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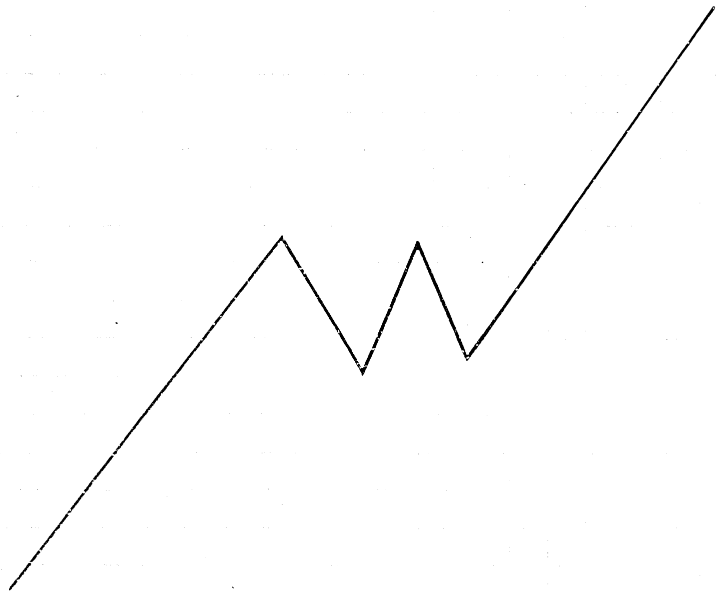

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REQUIREMENTS FOR CONTRIBUTIONS

Articles in the field of agricultural economics, suitable for publication in the journal, will be welcomed.

Articles should have a maximum length of 10 folio pages (including tables, graphs, etc.), typed in double spacing. Contributions, in the language preferred by the writer, should be submitted in triplicate to the Editor, c.o. Department of Agricultural Economics and Marketing, Pretoria, and should reach him at least one month prior to date of publication.

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Recent developments in the dairy industry 1)

by

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Dairy Industry Control Board

The dairy industry in South Africa has on various occasions since 1960 roused considerable public interest. The large surplus production during the early sixties along with international developments which made it practically impossible to export further supplies of butter, created a crises in the industry which could only be resolved by drastic measures.

No sooner was this crisis over than the industry found itself in the midst of the worst droughts in human memory, and large quantities of dairy products had to be imported to meet the growing domestic demand. Thus, within six years, the two extremes in weather conditions were experienced which greatly complicated attempts to stabilise the industry. An economically sound and stable dairy industry is, however, of national importance, not only because of the essential foodstuffs produced but also because dairying is of importance to a large number of primary producers; and the contribution this industry makes to the South African economy.

The impact of the droughts during the past number of years on the production of dairy products can be clearly seen from the indices in Table 1.

PRODUCTION OF VARIOUS KINDS OF DAIRY PRODUCTS

The best measure to indicate the development in the production of individual kinds of secondary dairy products, is to compare the quantities of industrial milk taken in by the respective factories. Comparative intakes over the past ten years are given in Table 2, from which it will be seen:

1. The milk equivalent of butterfat taken in, increased by about 29% from an average of 171.8 million gallons during the basic year to 221.9 million gallons in 1960/61, and then declined by more than 25% and amounted during 1965/66 to 3% less than the quantity in the basic year.

This decline since 1960/61 must be ascribed mainly to the droughts prevailing during these years, and because butterfat is produced in the more extensive farming areas from natural pastures.

The big reduction in the price of butterfat which had of necessity to be introduced during the 1961/62 season, resulted in many cream producers temporarily losing interest and the subsequent increases in prices could, because of unfavourable weather conditions, not contribute much in stimulating the output of butterfat.

The prices of industrial milk used by the respective manufacturers are shown in Graph 1.

2. The intake of industrial milk by cheese factories basically follows the same pattern as that of butterfat, but the increase of 30% up to 1960/61 was followed by a comparatively smaller

1) Also refer to Note under "General".

