



# **Farm Business Survey**

**2013/2014**

## **Dairy Farming in England**



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**Farm Business Survey  
2013/14**

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## **Foreword to the First Series**

This report is one of a series being produced based on the results of the Farm Business Survey (FBS) for England. The annual Farm Business Survey is the most comprehensive and independent survey of farm incomes and provides a definitive data source on the economic and physical performance of farm businesses in England. It is conducted by a Consortium comprising the Universities of Cambridge, Newcastle upon Tyne, Nottingham and Reading, and Askham Bryan, Duchy and Imperial Colleges. The Consortium is led by the University of Nottingham and its members work in partnership, using uniform and standard practices in reporting on their findings to ensure consistent data quality, accuracy and validity. The Survey is financed by Defra and the Consortium values greatly the input of their staff.

These detailed reports for various farm types and enterprises are in addition to the comprehensive Farm Business Survey Reports for Government Office Regions published at [www.farmbusinesssurvey.co.uk](http://www.farmbusinesssurvey.co.uk). The Consortium is seeking by these additional reports to ensure that timely and relevant information is available to farmers, consultants, advisers and other organisations and individuals interested in farming and land management. The analysis and publication of these reports uses data from farm businesses across England, with an individual member of the Consortium undertaking the research analysis. In line with the ethos of the Consortium, these reports present results in such a way as to ensure a significant element of continuity and consistency from one report to the other, whilst also ensuring that each report captures the contemporary issues of relevance to the sector of agriculture in England to which it relates.

We believe these reports will make a valuable and useful contribution to the farming industry and we commend them to you.

**Prof. Martin Seabrook**

(Chief Executive of the Consortium)

Spring 2007

## Foreword to the Ninth Series

As 2015 gets into swing the agricultural and horticultural sectors are met with both certainty and uncertainty at the same time. With respect to the revised Common Agricultural Policy (CAP) certainty, to some extent, now exists where it was previously lacking. For the most part, the process of implementation of the revised CAP is now available for farmers and their advisors to work with ahead of ensuring they submit their claims under the new Basic Payment Scheme (BPS) by the 15 May 2015 deadline. While this provides an element of certainty it also represents an evolution of policy that places increased emphasis on the management of the environment to attract the full BPS funding available per farm. Greening and Ecological Focus Areas (EFAs) represent new concepts and definitions to the industry, however, the rules of engagement are, by and large, now known.

However, while certainty exists with respect to policy, the wider agricultural and general economy continues to exhibit considerable uncertainty. The prices of many products, notably combinable crops and milk have been on a (largely downward) rollercoaster over the previous 12 months, while input costs driven in part by the falling cost of energy are exhibiting some considerable 'stickiness'. The wider political economy within Europe will also have an impact on the fortunes of agriculture and horticulture in the UK. As the European Central Bank has initiated a programme of Quantitative Easing (QE), the likely direction of travel for the Euro against Sterling will be downward – making UK exports more expensive to our European trading neighbours, decreasing the value of the BPS funding to UK farmers, but conversely reducing input costs from Europe. Within the UK, the economic recovery continues to hold on set against mixed signals, with many commentators now moving out any predictions of an interest rate rise to 2016 (at the earliest) as inflationary pressures have dissipated.

Against this wider background Rural Business Research (RBR) are proud to produce the ninth series of reports that focus on the economics of agriculture and horticulture. Our data are drawn from the 2013/14 financial year and hence relate to the 2013 harvest / production calendar. In the foreword to the eight series I noted the climatically atypical 2012/13 production year; the 2013 harvest was not immune to the knock-on impacts from '12/13 and the outcomes presented in these reports must be considered against this backdrop. In particular the impact on Cereal farms which have witnessed a fall in Farm Business Income (FBI) of 27% from 2012/13 to 2013/14 reflects a combination of lower yields and an increased area of spring cropping. Similar falls in FBI were witnessed in General Cropping (-24%), Less Favoured Area Grazing Livestock (-22%) and Mixed farms (-20%). Conversely the dairy sector witnessed a strong improvement in FBI during 2013/14 (+67%), flowing largely from increased milk prices - albeit that these price improvements have now gone into reverse. Horticulture witnessed an improved FBI of 31%, while Specialist Pigs and Specialist Poultry also saw increased income levels, flowing largely from improvements in output.

While certainty and uncertainty both exist, we continue to observe large variation between performance within and across farm types. Businesses seeking to position themselves for the future will need to closely examine the costs of production and benchmark their performance to identify areas for continued business success. RBR hopes that this ninth series of reports provides the basis for such analysis. I particularly thank all the FBS research programme co-operators in providing us with the opportunity to collect, analyse and present these data for the benefit of the industry as a whole.

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Chief Executive Officer, Rural Business Research  
January 2015  
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## **Acknowledgements**

Rural Business Research thanks sincerely all the farmers who have voluntarily provided records and information on which the annual Farm Business Survey, and this report, is based.

The basic information on which this report is based was collected on behalf of, and largely financed by, the Department for Environment, Food and Rural Affairs and is Crown Copyright.

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## Summary

### The Dairying Sector

- During 2013/14, dairy farming in the UK witnessed an increase in milk prices with a yearly average price of 32.58 pence per litre (ppl) compared to 28.35 ppl in 2012/13
- As noted in last year's report, a similar pattern has occurred whereby for all farms, key inputs costs, namely feeds, energy and veterinary costs all increased on the levels of the previous year, whilst fertiliser costs once again showed a decrease
- Annual milk production in the UK for 2013/14 increased by 706 million litres (+5.4%) in sharp contrast to 2012/13 during which annual milk production fell by 520 million litres (-3.9%). Poor grass growing conditions during the spring and summer of 2012 contributed significantly to the previous year's fall in production, whilst the favourable weather of 2013/14 with regards to forage production and its subsequent high quality, impacted positively on the levels of 2013/14 milk production
- Average milk yield increased by 5.3% to just over 7,700 litres per cow (lpc) in contrast to the fall reported for the previous year of 3.6% to just above 7,300 lpc. This represents a return to the upward trend for average milk yield of the previous four years. The national herd size stabilised by remaining at around 1,800,000 head of cows
- In December 2014, there were approximately 470 fewer milk producers in England and Wales than a year earlier; a fall of 4.5%. This highlights an increase in the number of producers leaving the industry compared to the 200 producers that left the industry during 2013

### Farm level results

- Farm Business Survey data from 2013/14 shows that the average Farm Business Income (FBI) from dairying was £584/ha, which at the average farm size equates to an FBI of approximately £87,600, representing an increase of 58% from 2012/13
- Average FBI on all conventional dairy farms in 2013/14 was £590/ha (£89,000 per farm), whilst on organic farms average FBI was £447/ha (£63,500 per farm). These results represent an increase in FBI of 60% for conventional farms and of 7% for organic farms
- Average FBI on lowland dairy farms was £567/ha (an increase from £366/ha in 2012/13). For LFA dairy farms, average FBI was £722/ha compared to £380/ha in 2012/13
- Management and Investment Income (MII) across all dairy farms increased by £241/ha to £289/ha in 2013/14. This equates to an average MII of £43,350 per farm
- The reliance on family labour typically found on the smaller dairy farms, i.e. less than 60 hectares, resulted in a lower MII than was achieved for the two larger size groups presented. The smaller size group achieved a MII of -£122/ha, compared to £319/ha and £289/ha for the 60 to 120 hectares and greater than 120 hectares groups, respectively
- Profitability analysis reveals that FBI for the upper quartile of lowland dairy farms was £1,036/ha compared to £38/ha for the lower quartile. Milk output for the upper quartile group increased by 8% in 2013/14, whilst for the lower quartile group, milk output remained stable, falling by just 0.2%. The upper quartile group has the largest average farm size at 169ha, compared to 137ha for the lower quartile
- LFA dairy farms within the largest size group operated less intensive systems; achieving the lowest total farm output whilst incurring the lowest variable and fixed costs. This has been a regular feature of LFA income results during the nine years that this report has



been published. The heavy reliance on family labour resulted in the smallest size group (less than 60 hectares) recording the lowest MII at £87/ha. The respective approximate FBIs for the less than 60 hectares, the 60 to 120 hectares and the greater than 120 hectares size groups are £37,900, £73,700 and £130,000

- An analysis of FBI by LFA quartile groupings reveals that the upper quartile achieved a milk output that was 42% greater than that achieved by the lower quartile. At the average farm sizes for these groups, the lower and upper quartiles achieved FBI returns of approximately £16,400 and £196,400, respectively

### **Dairy Enterprise Results**

- Enterprise-level analysis shows that for conventional and organic dairy farms, respective gross margins in 2013/14 were £1,260/cow and £1,247/cow
- For lowland dairy herds, due to a significant increase in average milk yield and an increase in milk price of 3.5 ppl, output from milk increased by £384/cow. For LFA herds, average milk price increased by 3.8 ppl and when coupled with a 6% increase in yield, resulted in an increased output from milk of £415/cow. Respective gross margins for lowland and LFA herds were £1,272/cow (£1991/cow, 2012/13) and £1,191/cow (£867/cow, 2012/13)
- For lowland herds, a continuation of a trend from previous years can be seen, i.e. as herd size increases, so do, milk price, milk output/cow, total dairy output/cow and total gross margin/cow. Gross margins per cow for the less than 80 cows, the 80 to 130 cows and the greater than 130 cows groups were £1,126, £1,242 and £1,285, respectively. These margins per cow equate to gross margins per litre for the less than 80 cows, the 80 to 130 cows and the greater than 130 cows groups of 16.8ppl, 16.6ppl and 15.8ppl respectively. i.e. the smallest sized group achieved the highest gross margin per litre
- Lowland dairy farms in the upper quartile (by gross margin performance) produced on average 1,770 lpc more than those in the lower quartile. Average milk prices for the upper quartile exceeded those of the lower quartile by 1.3ppl which represents a small increase in the quartile differences from 2012/13
- Feed concentrate to milk conversion rates of 8.6ppl and 11.1ppl were recorded for the gross margin upper and lower quartile lowland farms respectively (8.1ppl and 10.2ppl in 2012/13), whilst gross margin per litre results were 18.6ppl (upper quartile) and 12.9ppl (lower quartile) compared to 15.2ppl and 9.3ppl in 2012/13
- Gross margin performance quartile analysis of LFA dairy farms reveals that the better performers have larger herds and achieve substantially higher yields (+1255 lpc) and receive higher milk prices (+1.9ppl); leading to a wide disparity of more than £800 between the two quartile's relative gross margin per cow performances
- The higher milk price achieved by organic herds, coupled with their lower concentrate feed costs, resulted in organic herds achieving a margin over concentrate performance that exceeded that of conventional herds by 3.9ppl., compared to the previous year's excess of 4.2ppl

## Chapter 1: The Dairying Sector

### 1.1: Introduction

The 2013/14 milk year witnessed average farmgate milk prices that were consistently above 30.0 pence per litre (ppl), peaking at just over 34.0 ppl in November 2013. Whilst this price increase was welcomed by milk producers there was some disquiet amongst them concerning the failure of liquid milk prices to keep up with price increases recorded for other dairy commodities. AMPE (Actual Milk Price Equivalent) is an industry recognized indicator of changes in market prices for butter and skimmed milk powder and it compares trends and illustrates how effectively price changes are fed down to the milk supply chain. For example, in July 2013, DairyCo reported figures that showed the average farmgate milk price rose by 10.7% between May 2012 and May 2013, whilst AMPE rose by 65% and producers view this difference as an undervaluing of the milk they produce. From its November 2013 peak, the milk price began to decline, reaching a milk year end price of 33.7ppl and this downward trend was set to continue into the 2014/15 year.

The average milk price for 2013/14 increased by a significant 4.23 ppl compared to 2012/13 but key input prices such as feed and energy costs also increased. However, the scale of the milk price increase easily offset input price increases which resulted in substantially improved income figures for 2013/14.

Other important factors that contributed to the final incomes and margins reported in this report are:

- the delayed onset of spring in 2013 required many farmers to purchase expensive fodder and / or concentrate and straight feeds as a result of running out of own conserved forage stocks.
- dairy farmers entered the 2013/14 winter with good stocks of forage crops that were generally of good quality and contributed to lower feed concentrates usage.
- lower purchased feed costs were available for the 2013/14 winter period as a result of a lower priced grain market.
- an increase in average yield per cow which was influenced by the availability of good quality forage and improved body condition.

