

The international competitiveness of the South African primary dairy
sector, 2015



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1. Introduction

This report is based on the research done within the International Farm Comparison Network in 2015. The comparison of farms is based on the actual income and cost figures for the 2014 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 95 countries cooperated in the work of IFCN in 2014. It analysed the production and cost of 170 typical dairy farms in 55 countries and published the results in the 2014 Report.

The IFCN is managed by a group of dedicated dairy scientists at the IFCN Dairy Research Centre in Kiel in 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 countries featured in the 2015 country analysis.

2.1 Size of dairy farms

The average dairy farm internationally owns 2,8 cows. Larger dairy farms are found in Saudi Arabia, New Zealand, South Africa, Argentina, the USA and Canada. The 2014 South African average number of cows in herd of 375 is the third largest in the world. Average herd sizes (cows in herd) for selected countries are shown in Table 1.

Table 1: Average herd size, selected countries 2014

Country	Average cows in herd
Saudi Arabia	6 556
South Africa*	427
New Zealand	410
Australia	241
Czech Republic	195
USA	181
Denmark	166
Israel	161
Argentina	157
United Kingdom	133
Uruguay	100
Canada	80

Source IFCN 2015: * MPO survey 2014

2.2 International milk production

IFCN estimates total world milk production, including buffalo, sheep and goat milk, during 2014 at 815 million tonnes. About 95% of total milk is represented by cow and buffalo milk. The largest milk producers in the world are India, the USA, Pakistan, Brazil and Germany. Annual world milk production increased in most major milk producing countries in 2014 compared to 2013. In Brazil production increased by 6,0%, India 5,7%, Germany 2,8%, the USA 2,4% and Pakistan 2,0%. Milk production also increased strongly in New Zealand 7,3%, France 5,3% and China 5,5%. A decrease was observed in Argentina -2,0% and Russia -0,6%. Asia produces 33% of world milk,

closely followed by the European Union with 21%. Table 2 shows milk production and milk deliveries to market for the top 10 milk producing countries. South Africa is added for comparison.

Table 2: Milk production for the top 10 milk producing countries and South Africa, 2014

	Country	Milk produced Mil.Ton	Milk to market Mil.Ton	% of total production to market
1	India	157,4	26,6	16,9
2	USA	89,2	88,7	99,5
3	Brazil	36,9	25,1	68,1
4	Germany	33,0	32,0	96,9
5	China	31,6	29,4	93,1
6	Russian Federation	28,9	18,4	63,8
7	France	25,5	25,0	98,2
8	New Zealand	24,9	24,9	100,0
9	United Kingdom	15,1	14,8	97,9
10	Netherlands	13,4	13,2	98,4
	South Africa	3,1	3,0	96,0*

* Delivered to formal market

3. Farm comparison

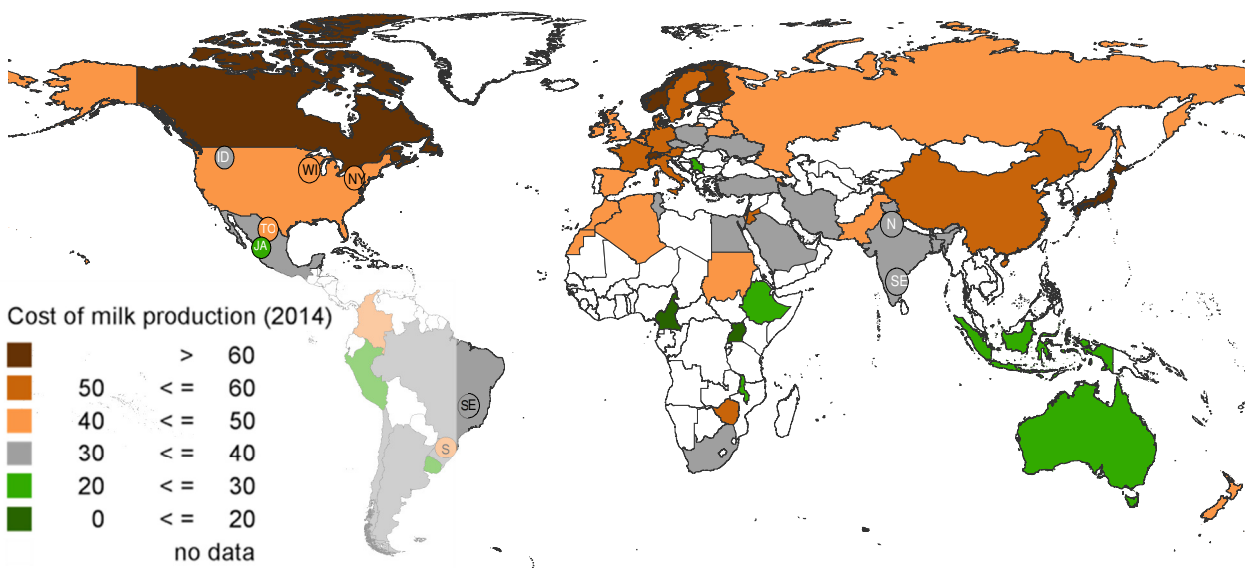
One hundred and seventy different typical farms from 55 countries were compared in the farm comparison. Three South African typical farms namely a 230 cow mixed farm¹, a 520 cow grazing farm and a 630 cow intensive total mixed ration farm were included in the farm comparison. These three typical farms are representative of farms that produce an estimated 80% of milk produced in South Africa and are thus typical of the South African primary sector.

