The Royal Agricultural College/Rumenco Ltd Annual Fellowship in Beef/Sheep Research

Founded: 2004

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The 5 year programme involved appointing a Fellow to present a selected subject and then present a final report and lecture at the Royal Agricultural College on a particular date on an annual basis.

The award presented is that of a ‘Fellow of the RAC 100 Club’.


Report No.4 October 2008 Dr John Vipond (SAC) “Understanding the Evolutionary Role of Sheep in Future Food Supply, Rural Society and Landscape Management”


Report No.6 October 2010 Nicholas Peter Allen (Sector Director – EBLEX) “The Outlook and Opportunities for the English Sheep Industry 2012 and Beyond”

Signed Peel H Holroyd, Chairman RAC 100 Club

Dated 21stOctober 2010
This is part of the existing Annual Fellowship Programme at the Royal Agricultural College focussing on important issues-vis-

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Contacts:-

The Principal  
Professor Chris Gaskell  
Royal Agricultural College, Cirencester, Glos.  
Tel: 01285 652531

Business Development Centre Administrator (100 Club)  
Rebecca Harris  
Royal Agricultural College  
Cirencester  
GLOUCESTERSHIRE  
GL7 6JS  
Tel: 01285 889872  
Email: rharris@rac.ac.uk

Nicholas Allen  
Sector Director  
EBLEX – a division of Agriculture and Horticulture Development Board (AHDB)  
Stoneleigh Park  
Keniworth  
Warwickshire  
CV9 2TL  
Tel: 024 7669 2051  
www.eblex.org.uk
The Royal Agricultural College
And
Rumenco

100 Club Annual Fellowship
in Beef and Sheep

Report No 6

Thursday 28th October 2010, RAC Cirencester

‘The Outlook and Opportunities for
the English Sheep Industry
2010 and Beyond’

By Nick Allen
Sector Director, EBLEX
Preface

The RAC/Rumenco Ltd Annual Fellowship in Beef/Sheep Research Report No.5 entitled ‘The Full Utilization of the Sheep … to Add Value’ included in its general conclusions that ‘future legislation on environmental management is inevitable post 2012 changes in the EU Common Agriculture Policy’.

This is only one aspect of translating the excellent listing by EBLEX of over 50 other aspects of legislation that may have an influence on the Beef and Sheep Sector, which in turn illustrates how such positive guidance is of immense value to all sections of the Sheep Sector.

EBLEX was established as a Non-departmental Public Body for the Beef and Sheep Sector Company for England in 2003 and became a division of the newly created Agriculture and Development Board (AHDB) on 1st April 2008.

It was authorised under the Agriculture and Horticulture Development Board Order 2008 which serves the six sectors of:

- pig meat in England;
- beef and lamb in England;
- commercial horticulture in Great Britain;
- cereals and oil seeds in the UK
- milk in Great Britain.

The EBLEX Board oversees strategy delivering a wide range of technology transfer, marketing and promotional programmes to farmers, consumers and businesses in the beef and lamb supply chain. Funded through the AHDB levy paid on all cattle and sheep slaughtered in or exported from England, EBLEX also obtains additional grant funding from a range of sources.

Experience clearly indicates that EBLEX is very much part of the commercial food chain and rapidly becoming a highly respected friend to the farmer.

The content of this Report No. 6 is to look forward to how current and future issues can be translated into positive components of a viable future.

It is indeed a privilege to involve EBLEX and the Agriculture and Horticulture Development Board in this report.

Signed:  Peel H Holroyd
Chairman, Royal Agricultural College 100 Club
Chairman, RAC/Rumenco Ltd Annual Fellowship in Beef/Sheep Research
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Foreword

There is no doubt that the sheep industry is at a crossroads. Robust and consistent prices throughout much of 2010 are set against a background of falling flock numbers worldwide, falling consumer demand for lamb products in the UK and new challenges, like climate change and EID.

But there is much to be optimistic about. These higher prices have brought increased returns for producers. The tightening supply is leading to new market opportunities worldwide, not just in traditional cuts but also for fifth quarter products.

This coupled with an apparent demand in the rise for Halal products, moves to rejuvenate the wool market and leaps in technical knowhow and breeding techniques, as well as on-farm efficiencies to cut emissions, make it an exciting time to be in the industry.

We need to challenge ourselves though to make the most of these opportunities and drive the industry forward. If we miss these chances or simply decide we are happy where we are at this moment, the future of the sheep industry in this country will not be secure.

This report looks at all aspects of the sheep industry, giving a snapshot of where we are, what the challenges are and what we can do to make the most of the opportunities. From the world situation, to UK sheep industry infrastructure, technical knowhow to new markets and new blood coming through into farming, it is a comprehensive look at where we are and where we are going.

To take the industry forward, we need to:

- Identify and exploit new markets, particularly overseas
- Improve uptake of technical improvements and genetically superior recorded animals
- Address consumer concerns over lamb to halt consumption decline
- Maintain throughputs in a climate of declining numbers.

It is down to everyone in the sheep industry to work together to help us achieve this and give us the best chance of a sustainable and profitable future.

Nick Allen
EBLEX Sector Director
October 2010
Acknowledgements

I would like to thank the principal of the Royal Agricultural College (received its Royal Charter 1845) for inviting me to present the RAC/Rumenco Annual Fellowship in Beef/Sheep research 2010 report no.6. I regard it as an honour and hope my and EBLEX’s contribution will stimulate and assist the industry.

I would like to pay tribute to Peel Holroyd Chairman of the Fellowship for his assistance, guidance, encouragement and vision

I would like to record my thanks for the tremendous support I have received from my colleagues at EBLEX.

Chris Lloyd EBLEX - his coordination of this report as well as his contribution has been essential and the report could not have been achieved without him.

Mark Topliff EBLEX
Mark Doherty AHDB MI
Liz Ford EBLEX
Dr Phil Hadley EBLEX
Nicola Dodd EBLEX
Dr Duncan Pullar EBLEX
Sam Boon EBLEX/SIGNET
John Thorley OBE Campaign for Real Wool
James Wilde EBLEX
Heather Stewart EBLEX
Dr Liz Genever EBLEX
Katie Brian EBLEX

Many other EBLEX staff have contributed to this report as well as the above. It has been a true team effort and it is a privilege to be their Sector Director

I am very conscious to be following previous respected reports by truly professional members of the UK Sheep industry and trust that the content of Report no.6 will continue to stimulate the future of the important contribution of this Fellowship programme to the industry.
Figure 1.1: World Sheep and Goat Numbers

Country Code
- AU Australia
- CN China
- DZ Algeria
- ET Ethiopia
- EU European Un
- IN India
- IR Iran
- NG Nigeria
- NZ New Zealand
- PK Pakistan
- SD Sudan
- SY Syria
- TR Turkey
- ZA Zambia

Source: FAOSTAT

Sheep: 1,078 Million head
Goats: 855 Million head

World: 1,933 Million head

Sheep
Goat
Chapter 1: The world lamb market

Introduction

The outlook for the UK English sheep industry needs to be considered in the context of a world sheep meat market. Recent trends have seen declining numbers in the main sheep meat exporting countries, against a backdrop of a growing world population with an increasing demand for protein. Once we analyse the world picture, we can see where the UK fits in and where the best opportunities may lie.

Figure 1.2: Sheepmeat Trade Flows 2009-10 GIRA

UK sheep production is greatly influenced by the wider world market. In simple terms Europe is a major market for UK exports as it is for Oceania countries like New Zealand and Australia. This can affect the fortunes of the UK sheep meat sector. Add to this the growing influence of developing markets around the world and the canvas for the global sheep meat trade is changing. When looking at such a scenario, it seems sensible to start with the southern hemisphere as the major player in market place.

New Zealand

New Zealand flock numbers have declined in recent years with a shift to dairying and forestry and as of July 2009 were estimated to be 33.1 million head (see Table 1.1). More recently, sheep numbers have fallen as a result of poor climatic conditions and contributed to the fall in the lamb supply. However, this trend is forecast to reverse during 2010/2011.
Table 1.1: New Zealand sheep meat production and forecasts

<table>
<thead>
<tr>
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<th></th>
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<tbody>
<tr>
<td>(000 head)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total sheep flock*</td>
<td>34,088</td>
<td>33,085(p)</td>
<td>-3</td>
<td>33,596</td>
<td>+2</td>
</tr>
<tr>
<td>Slaughterings</td>
<td>33,711</td>
<td>26,875</td>
<td>-20</td>
<td>28,040</td>
<td>+4</td>
</tr>
<tr>
<td>Lamb</td>
<td>27,108</td>
<td>22,641</td>
<td>-16</td>
<td>23,988</td>
<td>+6</td>
</tr>
<tr>
<td>Other sheep</td>
<td>6,603</td>
<td>4,234</td>
<td>-36</td>
<td>4,052</td>
<td>-4</td>
</tr>
<tr>
<td>(000 tonnes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production</td>
<td>595</td>
<td>500</td>
<td>-16</td>
<td>519</td>
<td>+4</td>
</tr>
<tr>
<td>Lambs</td>
<td>446</td>
<td>398</td>
<td>-11</td>
<td>424</td>
<td>+7</td>
</tr>
<tr>
<td>Mutton</td>
<td>149</td>
<td>102</td>
<td>-31</td>
<td>95</td>
<td>-7</td>
</tr>
</tbody>
</table>

(p) Provisional (f) Forecast
* As of July
Source: AHDB/EBLEX, Meat & Wool New Zealand: Economic Service, NZ Ministry of Agriculture and Forestry

More than 75% of the lamb and about 68% of the mutton produced in New Zealand is exported. The key factors that influence the outlook for the sheep sector, and therefore the level of lamb and mutton production in New Zealand, include:

- Dairy sector outlook, which is becoming increasingly important
- Exchange rate differentials and export prices
- Price of lamb relative to beef
- Situation in the wool sector.

One of the most significant features of the New Zealand sheep meat industry in recent years has been the rise in ewe productivity and lamb carcass weights. Since the beginning of the 1990s, the national average lambing percentage has risen from 100% to 118% in 2009, and average prime lamb carcass weights have risen by 2.6kg to 17kg.

A combination of better genetics and best practice management techniques has driven these technical improvements. Although New Zealand farmers are focused on continuing improvements in both these areas, the utilisation of good sheep country for dairy production may see lamb production concentrated onto poorer land in some areas and increase the challenges of further production improvements. This could present opportunities for UK producers.

New Zealand lamb production is forecast to increase in 2010/11, following the decline of 2009, after a record lambing percentage in spring 2009. However, mutton production is expected to decline further as producers focus on rebuilding flocks after several poor seasons of drought and poor financial returns. With a forecast increase in lamb production for export, shipments to the Middle East and Asian markets are expected to return to pre-2009 levels. However, the New Zealand Dollar has appreciated strongly against the Euro and Sterling from mid-2009 onwards, eroding export returns to producers.

The European Union is the largest lamb consumer and importer of lamb. However, virtual 100% take-up of the EU annual tariff quota by Australia and New Zealand means that there is limited scope to develop the EU market in volume terms until there are fundamental changes to the WTO agreement. The composition of exports to the EU, however, may well change over time, particularly in respect of the volume exported in higher-value chilled form.

The US market is also key for producers in New Zealand and Australia. According to the US Department of Agriculture (USDA), lamb and mutton imports currently account for nearly half of US consumption. Imports are mainly from Australia (about 68% to 70%) and
New Zealand (about 30% to 32%). However, the strong Australian Dollar and weak US Dollar might further restrain export gains to the US. For most of the first decade of the 21st century, lamb supplies in the US remained relatively constant, before late 2007 saw the start of a downward trend that became more evident in late 2009. With per capita lamb and mutton consumption stable, imports have offset the decline in domestic production.

Future growth in global sheep meat consumption is expected (see Table 1.2 in Appendix 2) and is likely to be focused on the developing countries of South America and East Asia, as consumption within Europe declines. Sheep meat is also the principal meat of the Middle East and North Africa. There is a strong positive relationship between the level of income and the consumption of animal protein, with the consumption of meat, milk and eggs increasing at the expense of staple foods.

Urbanisation is another major driving force influencing demand for livestock products and this has led to a remarkable increase in the consumption of such products in countries like Brazil and China. Demand for lamb in China has grown to become one of the world’s largest markets and demand is expected to continue rising over the next 10 years beyond local production capabilities, offering opportunities for imports.

Figure 1.3: New Zealand sheep farming
Australia

Australian ewe and lamb numbers in June 2009 were estimated by the Australian Bureau of Statistics to be at the lowest level for more than 100 years at 72.7 million (see Table 1.3 below).

