

Competitiveness of the SA primary dairy industry, 2017

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Contents

1. Introduction	2
2. Country comparison.....	2
2.1 Average size of dairy farms	2
2.2 International milk production	3
3 Farm comparison	3
3.1 Cost of milk production.....	3
3.2 Detailed analysis of selected typical farms	6

1. Introduction

This report is based on the research done within the International Farm Comparison Network in 2017. The comparison of farms is based on the actual income and cost figures for the 2017 year. The International Farm Comparison Network is a network of dairy experts in many countries. The IFCN mission is to create a better understanding of milk production worldwide. Scientists from 105 countries cooperated in the work of IFCN in 2017. It analysed the production and cost of 159 typical dairy farms in 53 countries and published the results in the 2017 Report.

The IFCN is managed by a group of dedicated dairy scientists at the IFCN Dairy Research Centre in Kiel, Germany. The Milk Producers' organisation has been involved in the work of IFCN since 1998. South Africa became a full member of the IFCN in 2008. South Africa's participation in the IFCN work is partially sponsored by Milk SA.

2. Country comparison

The work of IFCN is based on two different comparisons namely a country comparison where total country statistics are used and a farm comparison where typical dairy farms from the different countries are compared. One hundred and four countries featured in the 2017 country analysis.

2.1 Average size of dairy farms

The global, average dairy farmer owns between 2 and 3 dairy cows. Larger herds are found in Saudi Arabia, South Africa, New Zealand, Australia and a few other countries. South Africa's average herd size of 378 cows is one of the largest in the world

The total number of dairy cows for selected countries are shown in Table 1.

Table 1: Average number of cows in herd, selected countries 2017

Country	Average number of cows in herd
Saudi Arabia	7 074
New Zealand	423
South Africa*	378
Australia	280
Czech Republic	216
USA	204
Denmark	189
Israel	179
Argentina	168
United Kingdom	143

Source: IFCN 2018: *MPO survey 2017

2.2 International milk production

IFCN estimates total global milk production in 2017 at 867 million tonnes, with cow and buffalo milk accounting for more than 96% of the total. India is the largest milk producing country, producing more than 190 million tonnes of milk. Indian production grew by 4,5% from 2016, largely as a result of fast growth of buffalo milk production. The top five milk producing countries are India, the USA, Pakistan, China, and Brazil. Milk output in Pakistan decreased by 0,1% in 2017. Chinese production decreased for the second year in a row, caused largely by a very low milk price. Production in Brazil recovered partially in 2017. Milk production and milk deliveries for major producing countries are shown in table 2. South Africa figures are added for comparison.

Table 2: Milk production and milk deliveries, major dairy producing countries and South Africa, 2017

Rank	Country	Milk produced Mil. Ton	Milk delivered to dairies Mil. Ton
1	India	186.4	30,6
2	USA	94.5	94,1
3	Pakistan	45.8	1,4
4	Brazil	35.1	24,6
5	Germany	33.4	31,9
6	China	32.9	27,2
7	France	24.9	24,5
8	New Zealand	24.4	24,4
9	Turkey	17.4	8,4
10	Russian Federation	16.9	16,9
38	South Africa	3,5	3,4