TABLE 1 - Indices of physical volume of agricultural output - 1947/48 to 1949/50=100

PRODUCT	Index of volume produced during years ending June			
	1962	1966	Increase or decrease	
	Index	Index	Index	Per cent
All agricultural products	174	177	+ 3	+ 1.7
All livestock products	148	158	+ 10	+ 6.8
Cattle slaughtered1)	121	138	+ 17	+ 14.0
Sheep and goats slaughtered	139	155	+ 16	+ 11.5
Pigs slaughtered	103	125	+ 22	+ 21.4
Poultry products	181	206	+ 25	+ 13.8
Fresh milk	140	152	+ 12	+ 8.6
Dairy produce	204	172	- 32	- 15.7

Source: Statistical Yearbook, 1966.

1) It should be taken into account that cattle numbers declined during this period.

decline (about 17%) which brought the total intake during 1965/66 to 34.7 million gallons, or about 8% more than during the basic year.

It is therefore clear that the production of cheese was affected comparatively less than butter production by the unfavourable weather conditions. This tendency may inter alia be ascribed to the fact that butterfat is produced mainly in the extensive farming areas where farmers in general, do not provide supplementary feed to maintain milk production. Cheese-milk, on the other hand, is produced mainly in the more intensive farming areas where producers are more dependent upon this source of income and must thus provide sufficient feed for their herds.

With a price difference in favour of cheese-milk which varied from 25 per cent to 42 per cent since 1960/61 there is a further tendency amongst producers to prefer to deliver cheese-milk instead of butterfat in areas where facilities exist. The opening of a single cheese factory, like the one established at Lichtenburg a few years ago, results in a direct and marked increase in cheese production which largely takes place at the expense of butter production. This price difference, as will be explained later, also influences the diversion of surplus fresh milk.

3. In contrast with the trends in the deliveries of milk for butterfat and cheese, the intake by factories of condensing milk shows with few exceptions a continuous increase; and amounted to about 39.2 million gallons during 1965/66, which exceeded the intake during the basic year by more than 71 per cent.

Because of the price difference between condensing milk and cheese-milk, producers tend, wherever possible to deliver condensing milk. Like cheese-milk, condensing milk is also largely obtained from the more intensive farming areas where animals usually receive supplementary feed and where the effects of the droughts were less severe. Because of the location of the factories, their intake of milk, as with the cheese factories, is subject to severe competition from the more profitable market for fresh milk; nevertheless, because of the price dif-

TABLE 2 - Production of industrial milk used in the manufacture of different products

YEAR[1)]	Butterfat (Milk equivalent)		Cheese-milk		Condensing milk[2)]		Total	
	Million gal. [3)]	Index	Million gal.	Index	Million gal.	Index	Million gal.	Index
Average 1953/54 to 1955/56	171.8	100	32.2	100	22.9	100	226.9	100
1956/57	179.7	105	30.4	94	21.8	95	231.9	102
1957/58	183.4	107	30.7	95	24.2	106	238.3	105
1958/59	178.4	104	35.4	110	27.1	118	240.9	106
1959/60	190.9	111	39.4	122	28.0	122	258.3	114
1960/61	221.9	129	41.7	130	29.5	129	293.1	129
1961/62	219.4	128	38.4	119	27.8	121	285.6	126
1962/63	200.6	117	36.1	112	31.0	135	267.7	118
1963/64	184.5	107	34.8	108	34.0	148	253.3	112
1964/65	171.6	100	34.7	108	33.5	146	239.8	106
1965/66	165.9	97	34.7	108	39.2	171	239.8	106

1) Year October 1 to September 30.
2) Milk used for condensed milk and full-cream and skim-milk powders.
3) These figures are not strictly comparable since butterfat received from secondary sources has during recent years not been included in the total milk equivalent.

ference between cheese- and condensing milk there is a preference to divert surplus fresh milk to condenseries.

A further factor which contributed to the reduction in the quantity of butterfat supplied, was the practice of the manufacturers of condensed milk, during the droughts, to use large quantities of skim-milk powder to standardise milk for condensing; instead of removing part of the butterfat which was normally supplied to creameries.

In Table 3 certain information is given regarding the sources from which the respective factories received the raw materials and from this it appears that over the three years, creameries received only 10.1 per cent of the total intake of butterfat from secondary suppliers. This butterfat originates from the standardization of cheese- and condensing milk. The quantity of butterfat received from secondary sources increased over the three years by more than 20 per cent which accounts for the fact that the total intake of butterfat declined by only 5.7 per cent, since the supplies from primary producers declined by more than 8 per cent.