**Table 1.3: Australian sheep meat production and forecasts**

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>% change</th>
<th>2010(f)</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>(000 head)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total sheep flock*</td>
<td>76,938</td>
<td>72,740</td>
<td>-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slaughterings</td>
<td>32,359</td>
<td>31,079</td>
<td>-4</td>
<td>30,085</td>
<td>-3</td>
</tr>
<tr>
<td>Lambs</td>
<td>20,342</td>
<td>20,886</td>
<td>+3</td>
<td>21,170</td>
<td>+1</td>
</tr>
<tr>
<td>Other sheep</td>
<td>12,017</td>
<td>10,193</td>
<td>-15</td>
<td>8,915</td>
<td>-13</td>
</tr>
<tr>
<td>(000 tonnes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production</td>
<td>670</td>
<td>647</td>
<td>-3</td>
<td>628</td>
<td>-3</td>
</tr>
<tr>
<td>Lamb</td>
<td>414</td>
<td>432</td>
<td>+4</td>
<td>440</td>
<td>+2</td>
</tr>
<tr>
<td>Mutton</td>
<td>256</td>
<td>215</td>
<td>-16</td>
<td>188</td>
<td>-13</td>
</tr>
</tbody>
</table>

(p) Provisional (f) Forecast
* As of June
Source: AHDB/EBLEX, Australian Bureau of Statistics

Persistent drought conditions and the poor returns of wool enterprises relative to other land uses encouraged producers to shift away from sheep production into cropping. However, restructuring in Australia has resulted in a younger flock and a greater focus on meat production than historically. Significantly, growth in lamb export markets has helped encourage this new focus and the proportion of lamb produced that is exported has more than doubled over the past decade. Currently, 65% of lamb production is exported. With the decline in ewe numbers in recent years, mutton production has fallen. Nevertheless, the export of mutton remains a significant component of Australian sheep meat trade.

Lamb production in Australia is forecast to increase in 2010/11, principally due to the ongoing shift towards prime lamb production. Tight global supplies and robust demand from the Middle East is strengthening demand for Australian lamb. However, live sheep exports are forecast to fall as the strong Australian Dollar will continue to make its sheep more expensive for overseas customers. The rate of decline in the national flock is forecast to slow in 2010, to around two per cent year-on-year, at 69.9 million head and then stabilise in the medium term at around 69 to 70 million head. The decline in the adult sheep slaughter is forecast to slow, reaching a base of around 7.9 million by 2013.

**Table 1.2: Global sheep meat production and consumption forecasts**

<table>
<thead>
<tr>
<th>000 tonnes*</th>
<th>2008</th>
<th>2009</th>
<th>2010(f)</th>
<th>2011(f)</th>
<th>2012(f)</th>
<th>2013(f)</th>
<th>2014(f)</th>
<th>2015(f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>12,486</td>
<td>12,584</td>
<td>12,749</td>
<td>13,010</td>
<td>13,593</td>
<td>13,830</td>
<td>14,177</td>
<td></td>
</tr>
<tr>
<td>Imports</td>
<td>1,103</td>
<td>1,107</td>
<td>1,095</td>
<td>1,096</td>
<td>1,105</td>
<td>1,110</td>
<td>1,114</td>
<td></td>
</tr>
<tr>
<td>Consumption</td>
<td>12,361</td>
<td>12,495</td>
<td>12,640</td>
<td>12,902</td>
<td>13,177</td>
<td>13,491</td>
<td>13,710</td>
<td>14,082</td>
</tr>
<tr>
<td>Ending stocks</td>
<td>93</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>77</td>
<td>71</td>
<td>83</td>
<td>70</td>
</tr>
<tr>
<td>Exports</td>
<td>1,215</td>
<td>1,215</td>
<td>1,203</td>
<td>1,204</td>
<td>1,204</td>
<td>1,218</td>
<td>1,210</td>
<td>1,222</td>
</tr>
</tbody>
</table>

(f) Forecast
* Carcass weight equivalent
Source: OECD, FAO
European Union

Over the last 10 years, the breeding flocks in most of the major EU sheep producing countries have reduced in size. France has seen a fall of around 22%, with the UK and Ireland experiencing declines of 30% and 43%, respectively. However, in Romania the national breeding flock increased by 27% between 1999 and 2009.

**Figure 1.4: Distribution of the sheep population in Europe 2007**

![Distribution of the sheep population in Europe 2007](image)

Amongst the EU-15, under CAP reform, only Germany, Italy, Ireland and the UK implemented full decoupling in 2005 with the removal of production subsidies on cattle and sheep. Of the remaining EU-15, Denmark, Portugal, Greece, France, Spain, and Finland opted to retain 50% of the annual ewe premium. Denmark and Portugal introduced partial decoupling in 2005, with other member states commencing in 2006. With the exception of Greece, the countries opting for partial decoupling have also decided to retain one or more of the cattle headage premiums. In the 10 new member states (EU-10), an area-based payment scheme was introduced.

**Over the next 10 years, it is forecast that the breeding flocks in most major EU countries will continue to fall.** Spain, France and the UK are likely to experience the largest decline in total ewe numbers. The new EU member states (EU-12) accounted for less than 19 per cent of the total EU sheep breeding flock in 2009 but this proportion has risen as the EU-15 flock declined. (see Tables 1.4 and 1.5 in Appendix 2)

The decline should not be a surprise. EU sheep meat production has been in decline since the 1990s. As of 2009, the EU as a whole was only 79% self-sufficient in sheep meat (see Table 1.6 in Appendix 2) but this proportion varies greatly from one member state to the next. There was a sharp decline in EU gross indigenous sheep and goat meat production in 2009 to 953,000 tonnes, down 7% on 2008. A smaller but further fall in production is forecast for the EU for 2010. In 2009 the largest fall in production was in the second largest producing country, Spain, which was down 20% in response to a sharp decline in the breeding flock in 2008 because of poor profitability, drought and disease problems.

Total EU sheep meat imports in 2009 were largely unchanged on the previous year. New Zealand, the largest supplier with a market share of 85 per cent of EU imports, utilised 98% of its annual tariff quota in 2009, down from 99% in 2008. Imports from Argentina and Chile, although small, increased on the previous year. Imports are likely to increase only slightly in 2010/11 as most countries operate close to their tariff quota limits or will be limited by supply constraints.

Given lower EU production, there was an ongoing marked decline in EU consumption of sheep meat in 2009 for the second consecutive year, down 6% on 2008. Lamb’s high price relative to other proteins and product shortages led to consumers switching away from lamb to other meats.
Figure 1.5: Main EU Sheep Populations

Source: GIRA 2009
EU sheep meat consumption is likely to fall in 2010 as supplies remain tight and economic uncertainty, particularly amongst Euro Zone member states continues. In the medium term a slight decline in EU consumption is expected (see Table 1.7 below).

Table 1.7: EU sheep meat production and consumption forecast

<table>
<thead>
<tr>
<th>000 tonnes*</th>
<th>2008</th>
<th>2009</th>
<th>2010(f)</th>
<th>2011(f)</th>
<th>2012(f)</th>
<th>2013(f)</th>
<th>2014(f)</th>
<th>2015(f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>1,026</td>
<td>953</td>
<td>913</td>
<td>910</td>
<td>915</td>
<td>910</td>
<td>906</td>
<td>902</td>
</tr>
<tr>
<td>Imports</td>
<td>271</td>
<td>271</td>
<td>274</td>
<td>275</td>
<td>276</td>
<td>277</td>
<td>278</td>
<td>279</td>
</tr>
<tr>
<td>Consumption</td>
<td>1,288</td>
<td>1,212</td>
<td>1,174</td>
<td>1,172</td>
<td>1,178</td>
<td>1,174</td>
<td>1,171</td>
<td>1,168</td>
</tr>
</tbody>
</table>

(f) Forecast
*Carcase weight equivalent

UK view

The total number of sheep recorded on UK farms in December 2009 was down by more than 2% on the previous year to 21.3 million head, the smallest national flock since 1980 (see Table 1.8, Appendix 2). The reduction in lamb numbers was largely a result of the shrinking breeding flock and the December census showed a 1% fall to 13.8 million in ewe numbers compared with 2008. In 2009, farmers deciding to exit the industry were encouraged by strong finished prices, particularly for cull ewes, while good export demand encouraged further ewe lambs forward onto the market.

Figure 1.6: Chart 1 UK December sheep flock 1980 to 2009

![Chart 1 UK December sheep flock 1980 to 2009](chart.png)
Medium term historical developments indicate that with the introduction of de-coupled support payments in 2005, the number of ewes and quotas held no longer dictated the level of support payments. It appears that some producers reacted by reducing their flock sizes. Back in the 1980s, driven by the prevailing subsidy system, the breeding flock expanded by nearly five million ewes to total 20 million head.

Since then, the reduction in the UK breeding flock has been influenced by a combination of a change to the subsidy system, the level of subsidy payments and the trend in producer prices. This has had a knock-on effect on gross margins and net farm incomes (see table 1.9 in Appendix 2). The trend may have been accelerated by the outbreak of Foot and Mouth Disease (FMD) in 2001. As a result, the national breeding flock is unlikely to recover to the numbers pre-2001.

Taking 1996 as a base, productivity in the UK flock improved in 1997 and 1998 but then fell by 20% between 1998 and 2001, though this was mainly down to FMD in 2001. Since then, it has increased to over 121% in 2009.

Net sheep meat production in the UK during 2009 was down 7% on the previous year and is set to continue to fall further in 2010. The number of lambs available for slaughter remained significantly lower than in 2008, largely as a result of the smaller breeding flock in December 2008.

**Figure 1.7: DEFRA Dec 2009 Survey – breeding flock**

Sheep meat imports into the UK during 2009 were 3% higher than in 2008 (see Table 1.10 in Appendix 2). New Zealand increased its share of chilled product into the UK with shipments at an all time high of 37,000 tonnes. An increase in UK sheep meat exports to France and Belgium was indicative of a positive year for exporters and trade increased by 9% in 2009 compared with a year earlier (see Table 1.11 in Appendix 2). The weakness of £ Sterling was believed by many to be the primary driver behind the rise in export volumes.

Consumption of sheep meat in the UK has been falling and was down 7% in 2009 on the previous year as restricted supplies and higher retail prices impacted on consumer purchases. However, declines in consumption were not consistent across cuts and cut quality.

It is surmised that lambing rates have been lower in 2010 compared with 2009. Some improvement was expected but the harsh winter will have mitigated any potential increase. Subsequently, the lamb crop is expected to be marginally lower with slaughtering and
sheep meat production also declining. Also there were fewer lambs carried over from 2009 for slaughter in early 2010 partly given more positive sentiments within the industry resulting in a larger number of ewe lamb retentions last autumn. Sterling is expected to remain weak in 2010 compared to long term trends and, as a result, export prospects should remain favourable. Import volumes are expected to be slightly higher as UK supply tightens further.

The 2010 December survey is expected to show little change in the breeding flock. Culling rates are expected to fall in 2010 and 2011 due to a younger national flock and better market prices for producers leading to a stabilisation of the UK flock. Production is forecast to increase after 2011 up to 2014 (see Table 1.12 in Appendix 2). Little change in consumption is forecast due to high prices, potential slow economic growth affecting purchases of lamb and limited supplies of domestic and imported product.

**Figure 1.8: UK sheep marketing chain**

Going forward

As EU is only 79% cent self sufficient in sheep meat a high dependence on imports from the world market is inevitable. The EU is also a high cost producer and increased access to the EU market would present problems for EU sheep meat producers. This applies especially to chilled lamb imports which have increased steadily in importance over the years.

Before the last WTO negotiations were suspended, increases in market access to the EU were included. It was understood that Australia in particular was pushing for increased access as its lamb industry has been expanding in recent years. Yet its 2010 World Trade organisation (WTO) tariff quota with the EU for sheep meat is only 18,786 tonnes carcase weight per annum equivalent, compared with New Zealand that has a quota of 227,854 tonnes.
Over the years the French Government has taken several policy initiatives to improve the domestic sheep industry. This has not prevented the industry from being in long term decline and the latest measures may do little more than help to stabilise the industry rather than result in any expansion. In France and many other EU member states, improving the structure of production needs to be addressed if the sheep sector is to move forward.

The impact of potential CAP reform on the EU’s lamb industry is still uncertain. The EU Commission has now closed its public consultation on the future of the CAP post 2013. DG AGRI will prepare an options paper towards the end of 2010 and formal proposals will only appear in 2011. Despite current cuts in public spending, CAP expenditure (accounting for around 40% of the total EU budget) is protected until 2013. As direct payments now represent the largest share of the CAP, they will come under heavy pressure because of budget constraints. The new Treaty on the Functioning of the European Union (TFEU) involves significant challenges for CAP and its budget will be subject to the same discipline as other expenditure. This is all against the background of the more difficult negotiations on the overall EU financial framework post-2013 and early draft documents indicate expenditure will have to be curbed.

Efficient, cost effective and consistent quality production will continue to be the key factors determining the British sheep industry’s ability to at least maintain its share of export and domestic markets, as well as its ability to add value to exported product. It is generally recognised that British sheep meat will always find it difficult to compete with lamb imported from the global market on price grounds. It is highly unlikely that sufficient production and costs efficiencies alone will overcome this weakness. The UK sheep meat sector is therefore faced with the challenge of at least maintaining its current share of the EU market and finding ways of complementing the supplies of non-EU sheep meat that will continue to form a significant part of total supplies on the EU market. In order to do this there are a number of economic and marketing options for the industry to consider:

- Increasing the seasonality of supply to avoid direct competition during the first half of the year
- Greater consistency and quality of supply
- Capitalise on the existing EU market
- Targeting the halal market
- Exploit opportunities in the new EU member states
- Export lamb outside the EU to new developing markets e.g. Asia
- Improve production efficiencies
- Develop desirable brands for British sheep meat and country specific offerings
- Marketing of edible sheep offal to countries such as Hong Kong and China.