Source: IFCN 2018, MPO, 2018

3 Farm comparison

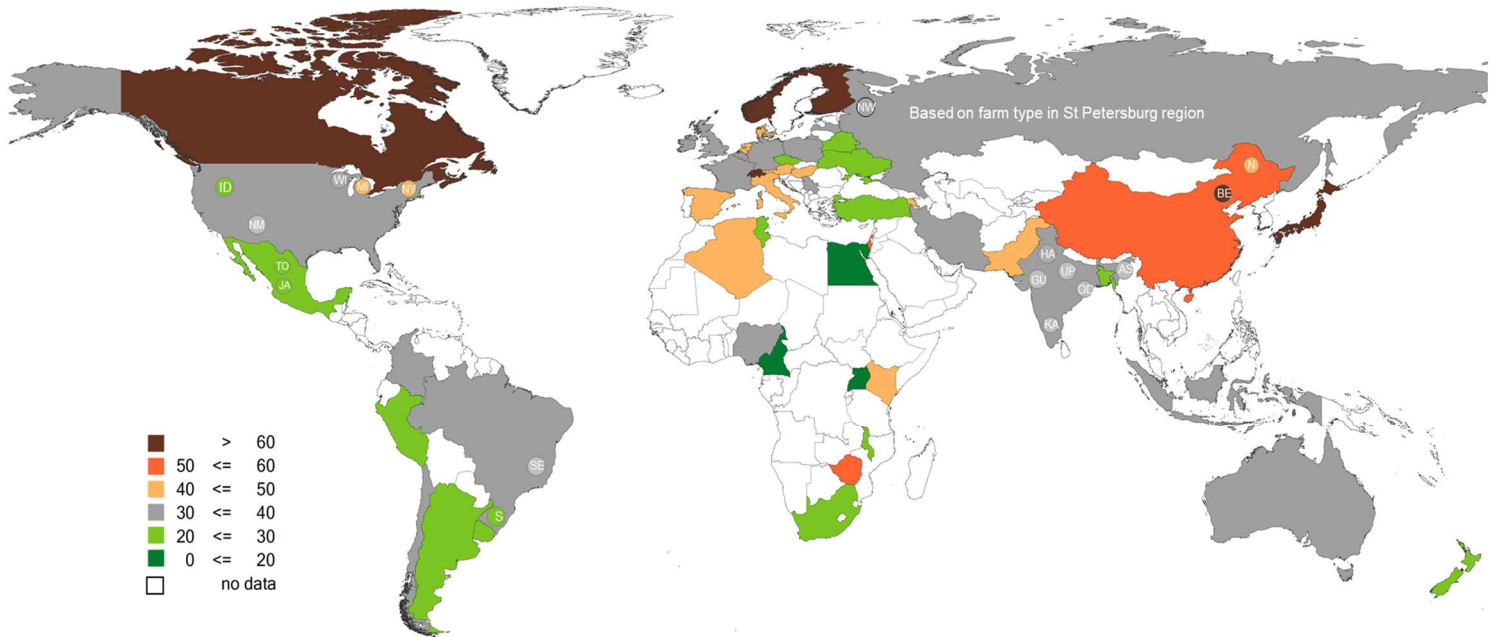
One hundred and forty-three different typical farms from 52 countries were compared in the farm comparison. Three South African typical farms namely a 230 cow grazing plus concentrate, a 520 cow grazing farm, and a 630 cow intensive total mixed ration farm were included in the farm comparison. These three typical farms are representative of farms that produce an estimated 90% of milk produced in South Africa and are thus typical of the South African primary sector.

3.1 Cost of milk production

Cost of milk production varies widely between countries. Lower production cost occurs in countries where farmers feed little extra concentrates and forage, where the owners' opportunity cost of labour is low, and where only a small percentage of milk reaches the market. The average production cost for the analysed farms was on a level of US\$ 35,5/100 kg energy corrected milk

(SCM)¹. Based on the average exchange rate of R 13,31/ US\$ it converts to a South African cost of R 4,73/litre on SA average composition. The average cost level increased slightly from 2016 to 2017. Typical farms in Western Europe, and North America produced milk at average cost levels significantly above the global average level. Countries in Africa, South America, Asia and Oceania managed to produce milk at or below the average level. Costs of milk production in different countries are shown in Figure 1.

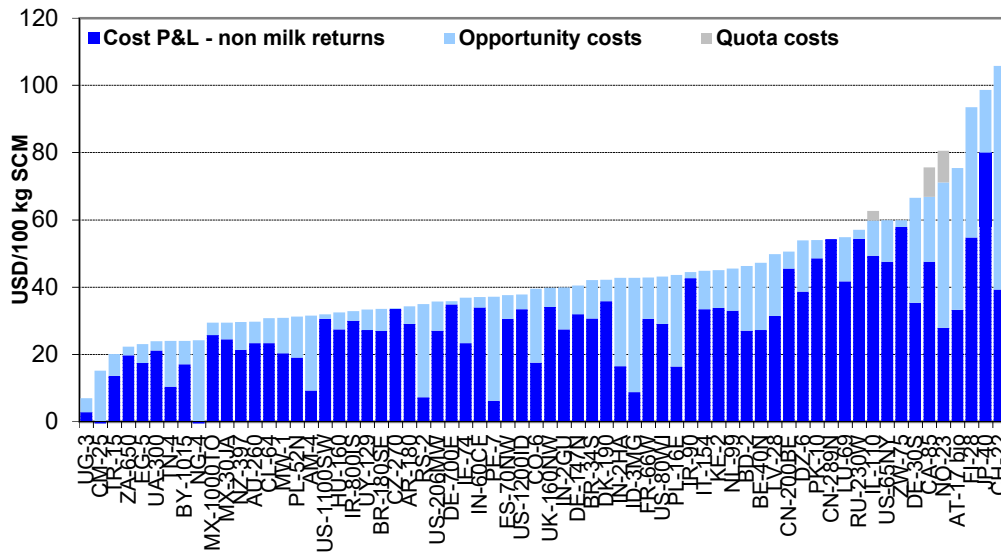
Figure 1: Average cost of milk production (US\$/ 100 kg solids corrected milk) per country 2017