Secondary suppliers of cheese-milk contributed over the three years 17.8 per cent of the total intake. These supplies consisted mainly of surplus fresh milk which increased by 58 per cent from 1963/64 to 1965/66 and thus more than made good the decline of 6.5 per cent in supplies from primary producers.

Of the total quantity of condensing milk taken in during the three years more than 22 per cent was received from secondary sources - mainly surplus fresh

TABLE 3 - Butterfat, cheese-milk and condensing milk supplies, 1963/64 to 1965/66

Year Oct. to Sept.	Total	Primary suppliers	Secondary suppliers
	(a) Butterfat - 1,000 lb		
1963/64	73,359.3	66,980.3	6,379.0
As per cent of total	100%	91.3%	8.7%
1964/65	69,386.3	62,003.4	7,382.9
As per cent of total	100%	89.4%	10.6%
1965/66	69,161.4	61,485.4	7,676.0
As per cent of total	100%	88.9%	11.1%
Total three years	211,907	190,469.1	21,437.9
	100%	89.9%	10.1%
Increase or decrease 1965/66 on 1963/64	- 5.7%	- 8.2%	+ 20.3%
	(b) Cheese-milk - 1,000 lb		
1963/64	343,248.9	297,230.0	46,018.9
As per cent of total	100%	86.6%	13.4%
1964/65	348,059.8	281,624.2	66,435.6
As per cent of total	100%	80.9%	19.1%
1965/66	350,779.3	277.910.9	72,868.4
As per cent of total	100%	79.2%	20.8%
Total three years	1,042,088	856,765.1	185.322.9
	100%	82.2%	17.8%
Increase or decrease 1965/66 on 1963/64	+ 2.1%	- 6.5%	+ 58.3%
	(c) Condensing milk - 1,000 lb		
1963/64	401,225.9	315,784.7	85,441.2
As per cent of total	100%	78.7%	21.3%
1964/65	413,745.8	324,377.9	89,367.9
As per cent of total	100%	78,4%	21.6%
1965/66	464,539.7	349,975.9	114,553.8
As per cent of total	100%	75.3%	24.7%
Total three years	1,279,501.4	990,138.5	289,362.9
	100%	77.4%	22.6%
Increase or decrease 1965/66 on 1963/64	+ 15.7%	+ 10.8%	+ 34.0%

milk. The quantities taken in increased by 34 per cent which enabled the manufacturers of condensed milk to increase their total intakes over the three years by 15.7 per cent in spite of the fact that the quantities received from primary producers increased by only 10.8 per cent.

While the production of industrial milk declined because of unfavourable weather conditions, the production of butter and cheese was also effected detrimentally, by the fact that relatively greater quantities of milk were delivered to the higher priced markets for fresh and condensing milk, which partly accounts for the decline in the production of butter and cheese after the 1960/61 season.

CONSUMPTION OF BUTTER AND CHEESE

The consumption of butter and cheese since 1955/56 is shown in Table 4.

Consumption of butter increased very slowly up to 1960/61 (when it was even slightly less than during 1959/60). During the succeeding three years consumption increased rapidly, but remained fairly constant after 1963/64, notwithstanding the increase of the population. Consumption of cheese follows a similar pattern, except that the increase in consumption commenced in 1959/60 and continued during 1961/62 to 1962/63 and subsequent seasons - although at a reduced rate.

It will be observed from Graph 2 that the consumption of butter in particular is strongly influenced by changes in the retail price. Although an actual decline did not take place during these years (which must be ascribed to the active sales promotion of the Dairy Board) the level of consumption shows a slower increase from June 1963, after every price rise.