### Challenge
- Address declining home consumption of lamb
- Develop English brands in existing and developing markets

### Opportunities
- Declining lamb supplies in Europe offer opportunities to consolidate English exports.
- Interest in consistent supply of quality products opens markets for higher value markets for certain cuts and sheep products in new markets such as the Middle East and Asia.
Chapter 2: The UK sheep industry infrastructure

Introduction

The UK sheep infrastructure is both steeped in tradition and embracing the latest innovations through challenges like Electronic Identification (EID). While it is important to preserve the aspects of the industry which have survived generations because they work well, it must also evolve to ensure it is efficient and offering the business opportunities and framework for technical improvement that is necessary in the 21st century.

Auction Market

The traditional auction market system for sheep sales is still an important part of the structure of farming in England. However, the sector has contracted significantly over the past 20 years. Pressure on town centre sites for re-development, increasing operating costs and risks from bad debts have been contributing factors in the demise of some markets, particularly some of the historic, smaller sites.

The 2001 Foot and Mouth (FMD) outbreak, however, has had the most significant impact upon numbers, with a decrease of 21% in market premises between 2000 and 2003.

Figure 2.1: Traditional English auction market

Table 2.1: Number of livestock markets selling prime sheep in GB 2006 – 2009

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Markets</td>
<td>113</td>
<td>114</td>
<td>112</td>
<td>108</td>
</tr>
</tbody>
</table>

Source: AHDB Market Intelligence

As indicated in table 2.1 above, market numbers since 2006 have been relatively stable. Several of the market closures can be accounted for by smaller traditional town centre sites closing to be replaced by a single amalgamated, purpose-built facility, for example the new agri-business centre at Sedgemoor Market, in Somerset, replacing the old traditional town centre markets at Highbridge and Taunton. New developments are now situated in purpose-built facilities out of town centres, with many of the older markets left looking to relocate where funding, feasibility and planning allow.
There is a wide geographical spread of markets in England with a concentration in the prominent stock areas. Table 2.2, below, shows the distribution of prime sheep markets within the defined price reporting regions in England.

Table 2.2: Regional split of prime sheep markets in England, 2009

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of markets selling finished sheep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern</td>
<td>32</td>
</tr>
<tr>
<td>Midlands</td>
<td>20</td>
</tr>
<tr>
<td>Eastern</td>
<td>5</td>
</tr>
<tr>
<td>South West</td>
<td>13</td>
</tr>
<tr>
<td>ENGLAND</td>
<td>70</td>
</tr>
</tbody>
</table>

Source: AHDB Market Intelligence

Despite rationalisation in the sector, over recent years there has been a clear resurgence in finished sheep sales through live markets, with more than 57% of slaughter sheep being sold liveweight in 2009. Table 2.3 below shows the national split between liveweight and deadweight selling of slaughter sheep. The table also highlights the place the live market has in the cull ewe/ram supply chain. According to data supplied to AHDB Market Intelligence, more than 8.56 million slaughter sheep were sold through GB markets during 2009, of which over 5.52 million were sold through English markets.

Table 2.3: GB Slaughterings analysed by marketing type (% breakdown) 1999 - 2009

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
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<tbody>
<tr>
<td>LW</td>
<td>52.3</td>
<td>54.0</td>
<td>12.6</td>
<td>29.8</td>
<td>47.0</td>
<td>51.6</td>
<td>47.3</td>
<td>52.6</td>
<td>45.8</td>
<td>54.6</td>
<td>57.1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DW</td>
<td>47.7</td>
<td>46.0</td>
<td>87.4</td>
<td>70.2</td>
<td>53.0</td>
<td>48.4</td>
<td>52.7</td>
<td>47.4</td>
<td>54.2</td>
<td>45.4</td>
<td>42.9</td>
</tr>
<tr>
<td>LW</td>
<td>49.9</td>
<td>52.0</td>
<td>12.4</td>
<td>28.2</td>
<td>44.2</td>
<td>47.7</td>
<td>46.4</td>
<td>49.7</td>
<td>42.2</td>
<td>50.3</td>
<td>52.8</td>
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<td>Clean</td>
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<tr>
<td>DW</td>
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<td>71.8</td>
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<td>52.3</td>
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<td>47.2</td>
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<tr>
<td>LW</td>
<td>70.8</td>
<td>67.7</td>
<td>13.7</td>
<td>40.8</td>
<td>65.4</td>
<td>76.6</td>
<td>52.7</td>
<td>69.7</td>
<td>67.2</td>
<td>80.7</td>
<td>83.3</td>
</tr>
<tr>
<td>Ewes/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rams</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LW</td>
<td>70.8</td>
<td>67.7</td>
<td>13.7</td>
<td>40.8</td>
<td>65.4</td>
<td>76.6</td>
<td>52.7</td>
<td>69.7</td>
<td>67.2</td>
<td>80.7</td>
<td>83.3</td>
</tr>
<tr>
<td>DW</td>
<td>29.2</td>
<td>32.3</td>
<td>86.3</td>
<td>59.2</td>
<td>34.6</td>
<td>23.4</td>
<td>47.3</td>
<td>30.3</td>
<td>32.8</td>
<td>19.3</td>
<td>16.7</td>
</tr>
</tbody>
</table>

The largest three prime lamb markets in 2009 each sold in excess of 200,000 head, which equated to more than 12% of the total GB throughput. The ten largest prime sheep markets in GB accounted for over 30% of the market share. The largest markets for prime sheep in 2009 in GB were:

- Welshpool Wales
- Longtown Cumbria
- St Asaph Wales
- Oswestry Shropshire
- Stirling Scotland
- Benthamp Yorkshire
- Penrith Cumbria
- Ludlow Shropshire
- Newton St. Boswells Scotland
- Ashford Kent

As well as slaughter sheep sales, the live market also offers a valuable mechanism for the sale of store and breeding sheep, with over 1.8 million head sold through English markets in 2009, (Livestock Auctioneers association LAA, 2010). Store and breeding sales will be held as part of the normal market, or will be specialised sales held on a weekly, fortnightly or monthly basis, as demand dictates.

Stock coming into markets is invariably sourced from a 30 to 40-mile radius, with the transport pattern skewed by main arterial roads and landscape features. For specialist pedigree sales, the range will increase accordingly. Generally, all market outlets tend to have buyers/agents representing them in the live market for slaughter sheep. These will include wholesale suppliers, supermarkets, export trade, halal markets and, where they still remain, local butcher buyers. Whilst some companies will send one dedicated buyer, others may employ an agent who may be buying for several accounts. Buyers for store and breeding stock will tend to travel up to 50 miles, whilst the specialist pedigree breeding sales can attract buyers from across the country.
The future for live marketing of sheep

The live market looks to be a secure marketing channel for sheep, as seen by the increasing proportion of slaughter sheep being sold liveweight and the strong store and breeding sheep sales figures. **The live market channel provides a transparent sale mechanism for all types of sheep**, allowing farmers to know the realisation of their stock on the day of sale, and if market licensing allows, the withdrawal of stock from the sale should price expectations not be met. Auction firms often employ field staff to visit farms to select stock prior to the sale day, whilst most provide a lamb sorting service on the sale day itself, to assist vendors to sort and present lambs to buyers to achieve the best price possible. This also helps to communicate market signals to vendors as the season progresses. In many cases, journey times to a market are shorter than travelling to an abattoir and, particularly for slaughter lambs, the gathering and sale at a market allows for a larger, more efficient load to transport. Out of town centre markets have good transport links, making them accessible for larger articulated vehicles.

Markets, as well as conducting the sale and guaranteeing payments, have developed additional services valued by their farmer clients. Many offer marketing advice as well as help on regulatory issues such as tagging, movement regulations and Central Point Reading Centre services for EID regulation compliance. These are areas where there is often misunderstanding and the auction mart is often a source of advice.

**The market environment is also seen by many as a social network for farmers.** Farming, particularly sheep farming, can be an isolated existence and the market can provide an opportunity to touch base with other farmers, or to learn about new regulations and thinking – a place where knowledge transfer messages can be directed at a market they might otherwise miss. Increasingly markets have chaplains in attendance, as well as facilities like a hairdresser or nurse’s clinic.

A number of issues could though lead to further rationalisation of markets and present pressing challenges including:

- Time pressures for farmers to leave the farm due to increased labour costs and/or labour shortages could in turn see farmers move to deadweight selling. This is more likely as younger generations take over the family farm, where previously the father undertook the selling, whilst the son or daughter stayed at home
- Decreasing national sheep numbers, and increased regulatory burden (e.g., EID, Food Chain Information, movement restrictions) leading to fewer producers and larger dedicated flocks
- Reduced number of buyers as the abattoir sector is becoming more concentrated
- Effect of reduced stock numbers on market turnover and increased running costs
- Threat of future disease outbreaks such as bluetongue.

Whilst further contraction of the sector is likely as sheep numbers decrease, it is the smaller markets that will be most at risk, particularly where they operate from a rented site with potential for more economically advantageous activities. However accessible out of town centres, in particular those sited in multi-function premises, have opportunities to secure their future sustainability. **Rationalisation of the industry should enable remaining markets to improve throughputs from local market closures.** Mergers or site-sharing may provide further opportunities for cost reductions.
Increasing the usage of the site where practical will also provide markets with the opportunity to safeguard their future. Many sites already conduct machinery sales or host car boot sales and collectors fairs. Horticultural sales are often a major source of income and there could well be scope for some markets to head down these routes to secure their future.

Securing and maintaining links to the younger farming generation is a key area for markets to focus on. Apprentice auctioneer schemes may bring in local youngsters with a plethora of young farmer contacts. The younger generation, who have traditionally stayed at home to work whilst their parents went to market, may not feel confident enough to venture into such an unfamiliar arena. Working with the local young farmer clubs to provide showing classes at prime stock and store shows, or perhaps competitions run over longer periods, could provide opportunities to attract the younger generation to livestock markets.

In the short-term it is likely the proportion of sheep sold through markets will remain relatively consistent if, as is forecast, the national flock levels out.

Abattoirs

The abattoir sector has become more concentrated over recent years. Between 2007 and 2008, English abattoirs slaughtering sheep fell by more than 3.6% to 185 plants. Many of the larger companies operate more than one plant and supply the large supermarkets and food service providers, which accounts for an increasing proportion of the total kill. In 2008, 24 plants accounted for 77.2% of the English kill, leaving 161 plants the remaining 22.8% share of throughput. See table 2.4 below.

<table>
<thead>
<tr>
<th>Size Group (GBU)*</th>
<th>Number of Abattoirs</th>
<th>Total Throughput (Head)</th>
<th>Average Throughput (Head)</th>
<th>Share of Throughput (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 1,000</td>
<td>40</td>
<td>18,238</td>
<td>456</td>
<td>0.2</td>
</tr>
<tr>
<td>1,001 – 5,000</td>
<td>49</td>
<td>113,268</td>
<td>2,312</td>
<td>1.1</td>
</tr>
<tr>
<td>5,001 – 10,000</td>
<td>16</td>
<td>114,690</td>
<td>7,168</td>
<td>1.2</td>
</tr>
<tr>
<td>10,001 – 20,000</td>
<td>18</td>
<td>269,030</td>
<td>14,946</td>
<td>2.7</td>
</tr>
<tr>
<td>20,001 – 30,000</td>
<td>12</td>
<td>287,869</td>
<td>23,989</td>
<td>2.9</td>
</tr>
<tr>
<td>30,001 – 50,000</td>
<td>9</td>
<td>338,906</td>
<td>37,656</td>
<td>3.4</td>
</tr>
<tr>
<td>50,001 – 100,000</td>
<td>17</td>
<td>1,129,897</td>
<td>66,465</td>
<td>11.3</td>
</tr>
<tr>
<td>&gt;100,000</td>
<td>24</td>
<td>7,693,640</td>
<td>320,568</td>
<td>77.2</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>9,965,538</td>
<td>53,868</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: AHDB (based on AHDB levy records)

* GBU = GB Livestock Units. 1 GBU = 1 cattle beast or 5 sheep or 2 pigs.

A similar pattern exists across GB as a whole. In 2008, seven companies operated a total of 17 plants and were the main suppliers to the large supermarkets and large food service suppliers, with most also exporting as well. These plants accounted for 42.6% of 16.026 million total GB 2008 sheep slaughterings. There is also a second significant group of 10 abattoir companies each killing more than 300,000 sheep. These were primarily involved in supplying larger secondary supermarkets and large food service suppliers and/or the halal
or export markets, but were not main suppliers to the large supermarkets. This group accounted for 28.5 per cent of total GB sheep slaughterings in 2008.

Compared with 2006 figures, 2009 UK sheep and lamb slaughterings fell by 5%. This coincided with the ongoing reduction in the national flock size, undoubtedly influenced in this period by changes to the CAP support regimes and the removal of direct subsidies in favour of the Single Farm Payment and 2007 Foot and Mouth outbreak.