The following Figure 2 shows the cost of milk production for larger sized farms in different countries in 2015. South Africa's 630 cow total mixed ration herds had lower production cost than the larger farms in the USA.

¹ SCM – solids corrected milk (4% butterfat, 3,3% protein)

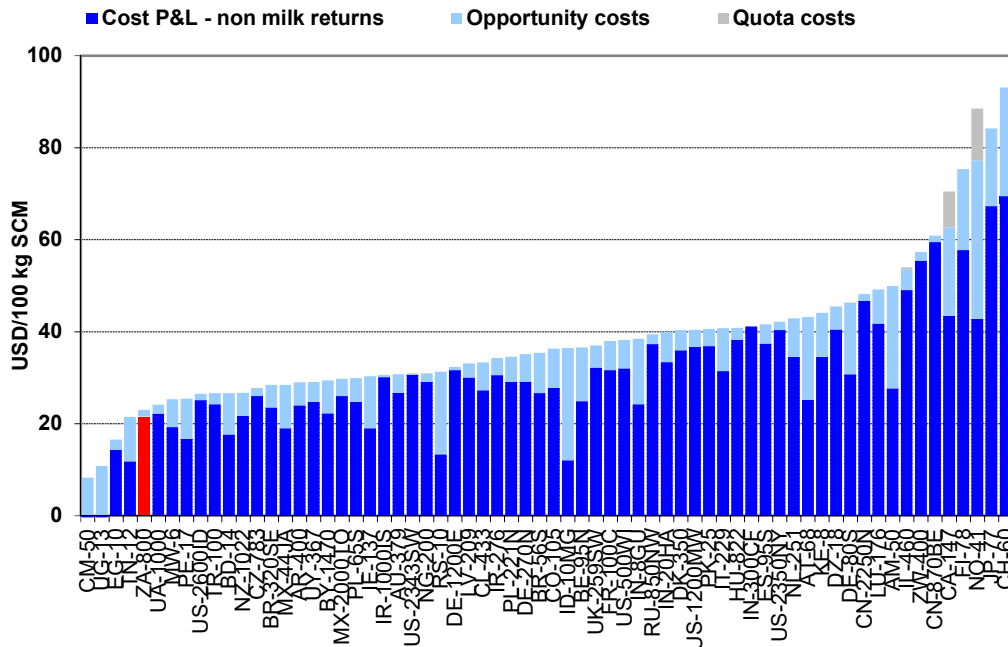
Figure 2: Cost of milk production, average farms per country, 2017



Source: IFCN, 2017 Cost P & L = Total production cost, Quota cost = cost to obtain milk quota, Opportunity cost = cost of using own inputs Code = International country code plus size of dairy herd, ZA-650 = 650 cow South African herd.

The following Figure 3 compares total cost of milk production on the average typical farms in different countries in 2016. South Africa's typical pasture farms produce milk at lower cost levels than pasture farms in other countries.

