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# **FARM LEVEL PROCESSING AND MARKETING OF MILK IN THE FREE STATE PROVINCE OF SOUTH AFRICA**

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## **ABSTRACT**

*This paper identifies the problems which currently affect processors of milk at farm level in the Free State. Perceptions of farmers regarding future problems which will constrain their operations are also tested and quantified. These perceptions are important in a fast changing and dynamic environment, as the one in which South African farmers operate, since it might affect future investment in value-added opportunities. Possible solutions to counter the problems, as identified, are given.*

## **INTRODUCTION**

The objective of this paper is to highlight business problems encountered by milk processors at farm level in the Free State Province of South Africa. It is believed that information in this regard will contribute to improved extension and policy making, ultimately increasing economic growth through adding value to milk. Research was based on data obtained by means of personal interviews. Full details may be obtained from Cronje (1997). Results were analysed by ranking general problem areas, general problem areas for different business categories and specific business problems. In the next section information about South Africa and the dairy sector is discussed with the method of research in section 3. In section 4 the results are discussed with possible solutions in the last section.

## **BACKGROUND INFORMATION**

South Africans have experienced many changes since 1993. Some of these changes made world headlines, like the inauguration of Mr Nelson Mandela as



South Africa's President. The removal of sanctions against South Africa, the GATT agreement and South Africa's new political dispensation are all forces which contributed to a new and liberalized South African agricultural sector.

Over the years there has been much direct and indirect intervention in the marketing of agricultural products. South Africa followed the example of many other countries and established a system of product boards with in most cases, monopoly powers. The 1937 and 1968 Marketing Acts enabled legislation, which provided for the establishment of statutory marketing, usually at the instigation of a group of producers and managed by a control board.

The process of market deregulation that took place over the last decade, accelerated since 1992, with the appointment, of the Committee of Inquiry into the Marketing Act (CIMA) by the Minister of Agriculture.

The Dairy Board was established in 1956. In 1983 consumer price control in fresh milk was abolished and in 1985 price control on butter and cheese went the same way. During 1992 a number of milk buyers have stopped paying levies, stating that statutory legislation was not required and that the Dairy Board was probably unnecessary. Price stabilisation ended in 1992 following a court ruling which ended levy income. The Dairy Board and dairy marketing scheme were abolished in 1993. The Milk Board (a voluntary organisation, representative of the industry) was established on the 1st of January 1994. The Milk Board is a service-orientated organisation and it's main function is the provision of market information.

South Africa had the highest degree of deregulation of all recognised dairy countries in the world during 1995/1996. Legal and illegal imports and an unfavourable fodder/milk price ratio caused many problems in the dairy industry during this time (De Jongh 1996; Fourie 1996 and Willemse 1996). Because of the above mentioned uncertainties and changes, farmers were looking at other opportunities, such as value adding, to survive financially.



Total milk production per annum in South Africa is about 2147 million litres of milk, with the Free State (one of the 9 provinces of South Africa, situated centrally, bordering 6 provinces and Lesotho) being the second largest producer with about 18.1 percent of national production. Production is fairly concentrated with 20 percent of the South African producers contributing more than 60 percent of total milk production. South Africa has one of the lowest per capita consumption rates of milk with approximately 44 litres per capita per year compared to  $\pm 100$  litres in the USA, during 1993/1994 Willemse, (1994). Consumption is still declining and it is accompanied by a decrease in actual expenditure on promotion of dairy products. Production of milk is seasonal with a peak in summer while consumption on a month to month basis remains fairly constant throughout the year (Milk Board, 1996).

A producer-distributor (PD) is defined as a producer selling dairy products of his own and/or dairy products of other producers. The number of registered (PD's) at the Milk Board stayed more or less constant during the 1995/1996 season. At the beginning of 1994 there were 546 PD's in South Africa and 81 in the Free State. Two hundred and seventy registered PD's deregistered between 1994 and 1996 in South Africa of which 59 were in the Free State (Coetzee, 1996). The above mentioned instability in the South African dairy market, which clearly underlines that there are problems in the industry, has led to this study.