According to Table 5 the per capita consumption of butter has again declined,

TABLE 4 - Consumption of factory butter and cheese, 1955/56 to 1965/66

	Butter		Cheese	
	1,000 lb	As per cent of yearly average	1,000 lb	As per cent of yearly average
1955/56	83,198	88.3	26,145	87.0
1956/57	85,218	90.4	26,437	88.0
1957/58	86,536	91.8	26,649	88.7
1958/59	88,411	93.8	26,768	89.1
1959/60	89,205	94.7	27,507	91.6
1960/61	89,020	94.5	28,287	94.2
1961/62	94,380	100.2	30,791	102.5
1962/63	100,978	107.2	32,673	108.8
1963/64	106,209	112.7	33,706	112.2
1964/65	106,418	112.9	35,012	116.5
1965/66	107,016	113.6	36,483	121.4
Annual average	94,235	100.0	30,042	100.0

TABLE 5 - Consumption per capita of butter and cheese

	Butter		Cheese	
	All races, lb a year	Whites, lb a year	All races, lb a year	Whites, lb a year
1955/56	5.915	29.295	1.858	9.205
1959/60	5.601	29.066	1.727	8.962
1960/61	5.467	28,559	1.737	9.075
1961/62	5.668	29.772	1.849	9.713
1962/63	5.925	31.185	1.917	10.090
1963/64	6.084	31.961	1.930	10.143
1064/65	5.956	31.317	1.959	10.303
1965/66	5.848	30.742	1.993	10.480

as from the 1964/65 season, and this can be ascribed mainly to the price increases. As butter prices increase more consumers blend butter and margarine for a spread on bread and larger quantities of margarine instead of butter are used for baking.

Consumption of cheese, on the other hand, is less sensitive to increase in price and according to Table 5 consumption per head continues to increase in spite of the periodic increases in price since 1963/64. This difference between butter and cheese may be accounted for by the fact that comparatively the increases in cheese prices were not as great as those of butter - since May 1963 when the retail price of first grade cheese was 28c a lb it increased up to June 1966 by 7c a lb or 25 per cent, while during the same period the price of butter was increased from 30c a lb by 11c or 36.6 per cent. The sustained increase in the consumption of cheese may further be ascribed to the fact that many consumers apparently became better aware of cheese only recently and that the variety of ways in which it can be used in the home (also as a substitute for other relatively expensive protein foods) has only recently been appreciated.

THE MARKETING OF BUTTER AND CHEESE

During 1960/61 the Dairy Board was faced with a serious situation because of an abnormal accumulation of stocks. This was largely due to the trends in production and to a lesser extent to a decline in the rate of consumption. The Board had to cope with a serious marketing problem. The progressive restrictions of importing countries to protect their own producers, clearly indicated that South Africa was dependent upon the domestic market to an ever increasing extent. Export prices were forced down by intense competition, because of surpluses in most exporting countries, to entirely uneconomic levels and the Board was compelled to introduce special measures to expand domestic consumption.

The appreciable decreases in the prices of butter and cheese during December 1961 provided the Board with an appropriate marketing opportunity and care was taken to develop the market further so as to secure the greatest possible benefit out of the situation and also to promote the domestic consumption of the two products to such a degree that a repetition of the 1961 crisis could in future be avoided.

The Board tackled this task over a wide field and inter alia paid special attention to the following:

1. Advertising

Because of the per capita decline in the consumption of cheese the Board had already commenced with more intensive advertising during 1960 to promote the consumption of this product. This promotion for cheese was intensified during 1961 and butter was also included as may be seen from Table 6 in which the funds devoted to advertising are given.

These figures reflect only the amounts paid each year on advertising through public media and include the following: Daily and Sunday newspapers, periodicals, bioscopes, posters and the radio. In addition the staff of the Board paid more attention to the advertising of cheese by organising cheese weeks and staging exhibits at all the important shows in the country.

The cheese weeks, which had to be discontinued towards the end of 1962 because of declining production, attracted much interest on the part of the press and the radio and gained wide publicity which brought the use of cheese effectively to the attention of the public. Participation by the Dairy Board in shows in the larger centres not only brought consumers and officials of the Board together and served as distribution points for advertising material, but with the exhibits as points of contact the interest of the press and radio was aroused and thereby sympathetic publicity for the industry was secured.

2. The "More Butter" Scheme

To expand the domestic use of butter still further, the Board paid particular attention to the non-White and especially the Bantu market which, because of the large number of Bantu and their great combined purchasing power, is the largest additional future market for butter. Although these efforts were the result of a surplus, it was the Board's intention from the start to create a stable demand for butter among the non-White community rather than using this market to dispose of sporadic surpluses.

