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**REPORT OF THE  
COMMITTEE OF INQUIRY  
INTO THE DAIRY INDUSTRY  
1956**

**This Report has not yet been considered by Government**

19th March, 1956.

**MICHAEL BLUNDELL,**  
*Minister for Agriculture, Animal  
Husbandry and Water Resources.*



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# REPORT OF COMMITTEE OF INQUIRY INTO THE DAIRY INDUSTRY, 1956

THE HON. M. BLUNDELL, M.B.E., M.L.C., Minister for Agriculture, Animal Husbandry and Water Resources.

## I—INTRODUCTION

SIR,

We have the honour to refer to letter No. VET. 4/11/37 of the 22nd September, 1955, from the Secretary for Agriculture (General) and his VET. 4/11/45 of the 27th September, 1955, in which we were appointed by you to examine the question of the future of the dairy industry with the following terms of reference:—

“To consider whether some form of statutory control of the dairy industry is necessary, and if so, to make recommendations to the Minister as to the form this control should take.”

We were further instructed—

“that the inquiry should cover the whole industry and not be confined to any one section thereof.”

2. The membership of the Committee is as follows:—

L. G. Troup (*Chairman*).  
J. K. Chemallan.  
K. D. S. MacOwan.  
The Hon. Humphrey Slade.  
H. G. Prettejohn.  
R. S. Alexander.  
S. M. Patel.  
G. R. Davies (*Secretary*).

We now beg to submit the following report.

### Procedure and Meetings

3. For the purpose of carrying out the inquiry the Committee began with certain informal discussions with Government officials, organizations and businesses concerned.

Oral evidence was taken by the Committee at the following places:—

KISUMU (8th November, 1955).  
KISII (9th November, 1955).  
SOTIK (10th and 11th November, 1955).  
KERICHO (11th November, 1955).  
NAKURU (12th and 21st November, 1955).  
KITALE (16th November, 1955).  
ELDORET (17th, 18th and 19th November, 1955).  
NAIVASHA (22nd November, 1955).  
THOMSON'S FALLS (23rd November, 1955).  
NANYUKI (24th November, 1955).  
MOMBASA (29th and 30th November and 1st December, 1955).  
MACHAKOS (8th December, 1955).  
DUNDORA DISTRICT (20th December, 1955).  
NAIROBI (12th December to 23rd December, 1955).



Visits were made to the African Land Units in Kisii, Kipsigis, Nandi and Elgeyo.

The Committee also visited the following establishments: —

- (1) Kenya Co-operative Creameries Ltd.
- (2) Dairies in Nairobi.
- (3) Kisumu Municipal Dairy.
- (4) Mombasa Town Dairies.
- (5) Mariakani Dairy, Mombasa.
- (6) Experimental and Animal Breeding Stations.

Visits to individual farms were made up-country and in the vicinity of Nairobi. The Committee is most grateful to the farmers who so kindly extended invitations.

#### **Witnesses**

4. The names of the various witnesses, representing every aspect of the dairy industry, who tendered oral or written evidence are given in Appendix A.

5. The Committee are conscious that this list, formidable though it is, is not fully comprehensive of the many farmers and others whom they had the pleasure to meet during their travels. To those whose names are not quoted, but who gave the benefit of their advice, the Committee tender their apologies.

6. The Committee must express their appreciation of the time and trouble expended by farmers, accountants and prominent business firms in providing them with a variety of statistical information without which this report could not have been completed.

7. In arriving at their conclusions the Committee have given full consideration to all this evidence though it has not been thought necessary or desirable to comment in detail on individual evidence.

#### **Interpretation of Terms of Reference**

8. The Committee decided at the outset that consideration of the terms of reference should be based upon the future expectation as well as the present position of the industry.

9. The building up of breeding herds of livestock is a slow process and a period of ten years is necessary before results are achieved. A longer period involves an ever-increasing degree of conjecture so far as economic and general conditions of production and marketing are concerned. The position ten years hence has been taken to represent the future.

10. All sources of production whether European, Asian or African have been considered as being on the same footing both as regards any necessary regulations and as regards payment according to quality.

#### **Background**

11. The dairy industry of Kenya developed from small beginnings some 50 years ago.

12. A notable step forward was made at Machakos when pasteurization on the farm for supplies to Mombasa and Nairobi was introduced.

13. During the first decade of this century production by up-country settlers reached a point where disposal of their product was beginning to become a problem so that in 1911 farmers in Lumbwa formed a local co-operative society.



14. Shortly afterwards their example was followed by farmers in Naivasha and Nanyuki. Small creameries were established in these three areas but it was not long before competition between the creameries, for a small market, became intense. This led to an agreement between the parties and eventually amalgamation took place in 1931 to form the Kenya Co-operative Creameries Ltd.

15. Three more creameries were established by the Kenya Co-operative Creameries Ltd., at Eldoret (1935), Thomson's Falls (1934) and Molo (1936). About this time members agreed to the payment of a cess of 5 cents per lb. of butterfat produced; this being the only product manufactured besides a small quantity of cheese.

16. In 1937, financial expansion was necessary and was carried out with the help of Messrs Dalgety & Co. Ltd.

17. The Kenya Co-operative Creameries Ltd., were at this time exporting four-fifths of their total production and an attempt was made to introduce statutory control but, although the producers were united on the matter no control was forthcoming. It was agreed, however, that a butter levy be made upon butter sold in the open market. This was done by a stamp issue of 25 cents on each packet of 1 lb. of butter. The amount so collected was used to benefit the industry and was credited to the exporters. When price control came in during World War II this levy was cancelled.

18. During World War II the call for increased production, and a controlled higher price, resulted in a large expansion of the industry. The Board of the Kenya Co-operative Creameries Ltd. decided to enter into the whole milk market and supplied large quantities to the military forces. In anticipation of increased production and demand which in fact occurred, the Kenya Co-operative Creameries Ltd., carried out a programme of extensions to its plant. The capacity of the existing factories was doubled and new factories were built in Nakuru, Sotik and Kitale.

19. These measures were made possible by:—

- (1) Creation of development reserves financed by members for the extension of old factories.
- (2) An issue of new capital in the form of preference shares (taken up by members) for the building of new factories.

20. By 1945 the operations of the Kenya Co-operative Creameries Ltd. were on a sound financial basis, and they were in a position to exploit the internal demand for whole milk which had considerably increased. The largest market was in Nairobi and a proposal was made to the City Council for the installation of a processing plant in the city in order that cooled milk could be sent in bulk from up-country and processed at the market end. This proposal, however, fell through. In 1950, the local dairy associations were approached and agreement was reached with the Kenya Dairy Co-operative Association for the pooling of resources. An extra allowance of 32 cents per gallon (i.e. pasteurization and transport) was paid to producers who supplied retailers direct from farm.

21. To-day the Kenya Co-operative Creameries Ltd. is the largest dairy organization in Kenya and in terms of gallons of whole milk for all dairy products handles 77 per cent of the production of the country. The following



creameries are now operated by the Kenya Co-operative Creameries Ltd.—Naivasha, Nanyuki, Eldoret, Thomson's Falls, Molo, Nakuru, Sotik and Kitale—the original Lumbwa depot having been closed in 1936. A further large expansion is now nearing completion and has involved bank facilities to the extent of up to £305,000.

22. In 1950, the Boards of the Kenya Co-operative Creameries Ltd. and the Kenya Dairy Co-operative Association Ltd., acting jointly, invited Mr. R. A. Pepperall, Secretary, Milk Marketing Board of England and Wales, to advise on the future organization of the whole milk section of the dairy industry of Kenya. Attempts to take action on this report proved abortive.

23. In more recent years and concurrently with the rapid growth of the Kenya Co-operative Creameries Ltd. other smaller organizations have developed.

24. Processed and other types of cheese have been produced on a number of farms and at at least two centres the canning of various milk products and the drying of whole and skim milk has been successful.

25. The Veterinary Department sponsored a co-operative scheme of production at Mariakani for the supply of milk to Mombasa, and the production of ghee on a large scale in the Nyanza Province.

26. The development of the industry in Kenya, which has outpaced that in neighbouring territories, is in a large measure due to the work of the Kenya Co-operative Creameries Ltd., and for a fuller acknowledgment of their valuable contribution reference should be made to paragraph 118.

### **The Importance of the Dairy Industry**

27. The annual value of milk to the producer at the present time is of the order of £3,250,000.

28. The industry has three main functions in the economy of the country:—

- (1) It provides vital basic food for the whole population of the Colony (*see* Appendix B).
- (2) In the areas adapted to mixed farming it provides the main class of livestock for the utilization of leys (or pasture) in the alternate husbandry system and the restoration or maintenance of a satisfactory soil fertility status.
- (3) It contributes to the economy of the country through exports. The net value of exports from Kenya, i.e. after deducting the cost of imports, has amounted to the following—

1951	..	..	..	..	£298,086
1952	..	..	..	..	£575,631
1953	..	..	..	..	£475,461
1954	..	..	..	..	£734,434

The above figures include exports to Uganda and Tanganyika.



## II—PRESENT POSITION

## Estimated Production

29. The following are the estimated figures of Kenya dairy production as prepared by the Kenya Co-operative Creameries Ltd.—

TABLE A

<i>Butter</i>								
								<i>lb.</i>
Kenya Co-operative Creameries Ltd.	..	..	..	..	..	..	..	9,300,000
Others (estimated)	..	..	..	..	..	..	..	200,000
								<hr/> 9,500,000 <hr/>
<i>Ghee</i>								
Kenya Co-operative Creameries Ltd.	..	..	..	..	..	..	..	520,000
Others (estimated)	..	..	..	..	..	..	..	1,480,000
								<hr/> 2,000,000 <hr/>
<i>Cheese and Milk Products</i>								
Kenya Co-operative Creameries Ltd.	..	..	..	..	..	..	..	939,300
Kenya Co-operative Creameries Ltd. (members under exemption)	..	..	..	..	..	..	..	145,700
								<hr/> 1,085,000 <hr/>
Others (estimated)	..	..	..	..	..	..	..	315,000
								<hr/> 1,400,000 <hr/>
<i>Wholemilk</i>								
								<i>gal.</i>
Kenya Co-operative Creameries Ltd.	..	..	..	..	..	..	..	5,600,000
Kenya Co-operative Creameries Ltd. (members under exemption)	..	..	..	..	..	..	..	2,400,000
								<hr/> 8,000,000 <hr/>
Others (estimated)	..	..	..	..	..	..	..	4,000,000
								<hr/> 12,000,000 <hr/>

Converting these figures to the common denominator of gallons of whole-milk gives a total estimated production of 37,400,000 gallons of milk, of which the Kenya Co-operative Creameries Ltd. handle some 28,985,000 gallons or 77 per cent.

### Seasonal Variations

30. The monthly production for the Kenya Co-operative Creameries Ltd. for the years 1954 and 1955 is set out in the following table.

TABLE B

				<i>Gal.</i>
<i>1954</i>				
January	..	..	..	1,726,000
February	..	..	..	1,321,000
March	..	..	..	1,262,000
April	..	..	..	1,390,000
May	..	..	..	2,299,000
June	..	..	..	2,587,000
July	..	..	..	2,628,000
August	..	..	..	2,535,000
September	..	..	..	2,474,000
October	..	..	..	2,428,000
November	..	..	..	2,259,000
December	..	..	..	2,231,000
<i>1955</i>				
January	..	..	..	1,979,000
February	..	..	..	1,800,000
March	..	..	..	1,891,000
April	..	..	..	1,778,000
May	..	..	..	2,486,000
June	..	..	..	2,386,000
July	..	..	..	2,340,000
August	..	..	..	2,622,000
September	..	..	..	2,653,000
October	..	..	..	2,790,000
November	..	..	..	2,611,000

*Highest—*

July, 1954, 2,628,000 gal.; October, 1955, 2,790,000 gal.