Many of the predominantly small-to-medium-sized plants are located within or near urban areas, where historically all plants would have been based to service their customers. However, as road links have improved and the requirement for space for chiller and processing facilities has increased, many of the larger plants are now located in out of town industrial centres or on green field sites, close to good transport links.

**Abattoirs will source sheep from a number of channels.** Finished sheep can either be procured on a deadweight basis either direct to the buyers at the main abattoirs, direct through their field representatives (often dealers in their own right) or direct through livestock procurement groups (some of these are owned and run by farmers, some are linked to larger feed companies, some run by auctioneers). Stock may also be procured on a liveweight basis through auction marts or livestock agents out in the field.

**Throughout England, stock movement has become more widespread in recent years as the large supermarkets have reduced the number of abattoir/processor companies servicing their mainstream market needs.** Many of the large plants provide a dedicated service to specific customers. This sector of the market requires livestock that conform to tight specifications (e.g., weight, classification), and in order to meet these needs, they frequently have to be procured from a large area, particularly when there are seasonal shortages. On the other hand, the small and many of the medium abattoirs will tend to procure their stock from a much smaller area.

Abattoirs, under a slaughter licence, are able to slaughter stock and quarter a carcase. A separate cutting licence is required to de-bone or take a carcase down to primal cuts. For practical reasons, today most of the large and medium-sized abattoirs in England will have co-located cutting facilities on site, but the size and potential of these varies markedly. Cutting facilities are intimately linked with the need for adequate chiller space (particularly if bone in or vacuum-packed meat is being matured). A major problem facing the smaller and many medium-sized abattoirs in England is a lack of chiller space which inhibits the development of their cutting (and value added) activity.

**The future for the abattoir sector**

It is likely that further contraction in the sector will continue as the national flock numbers decrease and overhead costs increase and margins become tighter. This, in turn, may lead to some plants becoming untenable. Small plants in prime development locations may choose to realise this value.

**Larger plants with dedicated supermarket supply chains will need to ensure future procurement availability.** The incorporation of producer groups and collaboration initiatives, such as links to feed companies to enable bulk buying and price bargaining could be considered. Some groups may look to establish agreed contracts and prices in advance. For plants where they supply a dedicated market, such as export or supermarkets trade, working with producers to constantly improve numbers of stock within specification will help alleviate the problems of re-directing and selling carcases falling outside of specification.
With the increasing interest in producers retailing their own meat through farm shops or box schemes, some abattoirs may choose to offer contract kill services. This may not offer a consistent throughput, particularly if the scheme is new, and could involve working with very small batches of animals, but could provide useful additional revenue for the plant.

Working closely with farmers to feed back information could help strengthen relationships, as well as alert them to issues which could in turn affect future supplies.

Whilst carcase condemnations would be reported back, any disease showing in the sheep’s offal, such as C.tenuicollis, should be reported back as although the plant may get little value from the offal, it could well be that the producer can change management practices on the farm to prevent this condition, many of which will affect live lamb performance and hence the quality of the animals being sent in.

Labour to work in meat plants is increasingly being drawn from Eastern European countries. Many of the larger plants have graduate training schemes with the aim of training future managers who have a thorough understanding of the business. The creation of apprentice training programmes for plant staff could be explored, with incentive linkages for reaching agreed milestones. As technology advances, plants are increasingly becoming more mechanised. Robotic cutting machines are now being installed in plants across the world and do require heavy investment but can help alleviate labour issues in the long term.

**Many plants have technical staff to focus on meat quality and oversee production.** Often, by making small changes, not only can meat quality be improved, but so too can production efficiency leading to a more valuable end product and cost reductions. EBLEX can signpost plants to information sources, provide details on new thinking or offer a plant visit to review layout and plant procedures which may affect efficiency or final product quality.
Challenges

- To maintain a viable infrastructure to effectively market the English lamb crop
- Maintain throughputs in a situation of declining supply

Opportunities

- Develop additional services for farmers to extend the use of facilities, e.g. third party read points for EID identification
- Increase usage of livestock auction centres
- Develop the service to supply the growing demand for locally sourced meat
- Establish fair supply contracts for producer groups or dedicated supply chains
- Exploit technology to improve slaughter efficiency and meat quality
Chapter 3: Consumer perceptions of lamb 2010

Introduction

To help plot the way forward for the lamb industry and efficiently tackle the challenges we face, it is important to understand the consumer market place – in other words, what people are buying in the shops. As part of its activity on this front, EBLEX gathers information from quarterly online interviews with 500 women who eat meat and are the primary grocery shopper in their household. The latest research carried out independently in early August 2010 gives insight into how consumers perceive lamb and also the role it plays in their typical in-home mealtime routines.

Consumption habits

Looking at consumption habits of different proteins (meats and fish) over a given month (Figure 3.1), lamb is eaten the least often. On average, only 16% of consumers eat it on a weekly basis and 57% have eaten it in the last month, which is significantly lower than the frequency of consumption of other proteins. For 43% of consumers, lamb is an occasional meat of choice consumed less than once a month.

Figure 3.1: Consumption of different proteins
When looking the different cuts of lamb that people regularly consume (see Figure 3.2), the most frequently eaten cut is a chop or cutlet. Although 80% of consumers eat roast lamb, less than half of those eat it once a month or more. Diced lamb (which is versatile for meals like stir-fries and casseroles) is eaten the least frequently with only 5% eating it on a weekly basis, 24% once a month and over 40% of consumers never eating it at all. In contrast to beef mince, which is by far the most popular beef cut (eaten by over half of consumers weekly and 84% monthly), lamb mince is only eaten weekly by 8% and monthly by 30%.

**Figure 3.2: Consumption of specific lamb cuts**

![Consumption of specific lamb cuts chart]

<table>
<thead>
<tr>
<th>Cut</th>
<th>Weekly</th>
<th>Monthly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lamb Mince</td>
<td>8%</td>
<td>36%</td>
</tr>
<tr>
<td>Roast Lamb (or Cutlet)</td>
<td>6%</td>
<td>40%</td>
</tr>
<tr>
<td>Lamb Chops or Cutlet</td>
<td>10%</td>
<td>22%</td>
</tr>
<tr>
<td>Diced Lamb (stir-fry etc)</td>
<td>5%</td>
<td>41%</td>
</tr>
</tbody>
</table>

**Key**
- Never
- Every 2-3 weeks
- Less often
- Once a month
- 2-3 times a week

**Purchasing lamb**

When consumers go into a supermarket to buy meat, the most important factor that influences their purchase is the overall appearance of the meat, closely followed by price. Other highly influential factors are the colour of the meat, the amount of fat, the texture and whether it is favoured by the whole family. When asked why they didn’t eat lamb on a weekly basis, consumers cited cost and price perceptions as key barriers. ‘I can’t afford to’ and ‘I think it’s too expensive’ were the most common responses, with many (69%) indicating that if it was cheaper they’d eat it more often.

These responses indicate the need to improve the image of lamb as a protein that is value for money, which is not necessarily about reducing the price but demonstrating the versatility and benefits of lamb to make consumers value it more. All lamb cuts, with the exception of mince which was borderline, are perceived as expensive and poor value for money (see Figure 3.3). After beef steak, lamb joints and then lamb chops/cutlets were perceived to be the most expensive cuts of meat, and they were also rated as ‘not at all’ or ‘not very good value’ for money.
Consumer perceptions of lamb

On a positive note, lamb is regarded as a tasty meat and is also rated as a good source of iron (see Figure 4). However, consumers are concerned about the amount of fat associated with lamb far more than with any other protein. Herein lies one of the biggest barriers to increasing sales of lamb, making it one of the essential challenges for the industry in terms of the consumers of our products.
In summary

The EBLEX consumer research has highlighted that lamb is eaten less frequently than any other protein. Although loved by many and perceived as tasty, there are a number of issues that need to be addressed in order to get people to eat lamb more regularly. Price is a factor that is difficult to control in isolation and therefore value perceptions need to be addressed and improved. Appearance and the amount of fat, limit lamb featuring regularly on the weekly shopping list.

Figure 2 showed there are certain cuts of lamb that people aren’t even contemplating, indicating a need for education. Showing the versatility of lamb will help educate those consumers who lack knowledge about different cuts and don’t know suitable recipes or how to cook them. If the industry could address some of these factors there is evidence to suggest that consumers would choose lamb more regularly.

Challenges
- Lamb is viewed as expensive compared to other proteins
- Lamb is seen as fatty compared to other food sources

Opportunities
- Increase the frequency of lamb purchases by promoting its versatility and its nutrient value for instance as a source of iron in a balanced diet.
- Improve the quality and consistency of lamb to combat the perception it is fatty and poor value.
Chapter 4: The Halal market

Introduction

Halal meat comes from animals ritually slaughtered according to strict religious rules for the Muslim population, as laid down in the Qur’an. While many may consider this to be an alternative or niche market, it is growing in size and prominence. Muslims make up approximately 2.4 million of the UK population (2008 UK labour force estimates) or 400,000 households. The fact that their protein choices are restricted principally to poultry or lamb results in above average consumption of both species. In fact, research by Mintel (2002) has demonstrated that the Muslim community in the UK represents 3% of the total population but consumes around 30% of the lamb. To put this in numerical terms, some 25% to 30% of GB lambs slaughtered – or 4.7 million head per annum - are processed under Halal specifications. A larger amount of Halal sheep meat is eaten by non-Muslims in the ethnic restaurant sector which further drives up the demand for Halal meat.

Interest in this sector has also recently seen KFC, McDonalds and Subway who all offer Halal poultry items on their menus, while major retailers, for example ASDA, have Halal store concessions in areas of high demand, again further establishing Halal as a mainstream offer.

In wider Europe, the Halal food market is estimated to be some €15 billion across 50 million consumers. Couple this with the fact that the population has grown by 140% in the last decade, it is clear that this is a market opportunity for the English livestock sector.

The story so far

It is a requirement for Muslims only to eat meat which has been produced under strict criteria for it to be deemed as Halal. These criteria are laid down in the Qur’an, the Muslim text, and state what is lawful (Halal) and unlawful (Haram). This is based on the health and welfare of the live animal and the conditions at the time of slaughter, including the requirement for the slaughterman to pronounce Allah’s name at the time of neck cutting.

Under EU legislation, the slaughter of animals for the purpose of religious consumption is devolved to the member state to allow slaughter without pre-stunning where appropriate. This is the position in the UK and of the 4.7 million animals slaughtered for the Halal sector, it is estimated that 62% are pre-stunned and 38% are not.

A key issue in the Halal sector is the use of pre-stunning prior to slaughter – and opinion amongst scholars and certification bodies is divided. There are three main certification bodies in the Halal sector whose role it is to accredit the process and meat as Halal. These are the Halal Food Authority (HFA), Halal Monitoring Committee (HMC) and UK Halal Corporation Ltd (UKHC). The HFA and UKHC both accept the use of pre-stunning, while HMC does not. A fourth body, the European Halal Development Agency (EHDA), has recently been formed with the aim to offer a common European standard.
Muslim consumers demonstrate differing buying patterns to the general population, often buying their main grocery products at a major multiple but remaining loyal to the independent for meat purchases and fresh produce. This may be for a number of reasons including:

- The lack of English language skills in the older generations, particularly women who have the main purchasing role
- The need for trust and affinity with the meat supplier that is more apparent in a smaller retailer
- Some see the independent as being more price-focused as price is a key issue for many in the Muslim community
- Lack of variety of Halal meat offered in multiples
- The strong sense of loyalty to their communities and the businesses within them may also drive Muslim consumers to be strongly supportive of local community suppliers rather than larger multiples.

These particular concerns, whether perceived or real, present a barrier to the mainstreaming of Halal meat in the multiple chains. Clearly, if these hurdles can be overcome there is a great opportunity to drive meat sales to Muslim consumers as part of their normal shopping pattern, as a ‘one-stop-shop’ offer as with other sectors of the community.

Outside of the retail trade, a further opportunity lies within the foodservice sector, particularly the cost sectors of school meals and the health and prison services. Here, it is vital that the product meets the needs of the consumer and their beliefs and it is authenticated as Halal. There is a history of lamb product being sourced from the New Zealand supply as it can offer these assurances, although if the English supply chain can also attain these standards, then an opportunity exists. This is an area EBLEX has been working in and has produced in 2009 a DVD entitled “The quality meat supply chain for the Muslim consumer” outlining the Halal supply chain from farm to fork and reinforcing the messages about the available supply.
Further to this, EBLEX has also produced a cutting guide for Halal retailers highlighting particular lamb cutting techniques to create a common language of cuts as exists in the domestic supply chain (See Figure 4.2). This should aid trade between suppliers by the use of common descriptive terms and also widen the supply base.

![Figure 4.2: Example of Halal specific lamb cuts from the EBLEX Halal cutting guide](image)

**The Future**

It is clear that the demand for Halal meat is likely to grow over the coming years, **both in the UK and Europe**, based on population growth alone. The younger population are increasingly likely to look to the multiple sectors to supply their meat requirements and this sector needs to develop ranges and assurance that satisfies this consumer group.