## **METHOD OF RESEARCH**

Personal interviews were conducted among 40 PD's from a total of  $\pm 120$  PD's (not all is registered at the Milk Board) of milk and dairy products dispersed evenly throughout the Free State. The intention of the questionnaire was to get a broad overview of the business problems of PD's in the dairy sector. For this reason registered and unregistered PD's as well as 8 businesses closed down, were included in the survey. A questionnaire developed by Berning (1996) was adapted for this purpose. General problem areas comprised 15 categories, such as personnel, record keeping, financing, marketing, etc. as listed in table 1.



Categories were again divided in specific problems, for instance in the personnel category qualified workers, wages and labour unions were listed. Participants were requested to give information on all the categories, in the current situation and to raise their perception of the future. This discussion concentrates on the perceptions of the future because of (1) a lack of space and (2) perceptions of the future that will generally drive people to take certain decisions.

Analysis of data comprised ranking of general problem areas, comparison of general problems in different business categories and ranking of specific problems.

## **RESULTS**

### **Profile of participants**

A total of  $\pm 16.5$  million litres of milk are handled by the 40 respondents per year. Concentration in the industry is illustrated in this sample with 13 (33 percent) PD's producing less than 100 000 litres and 5 (13 percent) PD's producing more than 2 million litres of milk per year. Turnover varied between less than one hundred thousand rand (25 percent PD's) and more than one million rand (18 percent PD's) per year. The exchange rate is US \$1 =  $\pm$  R4.50.

Milk is sold by 23 (58 percent) of the PD's, dairy products such as cheese and yogurt by 6 (15 percent) while the rest of the PD's sell a combination of milk and dairy products. Sole proprietorship (78 percent) is the dominating business form.

Although 15 percent of the businesses have plant managers, family labour forms the management team in most cases. Fifty eight percent indicated that their wives and 21 percent that their children are employed on a fulltime basis. Other relatives play an important role during weekends, holidays or by means of advise.



Labourers play a very important role with an average of 9.26 employed per PD. The total number of labourers of the 40 PD's increased by 189 (4.73 labourers per PD) since they started to add value to the basic product (in this case fresh milk).

In general the PD's are positive about the future, as were indicated by 53 percent PD's who would like to increase the size of their businesses and 23 percent PD's who would not like to change theirs. Five percent PD's indicated that they would like to retire (both owners is above 75 years of age).

### **RELATIVE IMPORTANCE OF GENERAL PROBLEM AREAS**

Table 1 shows the 15 general problem areas included in the questionnaire, ranked in order of importance according to a calculated score as explained in table 1. After participants had gained a thorough understanding of each general problem area, they identified 5 areas perceived to be most problematic and rated them on a scale from 1 (most important) to 5 (least important).

Personnel was the most important general problem area with 75 percent of the PD's ranking it as one of the 5 most important problem areas. The other 4 most important general problem areas are in descending order the economic climate, competition, marketing and financing. According to the calculated score respondents regarded personnel, financing, marketing, transport, raw materials and size to become more important in future than what it was in the past. Only 3 of the first 5 areas received a response percentage of more than 50, while all the others were below 50 percent. Of the first 5 important general problem areas, only economic climate can be regarded as external to the business environment. Personnel, on the other hand, is partly external because of labour legislation and unions which stand outside the farm business.

A study by Torok, Schroeder and Menkhaus (1991) among agribusinesses in the USA found that economic climate, financing, regulations, insurance and marketing are the most important general problem areas. Berning and Potgieter (1996) found that marketing, personnel, tax, economic climate and competition were the most



important general problem areas among red meat processors on farm level in the Free State.