*Lowest—*

March, 1954, 1,262,000 gal.; April, 1955, 1,778,000 gal.

31. It will be noted that the trough of lowest monthly production in the dry weather is less than half that of the flush during the rains. Even now available dry weather production is barely sufficient to meet the increasing demand for liquid consumption. In the past there have been periods of shortage in the dry season with disproportionate heavy demands on manufacture during the remainder of the year.



### The Trend of Production

32. During the last three years this is indicated in Table C (Kenya Co-operative Ltd. returns). There was an increase in production of some 70 per cent in the outside areas not affected by the Emergency, and a decrease of some 2 per cent in the adjacent or troubled areas.

TABLE C

	Gals. Milk 1952	Gals. Milk 1955	Increase	Decrease	Percentage
<b>AREAS NOT AFFECTED BY EMERGENCY—</b>					
Eldoret .. ..	1,648,602	2,872,495	1,223,893	—	74.2
Kitale .. ..	2,177,662	3,202,089	1,024,427	—	47.0
Sotik .. ..	499,563	1,300,794	801,231	—	60.4
	4,325,827	7,375,378	3,049,551	—	70.5
<b>AREAS AFFECTED BY EMERGENCY—</b>					
Molo .. ..	3,904,303	3,645,624	—	258,679	-6.6
Nairobi .. ..	1,813,757	1,427,801	—	385,956	-21.3
Naivasha .. ..	2,863,992	2,711,291	—	152,701	-5.3
Nakuru .. ..	5,335,680	5,598,758	263,078	—	4.9
Nanyuki .. ..	2,700,143	2,665,575	—	34,568	-1.3
Thomson's Falls ..	2,634,624	2,774,950	140,326	—	5.3
	19,252,499	18,823,999	—	428,500	2.2
<b>OVERALL .. ..</b>	<b>23,578,326</b>	<b>26,199,377</b>	<b>2,621,051</b>	<b>—</b>	<b>11.1</b>

It is impossible to assess what increase of production there might have been in the troubled areas had there been no Emergency.

### Utilization of Present Production

33. The total output is used approximately as follows—  
 32.0 per cent as liquid milk;  
 3.7 per cent as manufactured into cheese, dried milk, etc.;

64.3 per cent as butter fat.

Although the sales of liquid milk are steadily increasing; butter and ghee still absorb the greater part of production.

### Channels of Supply

34. The total output is channelled as follows—  
 77.0 per cent handled by the Kenya Co-operative Creameries Ltd;  
 2.7 per cent handled by Milk Producers Co. Ltd.;

8.0 per cent native production converted into ghee;

12.3 per cent distributed amongst Mariakani Dairy, Osano Dairy, retailers, producer/retailers, cheese-makers and smaller factories.



### **Method of Distribution of Whole Milk**

35. Generally speaking fresh milk is delivered to the nearest Kenya Co-operative Creameries' depot or creamery where it is pasteurized and forwarded in 10-gallon churns to the appropriate market, or is converted to one or other dairy product—butter, ghee, dried milk, etc. There are exceptions to this in the neighbourhood of large urban areas. As an example Kisumu Municipal Dairy draws fresh milk from members of the Kenya Co-operative Creameries Ltd. in the Lumbwa-Turi area and itself pasteurises, bottles and distributes.

36. At Mariakani Dairy, previously mentioned in this report, milk is collected up to a distance of 60 miles, pasteurised at the dairy and forwarded in churns by lorry to Mombasa.

37. There are two large producers at Machakos who pasteurise on the farm and deliver by road or rail in 10-gallon churns to Nairobi and Mombasa.

38. Pasteurised milk from Eldoret to Kampala is conveyed daily in churns by rail in insulated vans packed with dry ice.

39. In addition, in each town, there are producers who deliver fresh (unpasteurised) milk and also producer/retailers selling fresh milk, including Channel Island milk, which commands a slight premium.

40. There would appear to be a steady demand in Nairobi and Mombasa for fresh (unpasteurised) milk and there is no doubt a clash of opinion as to the relative merits of fresh and pasteurised milk. This preference for fresh milk is a well-known factor in other countries, due, in part, to the more pronounced cream line shown by fresh milk.

### **Retail**

41. The total consumption of whole milk in Mombasa is estimated to be 5,000 to 6,000 gallons per day. Of this quantity some 900 gallons are produced in town dairies where it is bottled on the premises and directly distributed. The milk from Mariakani (varying from 800 to 2,000 gallons per day) is delivered to certain dairies and there bottled. In addition, approximately 3,000 gallons of pasteurised milk arrive daily by rail in 10-gallon churns from Machakos or even farther afield. This milk is collected by the Mombasa retailers where it is bottled and immediately distributed. There are believed to be about 45 retailers in Mombasa who handle from 10 gallons to 900 gallons per day.

42. The milk consumption in Nairobi is believed to be about 15,000 gallons per day, distribution being made by 16 principal retailers who obtain fresh milk from local farms and pasteurised milk from the Kenya Co-operative Creameries Ltd. There are also a number of producer/retailers.

### **Marketing**

43. The whole of the liquid milk and dairy produce is consumed within East Africa except for some 1,500,000 lb. butter which are exported annually farther afield to other points in Africa, and for some 1,250,000 lb. which are exported annually to London.

The latter market involves a lesser realisation as compared with other sales. The difference is at present adjusted in the payout to the butterfat producer alone.

44. The London market is able to absorb any quantity of Kenya butter, but it is a highly competitive market supplied largely from Danish, Australian and New Zealand sources, and so far as can be foreseen, it is unlikely to become an attractive outlet financially.



### The Law as it Affects the Dairy Industry

45. The Laws of Kenya (Vol. VI, Chapter 127) Food and Drugs (Adulteration) (Milk, Cream and Butter) Regulations lay down standards of composition, purity, cleanliness and the use of preservatives.

46. The Laws of Kenya (Vol. VI) Public Health (Milk and Dairies) Rules deals with the registration of dairies by local authorities, standards of construction of dairies, cleanliness, licensing of purveyors, powers of entry and inspection of premises, etc.

47. It would appear that the enforcement of the above Rules is entirely in the hands of the local authority and that their application is dependent upon the extent to which local authorities are able and willing to undertake their responsibilities.

### Existing Organizations for Supply

48. In some African Land Units, there is already compulsory control of produce by Government on a small scale by way of compulsory delivery of specified products to specified collecting centres for sale on behalf of the African producers (and in their interests).

49. Otherwise, the only organisation of the dairy industry at present is by way of voluntary co-operation, in the following categories—

- (a) Kenya Co-operative Creameries Ltd. (already described) of which some 90 per cent of European dairy farmers are voluntary members, with the view to the use of its factories and to assurance of a market and stable prices.
- (b) Some organizations of producers of liquid milk within easy reach of liquid milk markets, such as Milk Producers Co. Ltd. also designed to assure a market and stable prices.
- (c) Some factories or depots such as M.P. Products Ltd. and Osano Dairy Ltd. working under arrangements with the Kenya Co-operative Creameries Ltd. which enables them to draw supplies of milk from neighbouring producers who are members of the Kenya Co-operative Creameries Ltd. for manufacture into tinned cream, dried milk, "long-range" milk, etc.
- (d) The factory at Mariakani (already described) which collects, pasteurises and sells to Mombasa liquid milk produced by local Africans, with a view to the interests of both producers and consumers.
- (e) Some African co-operative societies, which operate in small areas for collection and sale of their members' whole milk.

50. Apart from the co-operation between the Kenya Co-operative Creameries Ltd. and other factories or depots (*see* paragraph (c) above) there is little or no co-operation between any of the several categories described above; though the Kenya Co-operative Creameries Ltd. is prepared to negotiate with co-operative societies for membership, and also endeavours to make up shortfalls of supplies to Mombasa in dry periods.

## III—APPRECIATION

### Climate

51. The absence of extremes in temperature, the distribution of rainfall in the upland areas which have an average of 30 in. or over, and the general high fertility status of the soil, make the mixed farming areas of Kenya a favourable one for livestock—there are few regions in Africa so well placed and—New Zealand apart—there can be few countries in the world which can be said to have material advantage over Kenya from a geophysical standpoint.



### The Farming Pattern

52. The form and standard of farming in the European Highlands of Kenya have developed rapidly, particularly in the past few years. In the absence of slump conditions and assuming official encouragement, there is every reason to expect an acceleration in production during the coming decade.

53. Under similar conditions in the African Land Units of high potential, progress is rapid under the Swynnerton Plan. Improved individual holdings are being developed, and although in certain cases attractive cash crops such as coffee, pyrethrum and tea may take first place, there is no reason to doubt that "alternate husbandry" and the ley will ultimately result in a large increase of the animal potential. Improved livestock and management are required, which will take time to introduce, and finally it is difficult to forecast how much of the increased milk production will (properly) be absorbed by home consumption instead of by sales outside the African Land Units (see Appendix B). We have, therefore, been inclined to believe that little milk from the African Land Units will appear for sale in the general market during the next decade and that the results of development will become apparent at a later date.

54. A report to the committee on the future of milk production has been prepared by Mr. A. Storrar, Assistant Director of Agriculture, and appears as Appendix C. In the first part of the report an estimate has been built up from the reports of the District Agricultural Officers of the potential in terms of livestock and leys, and before reaching a final conclusion a check is made on the actual production of certain planned farms.

55. It is difficult to regard these figures as anything other than conservative—again on the assumption that conditions are reasonably favourable for the farming community—particularly as they take no account of the improvements of ley technique and of livestock and livestock management, which are steadily taking place.

56. In the second part of the report, the actual accounts are taken of a farm planned some seven years ago, and the profitability of this farm when producing whole milk is compared with the result should butterfat be produced and finally an estimate of the result in the event of beef cattle being substituted for dairy cows.

57. At present prices it is apparent that for the smaller intensive farm, there is little scope for beef production, as such, in comparison with dairying.

58. The last point is all important in any attempt to forecast the future scope of production for milk. Its validity is based on the assumption that Government policy is in favour of the breaking up of the large farms in the high rainfall areas, which are run on extensive lines, and the substitution of smaller farms operated on the more intensive alternate husbandry system.

59. The fattening of beef stores and the keeping of sheep on grass will undoubtedly be carried on, but the overall conclusion must be that milk production will be the main enterprise and may well increase from the present annual total of 37,000,000 gallons to one of 100,000,000 gallons. This then is the possible size of the marketing problem within a decade.

### Cost of Production and Prices

60. We have little material at our disposal on which to assess the range of costs in the production of a gallon of milk or pound of butterfat and more particularly those costs which relate to the financial treatment of capital expenditure. A few farm profit and loss accounts have been submitted but otherwise it is necessary to fall back on discussion and impressions gained on the farm.



61. Broadly speaking there are three systems of management of dairy cattle practised in Kenya.

62. In the case of those producing butterfat it is commonly stated that there is no direct cash benefit but that the natural increase of cattle and the indirect benefits represent the actual profit. Provided that improved stock is kept and bearing in mind the simplicity of the system, dairy farming of this type may not be unsatisfactory. If the value of separated milk is assessed at 30 cents per gallon, the overall return in terms of milk, amounts to some Sh. 1/40 to Sh. 1/50 per gallon.

