) are the main cost factor. The transport costs per gallon of milk (total intake) are lower in societies selling cream, partly due to

the lower costs of transport for cream and partly due to the fact that the KCC pays the railage and in some cases road transport too.

The second main cost factor is the personnel cost (salaries and wages plus the expenses of the committee). Here again the small milk societies are showing the highest personnel costs due to the surplus labour employed. In most of the Settlement Societies surveyed the personnel costs are less than in the other Co-operatives, undoubtedly because of the closer supervision by the Department officers.

One point is still noteworthy, namely that in the schemes selling little milk and much cream the milk delivered per cow is much higher than in other schemes selling little cream. For instance, the marketed production in the Settlement Schemes of Eldoret and Kericho Districts exceeded 200 gallons per cow but reached in Nandi only 120 gallons.

Because the dairy industry in Kenya will depend on the production from small holdings the following points should be considered for the future development of Dairy Co-operatives:

A. Close supervision and control.

Up to now supervision was exercised by various bodies: KDB, Veterinary Department, Co-operative Department, Department of Settlement. The KDB provided technical and marketing assistance, the Veterinary Department supervised in cattle husbandry and management, the Co-operative Department controlled books and Co-operative matters.

A high degree of co-ordination was needed between the Departments concerned, and unfortunately this was not usually achieved.

With the establishment of the Kenya Creameries Commission it is hoped that all the supervision and control over the Rural Dairies will be taken over by this body. This would mean that the Kenya Creameries Commission (like the KDB) has to appoint a director for Rural Dairy Development who must have provincial and district field assistants trained in dairy technology and marketing of milk.

It should be added that the partition of the Ministry of Co-operatives and Marketing was a useful decision. Not only the Marketing section, but also the Co-operative Department, as far as agricultural products are concerned, had to be attached to the Ministry of Agriculture, because the agricultural co-operatives are mainly marketing associations.

B. More power of control for the supervising Department.

Up to now neither the Co-operative Department nor the KDB really had the power to carry out their intentions. In particular the KDB, FAO and UNICEF coordinating Committee should have the power to take away equipment provided by UNICEF from co-operatives not using it.

To implement an effective control, a further number of trained staff and means of transport are necessary. Without any expansion in this

direction it will not be possible to reach the plan target of doubling the marketed milk production in Kenya. The collapse of many of the ghee schemes in South Nyanza and in Machakos Districts as well as the success of the Mariakani Milk Scheme should be a lesson that without close control and supervision any expansion of the dairy industry into remote areas will be unsuccessful.

C. Establishment of further training facilities for co-operative secretaries.

It should be possible to arrange these courses on Farmer Training Centres.

D. The extension and control work. This must include:

a) Control over the whole business of the societies

b) Further extension and education of secretaries and managers, after they have finished their courses.

c) Arrangements for milk and cream transport.

d) Instructions about the nutritional value of skim milk and its utilization possibilities in feeding calves and pigs.

e) Improvement of cattle husbandry.

f) Organization of calf rearing schemes in advanced societies.

g) Education in co-operative marketing.

Table 1

Marketed milk Production, '000 gallons (July - June)

	1962/63	1963/64	1964/65
Sold under KDB Licence	8609	7384	5084
Sold to KCC	41884	40066	35896
Total	50493	47450	40980

Source: KDB Annual Reports.

Table 2

KCC intake, utilization and production of milk and milk products (March-February)

	1962/63	1963/64	1964/65
Intake: Butterfat '000 lbs.	11,153.6	11,287.0	9,449.2
'000 gallons	27,884.1	28,217.5	23,624.2
milk " "	13,902.9	14,437.6	17,233.5
Total " "	41,787.0	42,655.1	40,857.7
Utilization:			
Sales milk 1000 gallons	9,568.9	10,397.0	12,449.2
Manufactured[1] '000 gallons	2,131.2	1,982.8	2,029.7
Used for butter and ghee[2] '000 gallons	29,871.3	30,079.2	26,149.1
Wasted	215.6	206.2	229.7
Production:			
Butter '000 lbs.	11,278.4	11,647.6	9,500.2
Ghee " "	2,385.2	2,141.4	2,428.7
Cheese " "	1,138.5	1,115.7	1,049.4
Whole milk powder[3]	1,252.5	1,025.0	1,136.8
Skim milk powder '000 lbs.	525.0	491.8	680.5
Sweetened condensed skim milk '000 tins	221.6	775.5	2,784.8

Source: KCC Annual Reports

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[1] Does not include milk separated.

[2] Includes milk separated.

[3] Amount sold.

Table 3 - Intake and utilization

Milk, '000 gallons

Factory Area	Intake
Eldoret	4,861.1
Nakuru	4,906.0
Naivasha	2,346.4
Nairobi	4,830.4
Kisumu[1]	289.6
Total	17,233.5

[1] Kisumu has not a KCC factory.

For the KCC - factories (1964/65) March - February

Transfer	Available	Sales	Manufactured and wasted
+79.0	4,940.4	3,401.4	1,538.7
-3,134.0	1,772.0	1,026.9	745.1
-1,172.3	1,174.1	11.3	1,162.8
+4,227.3	9,057.7	7,719.9	1,337.8
-	289.6	289.6	-
±4,306.3	17.233.5	12,449.1	4,784.4

but KCC members are selling to the Municipal Dairy.