Figure 3: Cost of milk production, larger farms per country, 2017

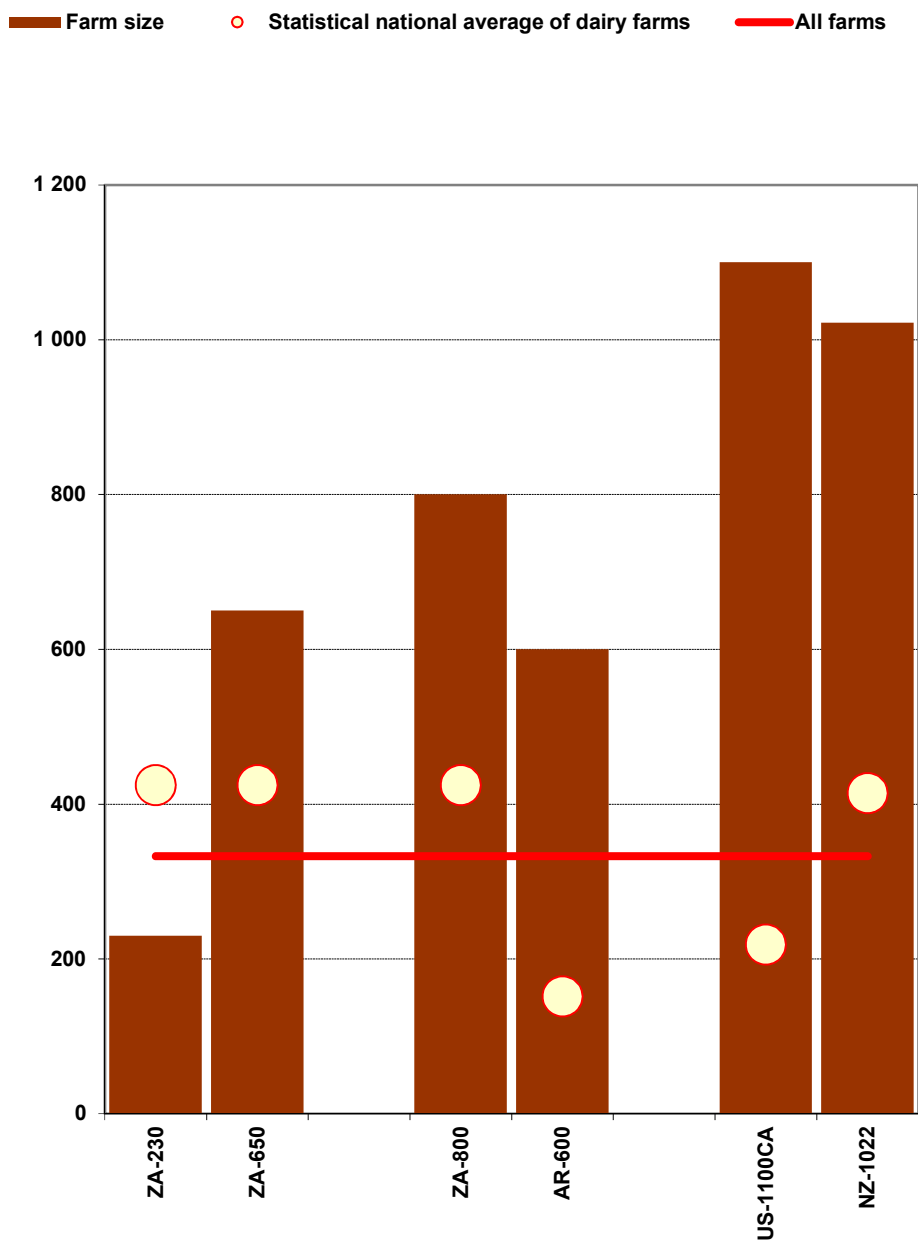


Source: IFCN, 2017 Cost P & L = Total production cost, Quota cost = cost to obtain milk quota, Opportunity cost = cost of using own inputs Code = International country code plus size of dairy herd, ZA-650 = 650 cow South African herd.