The future possibilities of butter sales to the Bantu in the White urban areas are such that the Board decided for the time being to concentrate on the areas border-

TABLE 6 - Expenditure on advertising by the Dairy Board, 1956 to 1966

October 1 to September 30	Cheese	Butter	Total
	R	R	R
1956	16,200	16,300	32,500
1957	11,800	15,300	27,100
1958	11,400	20,400	31,800
1959	18,700	25,000	43,700
1960	80,000	7,000	87,000
1961	87,300	74,500	161,800
1962	114,700	107,100	221,800
1963	75,300	72,300	147,600
1964	76,000	89,800	165,800
1965	102,600	82,200	184,800
1966	72,300	53,000	125,300

ing on the cities, where the Bantu, because of their higher purchasing power and contact with the Whites, accepted butter more readily.

After intensive investigation and experiments the Board decided to make available half-pound pats of "table" butter at 25c a pound retail, in accordance with the "More Butter" Scheme. This meant that the non-White market was subsidised to the extent of $3\frac{1}{2}$c a pound. Sales increased rapidly from 7,900 lb in December 1961 to 101,400 lb in September 1962. Even at this stage it was difficult to provide sufficient quantities of "table" butter and later "choice" butter was also made available at the same subsidy. Sales continued to increase and during 1963/64 about $1\frac{1}{2}$ million pounds of butter were sold in the Bantu areas.

Because of the periodic increases in prices and low production, it was not always possible to supply this market in full (further expansion had to be stopped) and after 1963/64 sales declined. The decrease was, however, not very substantial which would indicate that the Board succeeded to establish a permanent market for butter among the Bantu.

In order to give the needy among other races an opportunity to use more butter, a subsidy of $5\frac{1}{2}$c a pound was paid on additional "table" and "household" butter distributed by registered welfare organizations and local authorities amongst families which qualified. During 1962/63 about 142,000 pounds of butter were sold under this part of the scheme, but during the succeeding year the price concession had to be reduced to $3\frac{1}{2}$c a pound because of low production. This, along with the effect of subsequent price increases resulted in only 89,000 pounds of butter being sold during 1963/64.

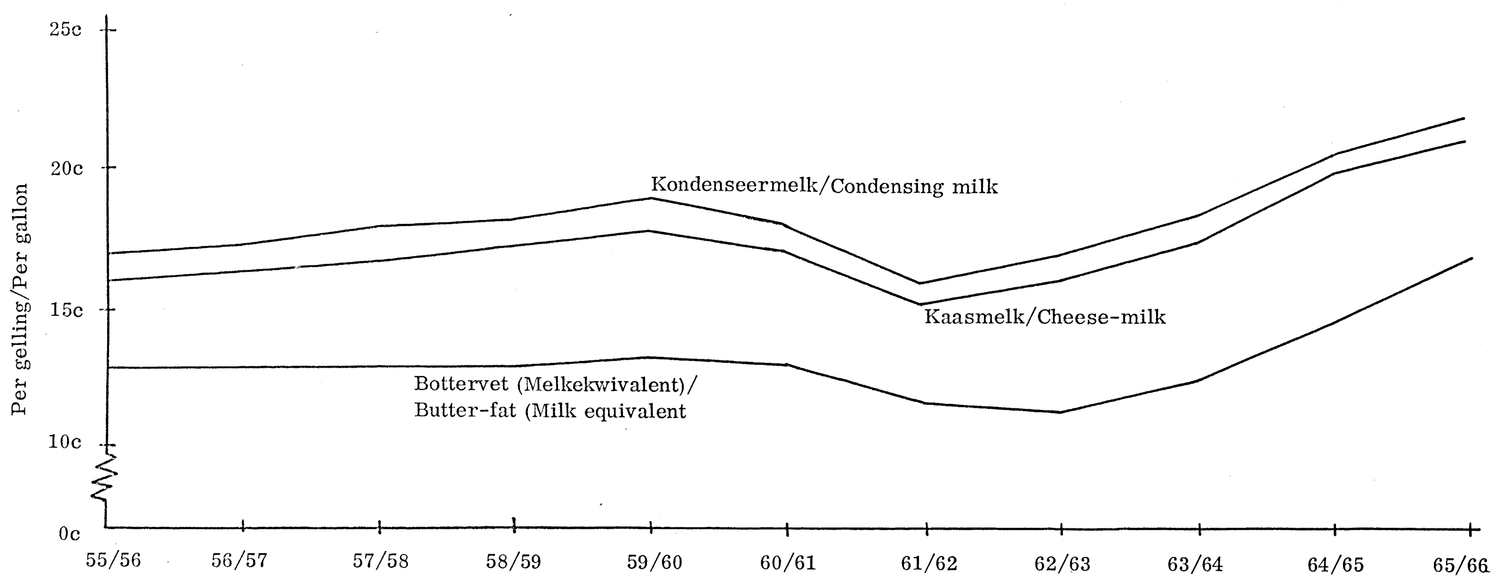
To encourage bakers and confectioners to use butter to a greater extent, supplementary supplies of "table" and "household" butter, were, subject to certain conditions, made available to these firms at the prices applicable to welfare organizations. Although this price concession also had to be reduced and similar problems were experienced in maintaining supplies, sales under this part of the scheme continued to increase and amounted to about 750,000 lb during 1965/66.