63. At the other end of the scale are those attempting a level production of liquid milk and of a high order such as 700 gallons per cow per annum from the dairy breeds. They estimate that the actual cost may be of the order of Sh. 1/60 to Sh. 1/75 per gallon. Such a system involves the growth of both bulk and concentrated foods and probably the purchase of protein concentrates. This system needs skilled management as well as entailing additional work and worry.

64. What may be termed a middle course in terms of output is often adopted for the dairy, but more particularly for the dual purpose breeds, in which supplementary feeding is largely limited to bulk feeds and an average of, say, 500 gallons per cow is aimed at. Beef clearly comes into the picture in the first and third systems.

65. It is probably true of all the three systems that the margin of profit varies between individuals from a bare margin to a substantial but not excessive profit.

66. In areas adjoining Nairobi it is claimed that the cost of production is higher because of the higher value of land, the higher wage level, and the greater dependence on purchased feeding stuffs. In the Dundora area conditions are yet more difficult in that low rainfall means less grass and lowers the prospect of success in the growth of fodder crops and it is suggested that in this area the cost of producing one gallon of milk amounts to Sh. 2/10. There is a conflict of opinion as to whether the reduction in transport and the saving through supplying fresh milk to the market offsets these higher farm costs.

67. It will be noted in Table E, paragraph 89, that the range of producer prices in Kenya is markedly lower than in South Africa and Southern Rhodesia.

68. Prices at present paid for milk by the Kenya Co-operative Creameries Ltd to producers are set out in the following table—

TABLE D

	Pool 1 (For Sale as Liquid Milk)	Pool 2 (Mainly for Cheese)	Pool 3 (Mainly surplus for manufacture)	Average
<b>FACTORY SUPPLIERS—</b>	Sh.	Sh.	Sh.	Sh.
Naivasha-Nakuru ..	2.20	1.65	1.10	2.08
Sotik .. .. .	2.15	1.51	—	1.90
Eldoret .. .. .	2.38	—	—	2.38*
<b>DIRECT SUPPLIERS—</b>				
Nairobi .. .. .	2.55	1.91	1.41	2.44
Kisumu .. .. .	2.71	—	—	2.71*

\* In these cases "self-balancing quotas" are in force and only milk which can be sold as liquid milk is accepted. All surpluses are separated on the farms and sent in as cream. The above prices are for milk delivered.

Cream is paid for according to quality—Grade 1 Sh. 3/10 per lb. butterfat; Grade 2 Sh. 3/0 per lb. butterfat; Grade 3 Sh. 2/45 per lb. butterfat.

In addition to the regular pay out a small annual bonus which in 1954/55 amounted to 1 per cent on milk and 2 per cent on cream was paid.



## Output

69. The monthly deliveries to the Kenya Co-operative Creameries Ltd. (expressed as milk) for the years 1954 and 1955, are set out in paragraph 30, Table B. It will be seen that the lowest monthly delivery in March 1954 amounted to 1,262,000 gallons and the highest in October 1955 to 2,790,000 gallons.

70. This tremendous disproportion constitutes one of the main problems in the economic marketing of dairy produce.

71. In the first place the lower level of deliveries in the dry weather effectively limits the expansion of liquid milk sales in established or new markets either within or without Kenya and in a bad dry season there is even at times the danger of not satisfying the existing demands of consumers.

72. In the second place it is clear that the seasonal high level of supply will only fully occupy manufacturing facilities for a part of the year.

73. Thirdly, in view of the need for storage of temporary gluts of produce, it has hitherto been the practice to manufacture largely into butter, which returns the lowest price per gallon of milk—approximately half that of fresh milk.

74. The Kenya Co-operative Creameries Ltd. have recently introduced a preferential price to each producer of liquid milk for a quota maintained throughout the year, based on the average of deliveries of the lowest fortnight in the dry weather, and it remains to be seen whether the higher price is effective in levelling supplies. In other countries similar results have been achieved by varying the seasonal price or by premiums for level supplies. The Milk Producers' Company Ltd. favours quotas based on the average of the total annual output. Up to about a year ago the Kenya Co-operative Creameries Ltd. operated a contract system with penalties for short deliveries. It appears that the dry weather quota system may be more suited to Kenya conditions for a number of reasons, such as variation of rainfall as between areas and the advantage of being able to budget on quotas, but a longer period of trial is necessary before it can be established that this is, in fact, the most suitable system and that the premiums are sufficient to achieve the desired results.

## The Kenya Milkshed—Transport

75. The main milkshed extends on a N.W. × S.E. axis from Mount Elgon to Machakos district, a distance of less than 400 miles and for a lesser distance on an E. × W. axis from Mount Kenya to Nyanza. In addition, there is an area of limited production already referred to at Mariakani near Mombasa and a more doubtful supply in Mombasa itself.

76. Within the main milkshed the greater amount of production is comparatively well served by road and rail with the exception of such areas as Mount Kenya, Thomson's Falls and Nyanza, which are somewhat isolated. In a country with a more highly developed transport system this main milkshed would not be regarded as unduly extensive. The density of production is, however, extremely low, which complicates the problem and increases in particular the cost of farm to depôt transport.

77. The development of production in the future, which is dealt with in paragraph 59, will, to a large extent, simplify this problem. At the same time, the programme of road development and the use of more efficient insulated or refrigerated vehicles by both road and rail will become possible as the density of production increases.



78. It is a truism to say that the more evenly distributed seasonally and the denser and larger the production the easier it is to justify improved lines and facilities of transport, and as a result the greater the flexibility and opportunity for full economic marketing of either whole milk or its manufactured products.

79. In the end there can be no question that the longer hauls are more efficiently dealt with by tanker transport with a processing depôt adjacent to the market. In the interim period it would appear that the tetrapak may offer the best solution for comparatively long deliveries as it is light in weight, packs without wastage of space, and may well prove more difficult to tamper with than either churns or bottles.

80. Dealing with the present position and the more immediate future, the regular supply to Nairobi is, and will be, either in the form of fresh milk from local farms, or pasteurized milk normally transported from less than a 50-mile radius. In the dry weather reduced local supplies necessitate increased deliveries being made from a distance of 100 miles.

81. The pattern of the milk supply to Mombasa is similar and up-country milk from probably 400 miles distant has to be brought by train.

82. The supply to Uganda has only been developed recently and increase in the immediate future is undoubtedly limited both by transportation costs of liquid milk and the present lack of an adequate and efficient system of packaging and distribution.

83. The position of the African Land Units varies according to local custom as regards both feeding and farming but unquestionably the demand for milk from adjacent European farms is growing and is no longer confined to the dry weather, neither does the price appear to be a deterrant to the African to purchase. In future development it would appear to be most economical for the growing requirements within the African Land Units to be supplied from African farms situated therein before milk is sold outside, in order to save both transport and distribution costs.

84. Alternatively the production of ghee and the distribution of separated milk could combine a cash sale with production of an essential basic food for home consumption.

### **Distribution**

85. The warm and level temperature range, together with the high sun temperature of Kenya undoubtedly need a system of careful and rapid handling of a highly perishable commodity such as fresh milk. The retail dairymen of Nairobi appear to have made the most progress in recent years in the installation of sterilizing and washing apparatus and claim that collectively some £100,000 has been expended on this equipment. In other urban areas in the Colony the sterilization of bottles is the exception rather than the rule.

86. Any system which reduces the handling of milk must be hygienically advantageous and this consideration, combined with the apparent practical difficulties of ensuring proper sterilization of bottles points to the advantage of a system such as the tetrapak in the larger consuming areas. The tetrapak system ensures a high degree of cleanliness as the containers are automatically sterilized and they are non-returnable. This would also seem to reduce the opportunities for adulteration, which constitute a major problem, particularly in the house-to-house distribution.

87. Before the adoption of the tetrapak system consideration should be given to the effect on the price, if any, to the consumer. If any such change is found desirable it should be carried out before any further sums are spent on buildings and equipment dealing with bottles.



88. The price margin taken by the distributor seems in many cases to be larger than in towns of other countries especially in view of the services rendered. This is due to small distributors handling uneconomic quantities, to low density of consumers in some areas and to excessive overlapping of distribution. The zoning of distribution is an obvious way of effecting economy and the development of shops with other foodstuffs would not only encourage purchasing across the counter but would also preserve an element of competition.

89. Some of the Kenya producer, wholesale and retail prices, together with prices in towns in other countries in Africa are given below:—

TABLE E  
*Wholemilk Prices*

	PRODUCER		WHOLESALE	RETAIL	
	Per Gal. Factory	Per Gal. Direct	Per Gal.	Per Gal.	Per Pt.
KENYA	Sh.	Sh.	Sh.	Sh.	cts.
Naivasha-Nakuru ..	2.20	—	2.56	4.08	.51
*Nairobi .. ..	—	2.55	2.72	4.40	.55
Eldoret .. ..	2.38	—	2.56	4.08	.51
Kisumu .. ..	—	2.71	2.76	3.76	.47
Sotik .. ..	2.15	—	2.56	3.60	.45
Uganda (Ex Eldoret) ..	—	—	3.68	5.20	.65
Southern Rhodesia ..	3.62	—	3.33	4.80	.60
	(Subsidy of 30 cts.)		(Subsidy of 18 cts. to Retailer)		
Johannesburg .. ..	2.95	—	3.12	4.48	.56

\* A house delivery charge of Sh. 2 per month is made in addition in the outlying districts of Nairobi.

Channel Island milk, when freshly delivered from a local source, will normally command an additional price.

### Legal Standards

90. It must be apparent that standards not only of composition but of cleanliness and of adequate facilities should be upheld at all stages in the progress of milk from the cow to the consumer. A danger lies not only in dirty milk in itself but in milk as a carrier of human disease.

91. It is appreciated that in a young country and with the general system of delegation of powers to the newly constituted local authorities, this work of inspection and checking could hardly yet have got into its stride. Its importance lies not only in the protection of public health but in the securing of the necessary confidence in the dairy industry by the public—a major factor in developing consumption.

### Milk as a Food

92. Dr. D. H. Mackay, the Assistant Director of Medical Services, has submitted a report to the Committee covering the fields of public health, milk as a food and the potential needs of the African. This appears as Appendix B.

93. The vital value of milk from a dietetic standpoint is emphasized in this authoritative statement, as well as the relative importance of the various food constituents in milk and its products.



94. One outstanding conclusion is the prime value of skim or standardized milk (i.e. reduced butterfat) for the healthy development of children and the essential importance of either of these products for people of whatever race whose incomes are insufficient to meet the cost of whole milk. It would also seem clear that owing to difficulties of either distribution or of keeping milk fresh, the use of the dried or canned products could, with advantage, be very largely increased. The possibilities are discussed, with especial reference to Nairobi, in a document prepared by Dr. A. T. G. Thomas, Medical Officer of Health, Nairobi, which appears as Appendix F.

#### Potential Milk Consumption of Kenya and East Africa

95. There is little or no information as to the amount of milk consumed within the various African Land Units, except that it may be assumed that in South Nyanza, for example, the corollary to the sale of ghee will be the home consumption of separated milk. The table below gives some indication of the relative preference for milk of certain tribes in 1950.

TABLE F  
*Average Monthly Expenditure on Milk  
Per African Employee During November, 1950, by Tribe*

SH. PER MONTH					
Kikuyu	Kamba	Jaluo	Other	Crude Average	Standardised by tribe
0.52	0.67	1.01	1.18	0.84	0.77

96. On the European farm it is the frequent practice to give or sell separated milk to those working on the place. In the urban areas it may be assumed that both Europeans and Asians are generally able to obtain the supplies required, and that the only likely increase of milk consumption by them would be as a result of improving the quality standards.