3.2 Detailed analysis of selected typical farms

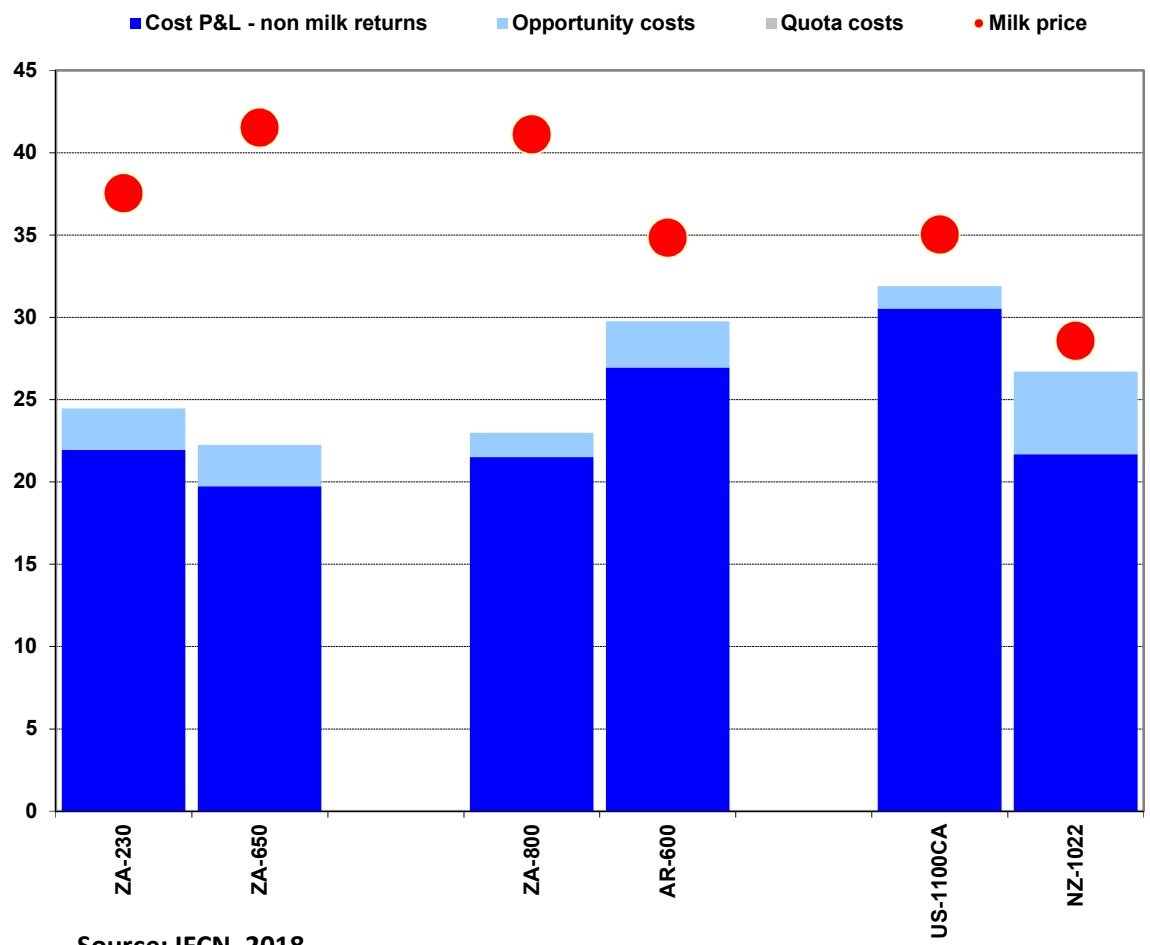
In this section the performance of the three typical South African farms are compared with similar farms from Argentina, New Zealand and the USA. The following figures 4 - 6 indicates the comparable variables for these farms. In addition to the three SA farms (ZA-230, ZA-650 and ZA800) a 600-cow Argentinian (pasture plus concentrate), a 1 100-cow US farm (Total mixed ration) and a 1022-cow New Zealand pasture farm were used.

Figure 4: Farm size of typical dairy farms, selected countries, 2017



Source: IFCN, 2018

Figure 5: Milk production cost US\$ per 100 kg SCM for typical farms, selected countries, 2017



Source: IFCN, 2018

Cost P & L = Total production cost, Quota cost = cost to obtain milk quota, Opportunity cost = cost of using own inputs Code = International country code plus size of dairy herd, ZA-650 = 650 cow South African herd.

4. Conclusion

South African average dairy farms are larger than dairy farms in most other countries. South African milk producers produce milk at cost levels comparable to those in New Zealand. Production cost for the South African pasture-based dairy farms are equal to production cost on New Zealand dairy farms. New Zealand farms have a higher opportunity cost as they use more expensive own labour than we do. South African total mixed ration dairy farms are highly cost competitive if compared to farms in the United States.