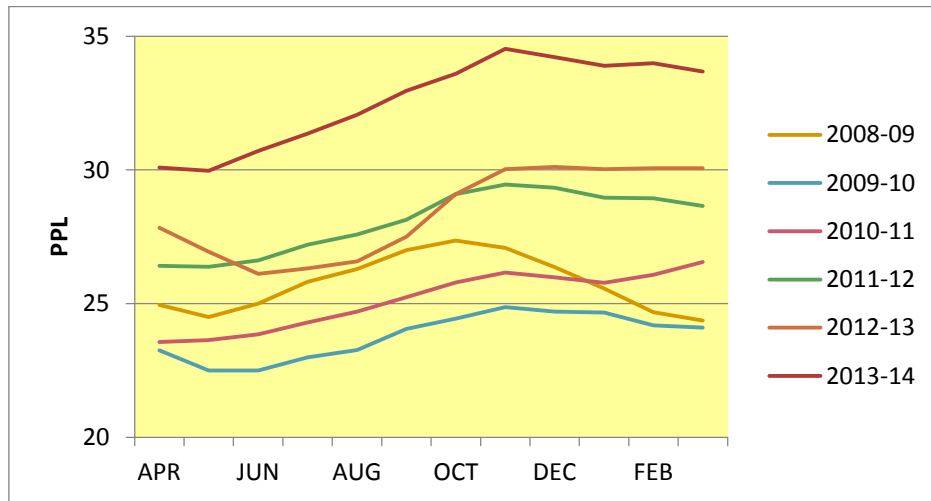
Drawing upon information from a range of published sources together with analysis of data from the Farm Business Survey 2013/14, *Dairy Farming in England* provides a contemporary analysis of the performance of dairy farms, and dairy production, in England for the 2013/14 financial year. The purpose of this introductory section of the report is to set out the market environment and key factors affecting the sector during this financial year. Specifically, this section of the report gives an overview of the UK dairying sector, focusing on:

- farmgate milk prices
- input prices
- annual milk production
- UK dairy herd and average milk yield
- producer numbers

### 1.2: Farmgate Milk Prices

Figure 1.1 shows the UK monthly average ex-farmgate milk price (including seasonality; net of delivery charges) for milk years 2008/09 to 2013/14. The average price during 2013/14 increased significantly to 32.58ppl compared with 28.35 ppl in 2012/13; 28.03 ppl in 2011/12; 25.11 ppl in 2010/11; 23.59 ppl in 2009/10 and 25.72 ppl in 2008/09. November 2013 saw the highest average milk price at 34.55ppl, with a gradual decline to 33.71ppl by the end of the 2013/14 year but still almost 12% higher than the 30.09ppl seen at the start of the 2013/14 year.

**Figure 1.1: Average Farmgate Milk Prices (UK)**



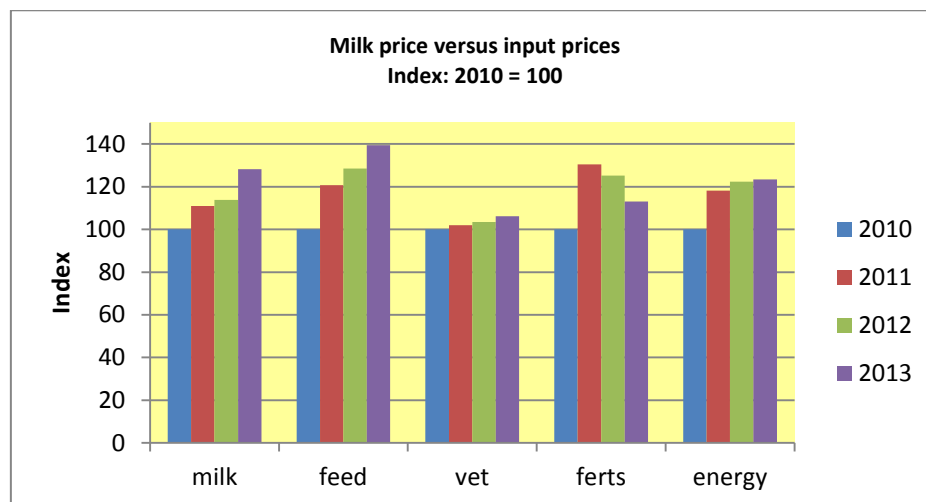
Source: Defra (2015a); Milk Price Surveys

### 1.3: Input Prices

Figure 1.2 shows the trends in farmgate milk prices and the prices of some key dairying inputs from 2010 to 2013, using the year 2010 as the base year (index 2010 = 100). Note that the price changes presented here are overall averages for UK farmers and not necessarily those of dairy farmers. Although there was a significant increase in milk price in 2013 (+12.7%), the cost of feed also increased (+8.5%) on 2012 levels. Veterinary services and medicines, as well as energy inputs also recorded increases in 2013, whilst fertiliser prices continued the downward trend seen in 2011 and 2012.

A comparison of input and output costs for dairy farms can be found later in this report.

**Figure 1.2: Milk and Input Prices (UK)**

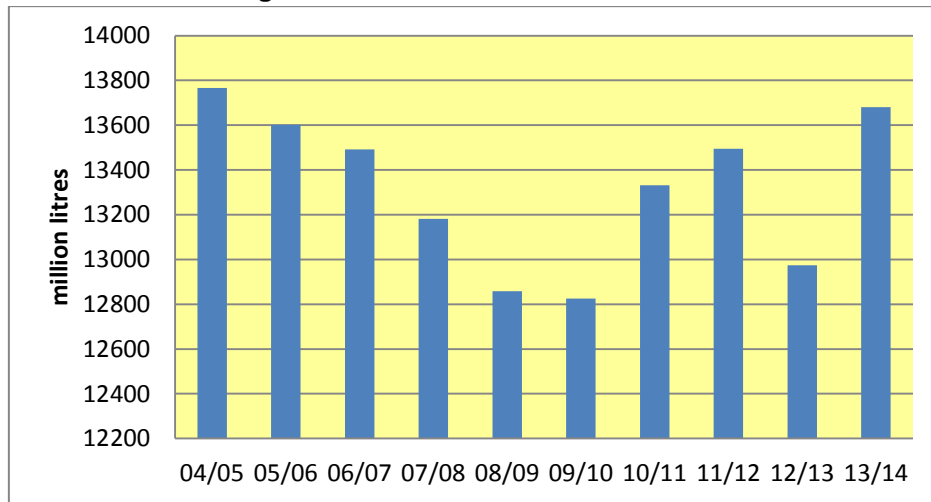


Source: Defra (2015b); Agriculture in the UK 2013

#### 1.4: Annual Milk Production

Figure 1.3 shows annual milk production in the UK (defined as wholesale deliveries) for the years 2004/5 to 2013/14. Following the drop in production in 2012/13, milk production increased significantly in 2013/14, continuing the previous trend of 2010/11 and 2011/12. Annual production increased by 706 million litres (+5%) to 13680 million litres in 2013/14, indicating that the drop in production in 2012/13 was a temporary response to poor environmental conditions.

**Figure 1.3: UK Annual Milk Production**

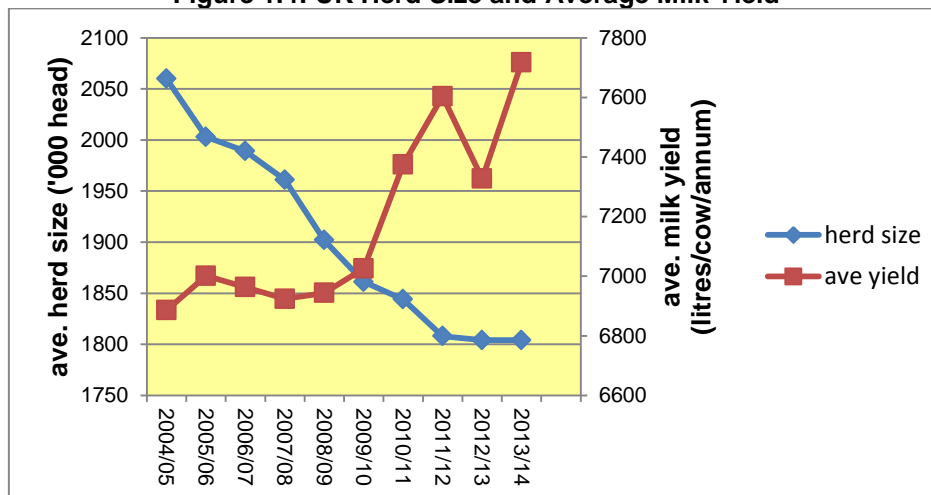


Source: MDC Datum (2015a)

#### 1.5: UK Dairy Herd and Average Milk Yield

Figure 1.4 shows that in 2013/14 the average milk yield per cow notably increased, which was a positive response to the decline seen in 2012/13. Average yields of around 7,720 litres per cow in 2013/14 represent a 390 litres per cow (+5.3%) increase on the 2012/13 average yield. Factors that contributed towards this recovery in yield include better quality of forage and therefore improved body condition of cows and the impetus of better milk prices for producers to increase production. Figure 1.4 illustrates that during 2013/14 the national herd size remained static at around 1,800,000 cows.

**Figure 1.4: UK Herd Size and Average Milk Yield**

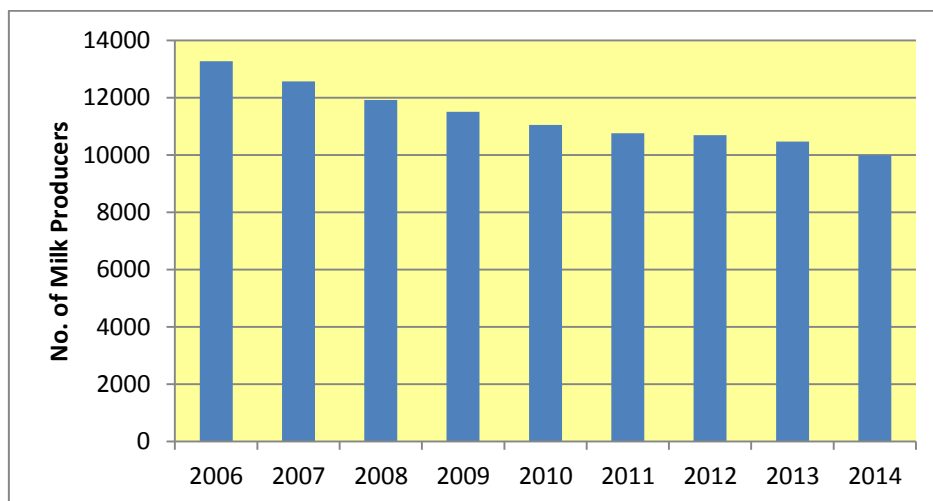


Source: MDC Datum (2015b)

## 1.6: Producer Numbers (England & Wales)

Figure 1.5 shows a further decline in the number of milk producers in England and Wales in 2014, following the general trend of the last few years, although 2014 saw a more significant reduction. In December 2014 there were 474 fewer producers than in December 2013, representing just over 4.5% of dairy farmers leaving the industry, the biggest exodus since 2008. Between 2006 and 2014, there were 3,283 fewer milk producers, representing a decrease of 24.74%, almost a quarter of the producers in England and Wales.

**Figure 1.5: Number of Milk Producers (England & Wales)**



Source: MDC Datum (2015c)

## 1.7: Structure of Report

The above sections have described the market environment in which the dairy sector has been operating during the 2013/14 financial year, whilst making reference to the economic and market conditions over recent years. The remaining chapters of this report are as follows:

- Chapter 2 details the data source and data analysis undertaken
- Chapter 3 provides the results of the data analysis

## Chapter 2: Data and Methodology

### 2.1: Data

The data used in this report are derived from the Farm Business Survey returns for England for those farms classed as Dairy Farms<sup>1</sup> and relate to the outputs, inputs and returns to each farm, together with total farm area and farm size data. Table 2.1 below details the number of observations for the per hectare farm results, in each category by farm type (All, Lowland Conventional, Less Favoured Area (LFA) Conventional and Organic), by EU super region (North, East, West), by farm size categories and by lower and upper performance quartiles. Table 2.2 details the number of observations for the enterprise level results, in each category by farm type (All, Lowland Conventional, Less Favoured Area (LFA) Conventional and Organic), by EU super region (North, East, West), by herd size categories and by lower and upper performance quartiles.

For the 2013/14 edition of this report there has been a change in the measurement of Standard Output (SO) from using figures derived for the period 2005-2009 (2007) as the basis for classification to revised figures to the period 2008 to 2012 (2010). The SO coefficients for 2010 are generally higher than those for 2007, due to higher prices in the later period. As a result of this amendment there is a slight change in the numbers of farms classified as Dairying, as well as a change in the weight allocated to each farm in the dataset. The previous year's dataset (2012/13) has been recalculated and consequently is slightly different from the 2012/13 data published in last year's report.

**Table 2.1: Observations by Category: Farm-Level Data 2013/14**

Category		All	Lowland Conventional	LFA Conventional	Fully Organic <sup>2</sup>
Number of farms		303	203	64	36
EU Super	North	-	53	38	-
	East	-	45	10	-
	West	-	105	16	-
Farm Size	<60 hectares	-	23	16	-
	60-120	-	81	21	-
	>120	-	99	27	-
Performance by ratio					
	<i>Lower</i>	-	63	15	-
output:costs	<i>Upper</i>	-	46	16	-

Ins. data = Insufficient data available (<10 observations)

1. Holdings on which dairy cows account for more than two thirds of the total Standard Output for the farm. A holding is classified as a Less Favoured Area (LFA) holding if 50 percent or more of its total area is in the LFA and a lowland holding if less than 50 per cent of its total area is in the LFA.