97. An intelligent appreciation of the situation leads to the conclusion that the population of some 185,000 Europeans and Asians are likely to consume nearly half the liquid milk offered for sale through normal channels. In the latest census figures there are some 246,000 Africans in the main towns and some 500,000 in employment. Therefore, the remaining 50 per cent of the market milk together with supplies to workers on European farms and the unknown but limited production within the African Land Units supplies some 5,750,000 Africans.

Therein lies the greatest potential market.

98. No doubt patient educational propaganda, as well as the careful consideration of the most suitable forms of milk, and their distribution, will be needed before this vast potential can be realized—primarily in the interests of the people, but incidentally in the interests of the dairy industry.

99. The potential in those parts of Uganda which are within reach would appear to be equally great but with greater emphasis on the increased needs of the Asians and Europeans who, in many cases, are now unable to obtain a satisfactory supply.



100. The requirements of both the coastal area of Tanganyika and the plantation area around Kilimanjaro would merit further investigation.

101. Apart from present dietetic deficiencies, particularly of the African, the requirements of an increasing population will obviously demand increased supplies. Appendix D, prepared by the High Commission Director of Statistics, contains information on African population and employment.

### **The Potential for Dairy Products**

102. The selection and scale of manufacture of the various dairy products should be based, after satisfying internal requirements, on the relative monetary return of the product.

103. The demands of markets farther afield and the establishment of economic processing units will require constant consideration.

The range of products includes the following:—

Cream, ice-cream and milk shakes, cheese, butter and ghee, dried whole milk or skim milk, canned cream or milk, and condensed milk.

Up to the present time the greatest emphasis has been placed on butter and in so far as transport from the farm has dictated the delivery of cream rather than milk, this is clearly understandable.

104. The competition of margarine and its lower price has reduced both the consumption and price of butter in the United Kingdom, and although there is an unlimited market there for Kenya butter, it is highly competitive and fluctuates in consequence. Nevertheless, it is valuable as an elastic outlet and as a reflex of quality.

105. The development of a special market for cream, ice-cream and milk shakes is extremely profitable, and the Committee considers that this has not yet been seriously exploited.

106. In addition to factory cheddar and processed cheeses, the various other types, which are particularly suited to small-scale and skilled farmhouse production, would seem to be worth encouraging.

107. Ghee manufactured by the Kenya Co-operative Creameries Ltd. is of a "superfine" quality. Unfortunately, the quality of ghee made in the African Land Units leaves much to be desired and it would appear that if there is an improvement in the quality, a considerable export market could be found.

108. The dried and canned products should find an internal market in the Services, confectioners, etc., and in any situations where distribution and home conditions are difficult. These products would form the main basis of export to those countries farther afield than East Africa.

### **The Marketing Problem**

109. Active and persistent research is required into possible markets, together with an appreciation of the position of world trends of production and surpluses.

110. It is apparent that regularity of supply of any product is essential, as is also a system of careful grading and attractive packaging and trade marks.

111. The question of preferential transport rates for export requires attention.

112. In these fields there is every reason to anticipate active co-operation from the Government.



113. In repetition, however, the point should again be made that the development of the internal liquid milk market must take first priority. Under this heading should be included the considerable potential in Uganda.

114. The imports of dairy products from outside East Africa into Uganda and Tanganyika amounted to the equivalent of over 2,250,000 gallons of milk in 1954. This market Kenya should aim to supply. Moreover, these imports appear to be increasing over recent years.

115. The overall major job of market investigation and research will be to develop remunerative outlets ahead of the threefold expansion in production which is envisaged in paragraph 59.

### **Imports**

116. Appendix E sets out the volume and value of the importation of dried or canned dairy produce. These imports are considerable, amounting as they do to the equivalent of approximately 1,000,000 gallons of fresh milk in 1954.

117. It may be difficult or uneconomic to replace the whole of these imports by production in Kenya; but on the assumption that the Government contemplates anti-dumping legislation in the near future and that further a moderate import tariff is imposed, the question of manufacture within the country should be investigated.

### **The Role of the Kenya Co-operative Creameries Ltd.**

118. It is to a large extent due to the efforts of the Kenya Co-operative Creameries Ltd. that the industry has developed to its present position. The Kenya Co-operative Creameries Ltd. has set up a chain of dépôts for the manufacture of a range of dairy products as well as the pasteurization of milk and its supply to the main consuming centres.

119. In addition to handling most of the milk and cream produced, the Kenya Co-operative Creameries Ltd. has recently found itself, perforce, in the position when it was obliged to exercise some control in the form and direction of the milk pattern, but this could only be partial and liable to be torpedoed under a system of voluntary co-operation. It was this situation which led to the request for the present inquiry. Development has been rapid and it might well be argued that the handling of a great proportion of the output for both processing and manufacture in itself imposed sufficient responsibility on such an organization.

### **Common Interest of Producers**

120. It should be apparent to all producers, wherever situated and whatever their form of production that they have ultimately one common interest in the well-being of a single industry.

## **IV—THE ISSUE OF CONTROL**

### **The Meaning of Control**

121. Statutory control in this context is understood to mean the control of the destination and use of milk or cream, largely by the creation of a suitable price structure and by direction of supplies should this prove necessary.

### **Experience in Other Countries**

122. An examination of the circumstances leading to the adoption of statutory control in certain other countries and of subsequent events is of interest.



These schemes were all introduced after a large number of producers had themselves become involved in a price-cutting war for a limited number of higher-priced markets.

An outstanding result of the schemes operating in the United Kingdom, Northern Ireland, Southern Rhodesia, South Africa, New South Wales, Queensland and New Zealand has been that they have benefited both producer and consumer whatever their original prime objective.

### **World and Kenya Conditions**

123. The stockpiling of dairy produce in the United States of America and the dangers of world over-production cannot be overlooked. They might well result in "dumping" and certainly in "price-cutting" for a period, and in this event would adversely effect the price of butter exported by Kenya to London—which in turn might further stampede an internal war of prices. In Kenya this certainly has not yet happened, although the evidence given to the Committee indicates that certain up-country farmers are already considering the possibilities of the Nairobi liquid milk market.

124. In the "Appreciation of the Dairy Industry of Kenya" in the previous section of this report, the following points in particular are germane to the issue of control:—

- (a) The expected large increase in milk production which may well be of the order of 200 per cent in a decade.
- (b) The development of transport, which will be expedited by the increased density of production; the consequent extra fluidity of the milkshed, and the competitive ability of the areas farther afield.
- (c) The extreme seasonal disparity in production.

### **Weight of Evidence**

125. The weight of both written and oral evidence submitted to the Committee was preponderantly in favour of the institution of a system of statutory control, and the opposite view was largely confined to producers within reach of Nairobi.

126. Opinion was insistent that control should be exercised by a body on which those directly concerned should be adequately represented, and finally that any trading monopoly should be avoided.

### **Arguments against Control**

127. The creation of statutory control by legislation is not a step to be undertaken without full and careful consideration of the particular conditions of the industry and country as well as the experience of other countries. This is particularly the case at a time when public opinion instinctively favours the freedom of the individual.

128. It is understandable that the general public is apprehensive of any interference with the freedom of enterprise and trade.

Those in the industry will similarly fear any curtailment of their freedom of action and competition in conducting their business. Farmers are particularly sensitive to any encroachment upon their independence.

129. In the opinion of a minority, control is unnecessary at the present time.

130. There is bound to be in many minds an association of ideas between the words "statutory control" and "nationalization", and a fear of the irritations of bureaucracy.

131. The establishment of an organization for control however simple in form must inevitably involve some charge to the industry.



### Arguments for Control

132. The dairy industry commands special treatment in the national interest as an abundant supply of pure milk and its products is essential to the health and welfare of the community.

133. A planned and steady expansion of the dairy industry is vital to the proper use of land and to the development of the evolving farming pattern and, indeed, thereby to the whole economy of Kenya, and it would be very unwise to allow the industry to be subjected to the destructive effects of an internal "price war" and failure to develop external markets.

134. World surpluses and the scramble for the most profitable local markets are bound to have damaging effects on the industry. This is the experience of other countries where the cost of control has been more than justified by results. Other internal factors, as previously mentioned, indicating the need of control are the expansion of production, seasonal disparities in production and improvement of transport.

135. It is wise to introduce statutory control now before the "milk war" really starts and entrenched interests become more difficult to disentangle, thus avoiding the bitter experience of other countries. Voluntary co-operation covering the whole industry would be the ideal answer but this appears to be unattainable on a permanent and comprehensive basis.

136. Another consideration lies in the fact that not only is the dairy industry the most complex of the branches of farming in its wide range of products but also because liquid milk is highly perishable. Both these factors point to the necessity of orderly development of both production and marketing in order to secure the most economic outlets. Finally, the great weight of both oral and written evidence is in favour of statutory control.

### Committee's Conclusion

137. After the most careful consideration the Committee have reached the conclusion that statutory control of the dairy industry is necessary.

### Other Associated Functions

138. It is apparent to the Committee that there are other valuable functions which, though not necessarily requiring the aid of statutory control, could most conveniently and effectively be handled by the organization set up to administer control.

139. The organization should foster either itself or through its agents, or in association with Government departments or local authorities an active policy on the following:—

*Market Research* both inside and outside the territory in order to establish a profitable outlet for the whole of the increased output.

*Grading and Packaging* of goods for export.

*The Encouragement and Support of New Ventures*—where an outlet has been discovered.

*Standardization and Control of Methods of Production and Handling of Milk*—from the cow to the point of delivery.

*Safeguarding of Public Health*—by the satisfaction of dietetic requirements of the African in the most suitable form.

*Imports*—protection against dumping and protective tariffs for the establishment of local industry.

*Increased Efficiency of Production*—including, for example, the fostering of milk recording, the sponsoring of schemes for the eradication of livestock diseases which affect the efficiency of the dairy industry, etc.



## V—THE FORM OF CONTROL

### Principal Functions

140. In considering the form that statutory control should take, the Committee consider it desirable first to summarize the principal functions for which it should provide.

141. The general object is to develop and rationalize production and consumption and the more specific functions are:—

- (1) To regulate seasonal production of all forms of produce.
- (2) To encourage and secure minimum standards of all forms of produce.
- (3) To dispose of produce to the best advantage.
- (4) To secure reasonable and stable prices to producers.
- (5) To adjust the balance as between different forms of production.
- (6) To secure to consumers adequate and steady supplies of all forms of produce of satisfactory quality at reasonable prices.
- (7) To increase the efficiency of production and processing or manufacture.

### Organization

142. There are three methods of organizing control:—

- (a) The application of section 37 of the Co-operative Societies Ordinance by which compulsory control of all registered producers is vested in the established co-operative society, provided that its members already amount to over 75 per cent of the total number of producers and also that it handles over 75 per cent of the total production. This method is not acceptable to either the directors of the Kenya Co-operative Creameries Ltd. or the majority opinion.
- (b) The application of the Agriculture Ordinance to dairy produce. As a result powers of compulsory marketing become vested in the Minister. Majority opinion was against Government control.
- (c) The creation of a statutory board on lines similar to the dairy boards already established in other countries. This board should be a corporate body and subject to ministerial control in certain aspects. The great majority of both oral and written evidence favoured this form of control.

143. After full deliberation the Committee recommend the establishment of a statutory board for the control of the dairy industry, to be known as the Dairy Industry Board.

## VI—POWERS OF THE BOARD

### Main Powers

144. Before making recommendations as to the powers to be exercised by the Board, it should be stated that the Committee are in entire agreement in expressing the hope that any board would interfere as little as possible with existing channels and further that it would attempt, with the good will of all existing organizations, to combine the merits of an overall control with the maximum of individual freedom and initiative.