Table 4 - Milk marketing situation by districts, 1964/65 (July - June) - 1000 gallons -

Province / district		Production [1]	Sales [2] as milk	Sales [2] as butterfat	Consumption human	Consumption manufactured	Consumption total	Balance +surplus -deficit	Consumption of fresh milk gallons per capita
Nairobi		976	742	183	7,458	1438 [3]	8896 [3]	- 7920	19.1
Central	Kiambu	4,671	2807	102	2,187	25	2212	+ 2459	5.5
	Thika	764	303	142	474	11	485	+ 279	6.1
	Fort Hall	2,140	-	-	2,140	-	2140	± 0	5.8
	Kirinyaga	836	-	-	836	-	836	± 0	5.0
	Nyandarua	4 111	1479	1251	1,176	205	1381	+ 2730	12.4
	Nyeri	5435	1642	917	3,157	69	3226	+ 2209	10.9
Total		17,957	6231	2412	9,970	310	10280	+ 7677	7.1
Eastern	Meru	2,982	411	102	2,827	-	2827	+ 155	5.5
	Embu	616	-	-	616	-	616	± 0	4.2
	Machakos	3,762	1636	285	1,879	122	2001	+ 1761	3.1
	Kitui	2,250	-	-	2,250	-	2250	± 0	7.3
Total		9,610	2047	387	7,572	122	7694	+ 1916	4.8
Coast	Kilifi	1,045	605	-	438	262	700	+ 345	1.6
	Kwale	1,268	700	-	568	-	568	+ 700	3.3
	Mombasa	800	750	-	3,124	-	3124	- 2324	16.2
	Lamu	84	-	-	84	-	84	± 0	3.4

Table 3 - Intake and utilization 1

Milk, '000 gallons

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	Mombasa	800	750	-	3,124	-	3124	- 2324	16.2
	Lamu	84	-	-	84	-	84	± 0	3.4

Table 4 cont.

Province / district		Production[1]	Sales[2] as milk	Sales[2] as butterfat	Consumption human	Consumption manufactured	Consumption total	Balance +surplus -deficit	Consumption of fresh milk gallons per capita
	Taita	360	-	--	360	-	360	± 0	3.7
Total		3557	2055	-	4574	262	4836	- 1279	6.1
Western	Bungoma	2524	67	327	2109	21	2130	+ 394	8.1
	Busia	1058	-	-	1058	-	1058	± 0	5.7
	Kakamega	4133	345	526	3262	-	3262	+ 871	5.0
Total		7715	412	853	6429	21	6450	+ 1265	5.9
Nyanza	C. Nyanza	3396	88	66	3706	1440	5146	- 1750	5.5.
	S. Nyanza	9014	-	1440	7574	-	7574	+ 1440	14.6
	Kisii	3674	111	291	3312	-	3312	+ 362	5.8
Total		16084	199	1797	14592	1440	16032	+ 52	8.3
Rift Valley	Baringo	1956	109	150	1697	-	1697	+ 259	12.1
	Elg.Marakwet	1800	80	15	1705	-	1705	+ 95	10.0
	Nandi	3693	740	529	2397	7	2404	+ 1289	17.8
	Kericho	6457	683	1491	4451	249	4700	+ 1757	11.0
	Laikipia	2628	290	2116	331	3720	4051	- 1423	4.6
	Tr. Nzoia	8106	1696	5180	554	6906	7460	+ 646	6.0
	Uasin Gishu	5598	2950	1903	832	7437[3]	8269[3]	- 2671	8.7
	Nakuru	10683	5249	4229	1715	10641[3]	12356[3]	- 1673	6.2
	Narok	4750	-	-	4750	-	4750	± 0	40.0

Table 4 cont.

Province / district	Production[1]	Sales[2] as milk	Sales[2] as butterfat	Consumption human	Consumption manufactured	total	Balance +surplus -deficit	Consumption of fresh milk gallons per capita
Kajiado	4070	20	-	4060	-	4060	+ 10	55.0
West Pokot	1510	-	-	1510	-	1510	± 0	23.7
Samburu	3600	-	-	3600	-	3600	± 0	59.0
Turkana	1200	-	-	1200	-	1200	± 0	7.0
Total	56051	11817	15613	28802	28960	57762	- 1711	15.3
Kenya Total	111950	23503	21245	79397	32553	111950	± 0	9.0

1) excludes milk fed to calves

2) excludes milk direct sales from small holdings to neighbours

3) includes fresh milk exported to Uganda and Tanzania, total amount 3174,000 gallons.

Table 5.

Characteristics of different types of Dairy Co-operative Societies

Co-operatives selling	Sales revenue	payout to members	Costs	Deficit - Surplus +	Percentage of Local sales	Percentage of Cream sales
		cents per gallon of milk				
Milk a) less than 150 g.p.d.	287	218	86	- 17	53	-
b) more than "	272	222	35	+ 15	50	-
milk a) less than " and	156	119	35	+ 2	11	26
cream b)more than "						
1. of which over 50% is milk	164	133	28	+ 3	2	19
2. " cream	124	97	20	+ 7	4	78

SOURCE: Annual Balance sheets of the Co-operatives