2. In-conversion organic farms are included in the conventional groups.

**Table 2.2: Observations by Category: Enterprise-Level Data 2013/14**

Category		All	Lowland Conventional	LFA Conventional	Fully Organic <sup>3</sup>
Number of farms		283	190	59	34
EU Super Region	North	-	49	37	-
	East	-	42	(Ins. data)	-
	West	-	99	13	-
Farm Size	<80 cows	-	40	14	-
	80-130 cows	-	44	27	-
	>130 cows	-	106	18	-
<i>Performance</i>	<i>Lower quartile</i>	-	61	18	-
<i>(by GM/cow)</i>	<i>Upper quartile</i>	-	39	12	-

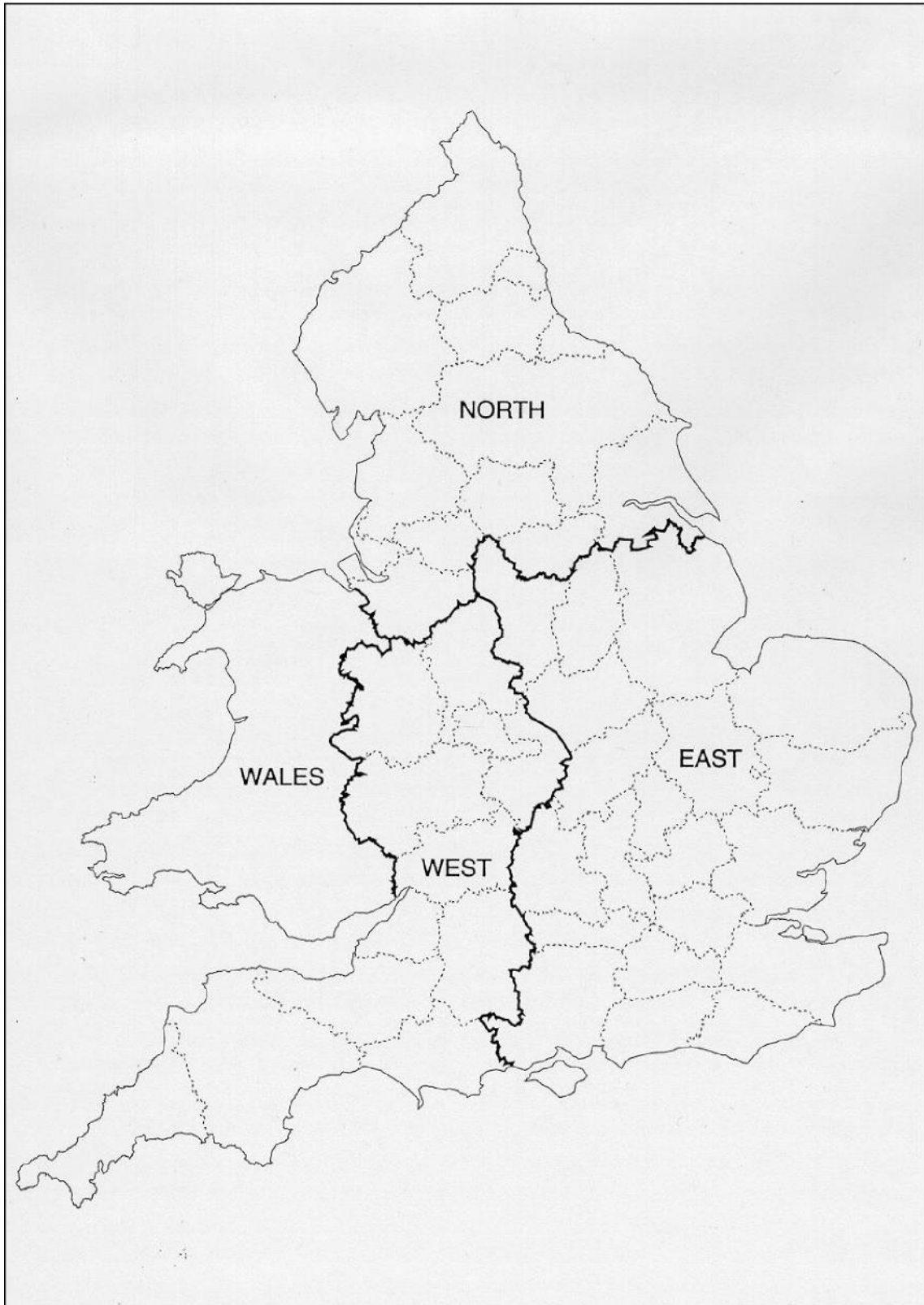
Ins. data = Insufficient data available (<10 observations).

1 Holdings on which dairy cows account for more than two thirds of the total Standard Output for the farm. A holding is classified as a Less Favoured Area (LFA) holding if 50 percent or more of its total area is in the LFA and a lowland holding if less than 50 per cent of its total area is in the LFA.

3 In-conversion organic farms are included in the conventional groups.

## 2.2: Methodology

The farm and enterprise level data were weighted using the Farm Business Survey weights and the subsequent results presented on a per hectare (farm level analysis) or per cow (gross margin analysis) basis. Descriptive results with the mean (average) for each category are reported as detailed in Chapter 3.



**Figure 2.1: The EU Super Regions of England and Wales**



## Chapter 3: Results

### 3.1: All Farms – including Conventional and Organic

The results of the outputs, inputs, and margins from dairy farms in England on a per hectare (ha)<sup>4</sup> basis for 2012/13 and 2013/14 are presented in Table 3.1. This table shows the results for all dairy farms, together with results for conventional and organic farms detailed separately.

The results for all farms show that for 2013/14, Farm Business Income (FBI) was £584 per hectare, which at the average farm size provides an average FBI of £87,600; an increase of 58% on the 2012/13 figure. In contrast, the previous years' results had shown a decrease of 41% between 2011/12 and 2012/13. However, the current year's rise does not return the FBI measure to the £608/ha recorded in 2011/12 (McHoul et al., 2013).

Management and Investment Income (MII) of £289/ha for 2013/14 returned to the levels recorded for 2011/12 and equates to an increase in MII of over 500% compared to 2012/13. MII is the economic return after accounting for the value of the farmer's and spouse's manual labour and a nominal rental value for owned land. In 2013/14, the average MII on dairy farms in England was £43,350 per farm, compared to the 2012/13 result of £6,816.

The data shows a 12% increase in total farm output; increasing from £3,317/ha to £3,721/ha. Milk output rose by 17% to £2,816/ha compared to £2,410/ha in 2012/13.

Total variable costs increased by 7% from £1,572/ha in 2012/13 to £1,678/ha in 2013/14 which continues the pattern of rising costs as recorded in previous years' reports. In 2011/12 and 2012/13 variable costs rose by 8% and 17% respectively (McHoul et al., 2013). The most notable variable cost categories which show an increase on the previous year are purchased concentrates (+10%), coarse fodder (+31%) and seed costs (+20%). However, the cost of home-grown concentrates decreased by 19%.

Fixed costs increased by 4% to £1,556/ha compared to £1,491/ha in 2012/13. Without exception, all the fixed cost categories show increases on the previous year's levels; labour (1%), contract (14%), machinery depreciation (4%), other machinery (6%), miscellaneous (1%) and rent and rental equivalent (6%).

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<sup>4</sup> The area used is the total farm area including woodland, roads, water, area not used for agriculture

**Table 3.1: Outputs, Inputs and Margins for All Farms, Conventional and Organic**

	All		Conventional		Organic	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	310	303	272	267	38	36
Area (ha)	142	150	142	151	136	142
	£/ha		£/ha		£/ha	
<b>Output</b>						
Milk	2410	2816	2436	2853	1796	2065
Calf	122	126	123	128	91	88
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	1	1	2	1	0	0
Herd Replacement	-255	-250	-259	-254	-161	-192
<b>Total Dairy Output</b>	<b>2278</b>	<b>2692</b>	<b>2301</b>	<b>2727</b>	<b>1725</b>	<b>1962</b>
Other Livestock	535	524	543	531	342	361
Other	505	504	507	507	460	419
<b>Total Farm Output</b>	<b>3317</b>	<b>3721</b>	<b>3350</b>	<b>3766</b>	<b>2528</b>	<b>2742</b>
<b>Variable Costs</b>						
Home-grown Concentrates	72	58	71	58	88	77
Purchased Concentrates	839	926	852	942	517	580
Coarse Fodder	70	92	71	94	49	69
Other Livestock Concentrates	11	9	11	9	2	1
Vet and Medicine	102	104	104	105	57	65
Other Livestock Costs	248	256	249	257	232	234
Seed	35	42	35	42	24	37
Fertiliser	137	137	142	142	6	19
Crop Protection	37	32	38	34	2	2
Other Crop Costs	22	22	22	22	11	12
<b>Total Variable Costs</b>	<b>1572</b>	<b>1678</b>	<b>1597</b>	<b>1705</b>	<b>988</b>	<b>1096</b>
<b>Fixed Costs</b>						
Labour	377	381	381	384	301	313
Contract	150	171	151	173	123	123
Machinery Depreciation	189	197	191	199	140	151
Other Machinery	211	223	213	225	150	165
Miscellaneous	283	286	285	289	235	241
Rent and Rental Equivalent	281	298	283	300	245	264
<b>Total Fixed Costs</b>	<b>1491</b>	<b>1556</b>	<b>1503</b>	<b>1570</b>	<b>1194</b>	<b>1257</b>
<b>Net Farm Income</b>	<b>254</b>	<b>486</b>	<b>250</b>	<b>490</b>	<b>345</b>	<b>390</b>
Farmer / Spouse Labour	206	197	206	197	201	205
<b>Management and Investment Income (MII)</b>	<b>48</b>	<b>289</b>	<b>44</b>	<b>294</b>	<b>144</b>	<b>185</b>
<b>Farm Business Income FBI)</b>	<b>370</b>	<b>584</b>	<b>368</b>	<b>590</b>	<b>416</b>	<b>447</b>

### 3.2: Comparison of Conventional and Organic Farms

Table 3.1 also shows the performance of conventional and organic dairy farms.

In 2013/14 conventional farm's FBI rose by 60% from £368/ha to £590/ha, whilst for organic farms, FBI rose by 7% to £447/ha. On a per farm basis, conventional farm FBI in 2013/14 equated to £89,090 compared to organic farm FBI of £63,474, in contrast to the previous year whereby conventional farm FBI was £52,256 and organic farm FBI was £56,576.

Conventional farm's total farm output increased by 12% from £3,350/ha to £3,766/ha; organic total farm output increased by 8.5%, from £2,528/ha to £2,742/ha.

On conventional farms, milk output rose by 17% from £2,436/ha to £2,853/ha. On organic farms, milk output increased by 15% from £1,796/ha to £2,065/ha.

Variable costs increased by 7% from £1,597/ha to £1,705/ha on conventional farms compared to an increase of 11% from £988/ha to £1,096/ha on organic farms.

Fixed costs increased by around 5% on both conventional and organic farms resulting in an increase from £1,503/ha to £1,570/ha on conventional farms compared to an increase from £1,194/ha to £1,257 on organic farms.

***From this part of the report onwards when referring to data on a per hectare basis, unless otherwise stated, organic farm results are not included in the data presented.***

### 3.3: Comparison of Lowland and Less Favoured Area (LFA) farms

Table 3.2 shows the FBI performance of lowland and LFA dairy farms.

The average farm area of lowland farms increased by approximately 8ha to 156ha, whilst for LFA farms the average farm area increased by approximately 7ha to 125ha.

In 2012/13, lowland dairy farms achieved, on average, a total farm output of £489/ha greater than the LFA group. In contrast, the 2013/14 figure narrowed to £340/ha. Total farm output increased by 11% on lowland farms; however total farm output increased by just over 18% on the LFA farms. Although the lowland group achieved a higher total output, it also incurred greater variable and fixed costs.

Total variable costs and total fixed costs for lowland farms were respectively £111/ha and £342/ha greater than for the LFA group.

Despite the higher total output achieved by the lowland group, its average FBI was £567/ha in contrast to £722/ha for the LFA group. These figures represent an increase in FBI return for lowland farms of £201/ha (+55%), and for LFA farms of £342/ha (+90%). At the average farm size, these results equate to an average FBI of around £88,450 per farm for lowland farms and £90,250 per farm for LFA farms.

Taking into account values for farmer's and spouse's labour and imputed rents for owned land, the respective MII for lowland and LFA farms are approximately £44,300 and £43,750 per farm, respectively. It is interesting to note that in terms of FBI and MII, LFA farms have achieved levels higher than those recorded in 2011/12; however, conventional farms have not managed to return to those levels. That is, FBI recorded in 2011/12 for lowland farms was £619/ha compared to £567/ha in 2013/14, yet for the LFA group the FBI in 2011/12 was £635/ha compared to £722/ha for 2013/14 (McHoul et al., 2013).