145. After a close study of the forms of control in other countries, the Committee has come to the conclusion that any statutory board should be invested with the maximum range of powers, to be used only when and where required.



146. Therefore, having regard to the principal functions proposed by paragraph 140 above, the Committee recommend that the Board should have the following statutory powers:—

- (a) *For Regulation of Seasonal Production*, power to:—
- (i) Fix a liquid milk quota for individual producers upon a country-wide or area basis; and/or
  - (ii) pay or authorize premiums for dry-weather production.
- (b) *For Securing Minimum Standards*, power to:—
- (i) Prescribe grades and minimum standards.
  - (ii) Prescribe different prices for each grade or standard.
  - (iii) License buyers of produce.
- (c) *For Disposal of Produce to the Best Advantage*, powers of:—
- (i) Direction to licensed buyers (manufacturers and/or distributors)—with power to exempt producer/retailers.
  - (ii) Compulsory purchase and vesting in the Board.
  - (iii) Control of quantities of each form of manufactured product.
  - (iv) Establishment of factories, depôts or cold store.
  - (v) Market research in every aspect.
  - (vi) Fixing minimum standards for export and approving trade marks, packing, labelling, etc.
  - (vii) Representing to the Government any case for restriction of imports, manufacture of substitutes, etc.
- (d) *For Securing Reasonable and Stable Prices to Producers*, power (in addition to (a), (b) and (c) above):—
- (i) To fix minimum prices to producers for specific grades of each form of produce and/or purpose for which used.
  - (ii) To authorize or pay additional or reduced prices for special circumstances (e.g. members and non-members using Kenya Co-operative Creameries' facilities).
  - (iii) To subsidize one form of produce by levy from another, or otherwise.
  - (iv) To be party to contracts for sales by producers, with power to enforce and/or to take payment.
  - (v) To operate or direct pools.
  - (vi) To regulate prices payable by and to local distributors and/or retailers, after full consultation with the appropriate part of the industry concerned.
- (e) *For Balancing Different Forms of Production*, power:—
- (i) To vary differentials as between one product and another.
- (f) *For Securing Adequate and Steady Supplies to Consumers*, power:—
- (i) To regulate standards and conditions of retail.
  - (ii) To register retailers.
  - (iii) To zone retail distribution.
  - (iv) To register producer/retailers.
  - (v) To authorize or establish depôts for collection and distribution.
- (g) *For Increasing the Efficiency of Production and Manufacture* (see Ancillary Powers below).



### **Ancillary Powers**

147. Furthermore, as ancillary to the foregoing, the Committee recommend that the Board should also have the following statutory powers: —

- (a) To require registration of producers, etc.
- (b) To inspect premises.
- (c) To call for returns and for estimates from registered producers, agents, manufacturers and retailers.
- (d) To appoint agents for any service.
- (e) To employ staff for all or any of its functions.
- (f) To help producers and encourage development and improvements by: —
  - (i) Providing facilities of all kinds.
  - (ii) Providing financial accommodation.
  - (iii) Stimulating research.
  - (iv) Providing advisory services.
  - (v) Providing or encouraging artificial insemination services.
  - (vi) Encouraging milk recording.
  - (vii) Engaging staff for the above services.

### **Ministerial Approval**

148. Exercise of a number of the powers recommended in the preceding paragraphs, particularly those affecting the general public (such as price fixation) must, in the Committee's opinion, be subject to Ministerial approval.

### **Finance**

149. The Committee is of the opinion that the Board should be self-financing except possibly for Government subsidy for special purposes such as exploration of export facilities, and the continuance of aid to the milk recording scheme and artificial insemination services.

### **Funds**

150. The Board should be empowered, with the consent of the Minister, to: —

- (a) Raise funds by levy from all or any form of produce and at different rates.
- (b) Make deductions from pools.
- (c) Levy fees for services.
- (d) Borrow and give security.

### **Financial Responsibilities**

151. The Board should also be empowered to guarantee payment to producers by licensed buyers, and for that purpose, to require adequate security from licensed buyers.

### **Expenditure**

152. The Board should also have power to use its funds: —

- (1) To employ and pay staff or agents for any kind of service.
- (2) To subsidize different forms of produce.
- (3) To finance services as in paragraph 147 above.
- (4) To buy and develop land, factories, depôts, etc.



### Committees

153. The Board should be empowered and encouraged to set up standing committees (membership of which should not be limited to members of the Board), dealing with such matters as:—

- (1) Finance.
- (2) Consultation with distributors and consumers.
- (3) Market research.
- (4) Exports and imports.

### Miscellaneous

154. Penalties for breach of statutory obligations should be prescribed. An appeal tribunal should be constituted.

## VII—CONSTITUTION

155. The Committee has closely studied the composition of similar boards in other countries and existing marketing boards in Kenya.

156. In considering the constitution of a Board of Control for the Dairy Industry it should be borne in mind that it will have control over an industry vital to the agricultural life of the country and eventually to its economic health. The selection of the personnel of the Board is, therefore, of paramount importance and it should be of the highest available ability and integrity.

157. Before proceeding to the composition of a statutory board the following points in relation to the personnel were considered as being essential:—

- (1) Each member of the Board should be vitally interested in the success of the industry as a whole.
- (2) The members must have the confidence of the industry.
- (3) They should command the confidence of the public, whose interests must be protected.
- (4) The chairman should be a person of exceptional ability and be prepared to devote adequate time to the affairs of the Board.
- (5) All members of the Board should be persons of drive and initiative.

158. Assuming that the above conditions are fulfilled the Committee consider that the remuneration of the chairman and members should be fully commensurate with the responsibilities they assume.

159. The Committee unanimously recommend that the constitution of the Board be as follows:—

- (1) Four producers appointed by the Minister on the recommendation of the Board of Agriculture (scheduled areas).
- (2) Two representatives appointed by the Minister on the recommendation of the Board of Agriculture (non-scheduled areas).
- (3) Two members with wide experience of business and/or public interests, appointed by the Minister in consultation with the Minister for Commerce and Industry.
- (4) A chairman independent of sectional interests appointed by the Minister.

160. The Committee assumes that when the initial membership of the Board is considered the value of specialist knowledge and experience in the main branches of the industry will be taken into account.



161. The Committee considers that the Director of Veterinary Services or a senior member of his staff should be included as one of the two representatives of the non-scheduled areas.

162. The Committee also suggests that the Minister should consult the other members of the Board concerning the appointment of the chairman.

163. The Committee gave long and earnest consideration to the question of the constitution of the Board before reaching a decision. There are a number of considerations which arise:—

- (1) As in other countries the statutory Board should consist of a majority of the producer element.
- (2) All sources of production whether European, Asian or African, should be represented.
- (3) The sectional interests of manufacturers, processors and retailers should best be served by the method recommended above rather than by a legal requirement of individual and specific representation. In principle the same method would protect the consuming public. By this method also the elasticity of the long-term composition of the Board would be preserved and its smooth and effective operation simplified.
- (4) A great volume of the business concerning sectional and specific functions of the Board can most effectively be dealt with through the medium of a series of standing committees as indicated in paragraph 153. This will permit the Board to devote itself to its major functions of policy and administration.
- (5) In considering the relative merits of election or of nomination to the Board, the Committee were concerned that all members should be appointed on a similar basis and, although election is more common in other countries, consider that nomination is the only practicable method in Kenya.
- (6) Regarding the four producer representatives from the scheduled areas, the Committee were of the opinion, from evidence received, that election might well precipitate a cleavage within various organizations.

164. Further, as the Kenya Co-operative Creameries Ltd. conduct elections to their own Board, an election amongst producers to the statutory Board might result either in a common representation on the two Boards or conversely that the representatives on the statutory Board would be in active opposition to the Directors of the Kenya Co-operative Creameries Ltd.

165. The normal term of office of members would be three years but in the initial period in order to ensure a measure of continuity, retirement would be by rota giving periods of office of from three to six years.

#### VIII—FURTHER CONSIDERATIONS

##### General

166. Although the Board must work out its own policy the Committee considers it to be its duty to offer some initial advice based upon an analysis of the extensive evidence submitted to it.

167. It would be hoped that, armed with full powers, the Board will endeavour to secure at the least possible cost the best of both worlds by permitting the greatest possible degree of freedom and initiative to develop consistent with the maximum efficiency in the dairy industry. It fully appreciates that this can only be made possible by the greatest degree of co-operation from all those within the industry.



### **Agents**

168. The Committee anticipate that in the early stages, the Board will have a formidable task in organization and consolidation. To relieve it of early administrative problems the Committee would recommend that the Board should appoint agents who would account to the Board for supplies, and would be responsible for payment to the producers and so save accounting by the Board. These agents would physically handle milk and cream and so save the Board the task of processing or manufacture.

169. The term "agent" in this context is the person to whom the producer delivers for wholesale supply to the retailer or for manufacture.

170. It would seem, however, that under this system the Board has a firm responsibility for payment to the producer in the event of failure by the agent. The Milk Marketing Board of England do, in fact, assume ownership of the milk and responsibility for payment.

171. In appointing agents the Board would naturally have regard to the adequacy or otherwise of existing facilities and, if necessary, would direct supplies.

### **Retailers**

172. It is the opinion of the Committee that the Board should give early attention to the whole problem of the rationalization of the retail trade in liquid milk, and the economy of delivery. The Board has power to fix retail prices after full consultation with the trade.

### **Producer/Retailers**

173. These would seem to require registration as agents and will conform to the price policy of the Board. They would be exempt from direction as is the case in most other countries. Existing producer/retailers should be automatically registered provided always that they are performing a satisfactory service. New applicants for registration should presumably be dealt with in the light of the needs of the area. Under the Milk Marketing Board of Britain producer/retailers are liable to the producer cess and the retailer cess.

### **Price Structure**

174. Prior importance should be given to the formulation of a carefully integrated price formula which will on the one hand, encourage improved standards of cleanliness, other quality standards and of level production, and on the other hand have regard to the utilization and realization value of the end product. In paragraph 74 the Committee have considered pricing policy and suggest that a fair trial be given to the dry-weather quota system. It is also clear that the price policy should be so arranged as to ensure that production of quality milk is encouraged to be always ahead of demand.

175. It is the opinion of the Committee that the Board, in the interests of the industry, should establish a reliable and accurate system for ascertaining costs of production covering representative cross-section of producers. This work could best be carried out in co-operation with the Department of Agriculture Economist.

### **Other Aspects**

176. The Committee has in this section only attempted to advise on the operation of control. In paragraph 139 are detailed other equally important functions arising from control and these require early attention.



177. The Committee makes the following recommendations:—

- (1) Paragraph 137—that statutory control of the dairy industry is necessary.
- (2) Paragraph 143—that a statutory Board on lines similar to the dairy boards in other countries should be constituted.
- (3) That the Board should be constituted as in Section VIII of the report.
- (4) That the statutory board should be granted the powers as set out in Section VII of the report.

### ACKNOWLEDGMENTS

The Committee has received the greatest help from all those engaged in the dairy industry and its task has been made the more pleasant by the friendly attitude shown and the hospitality which has been extended to it.

The Committee is indebted to Ministers and Heads of Departments and their staffs who have been forthcoming with information and assistance.

The European Settlement Board has provided valuable information and, above all, the Committee is indebted to the directors and staff of the Kenya Co-operative Creameries Ltd. for their patient help and the great volume of statistics and information which it would have been impossible to obtain from any other source.

The Committee are indebted to Mr. A. Storrar, Dr. D. H. Mackay, and Mr. C. J. Martin and his staff for their written contributions, which are invaluable and appear as Appendices to this Report.