3. Improvement of the quality of dairy products

To further improve the quality of dairy products the Board appointed a special committee during 1961. It was found that the procedures adopted in grading butter and cheese left much to be desired and the Board decided that the grading standards prescribed in the regulations had to be strictly applied from October 1, 1961. Steps were also taken to give the primary producer better guidance in the proper handling of the raw materials. The committee reported during 1962 and the Board decided on a number of measures to effect further improvements in the quality of dairy products. To give effect to some of these measures the grading regulations for butter and cheese were revised and came into operation on 1 October 1962.

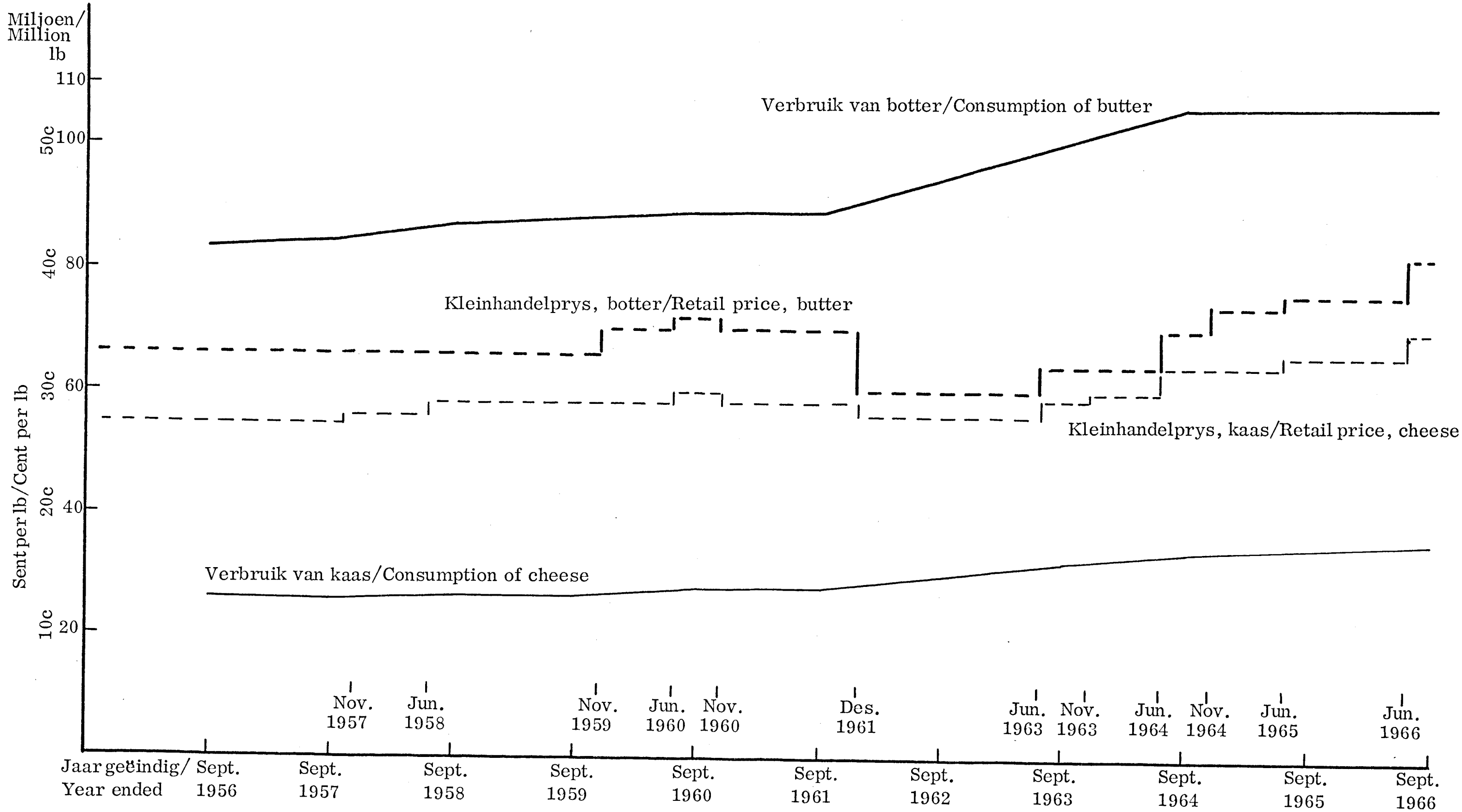
4. Hostel scheme for cheese

To promote the consumption of cheese among school children this scheme provides that cheese may be purchased by provincial and other state-supported boarding schools at 2c a pound less than the current wholesale prices. In spite of periodic increases in the price of cheese, sales amount to about 300,000 lb a year.



GRAFIEK 1 - Gemiddelde pryse deur fabrikante betaal/
GRAPH 1 - Average prices paid by manufacturers

GRAFIEK 2 - Kleinhandelpryse van keurbotter en eerstegraadkaas en verbruik van botter en kaas, 1955/56 tot 1965/66/
GRAPH 2 - Retail prices of choice grade butter and first grade cheese and consumption of butter and cheese, 1955/56 to 1965/66



5. The sale of butter and cheese in rural areas

Investigations proved that the rural areas which represented a large potential market, were not catered for properly. It appeared that the position might be improved by the introduction of free delivery services to retailers in these areas. The matter had, however, to be approached with circumspect since free deliveries in the sparsely populated areas where transport facilities left much to be desired, would be a costly undertaking and the appointment of additional agents would complicate the administration.