**Table 1: Ranking of all respondents as they perceive general problem areas**

Rank	General problem area	Average (a)	Response(%) (b)	Score (c)
1	Personnel	2.23	75	208
2	Economic climate	2.81	68	148
3	Competition	2.65	43	100
4	Marketing	3.38	60	98
5	Financing	2.67	30	70
6	Regulations	2.70	25	58
7	Technology	3.17	30	55
8	Transport	3.31	33	55
9	Information	2.90	25	53
10	Raw materials	2.50	20	50
11	Taxes and subsidies	3.55	28	40
12	General management	3.83	30	35
13	Size	4.00	25	25
14	Accounting	3.50	5	8
15	Insurance	5.00	5	0

- a Average value of ranking for all participants regarding the problem area as one of the five most important  
b Percentage of all participants regarding the problem area as one of the five most important  
c (5-a)b, where 5 = maximum of rating scale

#### **RELATIVE IMPORTANCE OF GENERAL PROBLEM AREAS FOR DIFFERENT BUSINESS CATEGORIES**

PD's were divided into 4 categories according to their location, the type of product they produce, their turnover and their net capital ratio's. This was done to link general problem areas with the mentioned business characteristics. Location were for example divided into 2 categories, with 13 respondents in the Southern and 27 in the Northern Free State. A high score is an indication of more serious problems, for example, regulations in the Northern Free State (a score of 107) is more serious than regulations in the Southern Free State (a score of 23). Information on turnover and the net capital ratio was received from 38 and 37 respondents respectively. Two respondents did not want to supply the information because they regarded it as sensitive in nature. The other respondent did not have the information.



## Location of business

Respondents in this category consist of 2 groups, namely the Northern Free State (27 respondents) and the Southern Free State (13 respondents). The Southern Free State is primarily an extensive grazing area while the Northern Free State is a relatively more intensive, mixed, livestock-cropping area. Table 2 indicates that regulations and the replacement of technology are a bigger problem in the Northern- than in the Southern Free State.

**Table 2: Relative importance of general problem areas for different business categories**

PROBLEM AREA		SCORE <sup>1</sup>		
LOCATION OF BUSINESS				
Problem area	Southern Free State (n=13)	Northern Free State (n=27)		
Regulations	0	85		
Technology	8	78		
Raw material	85	33		
TYPE OF PRODUCT				
Problem area	Milk (n=23)	Milk products (6)	Combinations (n=11)	
Economic climate	213	167	100	
Transport	65	0	64	
TURNOVER OF BUSINESS PER YEAR				
Problem area	< R100000 (n=10)	R100 000 - R 500 000 (n=14)	>R500 000 (n=14)	
Regulations	0	64	100	
Taxes and subsidies	60	43	21	
Technology	10	64	79	
NET CAPITAL RATIO				
Problem area	<2.00 (n=5)	2.00 - 4.00 (n=6)	>4.00 - (with debt) ( n=10)	no debt (n=16)
Finance	240	33	100	38
Economic climate	240	117	120	144
Information	0	50	60	75

1 See table 1.

## Type of products

Respondents in this category are divided into milk (23 respondents), milk products (6 respondents) and a combination of milk and milk products (11 respondents). Respondents handling only milk, experience much more problems with the



economic climate than respondents handling milk products or a combination of milk and milk products. Producers of milk products do not perceive transport as a big problem. The transportation of milk or a combination of milk and milk products is regarded as more problematic. Technology caused more problems for a combination of products than for milk or milk products because more equipment is necessary to handle both.

### **Turnover of business**

This category is divided into businesses with a turnover of less than R 100 000 (10 respondents), between R 100 000 and R 500 000 (14 respondents) and a turnover above R 500 000 (14 respondents). As the turnover increases regulations become more of a problem for businesses. Regulations are not a problem for dairies with a turnover of less than R 100 000. The importance of regulations do, however, decline and is perceived as less important in future than it is at present. Technology causes more problems for businesses with a higher turnover and replacement is a serious concern.