In addition, with a growing Western style diet, an opportunity lies within developing convenience or new offers in the Halal selection and this is also likely to include beef as a protein choice, which has similar challenges as those for lamb.

EBLEX has commissioned extensive market research into the Halal meat supply chain which will shed new light on this buoyant market to inform and enable the industry to respond to these new market opportunities.

<table>
<thead>
<tr>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>To work with the Muslim community to gain acceptance for mainstream production and slaughter practices</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue to develop products for the Halal markets at home and overseas to extend this important outlet for English sheep meat</td>
</tr>
</tbody>
</table>
Chapter 5: Young people in sheep farming

Introduction

The future of agriculture relies on the younger generation coming through to provide succession, add enthusiasm, bring fresh ideas and drive innovation. The reality is that the average age of farmers continues to rise. The sheep industry is not alone in facing this challenge, but initiatives are needed to ensure healthy numbers of people remain to refresh the industry.

The story so far

Historically sheep were seen as the first rung on the ladder for young people interested in farming. Starting a sheep business required very little capital, with affordable rented land or grass keep commonly available, and practically no machinery required. The investment was in the stock, hard work and the enthusiasm to shepherd them.

For many this was the route to larger and successful farming businesses. Conversely, running a few sheep is still the enjoyment of some farmers who would otherwise have retired. Add to this demand for grazing from ‘life-stylers’ and existing businesses keen to expand, and it is clear that land availability in many areas is short.

With historical poor returns, long hours, often working in isolation and out in the elements, plus subsidy systems which built barriers to new sheep enterprises, the industry faces some of the sternest challenges to encourage the younger generation to a career in sheep farming.

However for those young people who do want to get into farming, there are exciting options and the industry must do what it can to support these options.

Higher education institutions showed 3% growth in land-based provision over the last three years, while further education colleges grew by 20% over the same period. The Responsive College Unit (RCU1) report for Landex 2 indicates that the number of learners studying agriculture increased between 2004 and 2008, with the numbers enrolled on work-based routes tending to fluctuate from year to year. In higher education, 1,378 students were studying agriculture in 2009.

But the trend has been for more general education which has diluted or closed the courses which developed specialist skills. The last 20 years has seen the few remaining specialist shepherds’ courses at agricultural colleges such as Sparsholt (Hampshire) and Kirkley Hall Cheshire disappear. More and more students are leaving college with general qualifications, having kept their options open. For them, deciding on career options must encourage an interesting head versus heart dilemma. The offer of an uncertain financial security, unsociable working hours and harsh outdoor working environment aren’t the incentives most modern young people are looking for. Instead, the draw of work in the allied supply industry or another profession altogether is a more tempting path.

On the plus side, there are still forms of apprenticeship in some areas which have developed schemes to encourage young people, through work-based training programmes, for those who really want to succeed in a particular line of work.

1 www.rcu.co.uk
2 www.landex.org.uk
There is also help for young people through Lantra, the organisation that helps promote the development of skills in land-based industries. It works with more than 230,000 businesses and 1.5 million workers. Lantra’s aim is to ensure rural businesses have the skilled workforce they need to succeed. It can help find training in a chosen career. A primary role is to help develop national occupational standards in the key land-based sectors, such as equine management, fencing, floristry, fisheries, the environment, aquaculture and horticulture. These help to ensure that those with skills are able to develop their careers and progress well.

Given the challenges outlined, EBLEX asked one young sheep farmer for his views on developing a career in the industry.

**Case study - George Fell a young sheep farmer from Yorkshire**

“I took the opportunity to get into sheep farming when my grandfather decided he was going to take a less active role in the farming business. My father was busy running other farming operations and so this provided me the chance to set up my own business.

At the same time I was lucky enough to get hold of 160 acres of grass on a cheap grazing let, based around the landowner taking the Single Farm Payment (SFP) and offering me the land for a reduced amount, helping him with cross compliance. My business began trading in 2006, when breeding stock prices were significantly lower than they are today.

“There are many able and willing young sheep farmers within England I believe, but there just aren’t the opportunities for them to get a foothold, I would argue the main reasons are twofold:

1. Older, more-established businesses can offer higher rents for either a farm business tenancy (FBT) or grazing lets, as they offset the high rent against other owned land or cheaper tenancy agreements they already have. The current mindset of the modern land agent is to deliver as much as possible back to the landowner, without consideration for future generations. So the highest rent offered generally wins the tender.
2. The de-coupled SFP’s help the landowner who keeps the payment, not the producer/tenant. The landowner often requires the same level of rent as pre-2005 and the mid-term review, but also holds on to the subsidy payment. This effectively closes the helpful door offered to young people wishing to take on rented land.

“There are young people involved in the sheep industry, perhaps not as owners or in control of the business purse strings. We supply rams to some very good young people, but they are the flock managers, not the farmer business owner or the son whose father still has ultimate control of the business. However, most of them are keen to use all the modern tools available to them to deliver a sustainable sheep business – which they are doing very effectively!

“**What drives me as a young sheep farmer is the ability to develop a business within a sector that has great potential.** My aim is to grow a sizeable enterprise that is modern, technical, efficient and viable. I believe most sheep businesses are not, and that is where the opportunity for the younger generation lies, as over time the inefficient fall by the wayside.
“On my wish list for the industry would be a grant-aided scheme funded by modulation money used to offer retirement incentives, where a person’s business was replaced by younger, enthusiastic sheep farmers who embrace Electronic Identification (EID), Estimatable Breeding Values (EBVs), increased health and welfare and better overall management. They have a more positive outlook instead of finding reasons why things won’t work. Helping them to develop large scale operations producing a quality product in a sustainable way, and which is financially rewarding, will encourage them further and lead to a strong viable sheep industry.

“Overall, as an industry I believe we have an animal that can produce a high quality product from some of the poorest land in the country. The best people to take advantage of that environmentally, financially and productively are young enthusiastic farmers.”

The future

Whether it is an interest in animals, the appliance of science and technology, the desire to produce something or simply selling the end product, the attractions of sheep farming are still many and varied for those who want to invest their time and energy. There are also many benefits to living in the countryside and enjoying a way of life that many would envy, which thankfully still outweigh the negatives for many young people. If financial stability can be brought to the sector, and there has been a more rewarding scenario for the past two seasons, then sheep farming still has much to offer. It remains one of the cheapest enterprises to get into, and there are innovative business models which provide opportunities for those who do not have access to inherited land or large disposable assets.

EBLEX is committed to providing information to the next generation of beef and sheep farmers through close relationships with colleges, universities and the Young Farmers movement. It is working to find new and interactive ways to communicate messages to young people for whom the internet is the first stop for any information, mobile phones are a necessity and social media sites are becoming a way of everyday communication. In 2010 EBLEX established ‘Grass Watch’, a project with ten colleges across the country monitoring grass growth throughout the season. Information is hosted on Farmers Weekly Interactive and supported by blogs and video clips to inform and engage producers. Through its Better Returns Programme, EBLEX has already created a series of teaching aids by adapting existing material be it by providing ready to go presentations, or lecture support material or access to its virtual selection programmes on line.

Whilst there are challenges to provide good training and the right image to attract young people to sheep farming, there are opportunities and clearly there are young people with the appetite to make sheep farming their future. We need a positive financial outlook and some opening to give youth a chance, as well as all sectors of the industry to offer a helping hand to the next generation of sheep farmers in England.

Challenge

- Ensure the industry has sufficient succession to ensure a skilled labour force to ensure a sustainable future

Opportunity

- Promote the industry as an opportunity for skilled young people, with financial prospects.
Chapter 6: The climate change challenge for UK sheep production 2010 and beyond

Introduction

Global warming, or climate change, caused by a growing reliance on fossil fuels over the past 300 years, presents the UK sheep industry with an interesting challenge over the next decade and beyond.

Meat production is regularly in the firing line when it comes to discussions of climate change and a sustainable food supply for an ever-growing world human population. Livestock products do have a “cost” in greenhouse gas (GHG) terms, principally through the production of methane and nitrous oxide in farming systems and through land use change.

The defence for a ruminant meat production industry is one of resource use for the production of human food. There is no doubt that ruminant meats have a relatively expensive CO2 equivalent cost of production relative to other foods. However, it makes use of poorer land where there is little or no sensible alternative use for food production other than by ruminants and the environmental and preservation of sensitive landscapes benefits should not be ignored. This is particularly true for sheep.

EBLEX has commissioned a Life Cycle Analysis (LCA) of English lamb production where the sub-systems are modelled. This helps identify the areas most likely to respond to changes in management which can be adopted by producers in an effort to reduce overall GHG production. The opportunity for technical improvements is large but the scale of the task to encourage the 30,000 plus producers in England alone should not be underestimated.

The UK Government recognises that climate change is real and has set out its proposed response in the Climate Change Act 2009. Specific reduction targets have been set and for agriculture this has been summarised in the Defra document “Defra’s Climate Change Plan 2010”. In the next 10 years, UK agriculture currently has a target reduction of 11% in CO2eq cost of production. This activity is a “leading by example” response and is a starting point for the UK based on managing our production of GHGs, but in the years to come domestic policy will have to integrate with an EU and world response and may be better structured around a management of consumption.
Managing the GHG cost of English lamb production

The English sheep industry is large, complex and highly inter-dependent, both internally and with other farming enterprises. It represents the major proportion of the 16.7 million sheep annually slaughtered in the UK, which supplies more than 320,000 tonnes of sheep meat to the human food chain with a farm gate value of over £800 million.

Detailed modelling of current lamb production systems using an LCA approach has established national GHG emission and energy consumption benchmarks for the main types of sheep production regimes which, in turn, have been used to calculate overall 2008 baselines for industry emissions and energy use against which to plan future reductions.

There is broad scientific agreement that emissions should be measured in carbon dioxide equivalents that take into account the methane and nitrous oxide emissions that have 100-year Global Warming Potentials (GWP100), that are 25 and 300 times that of CO2 respectively, as well as the CO2 produced through primary energy use.

With primary energy use taken into account, English lamb production is currently estimated to be generating a GWP100 of around 14.6kg of CO2 equivalent GHG emissions per kilogram of meat.

Table 6.1: Managing the GHG cost of English Lamb

<table>
<thead>
<tr>
<th></th>
<th>UK Beef</th>
<th>UK Lamb</th>
<th>Pork</th>
<th>Chicken</th>
<th>Potato</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWP t CO2 Eq</td>
<td>13.89</td>
<td>14.64</td>
<td>6.5</td>
<td>3.1</td>
<td>0.11</td>
</tr>
<tr>
<td>Primary energy use GJ/t</td>
<td>31.28</td>
<td>22.02</td>
<td>18</td>
<td>9.7</td>
<td>3.1</td>
</tr>
</tbody>
</table>

These calculations highlight that Global Warming Potential (GWP) tends to increase with extensification both because more animals are required to produce each tonne of meat, and lower quality forages tend to generate higher methane emissions because of changes in the rumen environment.

In planning to achieve the Governments target of 11% reduction on current GHG emission levels, CO2 equivalent emissions per kilogram of meat are taken as the key parameter in measuring real gains in the efficiency of livestock production rather than merely reductions in stock numbers. This would simply transfer production, and therefore emissions, elsewhere in the world.

Government and industry in England are working together to put in place a “Greenhouse Gas Action Plan” which will coordinate the activities in all sectors of the industry and report progress.

Recent progress

Steady improvements in sheep production efficiency have taken place over the past decade, with 5% fewer lambs required to produce each tonne of meat in 2008 than in 1998. This, and the progressive reduction in the national flock and slaughter numbers over the past 10 years, has undoubtedly been an important factor in the substantial reductions in GHG emissions recorded in recent years. But it is the increase in efficiency which represents the sustainable option the industry needs to embrace moving forward.

Underpinning these recent efficiency improvements made in English sheep production has been a series of industry-wide development and knowledge transfer initiatives not least those run by EBLEX. Most notable among them are the breed recording schemes which have helped highlight animals with higher genetic merit using Estimated Breeding Values.
(EBVs), the Sheep Better Returns Programme (BRP) and the Business Pointers publication which provides a benchmark for production costs.

Together with other industry services, these initiatives provide a range of vehicles ideally placed to support environmental goals as part of a continued focus on increasing productive efficiency. EBLEX knowledge transfer work now clearly makes the link between improved economic performance through technical advancement and the reduction in the GHG cost of production.

**Current emissions position**

**Reporting the current emissions position is a problem because the measurement systems in place for the national inventory are crude.** The Intergovernmental Panel on Climate Change (IPCC) has three levels of reporting – Tiers, 1, 2 and 3 – which become progressively more tuned into the region and systems being used in agriculture. At present, the UK inventory uses Tier 1 information which means that all sheep will have the same GHG cost regardless of system, age or feed. This approach gives a basic estimate of GHG production for the UK but is no use at all for farm business managers.

To galvanise ownership of the GHG problem across the agricultural industry, business level carbon audits will be needed. The industry and Government recognise this and have work in place to develop what is needed, but this will be several years away. In the meantime, a number of consultancy companies have developed their own carbon calculators which allow enterprise, or business, carbon calculations to be done. In the livestock sector, dairy processing companies are leading the way, with some beef retailers following suit.