Finally, the Committee is grateful for the sustained work of Mrs. O. Collett, who has carried out the work of shorthand and typing, and to the Secretary of the Committee, Mr. G. R. Davies, who has been indefatigable in making all arrangements for the Committee and in the assembly of the Report.

We have the honour to be, Sir,

Your obedient servants,

L. G. TROUP,

*Chairman,*

R. S. ALEXANDER,

J. K. CHEMALLAN,

S. M. PATEL,

H. G. PRETTEJOHN,

K. D. S. MACOWAN,

HUMPHREY SLADE,

*Members.*

We, the other members of this Committee, wish to pay a tribute to our Chairman, who has carried the main burden of our work. Such value as the foregoing report may have will be due largely to his energy, patience, enthusiasm and experience.

R. S. ALEXANDER.

J. K. CHEMALLAN.

S. M. PATEL.

H. G. PRETTEJOHN.

K. D. S. MACOWAN.

HUMPHREY SLADE.

Nairobi,

31st January, 1956.



## APPENDIX A

## LIST OF PERSONS INTERVIEWED

## Oral Evidence

## KISUMU—

Mr. C. H. Williams (Provincial Commissioner).  
 Mr. S. Everett (Kisumu Municipal Dairy).  
 Mr. J. F. Hart (Provincial Veterinary Officer).  
 Mr. J. C. Templar (Agricultural Officer).

## KISII—

Mr. J. A. H. Wolff (District Commissioner).  
 Mr. G. W. Gurr (Agricultural Officer).  
 Mr. J. E. West (Assistant Registrar of Co-operative Societies).  
 Mr. A. M. Tyrrel.

## SOTIK—

Mr. H. S. Bastard.  
 Mr. I. S. Madsen.  
 Mr. R. C. Royston.  
 Mr. B. H. Landells.  
 Dr. J. D. Burn.  
 Mr. E. Collier.  
 Mr. N. Hutley (Livestock Officer).  
 Mr. O. T. Roberts.

## KERICHO—

Mr. M. B. Tennent.  
 Mr. H. R. Welsh.  
 Mr. A. Nottidge.  
 Mr. H. P. Mullar.  
 Mr. A. B. C. Smith.  
 Mr. C. R. Coulson.  
 Mr. J. A. Blundell (Senior Livestock Officer).

## NAKURU—

Major Brookes.  
 Dr. H. M. Arnell.  
 Dr. Bell.  
 Mr. E. McInnes (Secretary East African Milk Recording Scheme).  
 Mr. Daglish.  
 Mr. J. N. Hopcraft.  
 Mr. C. D. Hill.  
 Mr. Murphy.  
 Mr. H. R. Munroe.  
 Mr. A. Storrar (Assistant Director of Agriculture).  
 Mr. C. P. Nottidge (Agricultural Officer).

## KITALE—

Mr. B. M. Glover.  
 Mr. B. S. Mills.  
 Mr. R. Sands.  
 Mr. N. R. Cowdy (Livestock Officer).  
 Mr. H. L. Sarre (East African Osano Dairies).  
 Mr. D. N. Statham (East African Osano Dairies).  
 Mr. F. Humphris.  
 Mr. C. Tilney.  
 Mr. S. A. Nadin.  
 Dr. J. R. R. Wray.



## ELDORET—

Mr. Wooderson.  
 Mr. L. Davidson.  
 Mr. J. Robins.  
 Mr. S. P. Kruger.  
 Mr. L. Nel.  
 Mr. R. J. Spooner (Agricultural Officer).  
 Mr. K. H. Greathead.  
 Mr. K. Jorgensen.  
 Mr. C. Campbell.  
 Mr. B. H. Robson.  
 Mr. G. Gault.  
 Mr. W. A. C. Boucher.  
 Mr. D. Grafton.  
 Mr. D. Haggie.  
 Mr. J. Cellier.  
 Mr. A. Wright.  
 Mr. W. R. A. Knocker.  
 Colonel G. F. Macdonald.

## NAIVASHA—

Mr. H. B. Fraser.  
 Mr. P. Grimwood.  
 Mr. H. J. Thomas (Agricultural Officer).  
 Mr. C. Turner (Agricultural Officer).  
 Mrs. Tooley (also representing S. F. Polhill).  
 Mr. and Mrs. J. M. Nightingale.  
 Mr. J. Nimmo.  
 Mr. K. P. Cooper.  
 Mr. D. Rocco.  
 Mr. C. Hillier.  
 Mr. H. B. Fraser.  
 Sir John Hewitt.

## THOMSON'S FALLS—

Major G. E. C. Barton.  
 Mr. C. G. Wace.  
 Mr. T. Ross.  
 Mr. R. Joslyn.  
 Mr. J. S. Schouten (Agricultural Officer).  
 Capt. Louis Sykes.  
 Mr. Simonides (representative of Malvern Ltd.).

## NANYUKI—

Mr. P. D. Marrian.  
 Mr. S. E. Bastard (Chairman, K.N.F.U. and Vice-Chairman of Nanyuki Farmers' Association).  
 Colonel C. C. Oulton (Chairman, Agricultural Sub-Committee).  
 Mr. F. E. Payne.  
 Mr. C. N. L. Fernandes (Director of Kenya Co-operative Creameries Ltd.).  
 Mr. Shamsud Din.  
 Mr. C. S. Holford Walker (District Commissioner, Nanyuki).  
 Mr. G. K. Littlewood.  
 Mr. E. T. R. Cook.  
 Mr. P. Sandford.  
 Mrs. Powys.



## MOMBASA—

Mr. D. O'Hagan (Provincial Commissioner).  
 Mr. D. A. Brown (Veterinary Officer-in-Charge).  
 Mr. D. Skett.  
 Mr. A. V. Ratcliffe (Town Clerk).  
 Mr. R. Winsor.  
 Mr. Ismail Sidi (Retail Association).  
 Mr. D. Clay (District Commissioner, Kwale).  
 Dr. C. D. Rosenwald (Medical Officer of Health).  
 Dr. Kassam Hussein.  
 Mr. D. W. Hall (District Commissioner, Kilifi).  
 Mr. C. Heginbottom.  
 Mr. L. R. White (Livestock Officer).  
 Mr. Ahmad (Senior Assistant Veterinary Officer).

## MACHAKOS—

Mr. G. C. Javens.  
 Mr. A. D. Wilson.  
 Mr. M. D. Graham.  
 Mr. D. H. Stanley.  
 Mr. F. S. Howden.  
 Mr. J. H. Huber (Livestock Officer).  
 Mr. W. Webber.  
 Mr. R. Percival.  
 Mr. P. H. Leonard.  
 Mr. T. Davies.  
 Sir R. Shaw.  
 Miss A. Joyce.

## DUNDORA DISTRICT—

Major and Mrs. P. D. Carmichael.  
 Mr. C. Wigham.  
 Mr. J. A. R. King.  
 Mr. T. T. Robertson.  
 Mr. A. M. Watson.  
 Mr. H. Squair.  
 Mr. F. Squair.

## NAIROBI—

Mr. I. Somen (His Worship the Mayor of Nairobi).  
 Mr. R. Lund (Deputy Town Clerk).  
 Mr. A. W. Kent (City Treasurer).  
 Dr. A. T. G. Thomas (Medical Officer of Health).  
 Dr. D. H. Mackay (for Director of Medical Services).  
 Mr. G. Geddes (Deputy Traffic Superintendent, East African Railways and Harbours).  
 Mr. C. T. Hutson (Chief Commercial Superintendent, East African Railways and Harbours).  
 Mr. McEwan (Kikuyu).  
 Major F. de V. Joyce.  
 Major C. Steele.  
 Mr. M. A. Barrett (Makerere).  
 Mr. R. L. Cridland.  
 Lady E. Wilson and Mrs. Sylvester (representing East African Women's League).  
 Mr. G. M. Roddan (Director of Agriculture).  
 Colonel Henrey.  
 Mr. C. Caine.



### Written and Oral Evidence

Written and oral evidence was submitted by the following:—

Messrs. Kenya Co-operative Creameries Ltd.  
 Messrs. Milk Producers Company Ltd.  
 Messrs. Central Province Jersey Club.  
 Messrs. the East African Milk Recording Committee.  
 Messrs. the East African (Osano) Dairies Ltd.  
 Messrs. the Nairobi and District Dairymens' Association.  
 Messrs. Lengenny Farm Dairies.  
 Messrs. Kenya National Farmers' Union.

Written evidence was submitted by:—

The Medical Officer of Health, Nairobi.  
 The Registrar of Co-operative Societies.  
 Major H. F. Ward, Kabazi Estates Ltd.  
 Lt.-Col. V. C. Thompson, Lumbwa.  
 East African Guernsey Cattle Breeders Society.  
 Lady Sidney Farrar.  
 Mr. C. Tilney.  
 The Earl of Portsmouth.  
 Mr. Errol Whittall.  
 Mr. E. Highton.  
 Mr. K. O. Sands.  
 Mr. R. C. Doenhoff.  
 Mr. P. Hobbs.  
 Mrs. J. D. Dyer.

The Committee had interviews with the Minister for Finance and the Minister for Commerce and Industry.



## APPENDIX B

## THE DAIRY INDUSTRY AND ITS RELATION TO PUBLIC HEALTH

By D. H. Mackay, M.R.C.S., L.R.C.P., D.P.H., D.T.M. &amp; H.

(Acting A.D.M.S.)

1. In submitting this paper I am unaware of the special reasons which have given rise to the necessity for examining the desirability or otherwise of statutory control of the dairy industry. I am also of course completely in ignorance of the directions which the recommendations of the Committee may take. I have, however, heard it suggested that a possible proposal might be to place an import duty on such products of the industry as canned and dried milk. It is partly as a result of this suggestion, but mainly because of the importance to health of the matter, that as the adviser of the Government on matters of health I have been prompted to submit this paper.

2. Milk is of all foods the one which is most ideally suited to the requirements of the human body. This is true of the human adult, but what is of even greater importance it is the ideal food for the child from birth onwards. It is then obvious that any proposal for the statutory control of milk and milk products must have an important bearing on the health of the people of this country.

3. Of the three main racial groups in Kenya it would be correct as a generalization to say that the European and Indian groups are, owing to their relatively high economic station, adequately supplied with milk. In the case of the Africans, however, this is far from being so.

Apart from the pastoral tribes in which milk is a staple of diet, the bulk of the agricultural tribes have very little milk. This deficiency in the diet may be no calamity as far as adults are concerned, although there is reason to believe that the health and physique of adult Africans would be improved by the addition of more milk to the diet. In the case of the child population, however, deprivation of milk may well be a disaster.

The disease known as *Kwashiorkor*, which is a West African word meaning "red-headed child", and is descriptive of appearance of the hair in sufferers from this form of malnutrition has come into prominence in tropical countries in recent years, and a great deal of research into its causation has been and is being carried out. This deficiency disease affects young children, particularly at the ages of two or three years, following on weaning from their mothers. The course is grave and the termination in the untreated case is more often than not fatal. It is most common in districts where, owing to shortage of land or of tsetse infestation there are few cattle and consequently there is a shortage of milk. It is now known that it is due to a lack of protein in the diet and that such deficiency can most easily be corrected by the addition to the diet of the protein in milk. Experience has shown that relatively small amounts of milk protein given daily may ameliorate the condition. The supply of milk in adequate quantity to the African population both urban and rural is therefore a matter of the utmost importance.