Taxes and subsidies cause more problems for businesses with a lower turnover than for businesses with a higher turnover. Of the total respondents, 55 percent of the businesses use chartered accountants and 18 percent accounting officers. In the case of businesses with a turnover of less than R 100 000 per year, 40 percent use chartered accountants and 40 percent accounting officers. Grants for small and medium manufacturing development programs for specific regions are provided by the Department of Regional and Land Affairs. Only 7.5 percent of the respondents were aware of this.

### **Net Capital Ratio**

The net capital ratio is the ratio between total (farming) assets and total (farming) liabilities (Net Capital Ratio = Assets/Liabilities). Respondents in the category net capital ratio are divided in 4 groups, namely: no debt (16 respondents), a net



capital ratio above 4 (10 respondents), a net capital ratio between 2.00 and 4.00 (6 respondents) and a net capital ratio of less than 2.00 (5 respondents). Businesses with a net capital ratio of less than 2.00 perceived the economic climate and financing as their largest problems. Information is not a problem for farmers with a net capital ratio of less than 2.00. The availability of information does however become more of a problem as the net capital ratio increases. This phenomenon is very important since it shows that respondents who stand to lose more of their own money are also the one's who would like to improve their information basis.

### **SPECIFIC BUSINESS PROBLEMS**

Participants were asked to rate the specific business problems in 4 categories: no problem (1), minor problems (2), considerable problems (3) or problems likely to put them out of business (4). Specific problems, which were most frequently regarded as serious (assigned a 3 or 4), were sorted according to an average. In cases where these averages were equal (for example number 8-11) in table 3, an average for every rating (1-4) was calculated. Only the specific problems where 25 percent or more respondents had a serious problem, was sorted.

Two of the problems in table 3 were not in the 5 most important general problem areas namely seasonality of raw materials (raw materials category) and time management (general management category).

### **Current situation**

Competition in current markets and regulations governing trade, were the most important problems (table 3). Respondents had serious problems with unfair competition, especially with not-registered dairies that do not comply to health regulations and do not pay any levies. The way in which they operate, leads to their lower operating cost. This causes a serious threat to the continuation of "legal" businesses. Price wars, especially between PD's caused serious problems (33 percent respondents). This contributed to a situation where a large number of



PD's entered and left the industry, as seen in the background information. This is in line with the conclusions of Gradwell and Nell, (1995).

The seasonality of production inputs is a serious problem in terms of quality, availability and price. Immense fluctuations in weather conditions contribute to these fluctuations. With regard to the 3 problems in the general category of personnel, namely work habits, alcohol abuse and suitable qualifications, the first two are basically only problematic during weekends. The economic climate in the country is a major concern to all respondents and it reflects their concern regarding their inability to increase domestic sales.

**Table 3: Areas regarded as specific problems (current situation)**

Rank	Specific business problem	General problem area	Average
1	Competition current markets	Competition	1.10
2	Regulations governing trade	Regulations	1.08
3	Price wars	Competition	1.03
4	Seasonality of raw materials	Raw materials	1.00
5	Work habits of employees	Personnel	0.96
6	Alcohol abuse by employees	Personnel	0.90
7	Qualified employees	Personnel	0.83
8	Time management	General management	0.75
9	Local economy	Economic climate	0.75
10	National economy	Economic climate	0.75
11	Increase of domestic sales	Marketing	0.75

1 Average of considerable problems (3) or problems likely to put them out of business (4).

### Future predictions

Although ranking of specific problems changed between present and future, more or less the same specific business problems were regarded as most important (compare table 3 and 4). Specific problems are within 8 general problem areas with 4 of these areas not included in the 5 most important general problem areas. Four specific problems were added for the future while time management were removed. A significant change occurred to labour unions that were not even listed in table 3 and were ranked number one for the future (table 4). Other new problems are transportation cost (all participants complained about high fuel prices), the replacement of equipment and the provincial economy. Respondents



expectations about the economic climate are very negative with the local economy (ranked 3<sup>rd</sup>), the national economy (ranked 5<sup>th</sup>) and provincial economy (ranked 13<sup>th</sup>). According to the respondents, competition will be less important in future. This is probably due to the experience gained over the last few years with the large number of PD's that deregistered in South Africa and the Free State.