After a further investigation by an *ad hoc* committee the Board decided during 1965 on the appointment of 10 additional agents who could cater mainly for the rural areas and in principle the following centres were approved: Bonnievale, Ladysmith, Welkom (2), Potchefstroom (2), Pietersburg, Vereeniging and Nelspruit (2). At the same time the agency agreements between the Board and its agents were amended and to each agent in a centre a part of the neighbouring rural area was allocated, to be supplied with butter and cheese, in such manner that retailers in these areas would not incur delivery costs. These steps to improve delivery to rural areas were, however, only finalised recently and it is not possible to indicate what the outcome will be.

CONCLUSION

From the foregoing it is clear that the Board has encouraged the consumption of dairy products to such an extent and has improved its marketing organisation so greatly, that a record output equal to that of the 1960/61 season could be handled with confidence and without disruption. The prices of dairy products, particularly butter, are at present as a result of increased production costs so high that a decrease in effective consumption is anticipated should any further increases be made, or if the slightest recession in current economic conditions should occur.

The dairy industry which by its nature is very sensitive to weather conditions, is at present experiencing a very favourable season and output is very encouraging. At current costs of production the industry will find it difficult to absorb price reductions and the efficiency of the primary producer must be raised to a sufficient extent to meet future downward price adjustments without dislocation. South Africa's backwardness in the dairying field, as illustrated *inter alia* in the exceptionally low milk production per cow in comparison with other countries, can only be corrected through research into the factors which hamper greater efficiency in milk production - and active steps to eliminate these problems.