¹ Mixed farm is a farm that farms dairy cattle in addition to other enterprises.

3.1 Cost of milk production

Cost of milk production varies widely between countries. Lower production cost occurs in countries where very little extra concentrates and forage are fed, where the owners' opportunity cost of labour is low and where the bulk of milk is not sold to the market. The average production cost for the analysed farms was on a level of US\$ 46,2/100 kg energy corrected milk (ECM)². Based on the average exchange rate of R 10,84/ US\$ it converts to a South African cost of R 4,65 on SA average composition. The average cost level decreased slightly from 2013 to 2014. 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. The average cost levels for typical farms in Western Europe, North America and the Mid-east were at R6,32, R 5,58 and R5,05 per litre, significantly above the global average. Costs of milk production in different countries are shown in Figure 1.

Figure 1: Cost of milk production per country, 2014

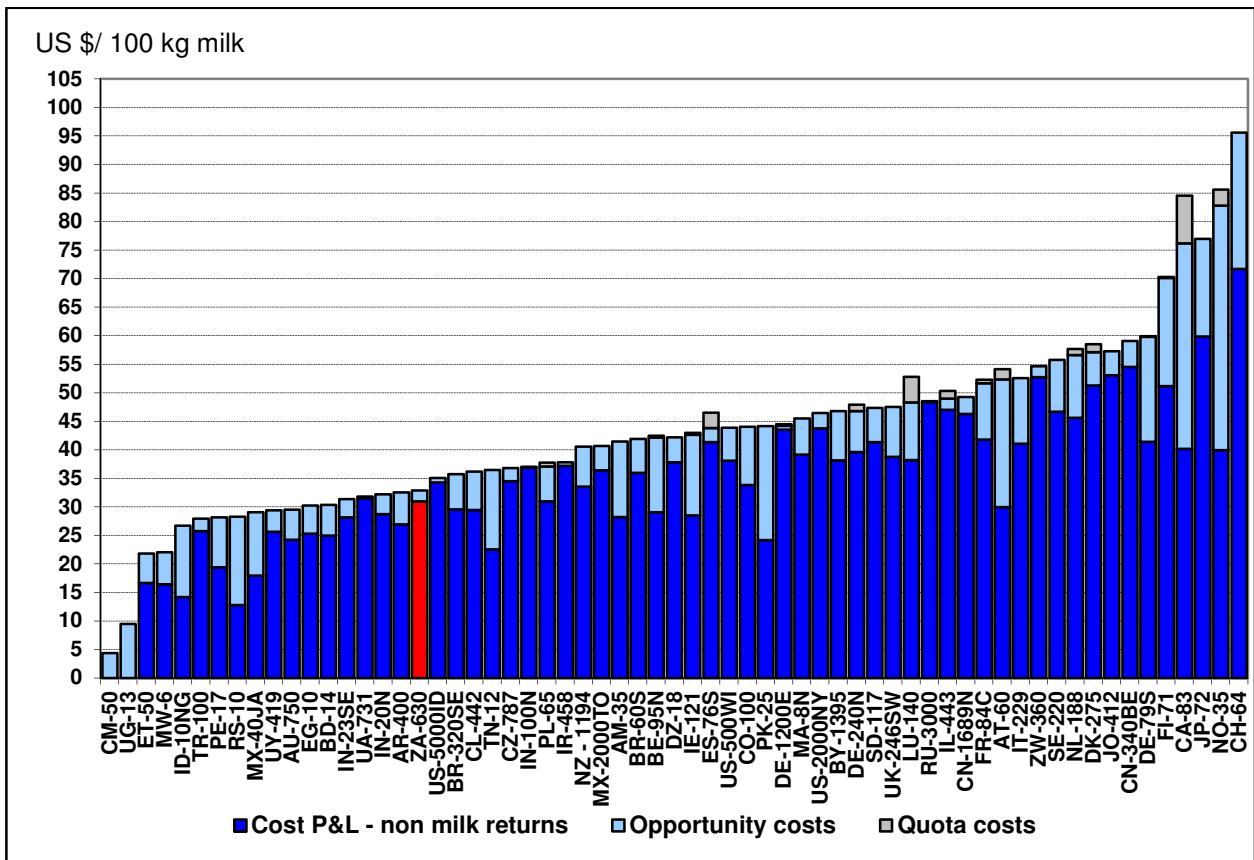


Source IFCN, 2015

² Energy corrected milk = standardised milk with 4% fat and 3,3% protein

The following Figure 2 shows the cost of milk production for larger sized farms in different countries in 2014. South Africa's 630 cow total mixed ration herds had higher production cost than the same type of farms in the US, mainly as a result of import parity based grain prices.

Figure 2: Cost of milk production, larger farms per country, 2014



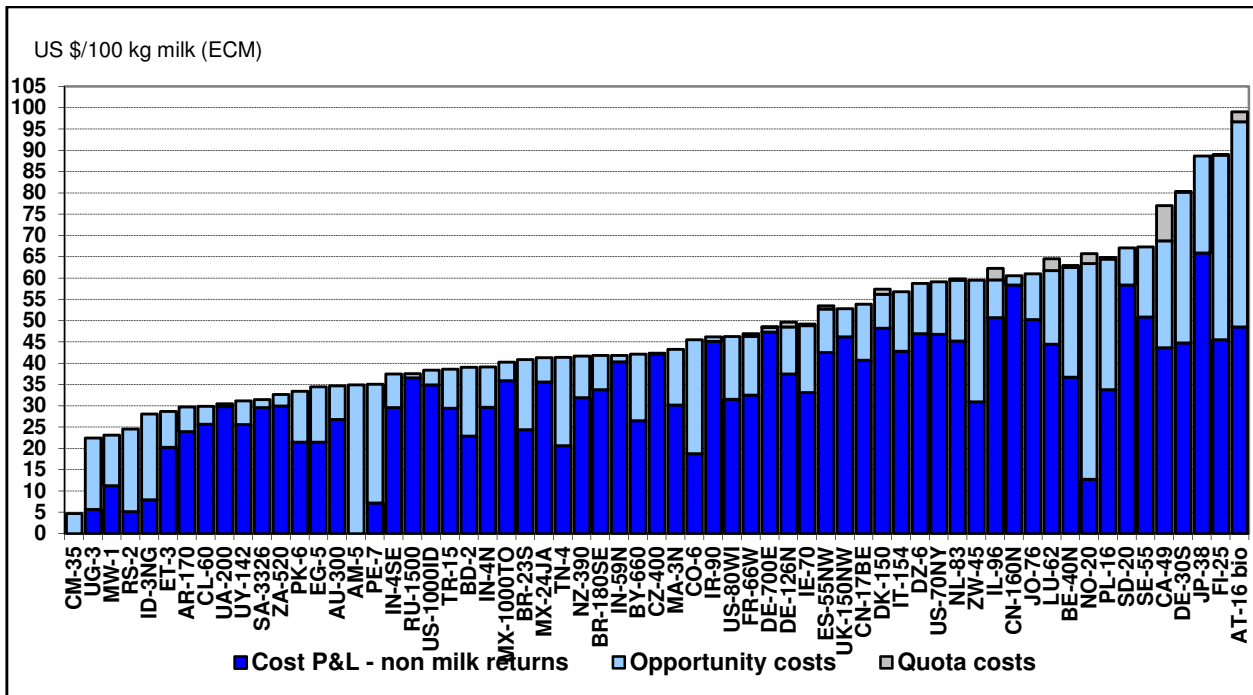
Source: IFCN, 2015

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-630 = 630 cow South African herd.