**Table 3.2: Outputs, Inputs and Margins: Lowland and LFA Farms**

	Lowland		LFA	
	12/13	13/14	12/13	13/14
Number of farms	208	203	64	64
Area (ha)	148	156	118	125
	£/ha		£/ha	
<b>Output</b>				
Milk	2473	2874	2218	2728
Calf	120	125	141	142
Lease Quota (net)	0	0	0	0
Other Dairy	2	1	0	0
Herd Replacement	-259	-254	-261	-254
Total Dairy Output	<b>2336</b>	<b>2746</b>	<b>2098</b>	<b>2617</b>
Other Livestock	542	531	545	534
Other	544	538	289	325
<b>Total Farm Output</b>	<b>3422</b>	<b>3815</b>	<b>2933</b>	<b>3475</b>
<b>Variable Costs</b>				
Home-grown Concentrates	76	59	45	50
Purchased Concentrates	849	941	870	944
Coarse Fodder	72	93	65	97
Other Livestock Concentrates	13	10	0	0
Vet and Medicine	105	106	99	100
Other Livestock Costs	252	259	235	246
Seed	40	47	10	15
Fertiliser	145	144	127	132
Crop Protection	43	38	9	9
Other Crop Costs	23	23	16	16
<b>Total Variable Costs</b>	<b>1618</b>	<b>1721</b>	<b>1476</b>	<b>1610</b>
<b>Fixed Costs</b>				
Labour	397	400	284	291
Contract	159	182	104	121
Machinery Depreciation	194	201	177	184
Other Machinery	219	233	179	183
Miscellaneous	290	295	257	255
Rent and Rental Equivalent	295	309	210	244
<b>Total Fixed Costs</b>	<b>1554</b>	<b>1620</b>	<b>1211</b>	<b>1278</b>
<b>Net Farm Income</b>	<b>251</b>	<b>474</b>	<b>245</b>	<b>588</b>
Farmer / Spouse Labour	196	190	262	238
<b>Management and Investment Income (MII)</b>	<b>55</b>	<b>284</b>	<b>-17</b>	<b>350</b>
<b>Farm Business Income (FBI)</b>	<b>366</b>	<b>567</b>	<b>380</b>	<b>722</b>

### 3.4: Lowland: Influence of Farm Size

Table 3.3 presents the results of lowland dairy farms according to the three size groupings (**less than 60 hectares = small; 60 to 120 hectares = medium; greater than 120 hectares = large**).

Analysis of the three farm size groups, shows that the medium size group recorded the highest milk output (£3,579/ha) and total farm output (£4,408/ha) and also the highest variable costs (£2,017/ha) and fixed costs (£1,720/ha)

The small size farms group achieved a MII of minus £122/ha, compared to the medium and large size groups which achieved a MII of £319/ha and £289/ha respectively. The key factor is the great reliance on farmer and spouse labour recorded on farms in the small size group, whereby the farmer and spouse labour is valued at £674/ha. This figure contrasts sharply with the two other groups which show respective contributions of £351/ha and £128/ha for the medium and large size groups.

Analysis of the three groups by FBI performance, reveals that the large size group recorded the lowest FBI of £511/ha in comparison to the small size group's FBI of £650/ha and the medium size group's FBI of £759/ha.

The range of FBI across the three size groups is noteworthy, with the small size group achieving an average FBI per farm of £31,200 compared to that of the medium size group and the large size group which achieved £67,551 and £112,931, respectively. These figures represent an FBI increase of 87%, 43% and 60% on the 2012/13 year for the small, medium and large size groups respectively.

**Table 3.3: Outputs, Inputs and Margins: Lowland by Farm Size**

<b>Lowland</b>	< 60 ha		60 – 120 ha		>120 ha	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	28	23	78	81	102	99
Area (ha)	46	48	87	89	212	221
	£/ha		£/ha		£/ha	
<b>Output</b>						
Milk	2721	3205	3059	3579	2296	2666
Calf	177	176	182	185	100	107
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	9	25	1	1	2	0
Herd Replacement	-313	-302	-346	-333	-232	-230
<b>Total Dairy Output</b>	<b>2593</b>	<b>3104</b>	<b>2895</b>	<b>3432</b>	<b>2166</b>	<b>2543</b>
Other Livestock	630	637	663	621	504	502
Other	331	332	342	354	611	596
<b>Total Farm Output</b>	<b>3554</b>	<b>4073</b>	<b>3901</b>	<b>4408</b>	<b>3281</b>	<b>3641</b>
<b>Variable Costs</b>						
Home-grown Concentrates	43	39	55	42	83	64
Purchased Concentrates	944	1032	1034	1157	792	878
Coarse Fodder	104	131	101	128	62	82
Other Livestock Concentrates	9	2	1	1	17	13
Vet and Medicine	125	119	122	120	99	102
Other Livestock Costs	332	297	322	334	228	237
Seed	23	22	32	36	43	51
Fertiliser	177	186	145	155	144	139
Crop Protection	11	7	22	19	51	44
Other Crop Costs	34	39	27	25	22	22
<b>Total Variable Costs</b>	<b>1801</b>	<b>1875</b>	<b>1862</b>	<b>2017</b>	<b>1540</b>	<b>1633</b>
<b>Fixed Costs</b>						
Labour	204	227	360	371	417	414
Contract	156	159	191	201	150	178
Machinery Depreciation	236	246	227	238	182	189
Other Machinery	248	272	208	224	221	234
Miscellaneous	371	379	341	357	271	274
Rent and Rental Equivalent	328	363	307	330	290	302
<b>Total Fixed Costs</b>	<b>1542</b>	<b>1646</b>	<b>1635</b>	<b>1720</b>	<b>1532</b>	<b>1591</b>
<b>Net Farm Income</b>	<b>211</b>	<b>552</b>	<b>404</b>	<b>670</b>	<b>210</b>	<b>417</b>
Farmer / Spouse Labour	679	674	339	351	132	128
<b>Management and Investment Income (MII)</b>	<b>-468</b>	<b>-122</b>	<b>66</b>	<b>319</b>	<b>78</b>	<b>289</b>
<b>Farm Business Income (FBI)</b>	<b>348</b>	<b>650</b>	<b>532</b>	<b>759</b>	<b>320</b>	<b>511</b>

### 3.5: LFA: Influence of Farm Size

Table 3.4 presents the results of LFA dairy farms according to the three size groupings (**less than 60 hectares = small; 60 to 120 hectares = medium; greater than 120 hectares = large**).

Examination of the input-output systems of the three size groupings, confirms that similarly to the findings for lowland farms, the large size group operates at a substantially lower intensity level of production than the two other smaller size groups. The large size group achieved the lowest total farm output (£3,258/ha), compared to the small and medium size groups which achieved total outputs of £4,017/ha and £3,876/ha respectively.

Across all three size groups, the percentage of total output derived from milk sales increased slightly in comparison to the previous year; for the small size group (79% *cf.* 77% in 2012/13), the medium size group (83% *cf.* 77% in 2012/13) and the large size group (76% *cf.* 74% in 2012/13).

From 2012/13 to 2013/14, total variable costs increased by 12%, 11% and 11% for the small, medium and large size groups respectively. As noted in the previous year's report (McHoul et al., 2013), purchased concentrates costs have again continued to increase; e.g. by 14% for the small size group, 10% for the medium size group and 10% for the large size group.

Fixed costs also increased for the three size groupings; e.g. by 6% (+£87/ha) for the small group; 4% (+£50/ha) for the medium group and 10% (+£105) for the large group.

For MII returns, the lower input-output system (large size group) achieved the highest MII of £410/ha, compared to the higher input-output systems of the small size group's MII of £87/ha and the medium size group which attained an MII of £274/ha.

With reference to the average farm sizes noted in Table 3.4, average FBI farm returns are approximately £37,900, £73,700 and £129,950 per farm for the small, medium and large size groups respectively. This is an increase on the 2012/13 year's FBI returns of 177% (+£24,220), 106% (+£37,800) and 77% (+£56,640) for small, medium and large size groups respectively.

**Table 3.4: Outputs, Inputs and Margins: LFA by Farm Size**

LFA	< 60 ha		60 – 120 ha		>120 ha	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	16	16	25	21	23	27
Area (ha)	44	46	94	93	188	190
	£/ha		£/ha		£/ha	
<b>Output</b>						
Milk	2466	3180	2524	3234	2013	2482
Calf	181	218	170	176	120	120
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	0	0	0	0	0	0
Herd Replacement	-329	-371	-301	-269	-229	-234
<b>Total Dairy Output</b>	<b>2318</b>	<b>3027</b>	<b>2393</b>	<b>3140</b>	<b>1905</b>	<b>2369</b>
Other Livestock	449	513	525	470	569	561
Other	443	477	343	265	238	329
<b>Total Farm Output</b>	<b>3210</b>	<b>4017</b>	<b>3261</b>	<b>3876</b>	<b>2712</b>	<b>3258</b>
<b>Variable Costs</b>						
Home-grown Concentrates	19	20	74	46	32	54
Purchased Concentrates	924	1052	1002	1106	790	870
Coarse Fodder	120	124	45	123	68	83
Other Livestock Concentrates	0	0	0	0	0	0
Vet and Medicine	84	97	104	121	99	93
Other Livestock Costs	351	363	253	268	208	224
Seed	6	8	10	11	11	17
Fertiliser	122	165	144	142	118	124
Crop Protection	6	3	10	8	9	10
Other Crop Costs	16	17	25	18	11	16
<b>Total Variable Costs</b>	<b>1647</b>	<b>1851</b>	<b>1666</b>	<b>1843</b>	<b>1347</b>	<b>1492</b>
<b>Fixed Costs</b>						
Labour	223	212	304	306	281	294
Contract	154	178	102	121	98	114
Machinery Depreciation	219	270	227	249	144	149
Other Machinery	217	216	211	199	155	172
Miscellaneous	358	360	315	313	211	221
Rent and Rental Equivalent	219	243	227	248	200	243
<b>Total Fixed Costs</b>	<b>1391</b>	<b>1478</b>	<b>1386</b>	<b>1436</b>	<b>1089</b>	<b>1194</b>
<b>Net Farm Income</b>	<b>172</b>	<b>688</b>	<b>210</b>	<b>597</b>	<b>276</b>	<b>572</b>
Farmer / Spouse Labour	627	601	332	323	172	162
<b>Management and Investment Income (MII)</b>	<b>-456</b>	<b>87</b>	<b>-122</b>	<b>274</b>	<b>104</b>	<b>410</b>
<b>Farm Business Income (FBI)</b>	<b>311</b>	<b>824</b>	<b>381</b>	<b>792</b>	<b>390</b>	<b>684</b>



In a change from previous year's methodology, the upper and lower quartiles referred to in the sections below, now represent the top and bottom 25% of the total weight, which can produce numbers per upper and lower quartile that are not equal.

### **3.6: Lowland: Comparison by Profitability Quartiles**

The profitability quartiles referred to are based on the ratio of output to costs (adjusted for unpaid labour).

In 2013/14 (Table 3.5) the average farm size of the upper quartile (approximately 169ha) was greater than that of the lower quartile (approximately 137ha).

The upper quartile achieved a substantially greater total farm output (£4,116/ha) compared to the lower quartile (£2,907/ha). The upper quartile also incurred higher levels of total variable costs (£1,673/ha) but similar levels of total fixed costs (£1,548/ha) compared to the lower quartile's respective costs of £1,397/ha and £1,526/ha, resulting in an average FBI for the upper quartile of £1,036/ha, in contrast to the lower quartile's FBI of £38/ha.

At the average farm sizes detailed in Table 3.5, the 2013/14 FBI data equate to average FBIs of approximately £175,000 per farm for the upper quartile and £5,200 per farm for the lower quartile. Compared to 2012/13, these levels of income represent an increase in average FBI of £50,700 per farm for the upper quartile and £13,500 per farm for the lower quartile.

There are notable differences between the two performance groups regarding the changes in output achieved and costs incurred. For the upper quartile group, milk output increased by 8% between 2012/13 and 2013/14, whilst for the lower quartile group, milk output remained relatively unchanged, falling by <1%. Variable costs for the upper quartile reduced by 0.8% (-£14/ha), whilst for the lower quartile variable costs fell by 9% (-£132/ha). With regards to fixed costs, for the lower quartile, these costs decreased by 5% (-£75/ha) and for the upper quartile increased by 6% (+£89/ha).

For the lower quartile group, 2013/14 MII increased by £256/ha to minus £241/ha and for the upper quartile group MII increased by £243/ha to £715/ha, resulting in a difference in MII of £956/ha between the two performance groups, which is similar to the previous year's difference of £969/ha. The difference in FBI between the two quartile groups increased from £868/ha in 2012/13 to £998/ha in 2013/14.

**Table 3.5: Outputs, Inputs and Margins: Lowland by Profitability Quartiles**

Lowland	Lower quartile		Upper quartile	
	12/13	13/14	12/13	13/14
Number of farms	58	63	49	46
Area (ha)	102	137	158	169
	£/ha		£/ha	
<b>Output</b>				
Milk	2081	2077	2847	3083
Calf	112	114	125	142
Lease Quota (net)	0	0	0	0
Other Dairy	1	4	5	0
Herd Replacement	-249	-218	-273	-245
<b>Total Dairy Output</b>	<b>1945</b>	<b>1977</b>	<b>2703</b>	<b>2981</b>
Other Livestock	469	384	609	667
Other	529	546	443	469
<b>Total Farm Output</b>	<b>2942</b>	<b>2907</b>	<b>3755</b>	<b>4116</b>
<b>Variable Costs</b>				
Home-grown Concentrates	91	52	85	52
Purchased Concentrates	784	750	884	887
Coarse Fodder	50	57	109	111
Other Livestock Concentrates	4	1	1	28
Vet and Medicine	97	87	106	109
Other Livestock Costs	245	222	260	252
Seed	40	46	32	38
Fertiliser	148	120	133	145
Crop Protection	39	37	33	33
Other Crop Costs	32	25	16	17
<b>Total Variable Costs</b>	<b>1529</b>	<b>1397</b>	<b>1659</b>	<b>1673</b>
<b>Fixed Costs</b>				
Labour	414	362	386	402
Contract	150	190	150	159
Machinery Depreciation	212	193	180	201
Other Machinery	228	228	194	211
Miscellaneous	285	276	244	278
Rent and Rental Equivalent	313	277	304	297
<b>Total Fixed Costs</b>	<b>1601</b>	<b>1526</b>	<b>1459</b>	<b>1548</b>
<b>Net Farm Income</b>	<b>-188</b>	<b>-15</b>	<b>637</b>	<b>896</b>
Farmer / Spouse Labour	309	226	165	180
<b>Management and Investment Income (MII)</b>	<b>-497</b>	<b>-241</b>	<b>472</b>	<b>715</b>
<b>Farm Business Income (FBI)</b>	<b>-81</b>	<b>38</b>	<b>787</b>	<b>1036</b>

### 3.7: LFA: Comparison by Profitability Quartiles

The profitability quartiles referred to are based on the ratio of output to costs (adjusted for unpaid labour).