4. When we consider that the largest body of potential consumers, namely the African, is obtaining only a fraction of the milk supply which is necessary for health, it is almost certainly true that Kenya does not possess an exportable surplus, at all events, of whole milk products. What is at present at fault is the low purchasing power of the African which makes it impossible for him, generally speaking, to afford to buy milk at a price which will be remunerative to the European farmer. It is possible that this will be remedied to an increasing extent in the towns by the rapid increase in wages of the urban African. It may also come about in the rural areas, though more slowly as the result of the Swynnerton Plan.



5. I would suggest therefore that the Committee should consider the means whereby an increasing flow of milk to meet the needs of the African population could be facilitated. This could be done in two ways:—

- (a) By increasing the production of milk in the African Land Units. It is important that the incentive to increased production in the African Land Units should not take the form of a cash return for whole milk, as there is then a danger that almost the total production of whole milk is sold for cash, and little is retained for consumption by the family of the producer. Where the cash incentive is related to butterfat only, as in the ghee-producing co-operative schemes already in existence in some African Land Units, the valuable milk proteins are retained for human consumption in the area where they are produced.
- (b) By facilitating the distribution of milk or milk products from European farms to the African trade, probably in the form of a skim milk preparation.

6. Regarded purely from the standpoint of health it is the protein fraction of the milk, not the butterfat, which is so essential to meet the particular deficiency in the diet with which we are faced in this country. Thus it follows that although whole milk is a better food than skim milk there would be no insuperable objection to the extraction and sale of butterfat, provided that, at the same time, a greatly increased supply of skimmed milk for local consumption could be ensured. If this were to be done the bulk, or perhaps all, of the available skim milk would have to be dried. Plant of sufficient capacity to deal with the whole of the milk supply of the Colony after the extraction of the butterfat would be needed.

7. I have reason to believe that the United Nations International Children's Emergency Fund would be willing to assist in the financing of such a scheme. This organization has been taking an increasing interest in the health of the children in this country and has already given practical help by supplying dried milk for the prevention of *Kwashiorkor* in the Central Province.

8. A possible advantage to the dairy industry of drying skim milk would be that seasonal surpluses would be readily absorbed, thus avoiding losses which might otherwise occur. It would seem to me that the present time when the whole subject is under investigation offers a great opportunity for the dairy industry to organize its methods of distribution. Such reorganization should be effected in such a way that dried skim milk could be reduced in price to bring it within the economic potential of an increasing number of consumers, at the same time ensuring a reasonable profit to the producer.

9. Even if the proposals which I have outlined are followed, it is doubtful whether the supplies of dried skim milk would be adequate. I would therefore recommend that no artificial barriers should be erected designed to interfere with or to render more costly the importation of skim milk products. At the same time I would recommend that statutory powers should be taken to forbid the export of any product which contains a substantial part of the protein content of milk.

10. It may perhaps be objected that even if dried skim milk is made available in large quantities, the African will not buy it. On the other hand it must be recognized that the African is becoming increasingly accustomed to dried milk products and is making use of them. At the present time supplies of dried skim milk are being distributed in the African areas.



It is readily accepted and is in fact conditioning the population to a taste for this product and milk in general. Furthermore, the idea could be popularized with the help of such Government agencies as the Information Department. Moreover, the Medical Department possesses a rapidly expanding Health Education Service which can, through the medium of a network of health centres and dispensaries disseminate propaganda to the remotest parts of the African Land Units.

11. With regard to the desirability or otherwise of pasteurization it should be recognized that serious hazards to health may be caused by the consumption of unboiled raw milk. Apart from the risks of contamination by human carriers of diseases such as typhoid fever and poliomyelitis there are diseases which can be transmitted by the cow. Of these brucellosis and "Q" fever are real and present dangers in this Colony. As more and more herds are upgraded by imported breeds from England it is not beyond the bounds of possibility that the present, not quite complete, freedom from tuberculosis in African cattle may break down. If this were to occur pasteurization would be even more desirable as an additional safeguard to whatever methods of control amongst the cattle themselves that might be adopted.

12. I do not consider that if pasteurization is introduced it should be carried out at the farmstead.

At this level scrupulous attention to cleanliness in the milking byre or parlour and the dairy and effective rapid cooling of the milk should be all that is necessary.

13. Pasteurization at a depôt or central distributing centre has many advantages. In addition to rendering the milk safe from the diseases mentioned earlier, experience has shown that as dirty milk does not pasteurize well; one of the immediate results of initiating a pasteurizing scheme is an improvement in the standard of cleanliness of the milk producers supplying milk to the plant.

14. Once milk has been pasteurized it is essential that it should be bottled or packaged immediately in a recognizable and therefore untamperable container.

15. If pasteurization is to be adopted it is important that this in itself is not allowed to engender a false sense of security, and all other measures to ensure safety and cleanliness of milk should be energetically pursued.

16. The preparation of sterilized milk offers some advantage in areas of scattered population as distribution can be wider owing to its longer keeping properties.

17. It is appreciated that the Asian community prefer unpasteurized milk in order to prepare the various curds used in their diet. There is no reason why unpasteurized milk should not be sold provided it is distinctively labelled. Similar arrangements would protect the interests of producers and consumers of milk from the Channel Island breeds. In both cases there would be some justification for charging a higher price than for ordinary bulked pasteurized milk, as the unpasteurized product has lesser keeping qualities than the pasteurized.



## APPENDIX C

**THE FUTURE DEVELOPMENT OF DAIRY FARMING IN RIFT  
VALLEY PROVINCE**

**By A. Storrar B.Sc. (Agric.), A.I.C.T.A., Department of Agriculture**

The European Highlands of Kenya has approximately 3,300,000 acres within the mixed farming zone, with about 3,000 farmers on the land, and so to-day the average holding is 1,100 acres. Of the 3,300,000 acres it is estimated that 1,300,000 acres (i.e. 40 per cent of the total acreage) is potential arable and that 2,000,000 acres will remain under permanent pasture.

European farmers are moving rapidly towards a system of ley farming and it is anticipated that there will eventually be 650,000 acres of ley within the 1,300,000 acres of potential arable. It is estimated that the ley equivalent value of the permanent pasture is in the region of 550,000 acres (roughly 1 acre of ley equals 4 acres of permanent pasture) and therefore the ley equivalent value of the European Highlands in the mixed farming areas will be roughly 1,200,000 acres. Without the use of fertilizer and considering that each year there will be 650,000 acres of stubble available, the ley equivalent should carry 1,000,000 head of cattle of all ages. This estimate is based on actual figures at Njoro and I do not consider the Njoro lands to be above average for the production of grass.

On an average farm every 100 cows will have 80 female followers and therefore there will be approximately 550,000 cows within the Highlands. Each cow should produce for sale not less than an average of 130 lb. of butterfat (325 gal. milk per annum), which indicates a total output for the Highlands of 71,500,000 lb. butterfat. This represents an output of 60 lb. butterfat per acre of ley, which is being achieved along profitable lines to-day on certain farms without the use of fertilizer or imported foodstuffs and with stock of an average "grade" quality.

Using information which is now available, this figure of over 71 million could easily be increased to 100 million by the use of fertilizer, better ley grasses and improved management.

Estimates for the native areas of Rift Valley Province must of necessity be vague as the production of dairy produce will be controlled by the policy of Government with regard to the supervision of individual farmers. Farm planning has great possibilities and with the present staffing under the Swynnerton Plan in Suk, Elgeyo and Nandi, planning should proceed at the rate of 3,000 acres or 150 farms per annum. Approximately half of each holding will be under grass and considering the African's attitude towards stock numbers we could only expect a dairy/beef economy. I would estimate a return of not more than 20 lb. ghee per acre of grass. The total area of high potential land in these three districts is some 750,000 acres and the estimated total production therefore stands at 7,500,000 lb. butterfat as ghee. I consider therefore the possible production of the Rift Valley Province to be 79,000,000 lb. butterfat within the foreseeable future and possibly as much as 107,000,000 lb. if the industry promises a bright future for marketing.



I append below a table of actuals and estimates for dairy production in the European Highlands. (All figures are shown in the equivalent of thousands of pounds of butterfat.)

	Total	Butterfat	Ghee	Manufacture	Whole Milk
<b>ACTUALS—</b>					
1946 ..	5,620	4,800	50	570	200
1950 ..	6,370	5,300	30	740	300
1955 ..	11,390	8,000	520	670	2,200
<b>ESTIMATES—</b>					
1958 ..	15,250				
1961 ..	19,800				
1965 ..	31,700				

The actuals were supplied by the Kenya Co-operative Creameries and the estimates are based on figures supplied by District Agricultural Officers. The increase in butterfat production will be caused by the natural increase of dairy stock within the understocked areas of the Highlands and the inclination of the Kenya farmers to move towards dairy production—as is the case at the moment—where beef markets are limited by factory capacity. The present Kenya Meat Commission factory at Nairobi, with a total capacity of 85,000 head per annum, accepts 30,000 head from European areas and it is understood could increase this figure to 50,000 head. I consider that this increased figure could be made up within the next few years, mainly by the sale of culled cows.

Note should also be taken of plans to increase sales of cattle from African areas in the Rift Valley, of which at any rate a large proportion will go to the Kenya Meat Commission's factory.

From 1950 to 1955, on certain well-run farms, an increase in milk production has been shown from unit 1 to unit 3, while the Kenya farmer as a whole has shown increased production from unit 1 to unit 1.75 over the same period. It is estimated that in 1958 there will not be a great effect on milk production from better planned farms alone, but by 1961 there should be 400,000 acres which have been planned and which will affect production. Of the 400,000 acres, 80,000 acres will be under ley equivalent and it is estimated that on these farms 60 lb. butterfat per acre of ley will be produced.

The overall estimate for the Highlands in 1961 shows a butterfat production of 15 lb. per acre and therefore planned farms should show an additional increase of  $45 \times 80,000$  lb. butterfat, or 3,600,000 lb. In effect this additional production must be taken into account and added to the original estimate which is based on a production of only 15 lb. butterfat per acre, so the finalized estimate will become 23,400,000 lb. and not 19,800,000 lb. In 1965 it is estimated that 800,000 acres will be effectively planned and this should show an additional increase of 30 lb. butterfat per acre of ley equivalent over the Colony estimate. 800,000 acres of planned farms represents 160,000 acres of ley equivalent and therefore an increase in production of 4,800,000 lb. This figure is then added to the Colony estimate of 31,700,000 lb. to give a finalized estimate of 36,500,000 lb. butterfat.



These estimates are summarized below:—

Year	Colony Estimate	Planned Farms Estimate	Total
		<i>lb.</i>	<i>lb.</i>
1955 .. ..	11,400,000	—	11,400,000
1958 .. ..	15,250,000	—	15,250,000
1961 .. ..	19,800,000	3,600,000	23,400,000
1965 .. ..	31,700,000	4,800,000	36,500,000

In addition, from the native areas of the Rift Valley Province, I anticipate production as follows:—

<i>1955</i>	<i>1958</i>	<i>1961</i>	<i>1965</i>
<i>lb.</i>	<i>lb.</i>	<i>lb.</i>	<i>lb.</i>
Nil	60,000	150,000	270,000

Below are shown tables of the cost of production and revenue on a milk economy and butterfat economy taken from an actual farm, and an estimate of beef production and dairy/beef on the same farm. Seven years ago this farm was almost entirely under wheat and had reached a low state of fertility. Grass leys were introduced slowly and by 1953 the full complement of 180 acres of Rhodes grass ley and 30 acres of permanent pasture was reached. A herd was started with culled Ayrshire cows and has been built up through good bulls. The farm is fully fenced and water laid on to each field. At the time of writing there are 81 cows and 80 young female stock and by 1956 there will be 100 cows and 80 young stock, which will be the full complement of the farm for several years to come.