**Armed with a business-specific report, managers can then implement new approaches to reduce the carbon costs of production in a verifiable way.** This should lead to a more structured approach to meeting the low carbon transition plan targets. When assessing the environmental impact of different systems it is vital to appreciate that hill sheep, in particular, are converting and concentrating nutrients not suitable for human needs into valuable foodstuffs from difficult-to-exploit land resources. This means they will have a relatively high carbon cost per unit of product, but they will be using resources which are pretty much impossible to exploit in any other way. This is extremely relevant when world demand for food is increasing while productive land is in decline.

On a parallel issue, of local importance to the UK livestock is the significant role sheep have in delivering environmental goods and services like biodiversity, habitat management and landscape character, as well as enhancing the value of pastures as carbon sinks. An environmental accounting model that values these issues alongside the GHG cost of production is needed to make sure livestock managers have a fully balanced report of their farming system. We need to account for the benefits as well as costs.

**The environmental impact of sheep production**

Using the Cranfield University LCA model, our best estimates for the average cost of producing a kilogram of lamb in England are shown below (Table 6.2). The model uses a bottom up approach, modelling the complex mosaic of different systems to come to the national estimate.

**Table 6.2: Current baseline environmental impact of English sheep production and distribution of breeding ewes in different production systems 2009**

<table>
<thead>
<tr>
<th>Environmental impact</th>
<th>% ewes in each system contributing to prime carcase lamb</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWP100 kg CO2 eq/kg</td>
<td>% ewes in each system</td>
</tr>
<tr>
<td>Primary Energy* MJP/kg</td>
<td>Hill Flocks</td>
</tr>
<tr>
<td>14.64</td>
<td>22.02</td>
</tr>
</tbody>
</table>
*The CO2 emissions implications of this are included within the GWP\textsubscript{100} figure*

14.6kg of CO2 per kilogram of meat means lamb has just slightly higher levels of GHG emissions than beef production, reflecting the industry’s greater reliance on more extensive hill production, and lower levels of primary energy input with lesser dependence on purchased feeds and fertiliser. This overall baseline can be broken down into specific system benchmarks for planned emissions reduction (Table 6.3).

**Table 6.3: Current baseline environmental impacts for the main components of English lamb production**

<table>
<thead>
<tr>
<th>Component System</th>
<th>Environmental impact</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GWP\textsubscript{100} kg CO2 eq/kg</td>
<td>Primary Energy* MJ/kg</td>
</tr>
<tr>
<td>Hill flocks</td>
<td>18.44</td>
<td>15.15</td>
</tr>
<tr>
<td>Upland flocks</td>
<td>13.82</td>
<td>23.69</td>
</tr>
<tr>
<td>Lowland flocks</td>
<td>12.62</td>
<td>23.68</td>
</tr>
</tbody>
</table>

*The CO2 emissions implications of this are included within the GWP\textsubscript{100} figure*

The fundamental differences between more extensive and intensive production systems are particularly clear in this context. The poorer quality nutrition and longer production times of hill sheep mean very much higher GHG emissions per kilogram of lamb produced, although primary energy consumption is considerably less by virtue of very much lower purchased feed and fertiliser inputs. Most efficient in emission terms, although with higher levels of primary energy input, are lowland flocks with access to higher quality forage.

**Efficiency improvement opportunities**

Within the sheep industry there are three main efficiency improvement opportunities available:

1. **Increasing the longevity of breeding stock** – so the costs of their non-productive rearing phase are spread over a greater weight of meat produced
2. **Increasing the fertility efficiency of breeding stock** – so they produce more slaughter stock and a greater weight of meat in their productive lives
3. **Increasing the feed efficiency of slaughter stock** – so they produce more meat per unit of input.
Assessment of realistic 10-year improvement possibilities for these opportunities suggests they all offer worthwhile GHG emission reduction benefits.

**Figure 6.1: Sheep-combinations of flock efficiency improvements to achieve the required 11% saving in GWP100 by 2020 (EBLEX)**

Other environmental impacts

While emissions reduction is clearly the most urgent priority, it needs to be undertaken with a full understanding of the other impacts – both positive and negative – of sheep production on the environment. This is vital if reductions in GHG emissions are not to compromise the achievement of other important environmental objectives, such as landscape management and biodiversity promotion. It is also important in ensuring future sheep production strategies take full advantage of mutually beneficial improvements, such as more efficient artificial fertiliser usage and water quality enhancement.

Landscape management

Even though the relative indigestibility of their herbage creates GHG emission challenges, maintaining sufficient grazing livestock on the English hills and uplands is essential if their open character is to be maintained and the encroachment of bracken and woody scrub is to be avoided.

Sheep production is important too in maintaining the traditional small hedge-bounded field structure that characterises much of northern and western England and has been so sadly depleted in many other lowland areas dominated by arable monoculture. It is a structure long recognised for its value in supporting wildlife both as a food resource and for safe movement.

Carbon sequestration

Regular grazing of appropriately managed grassland and the steady return of nutrients to the soil in faeces and urine accelerates its natural cycle of growth and decay. This has been shown to improve the capture of CO2 through photosynthesis and its incorporation into soil organic matter. In this way grazed sheep play a valuable role in increasing carbon capture and storage, especially in permanent pastures where lack of cultivation minimises carbon release through oxidation.
Fertiliser use

Over the past 10 years, the annual British Survey of Fertiliser Practice shows overall nitrogen, phosphate and potash applications to grassland in England and Wales more than halving to 52kg/ha, 7kg/ha and 12kg/ha respectively by 2008. Sheep production stands out as the lowest user of artificial fertilisers on grass. In 2008, for instance, grassland on beef and sheep farms received an average of just 34kg/ha of N, 8kg/ha of P2O5 and 10kg/ha of K2O. This compares with 117kg/ha, 16kg/ha and 25kg/ha recorded on dairy farms.

The progressive introduction of higher sugar ryegrasses, clovers and other more efficient forage species into grassland swards offers the opportunity to reduce this use of energy and potential pollutant even further, as does the better utilisation of farmyard manure.

Nutrient management and planning

The fact that 80% of livestock farmers out-winter their sheep reduces the nutrient management and planning challenge they pose, especially when it comes to storing and applying manures produced from housed stock.

Where housing occurs, the challenge is further reduced by the widespread use of straw bedding in winter sheep, leading to the majority of animal waste produced as farmyard manure rather than slurry. This also provides a valuable way of processing and recycling the organic matter in straw. Nevertheless, there remains the potential to make greater use of farmyard manure and minimise the risk it can pose to water and air quality by better planned applications.

Water usage and quality

Water quality is perhaps a more significant concern for many grazing livestock farmers, especially those situated in important river catchments. Working closely with Natural England and other specialists, considerable work is already underway in improving river quality through catchment-sensitive farming practices – including, most significantly, excluding livestock from access to key rivers.

The future

The English sheep industry has some serious challenges ahead if it is going to meet its obligations with regard to GHG reduction. The targets set by Government are technically possible but challenging. It is also synergistic that better management to achieve a GHG reduction is likely to be mirrored by greater output and improved returns – the benefits offer a win-win scenario for producers. The measurement of progress is rather problematic but with better tools and an understanding of the risks of failure the industry will surely rise successfully to this challenge.

Challenge

- Reduce the CO2 equivalent cost of production of lamb production by 11% by 2020 to meet the government target.

Opportunities

- The Government target is challenging but technically possible, for instance an increase in the average number of lambs born per ewe of 0.16 alone can deliver an 11% industry improvement. It is vital therefore that technical knowhow is passed on to producers in as many ways as possible.
Chapter 7: Technical developments

Introduction

Historically, the UK sheep industry has been slow to embrace technical developments. However, evidence from other sheep meat producing countries demonstrates that massive improvements can be made in a relatively short period of time, if research solutions are adopted and encouraged through knowledge transfer of best practice.

EBLEX spends a significant amount of its levy on R&D and knowledge transfer (KT) and both are likely to become more important as science and the transmission of the results play a growing role in stimulating sustainable sheep enterprises.

Although comparisons with New Zealand are often unwanted, we need to respect the increase in efficiency managed there over the last three decades. New Zealand’s rearing percentage has struggled in the recent years because of drought, but even so, from 1989 to 2009 the average rearing percentage for New Zealand increased by 0.8% per annum, while the GB rearing percentage increased by 0.3% per annum.

Figure 7.1: The rearing percentage (ewe and ewe lambs) for GB and NZ

[Graph showing the rearing percentage for GB and NZ from 1989 to 2009]

The average carcase weight in GB is 18.7kg, while in NZ it is 17.7kg. However, the average carcase weight in NZ has risen by 2.5kg in 15 years, and further improvements are likely.

The technical improvements in New Zealand have been stimulated by a drive to production in a subsidy-free arena. There has been a strong focus on genetic selection and improvement of production traits with little respect for maintaining purebreds or breed societies, plus attention to grassland management, rapid uptake of new technologies like breeding values and genetic tests, and a growth in scale of farms so changes are amplified quickly.

A big issue for GB is the general 21kg limit on payment for carcases, which hampers a producer’s potential to increase the weight of lamb reared per ewe, as there is a risk of giving away “free kilos”. However, increasing rearing percentage with little change to carcase weight is possible by application of best practice.
Comparison between average and top third flocks

EBLEX publishes Business Pointers every October which gives business costings collected from English cattle and sheep enterprises from the previous financial year. It is designed as a reference document, enabling producers to compare their own costs to others in the sector. It helps highlight areas that are performing well and those where there is scope to improve margins.

Lowland breeding flock

Table 7.1: Extracts from financial performance 2008/2009 (£/ewe)

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>Top Third</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number in sample</td>
<td>49</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Average flock size (head)</td>
<td>370</td>
<td>374</td>
<td>+1.1%</td>
</tr>
<tr>
<td>Lamb output</td>
<td>73.82</td>
<td>91.60</td>
<td>+24.1%</td>
</tr>
<tr>
<td>Total Output</td>
<td>74.64</td>
<td>92.59</td>
<td>+24.0%</td>
</tr>
<tr>
<td>Concentrate costs</td>
<td>10.61</td>
<td>13.96</td>
<td>+31.6%</td>
</tr>
<tr>
<td>Forage costs</td>
<td>4.28</td>
<td>2.66</td>
<td>-37.9%</td>
</tr>
<tr>
<td>Veterinary</td>
<td>5.99</td>
<td>6.80</td>
<td>+13.5%</td>
</tr>
<tr>
<td>Total Variable and Replacement Costs</td>
<td>35.49</td>
<td>40.15</td>
<td>+13.1%</td>
</tr>
<tr>
<td>Paid labour</td>
<td>8.93</td>
<td>5.91</td>
<td>-33.8%</td>
</tr>
<tr>
<td>Power and machinery repairs</td>
<td>9.12</td>
<td>6.65</td>
<td>-27.1%</td>
</tr>
<tr>
<td>Land resource costs, e.g. land rent</td>
<td>5.28</td>
<td>3.67</td>
<td>-30.5%</td>
</tr>
<tr>
<td>Machinery depreciation and fixtures</td>
<td>5.75</td>
<td>3.99</td>
<td>-30.6%</td>
</tr>
<tr>
<td>Total Fixed Costs (exc. non-cash costs)</td>
<td>43.87</td>
<td>28.14</td>
<td>-35.9%</td>
</tr>
<tr>
<td>NET MARGIN (exc non-cash costs)</td>
<td>-4.72</td>
<td>24.30</td>
<td>+614.8%</td>
</tr>
<tr>
<td>Unpaid family labour</td>
<td>18.61</td>
<td>22.93</td>
<td>+23.2%</td>
</tr>
<tr>
<td>Total non-cash costs</td>
<td>31.57</td>
<td>35.75</td>
<td>+13.2%</td>
</tr>
<tr>
<td>NET MARGIN (inc non-cash costs)</td>
<td>-36.29</td>
<td>-11.45</td>
<td>+68.4%</td>
</tr>
</tbody>
</table>

In the Lowland breeding flock, for net margin (including non-cash costs), the difference between the average and top third producer is £25.14 per ewe. The main reasons are higher output per ewe and lower fixed costs for top third producers, although they have higher variable costs, due to higher concentrate and veterinary costs.