In 2013/14, (Table 3.6) the upper quartile achieved a higher total farm output (£4,313/ha) than the lower quartile (£3,189/ha); resulting in a difference in output of £1,124 between the two quartile groups, which is similar to the £1,098 difference recorded in 2012/13.

The lower quartile's total farm output increased by 41% compared to an increase of 28% for the upper quartile.

Output from milk in 2013/14 differs markedly between the two quartile groups. In 2013/14 the lower quartile recorded £2,438/ha from milk returns, compared to the upper quartile's £3,457/ha; a difference of £1,019/ha, compared to the difference in 2012/13 of £841/ha.

In 2013/14, total variable costs for the lower quartile group increased by 48% to £1,755/ha, whilst the upper quartile's total variable costs increased by 11% to £1,695/ha. Feed concentrates, coarse fodder, vet and medicine, other livestock costs, seed and fertiliser costs increased by 50% (+£347/ha), 182% (+£62/ha), 76% (+£50/ha), 39% (+£77/ha), 55% (+£6/ha) and 2% (+£3/ha) respectively for the lower quartile group. However, in sharp contrast, the upper quartile's cost of concentrates increased by 7% (+£66/ha), whilst coarse fodder and vet and medicine costs fell by 11% (-£8/ha) and 2% (-£2/ha) respectively, and other livestock costs, seed and fertiliser costs increased by 18% (+£40/ha), 89% (+£8/ha) and 20% (+£28/ha) respectively.

The lower and upper quartile's total fixed costs in 2012/13 were £1,306/ha and £1,221/ha respectively increasing to £1,409/ha and £1,345/ha in 2013/14. Fixed costs were lower for the upper quartile compared to the lower quartile by £85/ha and £64/ha for 2012/13 and 2013/14 respectively.

Examining MII, the lower quartile shows that the average MII in 2013/14 is -£302/ha compared to -£654/ha in 2012/13, whilst for the upper quartile MII returns were £1,076/ha compared to £397/ha in 2012/13.

In terms of FBI, the lower quartile achieved an FBI return of £162/ha, representing an increase of £316/ha on 2012/13, whilst the upper quartile achieved an FBI return of £1,383/ha; an increase of £555/ha on 2012/13 returns. At the average farm sizes for these groups, the lower and upper quartiles achieved FBI returns of approximately £16,400 and £196,300 per farm respectively.

**Table 3.6: Outputs, Inputs and Margins: LFA by Profitability Quartiles**

LFA	Lower quartile		Upper quartile	
	12/13	13/14	12/13	13/14
Number of farms	16	15	15	16
Area (ha)	75	101	146	142
	£/ha		£/ha	
<b>Output</b>				
Milk	1723	2438	2564	3457
Calf	107	122	194	205
Lease Quota (net)	0	0	0	0
Other Dairy	0	0	0	0
Herd Replacement	-308	-282	-278	-277
<b>Total Dairy Output</b>	<b>1521</b>	<b>2279</b>	<b>2481</b>	<b>3385</b>
Other Livestock	408	553	590	563
Other	333	357	291	365
<b>Total Farm Output</b>	<b>2263</b>	<b>3189</b>	<b>3361</b>	<b>4313</b>
<b>Variable Costs</b>				
Home-grown Concentrates	45	57	58	83
Purchased Concentrates	690	1037	898	964
Coarse Fodder	34	96	72	64
Other Livestock Concentrates	0	0	0	0
Vet and Medicine	66	116	108	106
Other Livestock Costs	196	273	226	266
Seed	11	17	9	17
Fertiliser	125	128	138	166
Crop Protection	8	9	10	13
Other Crop Costs	15	21	10	16
<b>Total Variable Costs</b>	<b>1188</b>	<b>1755</b>	<b>1528</b>	<b>1695</b>
<b>Fixed Costs</b>				
Labour	258	300	301	344
Contract	98	146	88	117
Machinery Depreciation	247	235	170	144
Other Machinery	195	224	184	172
Miscellaneous	308	295	226	246
Rent and Rental Equivalent	199	209	253	321
<b>Total Fixed Costs</b>	<b>1306</b>	<b>1409</b>	<b>1221</b>	<b>1345</b>
<b>Net Farm Income</b>	<b>-232</b>	<b>25</b>	<b>612</b>	<b>1273</b>
Farmer / Spouse Labour	423	327	215	197
<b>Management and Investment Income (MII)</b>	<b>-654</b>	<b>-302</b>	<b>397</b>	<b>1076</b>
<b>Farm Business Income (FBI)</b>	<b>-154</b>	<b>162</b>	<b>828</b>	<b>1383</b>

### **3.8: Further Analysis: Lowland and LFA by Region and Farm Size**

The above sections have provided analysis for lowland and LFA dairy farms by size groupings and profitability quartiles. It is possible to present the data for lowland farms through further analysis that examines the data by regions and farm size groupings for each EU super region. The results of this analysis are presented in Tables **A1, A3, A5 and A6 in the Appendix**, albeit that where the number of farms by any one group is less than 10, these data have been withheld to preserve the statistical robustness of the data. It was only possible to provide meaningful results for LFA by Region and for some LFA size groups in the North on this basis of analysis due to sample size restrictions which are presented in Tables **A2 and A4 in the Appendix**.

### **3.9: Dairy Enterprise Results: Gross Margin for All Farms including Organic Farms**

In the above sections, outputs, inputs and returns were presented for dairy farms on a per hectare basis, with results that included data from the dairy enterprise, plus other enterprises on the farm to produce overall farm results. In this and the following sections, results are presented that relate solely to the dairy enterprise and are reported to Gross Margin (GM) returns (total dairy output minus total variable costs).

Table 3.7 provides the dairy enterprise results for all farms and for conventional and organic farms as separate data.

The results for “all farms” show that between 2012/13 and 2013/14 the average number of cows per farm increased by 6%, whilst average yield per cow increased by 5%. The yield increase combined with the increase in average milk price of 3.5ppl from 29.0ppl to 32.5ppl, resulted in the value of milk output per cow increasing by £384 (+18%). It is interesting to note that the average milk price received in 2008/09 was 26.8ppl, 24.4ppl in 2009/10, 25.4ppl in 2010/11 and 28.2ppl in 2011/12. Variable costs increased by 10% (£106/cow) to a total of £1195/cow in 2013/14.

Increases in total farm output (+19%) and variable costs (+10%) resulted in an overall rise in the GM/cow of £283 (+29%) for 2013/14. The average GM per litre increased to 15.95ppl in 2013/14 from 12.98ppl in 2012/13. Based on the average number of cows in 2013/14, the average GM for all farms is around £205,400, representing an increase of 36% when the average GM in 2012/13 was £150,500.

### **3.10: Dairy Enterprise Results: Gross Margin for Conventional and Organic Farms**

Studying the differences between conventional and organic farms in Table 3.7 shows that for the farms studied the average herd size in 2013/14 is 117 cows for organic farms compared to 164 cows for conventional farms.

In the previous year's edition of this report (McHoul et al., 2013) it was noted for 2012/13, that although average milk yield for organic herds decreased by a greater margin than for conventional herds, the increase in organic milk price was greater and thus helped to narrow the gap between the total outputs from conventional and organic farms compared to the 2011/12 year. However, in 2013/14 the combined increase in both milk output (yield) and price per litre for conventional herds, coupled with a static milk yield for organic farms has resulted in a widening of the difference in total dairy output for the two systems. That is, in 2012/13, the conventional herds achieved a total dairy output of £2,068/cow compared to £2008/cow for the organic herds, however in 2013/14 the conventional herds recorded a total dairy output of £2,462/cow compared to the organic herd's total dairy output of £2,201/cow.

The above figures equate to a rise in gross margin per cow for both the conventional and organic herds, with conventional herds returning the higher total gross margin. This is in contrast to the 2012/13 results whereby the organic herds returned a higher gross margin per cow. On a herd basis, conventional herds have a notably higher average total gross margin (influenced by herd size) of £206,640/herd compared to £145,900/herd for the organic farms.

**Table 3.7: Gross Margin Results for All Farms, Conventional and Organic**

	All		Conventional		Organic	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	285	283	248	249	37	34
Average number cows	154	163	156	164	118	117
Average yield (litres)	7526	7898	7572	7948	6216	6211
Milk price (ppl)	29.0	32.5	28.9	32.4	33.6	37.0
	£/cow		£/cow		£/cow	
<b>Output</b>						
Milk	2184	2568	2187	2576	2088	2295
Calf	112	116	112	116	106	102
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	1	1	2	1	0	0
Herd Replacement	-231	-230	-233	-231	-186	-196
<b>Total Dairy Output</b>	<b>2066</b>	<b>2455</b>	<b>2068</b>	<b>2462</b>	<b>2008</b>	<b>2201</b>
<b>Variable costs</b>						
Concentrates	688	765	691	769	595	620
Coarse Fodder	48	65	49	65	37	41
Vet and Medicine	79	80	80	81	59	57
Other Livestock Costs	175	181	174	180	213	203
Forage Costs	98	105	101	107	24	34
<b>Total Variable Costs</b>	<b>1089</b>	<b>1195</b>	<b>1094</b>	<b>1202</b>	<b>927</b>	<b>954</b>
<b>Total Gross Margin</b>	<b>977</b>	<b>1260</b>	<b>973</b>	<b>1260</b>	<b>1080</b>	<b>1247</b>

**Figure 3.1: Key Gross Margin Components by Conventional and Organic Herds**

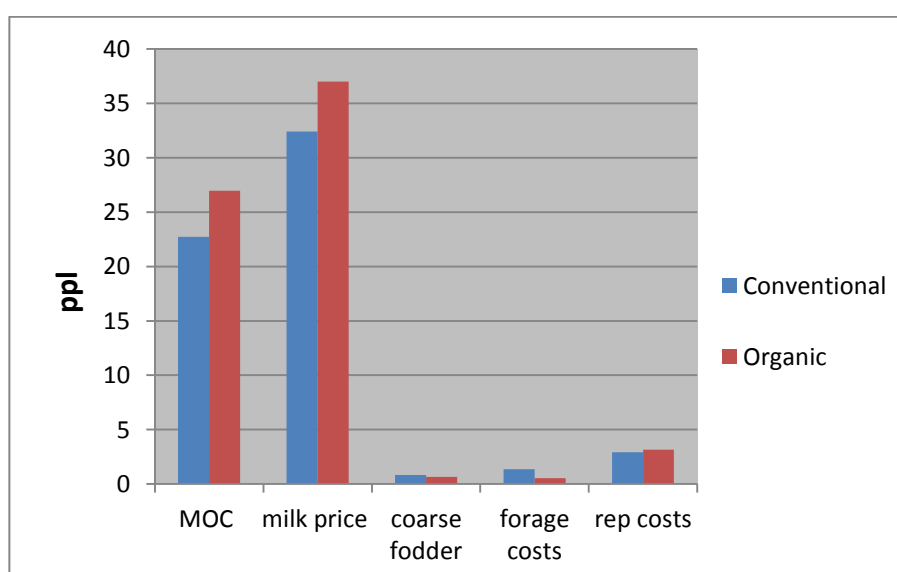


Table 3.7 shows the GM per cow performances for conventional and organic farms in 2013/14 and reveals that these were £1,260 and £1,247 per cow, respectively. Figure 3.1 provides some data that help explain why in contrast to 2012/13 when, in terms of GM/cow, the organic herds outperformed the conventional herds, GM per cow was slightly higher for conventional farms in 2013/14.

- Both systems received similar increases in average milk prices in 2013/14 of around 3.5ppl but the conventional herds increased their average yield by around 375 litres per cow, whereas the average yield from organic yields remained static.
- Milk output (£) from conventional herds increased by 18% and by 10% for organic herds.
- There was a slight reduction in herd replacement costs for conventional herds but for organic herds the cost of replacements increased by about £10/cow
- Although the increase in variable costs was greatest for conventional herds, this was offset by a greater increase from milk output for this system.

***From this part of the report onwards when referring to data on a gross margin basis, unless otherwise stated, organic herd results are not included in the data presented.***

### **3.11: Dairy Enterprise Results: Gross Margin for Lowland and LFA Farms**

Table 3.8 provides the dairy enterprise results for lowland and LFA farms as separate data.

Studying the differences between lowland and LFA dairy farms, reveals a familiar pattern, as highlighted in previous editions of this report whereby lowland herds achieve a higher yield, from a larger average herd size and sell milk at higher prices than their LFA counterparts.

In 2013/14, both groups achieved higher milk prices (32.4ppl for lowland and 32.3ppl for LFA farms) with increases on 2012/13 prices of 3.5ppl and 3.8ppl for lowland and LFA herds, respectively.