These figures do not carry a charge for European supervision, which is essential if such results are to be achieved.

#### COST OF PRODUCTION

	£
1. Rent .. .. .	210
2. Establishment of ley—Sh. 60 per acre at 60 acres per annum .. .. .	180
3. 11 miles of fencing, costing £1,000 at 10 per cent depreciation .. .. .	100
4. Water reticulation, costing £1,000 at 10 per cent depreciation .. .. .	100
5. Delivery of water .. .. .	50
6. Labour—10 boys at £50 per annum .. .. .	300
7. Depreciation on dairy (£400 at 10 per cent) .. .. .	40
8. Depreciation on dairy utensils at 20 per cent (£200) .. .. .	40
9. Dips and medicines .. .. .	100
10. Bought feed (mainly for calves) .. .. .	200
11. 300 tons of silage (at field cost) .. .. .	200
12. 100 tons of hay (at field cost) .. .. .	200
13. 5 per cent interest on value of stock (£4,000) .. .. .	200
Total: ..	£1,920



## REVENUE

	£
1. 26,000 gal. whole milk at Sh. 2/10 .. ..	2,730
2. 1,500 lb. butterfat at Sh. 3/10, plus value of skim milk at 20 cents per gallon (equivalent of Sh. 3/60 per lb. butterfat) .. ..	270
3. Sales of stock based on herd of 80 cows—25 per annum at £25 per head .. ..	625
Total: ..	£3,625

## BALANCE SHEET

	210 acres	Per acre
	£	£
Revenue .. .. .	3,625	17.2
Cost of production .. .. .	1,920	9.1
Net profit .. .. .	1,705	8.1

As this farm next year will carry 100 cows and some 80 young stock, an increase of 20 × 150 lb. butterfat is anticipated. This increase is valued at £540 and an extra £100 should be found from increased stock sales.

The increase in profit will therefore be £640, which will show a final net profit per acre of over £11.

The figures quoted above are actual figures from a specific farm and calculated below are the sales of butterfat where the average butterfat content is 4 per cent.

	£
26,000 gallons of milk as butterfat at Sh. 1/45 ..	1,885
1,500 lb. of butterfat .. .. .	270
Total revenue .. .. .	2,155
Cost of production .. .. .	1,920
Net profit .. .. .	235
	or £1.1 per acre.

Considering the projected increase in butterfat production and stock sales for 1956 of £640 this will show a net profit of £4.1 per acre.

It is doubtful if, on such a small farm, it would be practicable to contemplate the production of beef, but I append below the estimates for such a venture. I consider that the existing dairy herd could be replaced by 52 beef cows producing 42 young stock per annum, which will allow 32 prime beef animals to be sold each year as well as 10 cull cows. This assumes only a one-fifth heifer/cow replacement, which is very low.

## COST OF PRODUCTION

	£
1. Rent .. .. .	210
2. Sowing ley .. .. .	180
3. Fencing .. .. .	100
4. Water supply .. .. .	100
5. Delivery of water .. .. .	50



6. Labourers (two) .. .. .	60
7. Dips and medicines .. .. .	70
8. Bought feed .. .. .	—
9. Silage and hay .. .. .	200
10. 180 head of stock at £3,600 (5 per cent interest) ..	180
Total	1,150

## REVENUE

	£
1. 32 carcasses at 600 lb. deadweight at Sh. 1 per lb. ..	960
2. 10 culled cows .. .. .	250
	1,210

## BALANCE SHEET

	210 acres	£	Per acre
		£	£
Revenue .. .. .	1,210	..	5.8
Cost of production .. .. .	1,150	..	5.5
Net profit .. .. .	60	..	.3

It would be possible to include with a beef venture the morning milking of the cows and considering the reduction in the allowance of silage and hay and the suckling of calves I would anticipate the production of 60 lb. of butterfat (150 gallons) per cow for sale. This would give an added revenue, at 3,120 lb. of butterfat, of £560. There would be the added costs, however, of labour (£90) and dairy utensils and medicines (£50), and therefore a net profit of £2.3 per acre is anticipated.

With fresh milk at Sh. 2/10 and a high proportion going to market it is obvious that fresh milk is the line to follow. However, the average Kenya farmer is producing butterfat and his profits will be £4.1 per acre as opposed to £2.3 and £0.3 for dairy/beef and beef respectively.

Appended below is a table showing the relative profits per acre at the following prices—

Butterfat at Sh. 3/10	£4.1	Beef at Sh. 2/10 prime	£4.1
Butterfat at Sh. 2/50	£2.0	Beef at Sh. 1/50 ..	£2.0
Butterfat at Sh. 2/00	£0.2	Beef at Sh. 1/10 ..	£0.3

Prime beef in the United Kingdom is about Sh. 3 per lb. deadweight at present and it is doubtful if more than Sh. 2 per lb. could be paid here to put this on the home market at a competitive price. If it were possible then the profit per acre would be similar to that of butterfat alone at Sh. 3/10 per lb. If meat in the main overseas markets should drop to say Sh. 2 a lb. deadweight, then we should have to supply from this end at about Sh. 1/10 a lb. which would mean that a drop in butterfat to Sh. 2 a lb. would make the relative net profits of both enterprises approximately the same.

By increasing experimental work on beef production—and a start has been made—it might be possible to reduce the three-year steer to 2½ or 2¼ years old at 600lb. deadweight. This would raise the profit on such an enterprise by some £300 per annum or from £0.3 per acre to say £1.7 per acre at present-day prices



and would compete with butterfat at Sh. 2/50 a lb. However, this avenue needs further exploration and will require the liberal allocation of funds from Government for speedy results. Further, suitable markets would have to be explored so that farmers could have confidence in the production of beef.

With regard to butterfat, which, in my opinion, will undoubtedly be our export production rather than beef, it is imperative that we find solid markets at an early date. Present reports show butter and milk to be economically superior to beef and it is unlikely that even a rise of 50 cents per pound in beef will oust the dairy industry. Further, with the profit margin per acre being in favour of milk and butterfat and there being a general trend towards closer settlement and therefore smaller holdings, the Kenya farmer must progressively move towards the type of farming which will give the highest net profit per acre.

I consider that the Kenya Highlands and the higher areas of the African reserves of the Rift are capable of producing at the rate of the good dairy lands in New Zealand and our marketing organizations should be ready for this eventuality.

Nakuru,

31st January, 1956.



## APPENDIX D

## POPULATION

1. The African population of Kenya in December, 1955, is estimated to have been 5,870,000. It is assumed to increase at a compound rate of  $1\frac{1}{2}$  per cent per annum.

2. The African urban population of Kenya is estimated to have been:—

			'000s
February, 1948	..	..	161
February, 1952	..	..	203
December, 1955	..	..	246

These are very rough estimates.

3. The African population of Nairobi is estimated to have been:—

			'000s
Mid year, 1950	..	..	70
Mid year, 1951	..	..	80
Mid year, 1952	..	..	95
Mid year, 1953	..	..	100
Mid year, 1954	..	..	100
Mid year, 1955	..	..	110

**African Employment**

4. Since World War II the numbers reported in employment—men, women and children, both urban and rural—have increased at an average rate of about 4 per cent per annum with a higher rate of increase in the last five years. Of the 490,000 Africans employed in 1954, 218,800 or less than 50 per cent were in agriculture and forestry. The increase in employment in agriculture and forestry is not as rapid as the rise in other occupations. Between 1949 and 1954, the African employment increased by 5 per cent in private industry and commerce and 8 per cent in public service, but only 3 per cent in agriculture and forestry.



APPENDIX "E"  
RETAINED IMPORTS—KENYA

DESCRIPTION	1951		1952		1953		1954		1955, JAN. TO SEPT.	
	cwt.	Value £	cwt.	Value £	cwt.	Value £	cwt.	Value £	cwt.	Value £
16. MILK AND CREAM, EVAPORATED, CONDENSED OR DRIED—										
(a) Milk, Evaporated or Condensed:										
Sweetened .. .. .	9,726	69,925	4,399	32,909	6,542	50,920	22,736*	117,590*	5,827*	73,969*
Unsweetened .. .. .	2,986	19,054	1,486	10,562	3,413	22,799				
(b) Milk, Dried (Powder):										
Patent or Proprietary Infants Food ..	711	17,413	629	16,096	937	24,171				
Other .. .. .	180	2,959	129	2,587	23	747	1,152*	27,811*	1,462*	34,504*
Milk, Separated or Skimmed .. .. .	5,299	27,185	3,943	23,823	10,443	47,050				
Cream, Evaporated or Condensed ..	128	2,017	20	244	59	891				
	19,030	138,553	10,606	86,221	21,477	146,578	23,888	145,401	17,289	108,473

\*Trade Item Codes were changed in January, 1954.



## APPENDIX F

## THE MARKETING OF SKIMMED MILK

By Dr. A. T. G. Thomas, M.D., B.S., D.P.H., Medical Officer of Health, Nairobi

The facts which cannot be disputed are:—

1. That there is at present a surplus of skimmed milk.
2. That there is inadequate consumption of milk by the African population in the City.

It should, therefore, be a relatively simple process to make skimmed milk available to the African at a reasonable price. Unfortunately, other considerations make the solution less simple.

It would be unwise to permit the sale of skimmed milk as well as whole milk in the African dairies and milk shops because of the difficulty of differentiation. Other alternatives are:—

1. The licensing of skimmed milk dairies.
2. The sale of bottled skimmed milk from provision shops in the location.
3. The sale of tetrapak-ed skimmed milk from provision shops.
4. The dispensing from bulk of skimmed milk in clinics, schools and nurseries.
5. The sale of skimmed milk from a tanker operated by the Kenya Co-operative Creameries Ltd. or milk producers.

It would appear that some legal control of price would be necessary if the object is to be achieved. This is borne out by the experience gained in connexion with whole milk. The purpose of permitting the use of African milk shops of low standard was two-fold, viz.: (i) to have supplies available close enough to the customer to prevent the necessity of hawking, and (ii) to keep the retail price as low as possible. The first aim has largely been achieved but the second has not, and, in fact, these low standard milk shops are charging the same price for milk as the large, properly equipped dairies in town.

Price control would be easy if the milk were to be sold by the Council, but legal powers would have to be obtained if it were to be sold by private enterprise.

The wholesale price of skimmed milk delivered in Nairobi should be less than Sh. 1 per gallon in 10-gallon cans. The cost of bottling and delivery in bulk would not exceed 75 cents so that bottled skimmed milk could be sold at 22 cents per pint. The bottles would, of course, have to be properly labelled. Alternatively, the milk could be tinted, but this may give rise to consumer resistance.

Ideally, it would be best if the skimmed milk could be sterilized in air-tight bottles. Milk thus treated will keep for months, but the Kenya Co-operative Creameries Ltd., which has a plant capable of doing this, contend that it cannot be sold at less than 25 cents for a 10-oz. bottle—which is the same price as whole milk.

Therefore, the alternative methods require to be considered and the most practical appears to be the bottling of skimmed milk by one of the reputable registered dairymen and delivery in bulk to provision shops in the locations. Making allowance for a profit it should be possible to sell at 25 cents per pint—that is, half the price of whole milk.

Tetrapak is expected to be in operation in July and at a later stage it may be possible to use this for skimmed milk—but the price would inevitably be higher than in bottles.

The use of a tanker in the locations from which milk could be dispensed from a tap would be the cheapest method but is contrary to our policy of restricting the sale of milk to licensed premises, except where it is sold in unopened containers.



## APPENDIX G

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