The physical performance shows top third producers reared 21 more lambs per 100 ewes than the average producers, helped by a higher number of lambs born. More concentrates and fertiliser were used on the top third farms but this led to higher stocking rates. Figures for store producers show similar higher returns for top third producers.
Table 7.2: Extracts from physical performance 2008/2009 (£/ewe)

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>Top Third</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number in sample</td>
<td>49</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Average flock size (head)</td>
<td>370</td>
<td>374</td>
<td>+1.1%</td>
</tr>
<tr>
<td>Ewe to ram ratio</td>
<td>40</td>
<td>36</td>
<td>-10.0%</td>
</tr>
<tr>
<td>Lambs born per 100 ewes</td>
<td>158</td>
<td>178</td>
<td>+12.7%</td>
</tr>
<tr>
<td>Lambs reared per 100 ewes</td>
<td>153</td>
<td>174</td>
<td>+13.7%</td>
</tr>
<tr>
<td>Carcase weight finished (kg)</td>
<td>19.4</td>
<td>19.3</td>
<td>-0.5%</td>
</tr>
<tr>
<td>Weight per lamb sold store (kg LW)</td>
<td>31</td>
<td>37</td>
<td>+19.4%</td>
</tr>
<tr>
<td>Return per lamb sold finished (£)</td>
<td>57.15</td>
<td>57.91</td>
<td>+1.3%</td>
</tr>
<tr>
<td>Return per lamb sold store (£)</td>
<td>35.72</td>
<td>37.64</td>
<td>+5.4%</td>
</tr>
<tr>
<td>Total ewe &amp; lamb concentrates (kg per ewe)</td>
<td>51</td>
<td>75</td>
<td>+47.0%</td>
</tr>
<tr>
<td>N fertiliser use (kg per ha)</td>
<td>67</td>
<td>77</td>
<td>+14.9%</td>
</tr>
<tr>
<td>Stocking rate (LSU per ha)</td>
<td>1.6</td>
<td>2.0</td>
<td>+25.0%</td>
</tr>
</tbody>
</table>

Less favoured area (LFA) breeding flock

In less favoured areas the picture is similar. For net margin (including non-cash costs), the difference between the average and top third producer is £16.60 per ewe. The main reasons are higher output and lower fixed costs for top third producers, although again they have slightly higher variable costs, due to higher forage and veterinary costs. The physical performance again highlights that top third producers reared more lambs per 100 ewes than the average producers. Slightly more concentrates were used, while less fertiliser was applied on the top third farms but the stocking rates were very comparable.

Summary of Business Pointers 2009 analysis

Unsurprisingly, top third producers manage businesses with higher output and lower fixed costs, but with higher variable costs, when compared to average producers’ businesses. The higher output figures come from more lambs born and rearing a higher number of lambs, as carcase weights appear constant between the datasets (most likely as a result of the 21kg ceiling on deadweight payments as mentioned). The cost per kilo figures for both data sets suggest that the cost of production is lower in less favoured areas, which is due, in part, to lower feed and forage, and fixed costs (table 7.3).

Table 7.3: Summary of costs per kg liveweight (£/kg)

<table>
<thead>
<tr>
<th></th>
<th>Lowland Flocks</th>
<th>Less Favoured Area Flocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total feed and forage costs</td>
<td>0.29</td>
<td>0.23</td>
</tr>
<tr>
<td>Total variable &amp; replacement costs</td>
<td>0.64</td>
<td>0.60</td>
</tr>
<tr>
<td>Paid labour costs</td>
<td>0.16</td>
<td>0.14</td>
</tr>
<tr>
<td>Power and machinery costs</td>
<td>0.17</td>
<td>0.16</td>
</tr>
<tr>
<td>Total fixed costs</td>
<td>0.80</td>
<td>0.76</td>
</tr>
<tr>
<td>Total non-cash costs</td>
<td>0.57</td>
<td>0.57</td>
</tr>
<tr>
<td>Total costs</td>
<td>2.01</td>
<td>1.93</td>
</tr>
</tbody>
</table>
Solutions for the industry

Using the information from Business Pointers, plus data from other sheep meat producing countries, there are clear areas where the industry can improve its sustainability by increasing efficiency and margins.

Feed and forage

Better Grassland Management – Grass represents UK sheep farmers' cheapest and most readily available source of food. However the average utilisation of grass grown in the UK is as low as 50%. UK producers need to improve their grassland management and output per grazed area. The solution lies in the adoption of existing knowledge of best practice, complimented by new information from research and other lessons from other countries. Dairy producers have been quick to adopt more progressive grassland management strategies and sheep producers need to learn from this example.

Grass Watch – In 2010, EBLEX began a comprehensive and planned initiative to improve grassland management in England. This involves working with 10 agricultural colleges to collect grass growth and quality information that can be used for forage budgeting in 2011 (www.fwi.co.uk/grasswatch), plus several written resources and tools have been developed to complement a programme of on-farm events and press articles.

Improved utilisation – Well-managed grass is the cheapest feed available to all livestock producers, and at certain times of the year will have a higher feed value than any concentrates that can be bought (pre-weaned lambs can gain >400g per day off well-managed grass). It can be seen from Business Pointers that concentrate use is high and linked to improved output, but it is likely that if grassland management is improved, the output will be maintained but the costs reduced.

Re-Seeding – Whilst not necessary in all situations, re-seeding, can be beneficial for both grass yield and quality, and EBLEX has supported the promotion of the Recommended Grass and Clover List so that producers have access to independent information when making their grass seed decisions. Plant breeding has delivered a 1% increase in yield and quality per annum for ryegrasses, demonstrating the importance of using newer varieties with better genetic potential.

Forage Budgeting – Forage budgets are common in New Zealand and the USA, and also amongst dairy farmers in the UK. They are produced in the winter for the coming year, and predict the amount of forage the farm will produce based on historical data or assumptions. The prediction is compared with the total animal requirements to understand if deficits or surpluses are likely, and a grazing/conservation plan can be put in place. As the season progresses, the yields can be updated and plans changed to ensure optimum utilisation of grass grown. They are simple to do, but for England the historical data for grass growth from beef and sheep fields does not exist. This was one of the main reasons behind the Grass Watch initiative, to get an idea of the potential grass growth across England and, over time, to give a year-on-year benchmark.

Rotational grazing – This is a well-known grazing strategy but the uptake in England has been low, as it is perceived to be more labour and capital intensive than the traditional set stocking. However, with a potential increase in grass yield of 20% to 30%, it can boost returns from grassland and cover initial costs quickly.

Alternative forages – The climate is changing and alternative forages can offer opportunities for drier conditions, especially in the south east. Crops like chicory, red clover, brassicas, lucerne and sainfoin offer potential solutions for livestock producers but more information is needed on the management on these crops in a variety of different areas. Lambs grazing chicory have been shown to have a lower worm burden than lambs grazing grass swards. This helps reduce the number of wormer drenches needed, and help reduce costs and protect the worms for future use. They also grow faster and have higher killing-out percentages, making chicory a very interesting crop for the future.
Red clover is likely to increase in the future as a very good source of home-grown protein (14% to 19% crude protein). It may also play an important part of arable rotations as the price of nitrogen (N) increases, with it's the ability to fix between 200kg and 300kg of N per hectare per year. Newer varieties of red clover offer greater persistency, high sugar levels and a greater ability to supply nitrogen gradually.

Health and fertility

Business Pointers 2009 data in Figure 8.1, shows there is massive potential to increase the current national rearing percentage. It needs a year-round approach to sheep production, and is driven by many factors and attention to detail, including body condition management, ram fertility, culling policy and health planning. It should easily be within the scope of every farm to increase its rearing percentage by 10% using existing information on the subject. An increase in lambs born is especially important as high prices are removing potential ewe lambs and increasing replacement costs.

Awareness of health planning has increased over recent years, but the proportion of producers that actively use them is still thought to be low. Good records linked to good advice, often in the form of consultation with a vet, can identify key areas for an enterprise to focus attention, be it losses from scanning to birth, or post lambing. The data from Business Pointers suggests that the top third producers tend to have higher veterinary costs per ewe, but the resulting increase in output covers the additional treatments.

SCOPS guidelines are recommended to minimise the impact wormer resistance could have on the industry. Again, lessons learned from other countries suggest worm resistance is an aggressive problem in intensive sheep systems we need to work hard to slow and hopefully avoid its development in the UK. The release of the 4th group of wormer is a welcome weapon in this challenge.

Selection

Carcase classification – Evidence from the carcase classification summary produced by EBLEX from MLCSL data suggests there has been progress, albeit slow, in the proportion of carcases hitting the target specification (EUR, 2 or 3L). Table 7.4 and 7.5 Greater awareness of what the market wants and how to select lambs to meet these specifications will help many producers squeeze more lambs into the higher price brackets.

Over 21 kg carcases – Whilst opportunities exist to produce heavier lambs, information from carcase classification summaries shows that carcases over 20kg tend to get too fat. However, through careful ram/breed selection, e.g. using rams with lower fat depth EBVs, producers can develop specific systems to exploit the interest for heavier carcases suited to greater boning out and specific markets.

VIA and beyond – Video Image Analysis (VIA), represents a computer-based alternative to the current EUROP classification system and potentially a step towards payment structures based on primal meat yield. EBLEX co-funded a project that generated the prediction equations so VIA can be used with lambs and cull ewes in the UK. The information is available for any processor to use.

Looking ahead, New Zealand is looking at X-ray technology and increased use of computer-aided butchery. As an industry, we need to continuously look for new ideas that can increase the efficiency within the supply chain.
Table 7.4: Percentage of all lamb carcases by conformation in GB, 1999-2009

<table>
<thead>
<tr>
<th>Year</th>
<th>Conformation class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E</td>
</tr>
<tr>
<td>1999</td>
<td>1.0</td>
</tr>
<tr>
<td>2000</td>
<td>1.0</td>
</tr>
<tr>
<td>2001</td>
<td>1.6</td>
</tr>
<tr>
<td>2002</td>
<td>1.2</td>
</tr>
<tr>
<td>2003</td>
<td>1.4</td>
</tr>
<tr>
<td>2004</td>
<td>1.5</td>
</tr>
<tr>
<td>2005</td>
<td>1.4</td>
</tr>
<tr>
<td>2006</td>
<td>1.4</td>
</tr>
<tr>
<td>2007</td>
<td>1.4</td>
</tr>
<tr>
<td>2008</td>
<td>1.4</td>
</tr>
<tr>
<td>2009</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Table 7.5: Percentage of all lamb carcases by fatness in GB, 1999-2009

<table>
<thead>
<tr>
<th>Year</th>
<th>Fat class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1999</td>
<td>1.0</td>
</tr>
<tr>
<td>2000</td>
<td>0.6</td>
</tr>
<tr>
<td>2001</td>
<td>0.8</td>
</tr>
<tr>
<td>2002</td>
<td>0.7</td>
</tr>
<tr>
<td>2003</td>
<td>0.5</td>
</tr>
<tr>
<td>2004</td>
<td>0.6</td>
</tr>
<tr>
<td>2005</td>
<td>0.8</td>
</tr>
<tr>
<td>2006</td>
<td>1.2</td>
</tr>
<tr>
<td>2007</td>
<td>0.9</td>
</tr>
<tr>
<td>2008</td>
<td>1.0</td>
</tr>
<tr>
<td>2009</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Challenge
- The industry needs to hasten the uptake of current knowledge and ensure technical developments continue to generate new ideas, so sheep producers have financially sustainable options.

Opportunities
- Industry figures such as the EBLEX Business Pointers show that there is significant scope for technical improvements to improve net margins by focusing on costings, breeding, feed and forage, fertility and health, and selection.
Chapter 8: Improving the UK sheep industry over the next decade, through genetic improvement

Introduction

The UK sheep industry is often criticised for having a plethora of breeds and crosses. In truth, this is the down to the varied terrain and climate which breeds have evolved to exploit making maximum use of the varied natural forage and breed types combining to form a stratified breeding structure.

The UK’s unique stratified breeding structure

It is characterised by a stratified three-tier breeding structure related to the altitude and quality of grazing.

The overall goal is meat production and the two components which affect the efficiency of meat production most are the reproductive performance of the ewe and the growth and carcase characteristics of the lamb. Consequently, specialised sire and dam breeds or crosses are often used. The dam breeds, where ewe reproductive traits are most important, are generally kept in low input/low output systems (e.g., Swaledale) and the sire breeds, which have a big influence on the growth and carcase characteristics of the slaughter lamb, are usually reared more intensively (e.g., Texel).

Figure 8.1: Stratification of the UK sheep industry

Stratification exploits both breed complementarity and heterosis. The production of crossbred ewes from hill breeds by crossing with longwool rams results in ewes with higher prolificacy and bodyweight than their pure-bred mothers and maximises heterosis for maternal traits, survivability etc. The use of terminal sire meat breeds on the crossbred ewes then provides the means to tailor the slaughter lamb carcases to meet the requirements of the market.

The structure also means the wide range of farm environments in the UK can be exploited by using breeds/crosses which are suited to the different areas and production systems.
Breed improvement

Within this broad stratified structure genetic improvement of key breeds has proved a valuable tool to improve the output from the UK sheep industry, having the great advantage of being permanent, cumulative, sustainable and cost effective.

- Permanent: unlike feeding, for example, the performance of an animal is influenced for life
- Cumulative: improvements made in one generation are added to those made in previous generations
- Sustainable: improvements can continue to be made as long as there is genetic variation and breeding goals can be readily modified
- Cost-effective: a comprehensive review carried out by Peter Amer indicates the annual return from genetic improvement within the beef and sheep sector will exceed £20 million in 2010.

Value of recording to commercial producers

Commercial sheep producers can enhance the productivity and profitability of their flocks through the use of recorded rams.

In Terminal Sire breeds, rams with high scan weight Estimated Breeding Values (EBVs) can be used to increase carcase weights or to cut the number of days taken for lambs to reach slaughter weight, reducing costs of production. Rams with high muscle depth EBVs will enhance carcase conformation gradings, whilst those with low fat depth EBVs can be used to produce leaner carcases.