The average milk yield per cow increased by 5% to around 8,000 litres for lowland herds and by 6% to around 7,700 litres for LFA herds.

Total variable costs for lowland production increased by £109/cow whilst in LFA production these costs increased by £95/cow and thus maintained similar levels of variable costs per cow of £1,203 and £1,194 on lowland and LFA farms respectively.

Increases in GM/cow of £281 for lowland herds and £324 for LFA herds were recorded. In 2013/14, at the average herd sizes, the total farm GM for lowland herds was around £217,500 compared to £160,500 in 2012/13 and for LFA farms total farm GM was £159,600 compared to £110,000 in 2012/13.



**Table 3.8: Gross Margin Results for Lowland and LFA Farms**

	Lowland		LFA	
	12/13	13/14	12/13	13/14
Number of farms	192	190	56	59
Average number cows	162	171	127	134
Average yield (litres)	7620	7986	7280	7719
Milk price (ppl)	28.9	32.4	28.5	32.3
	£/cow		£/cow	
<b>Output</b>				
Milk	2205	2589	2078	2493
Calf	108	114	133	131
Lease Quota (net)	0	0	0	0
Other Dairy	2	1	0	0
Herd Replacement	-231	-229	-246	-239
<b>Total Dairy Output</b>	<b>2085</b>	<b>2475</b>	<b>1965</b>	<b>2385</b>
<b>Variable costs</b>				
Concentrates	688	768	710	777
Coarse Fodder	49	63	49	79
Vet and Medicine	81	81	77	78
Other Livestock Costs	174	183	171	163
Forage Costs	102	108	92	97
<b>Total Variable Costs</b>	<b>1094</b>	<b>1203</b>	<b>1099</b>	<b>1194</b>
<b>Total Gross Margin</b>	<b>991</b>	<b>1272</b>	<b>867</b>	<b>1191</b>

**3.12: Dairy Enterprise Results: Influence of Herd Size on Lowland Herds**

Gross margin results by three size categories for lowland farms are shown in Table 3.9 (**less than 80 cows = small; 80 to 130 cows = medium; greater than 130 cows = large**).

For almost all the key performance indicators, the same pattern occurs across all the three size groups over both years of data presented. That is, as herd size increases, so do average yield per cow, milk output per cow, total dairy output per cow, total variable costs per cow and total gross margin per cow. For 2013/14, average yields per cow for the small, medium and large herd size groups are around 6,700 litres per cow (lpc), 7,500 lpc and 8,150 lpc respectively, with the large herds outperforming the small herds by about 1,450 lpc. This equates to a 21% difference between these two size groups; which is a slight increase on the 18% gap which occurred in 2012/13.

In 2013/4, the milk price received by the small and medium size groups (31.7ppl) is lower than the 32.6ppl received by large size group. This represents a narrowing of the difference in milk price between the small and large herds from 1.4ppl recorded in 2012/13 to 0.9ppl in 2013/14.

The 2013/14 data shows average total variable costs per cow for the small, medium and large size groups to be £960/cow, £1,043/cow and £1,142/cow respectively, resulting in respective total gross margins of £1,126/cow, £1,242/cow and £1,285/cow.

In 2012/13 there was little difference in GM per litre between the 3 herd size groups (12.9 to 13ppl). However, in 2013/14 the largest herds achieved, on average, a lower gross margin per cow (15.8ppl) compared to the medium (16.6ppl) and smallest herds (16.8ppl).

**Table 3.9: Gross Margin Results Lowland by Herd Size**

Lowland	< 80 cows		80 – 130 cows		>130 cows	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	43	40	52	44	97	106
Average number cows	59	59	109	107	219	216
Average yield (litres)	6534	6705	7553	7503	7729	8139
Milk price (ppl)	27.8	31.7	28.1	31.7	29.2	32.6
	£/cow		£/cow		£/cow	
<b>Output</b>						
Milk	1814	2128	2124	2380	2257	2649
Calf	130	128	121	120	104	112
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	6	15	1	0	2	0
Herd Replacement	-193	-185	-234	-214	-233	-234
<b>Total Dairy Output</b>	<b>1757</b>	<b>2087</b>	<b>2012</b>	<b>2286</b>	<b>2129</b>	<b>2527</b>
<b>Variable costs</b>						
Concentrates	536	586	633	633	713	799
Coarse Fodder	32	41	43	41	52	68
Vet and Medicine	71	69	77	78	82	83
Other Livestock Costs	184	168	171	176	174	185
Forage Costs	95	96	106	115	102	108
<b>Total Variable Costs</b>	<b>918</b>	<b>960</b>	<b>1030</b>	<b>1043</b>	<b>1123</b>	<b>1242</b>
<b>Total Gross Margin</b>	<b>840</b>	<b>1126</b>	<b>982</b>	<b>1242</b>	<b>1006</b>	<b>1285</b>

### 3.13: Dairy Enterprise Results: Influence of Herd Size on LFA Herds

Table 3.10 shows the results of the gross margin analysis of LFA farms by herd size (**less than 80 cows = small; 80 to 130 cows = medium; greater than 130 cows = large**).

Examining the small, medium and large herd sizes shows that between 2012/13 to 2013/14, the average yield for the small size group increased by around 400lpc; for the medium size group by 340lpc and for the large size group by around 480lpc. In 2013/14, all herd sizes received higher milk prices than in the previous year, equating to a 3.6ppl increase for the small size group, a 3.4ppl increase for the medium size group and 4.0ppl for the large size group.

As reported in the previous edition of this report, LFA dairy herds have previously and continued to underachieve when compared to their lowland counterparts (small and large size groups) when comparing milk yield, milk output, total dairy output and gross margin. However, for the medium size group, LFA herds received a similar milk price (+0.1ppl), and achieved a higher milk yield (+395 litres/cow) and higher milk output (+£130/cow) but also recorded a lower gross margin (-£100/cow) in 2013/14 compared to lowland herds.

Compared to 2012/13, the increase in variable costs per cow was £105/cow, £42/cow and £126/cow for the small, medium and large herd sizes respectively.

The increase in GM between the two years shown is 34% (£258/cow) for the small size group, 46% (£361/cow) for the medium size group and 32% (£301/cow) for the large size group. Despite these increases, without exception, the GMs for 2012/13 and 2013/14 for the LFA herds are lower than that of the lowland herds across all three size groups.

**Table 3.10: Gross Margin Results LFA by Herd Size**

<b>LFA</b>	< 80 cows		80 – 130 cows		>130 cows	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	16	14	24	27	16	18
Average number cows	55	60	108	107	220	222
Average yield (litres)	6263	6672	7558	7898	7298	7782
Milk price (ppl)	27.3	30.9	28.4	31.8	28.9	32.9
	£/cow		£/cow		£/cow	
<b>Output</b>						
Milk	1712	2062	2145	2510	2109	2560
Calf	134	139	120	121	143	136
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	0	0	0	0	0	0
Herd Replacement	-245	-237	-280	-242	-220	-238
<b>Total Dairy Output</b>	<b>1601</b>	<b>1964</b>	<b>1986</b>	<b>2389</b>	<b>2032</b>	<b>2458</b>
<b>Variable costs</b>						
Concentrates	518	623	774	806	706	784
Coarse Fodder	28	21	72	84	36	86
Vet and Medicine	53	64	83	80	77	80
Other Livestock Costs	175	150	179	177	164	155
Forage Costs	76	96	98	100	91	96
<b>Total Variable Costs</b>	<b>850</b>	<b>955</b>	<b>1205</b>	<b>1247</b>	<b>1074</b>	<b>1200</b>
<b>Total Gross Margin</b>	<b>751</b>	<b>1009</b>	<b>781</b>	<b>1142</b>	<b>957</b>	<b>1258</b>

### **3.14: Dairy Enterprise Results: Lowland Herds by Performance Groups**

Results measured by gross margin performance for lowland farms are presented in Table 3.11. The results are shown for the upper and lower quartiles as measured by gross margin per cow:

The average herd size of the upper quartile is 185 cows compared to the lower quartile's average herd size of 170 cows.

Average milk yield for the upper quartile is around 8,700 lpc, whilst for the lower quartile it is around 6,950lpc; a difference of around 1,750 lpc between the two groups. In 2012/13 the difference in milk price was 1.2pppl (upper quartile 29.5pppl; lower quartile 28.3pppl) however, for 2013/14, it widened slightly to 1.3pppl (upper quartile 33.1pppl; lower quartile 31.8pppl).

Total variable costs for both groups increased; the lower quartile costs rose by 16% (+£159/cow) whilst the upper quartile costs increased by 6% (+£67/cow). Interestingly, these increases have resulted in the variable costs per cow reaching similar levels; that is £1,187/cow and £1,188/cow for the lower and upper quartile groups respectively.

It is interesting to report the difference in the rates of conversion of concentrates to milk between the two quartile groups and also note the change from 2012/13 to 2013/14. The conversion to concentrates factor represents the cost of concentrate feeds to produce one litre of milk. An analysis of the data in Table 3.11 reveals that in 2012/13 the conversion rate of concentrates to milk was 10.2pppl for the lower quartile and 8.1pppl for the upper quartile. In 2013/14, the conversion rate increased to 11.1pppl for the lower quartile and to 8.6pppl for the upper quartile.

Gross margin results considered per litre for the lower quartile equal 12.9pppl compared to 9.3pppl in 2012/13 and for the upper quartile equal 18.6pppl compared to 15.2pppl in 2012/13.

This analysis of upper and lower quartile groups reveals a continuation of previous year's findings which show that the larger herds with their high-output systems achieve the higher GM, with the main factor being the higher milk price attained from a superior quality product and / or better utilisation of the market. This is highlighted by the fact that similar total variable costs are reported for both the upper and lower quartiles.

**Table 3.11: Gross Margin Results for Lowland by Profitability Quartiles**

<b>Lowland</b>	Lower Quartile		Upper Quartile	
	12/13	13/14	12/13	13/14
Number of farms	57	61	43	39
Average number cows	130	170	166	185
Average yield (litres)	6221	6962	8585	8733
Milk price (ppl)	28.3	31.8	29.5	33.1
	£/cow		£/cow	
<b>Output</b>				
Milk	1760	2217	2529	2888
Calf	95	96	111	128
Lease Quota (net)	0	0	0	0
Other Dairy	0	0	3	1
Herd Replacement	-247	-231	-215	-207
<b>Total Dairy Output</b>	<b>1608</b>	<b>2082</b>	<b>2427</b>	<b>2809</b>
<b>Variable costs</b>				
Concentrates	632	770	699	747
Coarse Fodder	52	76	50	57
Vet and Medicine	71	73	87	87
Other Livestock Costs	167	170	188	186
Forage Costs	105	98	97	112
<b>Total Variable Costs</b>	<b>1028</b>	<b>1187</b>	<b>1121</b>	<b>1188</b>
<b>Total Gross Margin</b>	<b>580</b>	<b>895</b>	<b>1306</b>	<b>1621</b>

### **3.15: Dairy Enterprise Results: LFA Herds by Performance Groups**

The analysis by performance quartiles for lowland herds, measured by gross margin per cow and outlined in Section 3.14, highlighted larger herd size, higher average yield and higher milk price for the upper quartile as the main performance drivers in 2013/14. Examining Table 3.12 which shows the lower and upper quartile results for 2012/13 and 2013/14, reveals that the pattern noted for lowland herds is repeated for LFA herds.

The average herd size and average milk yield for the upper quartile in 2013/14 are 89 cows and 1,255lpc greater than for the lower quartile.

The difference in average milk price between the upper quartile and the lower quartile is 1.9ppl. When combined with the average yield, milk outputs of £2,700/cow and £2,012/cow for the upper and lower quartiles respectively are produced.

Herd replacement costs are lower for the upper performance group at £204/cow compared to £299/cow for the lower quartile.

Despite the upper quartile's increase in total variable costs of £95/cow to £1,184/cow, the high performing group has incurred total variable costs which are actually £118/cow lower than the lower quartile's total variable costs. This is a result of the increase in total variable costs of £306/cow for the low performing group to £1,302/cow.

The upper quartile's high-output system which has incurred comparatively lower variable costs, produced a GM of £1,517/cow, compared to the lower quartile's characteristic low-output system and comparatively higher variable costs which produced a GM of £710/cow in 2013/14.

**Table 3.12: Gross Margin Results for LFA by Profitability Quartiles**

LFA	Lower Quartile		Upper Quartile	
	12/13	13/14	12/13	13/14
Number of farms	16	18	13	12
Average number cows	87	101	159	190
Average yield (litres)	5920	7013	7865	8268
Milk price (ppl)	27.4	31.3	29.0	33.2
	£/cow		£/cow	
<b>Output</b>				
Milk	1620	2196	2279	2749
Calf	111	115	170	156
Lease Quota (net)	0	0	0	0
Other Dairy	0	0	0	0
Herd Replacement	-283	-299	-165	-204
<b>Total Dairy Output</b>	<b>1447</b>	<b>2012</b>	<b>2284</b>	<b>2700</b>
<b>Variable costs</b>				
Concentrates	595	840	733	800
Coarse Fodder	96	105	39	58
Vet and Medicine	55	75	67	79
Other Livestock Costs	160	195	162	146
Forage Costs	90	87	87	101
<b>Total Variable Costs</b>	<b>996</b>	<b>1302</b>	<b>1089</b>	<b>1184</b>
<b>Total Gross Margin</b>	<b>451</b>	<b>710</b>	<b>1195</b>	<b>1517</b>

### 3.16: Further Analysis: Dairy Enterprise Results for Lowland and LFA by Region and Herd Size

The above sections have provided analysis for lowland and LFA dairy herds on a gross margin basis by herd size groupings and profitability quartiles. It is possible to present the data for lowland farms through further analysis that examines the data by regions and farm size groupings for each EU super region. The results of this analysis are presented in Tables **A7, A9, A11 and A12 in the Appendix**, albeit that where the number of farms by any one group is less than 10, these data have been withheld to preserve the statistical robustness of the data. It was only possible to provide meaningful results for LFA by Region and for some LFA size groups in the North on this basis of analysis due to sample size restrictions which are presented in Tables **A8 and A10 in the appendix**.