The following Figure 3 compares total cost of milk production on the average typical farms in different countries in 2014. South Africa's typical pasture farms produce milk at comparable cost levels to pasture farms in other countries.

Figure 3: Cost of milk production for average* farms, 2014



Source: IFCN 2015

Cost to P&L = total production cost, quota cost = cost of obtaining production quota, opportunity cost = cost of own inputs

Code = International country code plus size of dairy herd, ZA-630 = 630 cow South African herd.

3.2 Detailed analysis of selected 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-520 and ZA-630) a 400-cow Argentinian (pasture plus concentrate), a 500-cow US farm (Total mixed ration) and a 388-cow New Zealand pasture farm was used.

Figure 3: Farm size (number of cows in herd) comparison

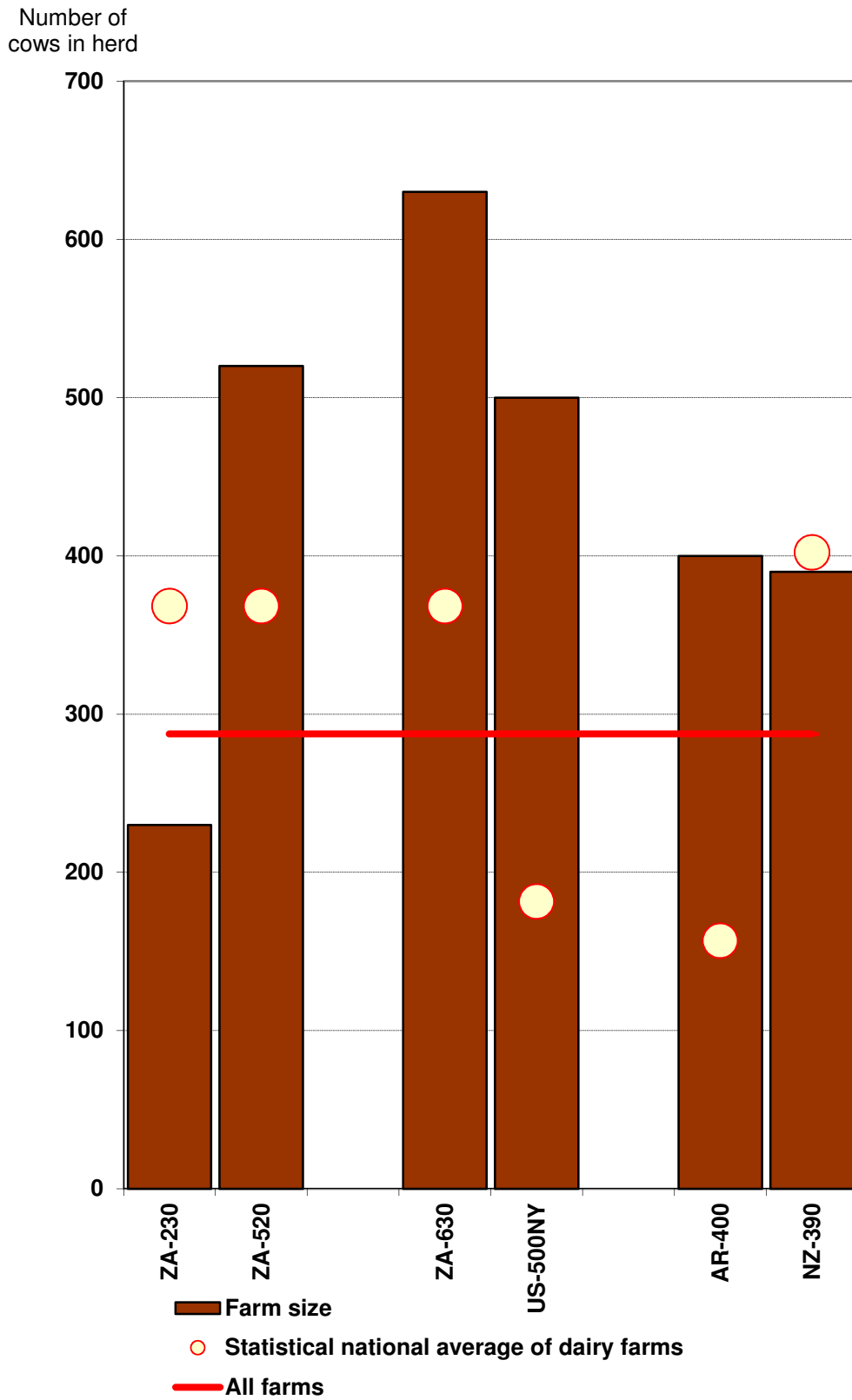


Figure 4: Milk yield (1 000 kg of energy corrected milk per year) comparison

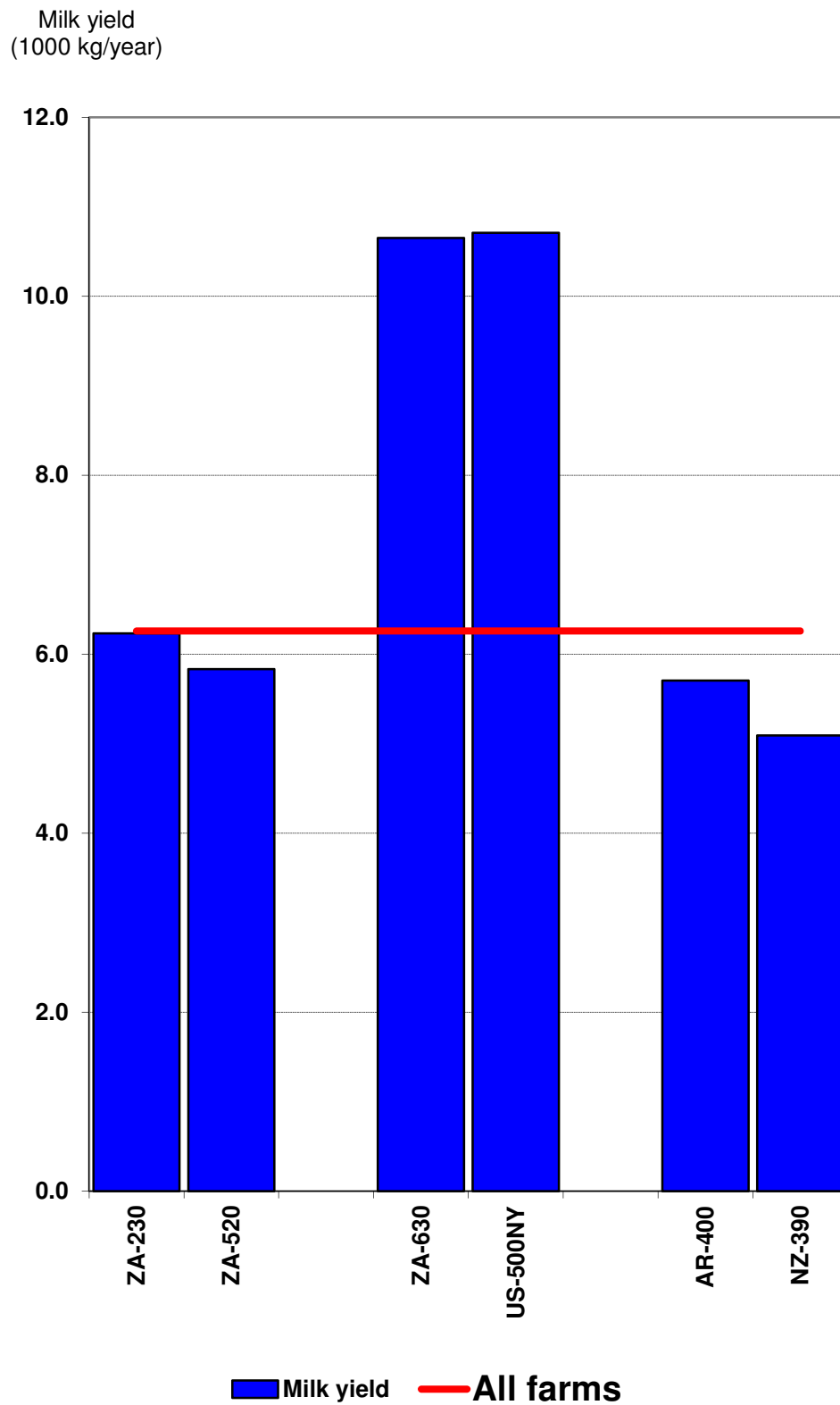
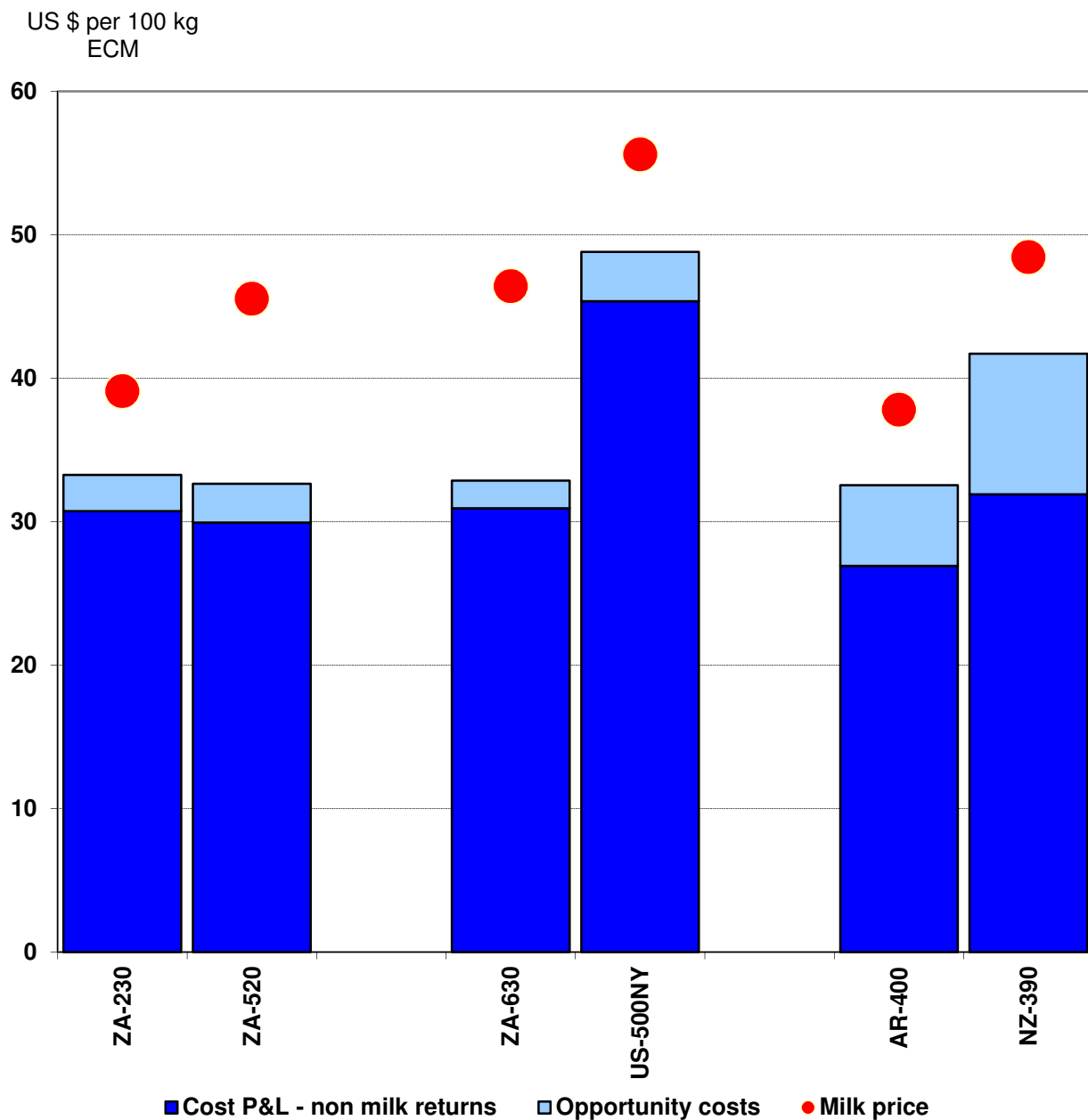


Figure 5: Production cost (US\$ per 100 kg energy corrected milk) comparison



Source: IFCN 2015

Cost to P&L = total production cost, quota cost = cost of obtaining production quota, opportunity cost = cost of own inputs

Summary

The average South African dairy farm is larger than average dairy farms in many other countries. Milk yield and cost of production is comparable to dairy farms in developed countries. However production cost is higher than in South America and New Zealand. Argentinian dairy farmers pay less for grain as there is an export tariff on grain while South African farmers buy grain at import parity prices. Both the large TMR and large pasture farm in South Africa can compete with similar farms in other countries.