**Table 4: Areas regarded as specific problems (future perception)**

Rank	Specific business problems	General problem area	Average
1	Labour unions	Personnel	1.15
2	Alcohol abuse by employees	Personnel	1.05
3	Local economy	Economic climate	1.00
4	Transport cost	Transport	0.95
5	National economy	Economic climate	0.95
6	Price wars	Competition	0.95
7	Seasonality of raw materials	Raw material	0.88
8	Qualified employees	Personnel	0.88
9	Regulations governing trade	Regulations	0.85
10	Work habits of employees	Personnel	0.83
11	Replacing equipment	Technology	0.80
12	Competition in current markets	Competition	0.78
13	Provincial economy	Economic climate	0.78
14	Increase of domestic sales	Marketing	0.75

1 Average of considerable problems (3) or problems likely to put them out of business (4).

## POSSIBLE SOLUTIONS

PD's of dairy products will have to pay attention to selection and recruitment of the correct type of worker required for a specific job, as well as training programmes for current personnel. Management will have to apply its attention to try to avoid problems such as strikes, bad working habits and alcohol abuse. Farmers will have to adapt to wages set by bilateral agreements, rather than by unilateral action. Market forces are no less important under collective bargaining than they are in the absence of unions, although their impact is filtered through a political process and only seen indirectly Van Schalkwyk, (1993). Because of this PD's will have to enhance their bargaining capabilities.

The intensive nature of dairies and producing-distributing necessitates, alternative (back-up) strategies to counter strikes, breakdowns etc. PD's should be familiar



with their market and the strategies of competitors. They should be able to apply basic marketing rules such as pricing, discounting and negotiating of shelf space. PD's should also be familiar with the market for his product(s). Bloemfontein, for example, has a very low consumption of dairy products during December holidays while Kroonstad and Parys show a different trend because of holiday resorts.

Although consumption of milk remains fairly constant throughout the year, peak periods occur, for example at weekends or after pay-days. The shelf life of milk is limited, which means that peak periods of consumption result in shortages of milk. Although milk products, such as cheese and yogurt, are more expensive, it has a longer shelf life. It is easier to keep these products longer without any loss. It is easier to supply retailers and consumers with a combination of products during such periods. More cheese or yogurt manufacturing can take place during periods of lower consumption of milk and less manufacturing during peak periods of consumption of milk. This horizontal integration will lessen the impact of a weak economy and will reduce the risk of the business.

Production should be as near as possible to a market with good quality fodder, to avoid excessive transportation cost. If production takes place in remote areas, far from suitable markets, higher value and less perishable products, such as cheese, should be manufactured. If seasonality of raw materials is a problem, own production, contracts and hedging can help to minimize it.

PD's entering the market financing themselves with debt, will have higher risks. The risk of distributing perishable product is already high. The fact that 40 percent PD's have no debt and 65 percent PD's have a favourable net capital ratio give them a comparative advantage and adds to the risk of new entrants. Taxes and subsidies cause more problems for businesses with a lower turnover than for businesses with a higher turnover. These businesses should do tax planning in cooperation with knowledgeable people in this regard for example chartered accountants. This is in line with recommendations by Groenewald (1993) of



controlling risk impact by assets and debt structure, credit reserves and tax management.

With regard to technology and especially the replacement of it, producers should take depreciation into account and save accordingly. The volatility in the dairy industry and the number of PD's expanding their businesses should urge PD's to look for good quality second hand equipment.

"Future strategy should build and strength facilitation and rectification of weaknesses, elimination or accommodation of threats, and most of all pursuance of opportunity" Groenewald, (1996).

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#### **Acknowledgement of financial support**

Agrelek      Opinions expressed and conclusions arrived at, are those of the author and are not necessarily to be attributed to Agrelek.