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## Glossary

**Output: Other Livestock** is comprised of sales of non-dairy livestock and livestock products adjusted for valuation changes plus the value of produce used on the farm and consumed in the farmhouse or by the workers, less livestock purchases. Miscellaneous livestock receipts are also included.

**Output: Other** is the sales of crops adjusted for valuation changes, plus the value of produce used on the farm (other than forage crops and straw) and produce consumed in the farmhouse or by the workers. Income from land let and buildings let, hirework, non-allocated grants e.g. for environmental schemes, profit on resale of purchased agricultural produce and other miscellaneous farm income including the change in valuation of cultivations is also included.

**Other livestock costs** include livestock haulage, marketing charges, AI charges, straw and woodshavings for bedding and dairy sundries.

**Other crop costs** include silage bags, twine, all marketing costs including crop haulage, purchase of standing crops, soil analysis and potato sacks.

**Labour** is comprised of the gross cost of regular paid employees including an allowance for perquisites together with unpaid family labour (other than the farmer and spouse) manual labour.

**Machinery depreciation** is calculated using the current cost accounting method whereby each item of equipment is revalued by an index prior to the depreciation calculation.

**Rent and Rental Equivalent** consist of gross rent, imputed rent on the net cost of the tenant's own improvements, drainage rates and for owner-occupied land a rental value based on what a tenant would be paying for similar land with an equal length of occupancy.

**Miscellaneous costs** include water charges, vehicle tax, insurance, professional fees, bank commission, telephone charges, subscriptions, office expenses and pest control, general repairs.

**Net Farm Income (NFI)** is total output less total inputs as defined above. It represents the reward to the farmer and spouse for their own manual labour, management and a return on tenant's capital.

**Farmer's and spouse's manual labour** is the estimated value of their manual labour.

**Management and Investment Income (MII)** is Net Farm Income less the allowance made for the farmer's and spouse's manual labour. It represents the reward for management and a return on tenant's capital. MII therefore represents the return to management after all costs have been deducted, including the imputed cost of all unpaid manual labour and a notional rent on owner occupied land and buildings.

**Farm Business Income (FBI)** represents the return to all unpaid labour (farmers, spouses and others with an entrepreneurial interest in the farm business) and to all their capital invested in the farm business including land and farm buildings. It is defined as Total Farm Output (TFO) minus cost (C): where TFO is defined as the sum of output from: crop enterprises, adjustment for disposal of previous crops, livestock enterprises, separable non-agricultural diversification, single farm payment, agri-environmental payments, other grants and subsidies, miscellaneous receipts; C is defined as variable costs plus fixed costs. *[For 2006/07 the definition of FBI included the profit / loss on sale of assets as part of the total farm output]*

**Total Gross Margin**, presented for the dairy enterprise results, is total dairy output minus total variable costs.

**Table A.1: Outputs, Inputs and Margins for Lowland by EU Super Region**

Lowland	North		East		West	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	58	53	48	45	139	105
Area (ha)	120	132	202	203	102	149
	£/ha		£/ha		£/ha	
<b>Output</b>						
Milk	3101	3468	1904	2268	2534	2940
Calf	136	137	91	103	132	132
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	0	0	2	0	3	2
Herd Replacement	-362	-336	-168	-175	-268	-260
<b>Total Dairy Output</b>	<b>2875</b>	<b>3269</b>	<b>1830</b>	<b>2196</b>	<b>2401</b>	<b>2815</b>
Other Livestock	683	610	389	399	573	570
Other	406	427	759	682	469	507
<b>Total Farm Output</b>	<b>3964</b>	<b>4306</b>	<b>2978</b>	<b>3277</b>	<b>3443</b>	<b>3892</b>
<b>Variable Costs</b>						
Home-grown Concentrates	103	70	60	53	71	57
Purchased Concentrates	1123	1190	658	745	835	934
Coarse Fodder	110	124	77	90	49	80
Other Livestock Concentrates	0	0	8	1	24	21
Vet and Medicine	135	135	83	90	104	101
Other Livestock Costs	290	306	191	197	273	272
Seed	31	35	43	47	42	53
Fertiliser	152	164	126	121	155	147
Crop Protection	30	28	53	43	44	40
Other Crop Costs	23	21	24	25	23	23
<b>Total Variable Costs</b>	<b>1999</b>	<b>2074</b>	<b>1323</b>	<b>1412</b>	<b>1619</b>	<b>1729</b>
<b>Fixed Costs</b>						
Labour	362	393	429	393	394	408
Contract	161	182	156	177	160	185
Machinery Depreciation	208	228	162	173	208	205
Other Machinery	213	235	213	217	226	241
Miscellaneous	294	286	278	277	296	310
Rent and Rental Equivalent	281	301	261	276	327	334
<b>Total Fixed Costs</b>	<b>1518</b>	<b>1625</b>	<b>1498</b>	<b>1513</b>	<b>1611</b>	<b>1683</b>
<b>Net Farm Income</b>	<b>447</b>	<b>607</b>	<b>157</b>	<b>351</b>	<b>212</b>	<b>481</b>
Farmer / Spouse Labour	221	217	143	140	219	207
<b>Management and Investment Income (MII)</b>	<b>226</b>	<b>391</b>	<b>14</b>	<b>212</b>	<b>-6</b>	<b>274</b>
<b>Farm Business Income (FBI)</b>	<b>526</b>	<b>660</b>	<b>233</b>	<b>412</b>	<b>373</b>	<b>614</b>

**Table A.2: Outputs, Inputs and Margins for LFA by EU Super Region**

LFA	North		East		West	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	36	38	11	10	17	16
Area (ha)	121	128	129	145	103	103
	£/ha		£/ha		£/ha	
<b>Output</b>						
Milk	2051	2481	2502	3035	2453	3341
Calf	119	120	148	164	201	202
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	0	0	0	1	0	0
Herd Replacement	-269	-274	-230	-203	-265	-232
<b>Total Dairy Output</b>	<b>1901</b>	<b>2327</b>	<b>2420</b>	<b>2997</b>	<b>2389</b>	<b>3312</b>
Other Livestock	603	562	471	466	440	498
Other	302	319	219	320	315	351
<b>Total Farm Output</b>	<b>2806</b>	<b>3209</b>	<b>3110</b>	<b>3783</b>	<b>3144</b>	<b>4161</b>
<b>Variable Costs</b>						
Home-grown Concentrates	56	66	17	14	34	23
Purchased Concentrates	850	935	954	1053	856	861
Coarse Fodder	68	97	48	67	72	129
Other Livestock Concentrates	0	0	0	0	0	0
Vet and Medicine	102	101	99	103	93	96
Other Livestock Costs	225	240	273	282	230	233
Seed	8	13	17	21	10	15
Fertiliser	123	130	110	101	154	175
Crop Protection	9	8	11	12	8	8
Other Crop Costs	18	16	14	19	13	16
<b>Total Variable Costs</b>	<b>1457</b>	<b>1607</b>	<b>1543</b>	<b>1672</b>	<b>1471</b>	<b>1554</b>
<b>Fixed Costs</b>						
Labour	270	276	290	289	319	348
Contract	99	113	94	126	128	143
Machinery Depreciation	171	186	211	201	163	159
Other Machinery	180	180	189	205	167	168
Miscellaneous	232	240	309	308	284	259
Rent and Rental Equivalent	173	201	250	295	284	356
<b>Total Fixed Costs</b>	<b>1125</b>	<b>1196</b>	<b>1344</b>	<b>1424</b>	<b>1346</b>	<b>1433</b>
<b>Net Farm Income</b>	<b>224</b>	<b>406</b>	<b>223</b>	<b>686</b>	<b>327</b>	<b>1174</b>
Farmer / Spouse Labour	245	224	274	240	302	290
<b>Management and Investment Income (MII)</b>	<b>-21</b>	<b>182</b>	<b>-50</b>	<b>447</b>	<b>25</b>	<b>883</b>
<b>Farm Business Income (FBI)</b>	<b>365</b>	<b>548</b>	<b>310</b>	<b>738</b>	<b>489</b>	<b>1371</b>

**Table A.3: Outputs, Inputs and Margins: Lowland (North) by EU Farm Size**

<b>Lowland (North)</b>	< 60 ha		60 – 120 ha		>120 ha	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	<i>Ins. data</i>	Ins. Data	24	23	26	23
Area (ha)			89	90	166	185
	£/ha		£/ha		£/ha	
<b>Output</b>						
Milk			3814	4297	2812	3171
Calf			201	205	103	107
Lease Quota (net)			0	0	0	0
Other Dairy			0	0	0	0
Herd Replacement			-482	-417	-309	-308
<b>Total Dairy Output</b>			<b>3533</b>	<b>4085</b>	<b>2605</b>	2969
Other Livestock			771	705	651	566
Other			313	322	450	473
<b>Total Farm Output</b>			<b>4617</b>	<b>5113</b>	<b>3707</b>	4008
<b>Variable Costs</b>						
Home-grown Concentrates			75	53	120	79
Purchased Concentrates			1347	1414	1037	1112
Coarse Fodder			145	171	98	107
Other Livestock Concentrates			0	0	0	0
Vet and Medicine			151	140	130	135
Other Livestock Costs			394	407	242	269
Seed			26	29	35	38
Fertiliser			165	190	145	154
Crop Protection			26	21	34	32
Other Crop Costs			28	27	19	18
<b>Total Variable Costs</b>			<b>2357</b>	<b>2452</b>	<b>1860</b>	1943
<b>Fixed Costs</b>						
Labour			387	383	367	410
Contract			186	204	152	179
Machinery Depreciation			223	251	200	218
Other Machinery			221	247	209	230
Miscellaneous			340	384	268	243
Rent and Rental Equivalent			316	342	268	288
<b>Total Fixed Costs</b>			<b>1674</b>	<b>1811</b>	<b>1465</b>	1567
<b>Net Farm Income</b>			<b>586</b>	<b>850</b>	<b>382</b>	<b>497</b>
Farmer / Spouse Labour			312	355	152	140
<b>Management and Investment Income (MII)</b>			<b>274</b>	<b>494</b>	<b>230</b>	<b>357</b>
<b>Farm Business Income (FBI)</b>			<b>673</b>	<b>842</b>	<b>460</b>	<b>578</b>

**Table A.4: Outputs, Inputs and Margins: LFA (North) by EU Farm Size**

<b>LFA (North)</b>	< 60 ha		60 – 120 ha		>120 ha	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	<i>Ins. data</i>	<i>Ins. data</i>	14	12	14	18
Area (ha)			99	94	184	184
	£/ha		£/ha		£/ha	
<b>Output</b>						
Milk			2767	3416	1653	2124
Calf			166	183	91	96
Lease Quota (net)			0	0	0	0
Other Dairy			1	0	0	0
Herd Replacement			-359	-330	-206	-242
<b>Total Dairy Output</b>			<b>2575</b>	<b>3269</b>	<b>1538</b>	<b>1978</b>
Other Livestock			635	486	593	585
Other			406	271	220	311
<b>Total Farm Output</b>			<b>3616</b>	<b>4025</b>	<b>2351</b>	<b>2874</b>
<b>Variable Costs</b>						
Home-grown Concentrates			108	63	33	71
Purchased Concentrates			1096	1191	724	836
Coarse Fodder			48	124	81	93
Other Livestock Concentrates			0	0	0	0
Vet and Medicine			121	135	94	89
Other Livestock Costs			284	293	181	215
Seed			12	15	6	13
Fertiliser			155	146	108	120
Crop Protection			14	7	6	9
Other Crop Costs			30	21	11	14
<b>Total Variable Costs</b>			<b>1869</b>	<b>1995</b>	<b>1242</b>	<b>1461</b>
<b>Fixed Costs</b>						
Labour			344	308	248	278
Contract			118	151	80	96
Machinery Depreciation			214	235	139	157
Other Machinery			239	196	139	169
Miscellaneous			330	325	159	197
Rent and Rental Equivalent			193	224	160	193
<b>Total Fixed Costs</b>			<b>1438</b>	<b>1438</b>	<b>926</b>	<b>1089</b>
<b>Net Farm Income</b>			<b>309</b>	<b>591</b>	<b>183</b>	<b>325</b>
Farmer / Spouse Labour			305	317	171	157
<b>Management and Investment Income (MII)</b>			<b>4</b>	<b>274</b>	<b>12</b>	<b>168</b>
<b>Farm Business Income (FBI)</b>			<b>484</b>	<b>800</b>	<b>313</b>	<b>451</b>

**Table A.5: Outputs, Inputs and Margins: Lowland (East) by EU Farm Size**

<b>Lowland (East)</b>	< 60 ha		60 – 120 ha		>120 ha	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	<i>Ins. data</i>	<i>Ins. data</i>	11	11	34	32
Area (ha)			83	84	245	239
	£/ha		£/ha		£/ha	
<b>Output</b>						
Milk			2039	2447	1881	2225
Calf			187	173	83	96
Lease Quota (net)			0	0	0	0
Other Dairy			0	1	2	0
Herd Replacement			-182	-218	-165	-166
<b>Total Dairy Output</b>			<b>2045</b>	<b>2404</b>	<b>1801</b>	<b>2156</b>
Other Livestock			356	317	389	403
Other			542	586	781	693
<b>Total Farm Output</b>			<b>2942</b>	<b>3307</b>	<b>2971</b>	<b>3252</b>
<b>Variable Costs</b>						
Home-grown Concentrates			34	32	62	54
Purchased Concentrates			719	879	650	727
Coarse Fodder			30	34	78	93
Other Livestock Concentrates			0	0	8	1
Vet and Medicine			70	88	83	89
Other Livestock Costs			235	221	185	193
Seed			21	35	45	47
Fertiliser			96	108	128	121
Crop Protection			14	21	57	46
Other Crop Costs			14	22	25	26
<b>Total Variable Costs</b>			<b>1233</b>	<b>1441</b>	<b>1323</b>	<b>1396</b>
<b>Fixed Costs</b>						
Labour			320	392	440	392
Contract			163	141	154	178
Machinery Depreciation			193	219	158	168
Other Machinery			168	197	217	218
Miscellaneous			355	348	268	269
Rent and Rental Equivalent			215	242	262	275
<b>Total Fixed Costs</b>			<b>1415</b>	<b>1540</b>	<b>1498</b>	<b>1500</b>
<b>Net Farm Income</b>			<b>294</b>	<b>327</b>	<b>150</b>	<b>355</b>
Farmer / Spouse Labour			327	301	119	119
<b>Management and Investment Income (MII)</b>			<b>-33</b>	<b>25</b>	<b>32</b>	<b>236</b>
<b>Farm Business Income (FBI)</b>			<b>372</b>	<b>405</b>	<b>226</b>	<b>414</b>

**Table A.6: Outputs, Inputs and Margins: Lowland (West) by EU Farm Size**

<b>Lowland (West)</b>	< 60 ha		60 – 120 ha		>120 ha	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	17	14	43	47	42	44
Area (ha)	46	47	87	89	215	228
	£/ha		£/ha		£/ha	
<b>Output</b>						
Milk	2914	3306	2788	3384	2417	2763
Calf	206	186	168	177	114	114
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	14	43	3	1	2	0
Herd Replacement	-331	-283	-293	-308	-254	-242
<b>Total Dairy Output</b>	<b>2803</b>	<b>3252</b>	<b>2666</b>	<b>3254</b>	<b>2279</b>	<b>2636</b>
Other Livestock	678	607	660	630	535	547
Other	249	286	318	330	538	582
<b>Total Farm Output</b>	<b>3730</b>	<b>4145</b>	<b>3643</b>	<b>4214</b>	<b>3352</b>	<b>3765</b>
<b>Variable Costs</b>						
Home-grown Concentrates	26	30	47	38	83	65
Purchased Concentrates	1016	1059	898	1064	800	882
Coarse Fodder	110	142	88	121	30	62
Other Livestock Concentrates	12	0	1	1	33	30
Vet and Medicine	128	112	115	115	99	96
Other Livestock Costs	365	321	295	313	259	255
Seed	26	20	39	40	44	59
Fertiliser	193	190	143	144	156	146
Crop Protection	14	9	22	18	53	49
Other Crop Costs	28	42	28	25	20	22
<b>Total Variable Costs</b>	<b>1919</b>	<b>1924</b>	<b>1676</b>	<b>1879</b>	<b>1578</b>	<b>1666</b>
<b>Fixed Costs</b>						
Labour	222	229	351	360	422	434
Contract	158	177	201	210	146	177
Machinery Depreciation	248	229	237	235	195	193
Other Machinery	264	297	208	216	230	247
Miscellaneous	365	391	339	343	276	294
Rent and Rental Equivalent	358	393	321	339	326	329
<b>Total Fixed Costs</b>	<b>1615</b>	<b>1716</b>	<b>1658</b>	<b>1702</b>	<b>1594</b>	<b>1674</b>
<b>Net Farm Income</b>	<b>197</b>	<b>504</b>	<b>309</b>	<b>633</b>	<b>179</b>	<b>425</b>
Farmer / Spouse Labour	721	701	359	358	134	129
<b>Management and Investment Income (MII)</b>	<b>-525</b>	<b>-197</b>	<b>-49</b>	<b>275</b>	<b>45</b>	<b>296</b>
<b>Farm Business Income (FBI)</b>	<b>394</b>	<b>640</b>	<b>475</b>	<b>777</b>	<b>335</b>	<b>554</b>

**Table A.7: Gross Margin Results for Lowland by EU Super Region**

Lowland	North		East		West	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	56	49	41	42	95	99
Average number cows	166	174	165	179	158	166
Average yield (litres)	7797	8173	7926	8211	7360	7765
Milk price (ppl)	29.1	32.2	28.6	32.4	29.0	32.5
	£/cow		£/cow		£/cow	
<b>Output</b>						
Milk	2265	2636	2268	2663	2137	2526
Calf	99	100	109	121	114	118
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	0	0	2	0	3	2
Herd Replacement	-261	-255	-201	-204	-224	-226
<b>Total Dairy Output</b>	<b>2104</b>	<b>2480</b>	<b>2179</b>	<b>2579</b>	<b>2029</b>	<b>2420</b>
<b>Variable costs</b>						
Concentrates	743	818	713	789	640	727
Coarse Fodder	65	74	64	78	31	49
Vet and Medicine	84	85	90	90	74	75
Other Livestock Costs	168	183	187	193	172	178
Forage Costs	98	108	94	92	109	116
<b>Total Variable Costs</b>	<b>1158</b>	<b>1268</b>	<b>1147</b>	<b>1243</b>	<b>1026</b>	<b>1145</b>
<b>Total Gross Margin</b>	<b>945</b>	<b>1212</b>	<b>1032</b>	<b>1337</b>	<b>1002</b>	<b>1275</b>



**Table A.8: Gross Margin Results for LFA by EU Super Region**

LFA	North		East		West	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	32	37	<i>Ins. data</i>	Ins. Data	15	13
Average number cows	112	121			141	169
Average yield (litres)	7555	8136			6603	6827
Milk price (ppl)	28.2	31.8			28.6	33.4
	£/cow		£/cow		£/cow	
<b>Output</b>						
Milk	2132	2588			1887	2280
Calf	124	127			153	135
Lease Quota (net)	0	0			0	0
Other Dairy	0	0			0	0
Herd Replacement	-290	-285			-203	-158
<b>Total Dairy Output</b>	<b>1967</b>	<b>2430</b>			<b>1837</b>	<b>2256</b>
<b>Variable costs</b>						
Concentrates	763	891			608	530
Coarse Fodder	62	86			45	72
Vet and Medicine	86	86			63	59
Other Livestock Costs	181	184			135	109
Forage Costs	91	96			95	105
<b>Total Variable Costs</b>	<b>1183</b>	<b>1342</b>			<b>947</b>	<b>874</b>
<b>Total Gross Margin</b>	<b>784</b>	<b>1088</b>			<b>890</b>	<b>1382</b>

**Table A.9: Gross Margin Results: Lowland (North) by Herd Size**

Lowland (North)	< 80 cows		80 – 130 cows		>130 cows	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	<i>Ins. data</i>	10	12	<i>Ins. data</i>	36	34
Average number cows		59	108		199	202
Average yield (litres)		6387	7486		7897	8293
Milk price (ppl)		31.3	28.0		29.2	32.3
	£/cow		£/cow		£/cow	
<b>Output</b>						
Milk		1999	2095		2308	2679
Calf		133	91		99	98
Lease Quota (net)		0	0		0	0
Other Dairy		0	0		0	0
Herd Replacement		-186	-280		-260	-255
<b>Total Dairy Output</b>		<b>1946</b>	<b>1906</b>		<b>2147</b>	<b>2522</b>
<b>Variable costs</b>						
Concentrates		557	704		758	841
Coarse Fodder		38	52		69	76
Vet and Medicine		68	84		85	85
Other Livestock Costs		150	171		168	185
Forage Costs		107	90		98	109
<b>Total Variable Costs</b>		<b>920</b>	<b>1101</b>		<b>1178</b>	<b>1296</b>
<b>Total Gross Margin</b>		<b>1027</b>	<b>806</b>		<b>969</b>	<b>1226</b>

**Table A.10: Gross Margin Results: LFA (North) by Herd Size**

<b>LFA (North)</b>	< 80 cows		80 – 130 cows		>130 cows	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	11	11	13	15	<i>Ins. data</i>	11
Average number cows	55	59	109	106		189
Average yield (litres)	6636	6923	7917	8050		8495
Milk price (ppl)	27.2	30.8	28.3	31.3		32.4
	£/cow		£/cow		£/cow	
<b>Output</b>						
Milk	1804	2129	2238	2516		2752
Calf	103	109	102	108		144
Lease Quota (net)	0	0	0	0		0
Other Dairy	0	0	1	0		0
Herd Replacement	-288	-279	-354	-289		-284
<b>Total Dairy Output</b>	<b>1618</b>	<b>1960</b>	<b>1987</b>	<b>2335</b>		<b>2612</b>
<b>Variable costs</b>						
Concentrates	563	663	818	872		959
Coarse Fodder	22	15	88	66		118
Vet and Medicine	62	71	97	84		91
Other Livestock Costs	196	151	198	186		192
Forage Costs	84	102	98	100		91
<b>Total Variable Costs</b>	<b>927</b>	<b>1002</b>	<b>1299</b>	<b>1307</b>		<b>1450</b>
<b>Total Gross Margin</b>	<b>691</b>	<b>958</b>	<b>688</b>	<b>1028</b>		<b>1162</b>

**Table A.11: Gross Margin Results: Lowland (East) by Herd Size**

<b>Lowland (East)</b>	< 80 cows		80 – 130 cows		>130 cows	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	<i>Ins. data</i>	Ins. Data	14	14	20	24
Average number cows			106	105	225	217
Average yield (litres)			7705	7281	8106	8431
Milk price (ppl)			27.2	31.3	29.1	32.6
	£/cow		£/cow		£/cow	
<b>Output</b>						
Milk			2094	2278	2355	2752
Calf			155	134	94	118
Lease Quota (net)			0	0	0	0
Other Dairy			0	1	3	0
Herd Replacement			-184	-189	-206	-208
<b>Total Dairy Output</b>			<b>2064</b>	<b>2223</b>	<b>2246</b>	<b>2662</b>
<b>Variable costs</b>						
Concentrates			685	637	736	825
Coarse Fodder			55	45	69	85
Vet and Medicine			69	67	97	95
Other Livestock Costs			171	156	190	200
Forage Costs			98	101	92	92
<b>Total Variable Costs</b>			<b>1078</b>	<b>1006</b>	<b>1183</b>	<b>1297</b>
<b>Total Gross Margin</b>			<b>986</b>	<b>1217</b>	<b>1063</b>	<b>1365</b>

**Table A.12: Gross Margin Results: Lowland (West) by Herd Size**

<b>Lowland (West)</b>	< 80 cows		80 – 130 cows		>130 cows	
	12/13	13/14	12/13	13/14	12/13	13/14
Number of farms	28	26	26	25	41	48
Average number cows	59	58	110	108	234	226
Average yield (litres)	6636	6867	7503	7578	7419	7884
Milk price (ppl)	27.7	32.0	28.7	31.9	29.3	32.7
	£/cow		£/cow		£/cow	
<b>Output</b>						
Milk	1841	2197	2152	2419	2171	2576
Calf	126	128	116	117	112	118
Lease Quota (net)	0	0	0	0	0	0
Other Dairy	9	22	2	0	2	0
Herd Replacement	-185	-186	-239	-205	-226	-234
<b>Total Dairy Output</b>	<b>1791</b>	<b>2161</b>	<b>2031</b>	<b>2332</b>	<b>2059</b>	<b>2461</b>
<b>Variable costs</b>						
Concentrates	551	607	576	628	668	756
Coarse Fodder	38	45	33	30	30	53
Vet and Medicine	71	72	79	80	74	74
Other Livestock Costs	182	172	171	187	172	176
Forage Costs	88	97	118	126	110	116
<b>Total Variable Costs</b>	<b>930</b>	<b>994</b>	<b>975</b>	<b>1052</b>	<b>1052</b>	<b>1176</b>
<b>Total Gross Margin</b>	<b>861</b>	<b>1167</b>	<b>1056</b>	<b>1280</b>	<b>1007</b>	<b>1284</b>

## **Appendix 2: Reports in Series**

Reports in this series:

**Crop Production in England**

**Dairying Farming in England**

**Hill Farming in England**

**Horticulture Production in England (Horticultural Business Data)**

**Lowland Grazing Livestock Production in England**

**Pig Production in England**

**Poultry Production in England**

**Organic Farming in England**

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