Trials five years ago funded by a DEFRA Agricultural Development Scheme Grant showed this benefit to be worth an extra £2.50 to £3.00 per lamb at the market price of the time (£2.60 dwt). Typical flock results are shown below.

Table 8.1: Value of Recording to Commercial producers

<table>
<thead>
<tr>
<th></th>
<th>No. of Progeny</th>
<th>Days to Slaughter</th>
<th>Carcase Weight (kg)</th>
<th>Extra Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Index Ram</td>
<td>77</td>
<td>134</td>
<td>19.68</td>
<td>£2.78 direct benefit</td>
</tr>
<tr>
<td>Farm Stock Ram</td>
<td>77</td>
<td>142</td>
<td>18.99</td>
<td>and leaner carcases</td>
</tr>
<tr>
<td>Farm B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Index Ram</td>
<td>38</td>
<td>166</td>
<td>18.61</td>
<td>£2.68 direct benefit</td>
</tr>
<tr>
<td>Farm Stock Ram</td>
<td>41</td>
<td>171</td>
<td>17.82</td>
<td>and leaner carcases</td>
</tr>
</tbody>
</table>

In maternal breeds, increases in the number and weight of lambs weaned will substantially increase the profitability of both hill and lowland breeding flocks. These financial benefits would be worth over £600 per ram during their working lifetime, indicating that an investment in recorded rams is highly cost-effective.

Within-breed selection

Although the majority of slaughter lambs in Britain are cross-breds, the pure-bred flocks have an essential role to play in the production of high genetic merit breeding stock for use in commercial flocks. Selection within breeds involves comparing animals of the same breed and mating the preferred animals to produce the next generation. As animals are kept in different environments, selection “by eye” can be misleading. Recording schemes use both performance and pedigree records to identify animals with high genetic merit for traits of interest (e.g., growth, litter size etc) to disentangle the effects of genes and environment on performance to help breeders, and their commercial customers, make objective selection decisions.
Signet's Breeding Improvement Services 1969-2010

Sheep improvement work has been invested in for more than 40 years. The primary objective has been to "improve the profitability of commercial flocks through the identification and selection of superior breeding stock".

Accessible to all the main breed groups in the industry, breed improvement has developed to meet the specific requirements of two distinct breed groups – ewe breeds and terminal sire breeds – and relied on the production of indexes to aid selection.

Sheep Performance Recording schemes are now delivered by Signet and its Sheep Breeder service.

Table 8.2: Recorded flock numbers- Signet’s Performance Recording Scheme

<table>
<thead>
<tr>
<th>Breed</th>
<th>Number of Signet Recorded Flocks (June 2010)</th>
<th>Av. Flock Size (ewes) (where known)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texel</td>
<td>149</td>
<td>51.0</td>
</tr>
<tr>
<td>Suffolk</td>
<td>71</td>
<td>54.9</td>
</tr>
<tr>
<td>Lleyn</td>
<td>49</td>
<td>170.8</td>
</tr>
<tr>
<td>Charollais</td>
<td>48</td>
<td>71.4</td>
</tr>
<tr>
<td>Hampshire Down</td>
<td>46</td>
<td>24.8</td>
</tr>
<tr>
<td>Scotchblackface</td>
<td>28</td>
<td>144.7</td>
</tr>
<tr>
<td>Dorset</td>
<td>20</td>
<td>144.9</td>
</tr>
<tr>
<td>Shropshire</td>
<td>18</td>
<td>35.6</td>
</tr>
<tr>
<td>Bluefaced Leicester</td>
<td>16</td>
<td>37.2</td>
</tr>
<tr>
<td>North Country Cheviot Park</td>
<td>16</td>
<td>69.4</td>
</tr>
<tr>
<td>Welsh Mountain</td>
<td>16</td>
<td>186.6</td>
</tr>
<tr>
<td>Beltex</td>
<td>14</td>
<td>31.6</td>
</tr>
<tr>
<td>Wiltshire Horn</td>
<td>14</td>
<td>38.5</td>
</tr>
<tr>
<td>North Country Cheviot Hill</td>
<td>9</td>
<td>105.7</td>
</tr>
<tr>
<td>Southdown</td>
<td>7</td>
<td>44.3</td>
</tr>
<tr>
<td>Beulah</td>
<td>6</td>
<td>119.7</td>
</tr>
<tr>
<td>Meatlincl</td>
<td>6</td>
<td>167.5</td>
</tr>
</tbody>
</table>

Five or less flocks = Hardy, Speckle, Easycare, Bleu de Maine, Border Leicester, Ile de France, Vendeen, Zwartbles, Composite, Romney Marsh, South Welsh Mountain, Berrichon Ducher, Charmoise Hill, Colbreds, Leicester Longwool, Oxford Down, Rouge de L’Ouest, Ryeland.

Technological developments over the years

- The development of new Estimated Breeding Values
- More complex multi-trait Breeding Indexes
- Across-flock evaluations
- Improved measurement techniques, such as CT scanning
- The development of Accuracy Values and Connectedness scores
Analysis of Results: Best Linear Unbiased Predictor (BLUP)

All British sheep breeding evaluations are delivered by Signet Breeding Services using data analysis services provided by EGENES at the Scottish Agricultural College.

Data is analysed using Best Linear Unbiased Predictor – or BLUP for short. BLUP is a statistical procedure which has been used in the UK dairy industry since the early 1970s and in the sheep, pig and beef industries since 1990/91. It is used to work out how much of an animal’s performance is due to the effect of its genes and how much is because of non-genetic factors. The farmer-based outputs from BLUP are a series of Estimated Breeding Values (EBVs) for traits of economic importance.

Estimated Breeding Values

Estimated Breeding Values (EBVs) predict the superiority (or inferiority) of the genes an animal possesses for each trait measured. They are termed multi-trait because each one is calculated using information on all recorded traits. EBVs of animals in the same flock or recording scheme can be directly compared and they can also be compared across time, allowing genetic trends to be monitored. EBVs cannot be compared across breeds.

EBVs are produced for a range of traits, although not every value is available for every breed.

Table 8.3: EBV traits

<table>
<thead>
<tr>
<th>EBV</th>
<th>Trait</th>
<th>Raw Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Litter Size</td>
<td>Prolificacy</td>
<td>This trait is defined as the total number of lambs born alive and dead when pregnancy reaches full term.</td>
</tr>
<tr>
<td>Lambing Ease</td>
<td>Easy of Lambing</td>
<td>Lambing ease score (1-5)</td>
</tr>
<tr>
<td>Birth Weight</td>
<td>Size at birth</td>
<td>Birth weight in kilograms</td>
</tr>
<tr>
<td>Maternal Ability (kg)</td>
<td>Maternal ability of ewe relates to milk production</td>
<td>The component of a lamb’s growth to eight weeks of age that is influenced by the ewes breeding potential for milk production.</td>
</tr>
<tr>
<td>Eight Week Weight</td>
<td>Growth rate to 8 weeks of age</td>
<td>Weight at 8 weeks of age. To achieve an adjusted 8-week weight lambs must be weighed between 42 and 84 days of age.</td>
</tr>
<tr>
<td>Scan Weight (kg)</td>
<td>Growth rate to 21 weeks of age</td>
<td>Weight at scanning time, when lambs are 21 weeks of age.</td>
</tr>
<tr>
<td>Muscle Depth (mm)</td>
<td>Carcase muscling</td>
<td>Measured at 21 weeks of age by a Signet-approved technician. Ultrasound measurements at the third lumbar vertebra.</td>
</tr>
<tr>
<td>Fat Depth (mm)</td>
<td>Leanness</td>
<td>Measured at 21 weeks of age by a Signet-approved technician. Three ultrasound measurements taken at the third lumbar vertebra.</td>
</tr>
<tr>
<td>Carcase Lean Weight</td>
<td>Muscle yield</td>
<td>Quantity of muscle tissue in the carcase assessed using Computed Tomography (CT) image analysis of breeding stock at 21 weeks of age.</td>
</tr>
<tr>
<td>Carcase Fat Weight</td>
<td>Leanness</td>
<td>Quantity of fat in the carcase assessed using CT image analysis of breeding stock at 21 weeks of age.</td>
</tr>
<tr>
<td>Gigot Muscularity (mm)</td>
<td>Carcase shape</td>
<td>Thickness of the muscle tissue in the gigot assessed using CT standardised to a fixed femur length.</td>
</tr>
<tr>
<td>Mature size (kg)</td>
<td>Ewe efficiency</td>
<td>Ewe liveweight at first mating.</td>
</tr>
<tr>
<td>Faecal Egg Count (FEC)</td>
<td>Worm resistance</td>
<td>Faecal samples are taken from lambs at 21 weeks of age and submitted for laboratory analysis to measure the worm egg count in the sample.</td>
</tr>
</tbody>
</table>
Breeding indexes

EBVs are usually presented for each trait measured which allows breeders to decide how much emphasis they wish to place on each trait in selection. However, they can also be combined into a multi-trait selection index for a specific breeding objective, or set of objectives. Economic weightings relevant to current market conditions may be used to ensure each trait is given the appropriate amount of emphasis in the index.

Table 8.4: The Sheep breeder Service indexes

<table>
<thead>
<tr>
<th>Index</th>
<th>Breeds using the Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal Sire Index</td>
<td>Charollais, Hampshire Down, Ile de France, Meatlinc, Poll Dorset, Suffolk, Texel Vendeen</td>
</tr>
<tr>
<td>Maternal Index</td>
<td>Some Lleyn and Poll Dorset flocks</td>
</tr>
<tr>
<td>Longwool Index</td>
<td>Blue Faced Leicester</td>
</tr>
<tr>
<td>Welsh Index/Carcase+ Index</td>
<td>Welsh hill breeds, such a Beulah and Welsh Hardy Speckles / Lleyn Flocks</td>
</tr>
<tr>
<td>Hill 2 Index</td>
<td>Scottish Blackface and North Country Cheviot</td>
</tr>
</tbody>
</table>

Across-flock evaluations

The most significant recent development has been the introduction of across flock evaluations. UK breeding flocks are generally small by comparison to countries like New Zealand where breeding companies run large recorded flocks, making faster genetic gains. The UK industry has therefore adapted and developed ways to link flocks within breeds or groups to widen the genetic base for selection and comparisons.

The development of Sire Referencing Schemes, where rams are used across members’ flocks, allows their progeny to be used as a benchmark against which all other lambs are compared. By linking the flocks in this way, the size of the population from which replacements can be objectively selected is enlarged. Group breeding schemes are logistically complex and expensive to run. By contrast, the expansion of across flock evaluations and more recently whole breed evaluations has been one of the most significant developments in sheep breeding in the last 25 years.

Sire Referencing Schemes (SRSs)

Figure 8.2: Schematic Diagram of a Sire Referencing Scheme

Key  ● = progeny of Reference Sires  ○ = progeny of other rams
Use of technology to aid sheep improvement

New techniques for measuring sheep have dramatically increased the accuracy of sheep breeding programmes. These include:

Ultrasound scanning – Scanning for fat and muscle depth is a valuable tool used in Sheep Breeder flocks to help predict carcase quality. It is carried out by Signet-trained staff, when the lambs are around 21 weeks of age.

Computed tomography – CT was developed for use in human medicine. It produces images of the body cross-sections, using low-dose X-rays, in a welfare-friendly way. Images are high resolution, allowing detailed measurements of the body to be made.

Using CT, three cross-sectional X-ray pictures are taken of the gigot, loin and chest/shoulder. Computer image analysis identifies areas of fat, muscle and bone, and from these measurements body composition, and hence carcase composition, can be predicted with 97% to 98% accuracy.
A cross-sectional CT scan through the chest of a sheep. Images like this are produced from a grid of tissue densities, estimated by measuring the absorption of the low-level X-rays from a source that rotates around the body.

The dosage of X-rays involved is not harmful to the animal.

Different densities are displayed as shades of grey. Dense tissues appear light, less dense tissues appear darker.
CT is a successful tool for identifying outstanding animals within the breed, but it also has an equally important wider impact on breeding improvement. The use of CT has enhanced our understanding of the relationship between on-farm ultrasonic measurements and lean and fat in the carcase. This has improved the efficiency with which superior animals can be identified using on-farm ultrasound and strengthens the breeding evaluations produced across the breed.

**Figure 8.6: Computed Tomography images**

Positions of the three cross-sectional scans as shown in the scout scan (Figure 9.4).

Key anatomical features are labelled on each diagram for orientation.

NB: CT measures density. The greyscale used for the cross-sectional scans shows air as black, fat as dark grey, muscle as light grey and bone as white.

The sheep is lying on its back in the cradle.
Breeding for worm resistance

Internal parasite infections can reduce growth in young lambs by as much as 25% without clinical signs of infection being observed. When infected with worms, lambs raise an immune response to fight the infection and some lambs are better at this than others. Research has shown that worm resistance has a genetic component, it is moderately heritable and it is favourably correlated to production traits, such as growth rate.

Worm resistance is clearly a trait that can be improved through breeding and a commercial service is now available to assist producers in this quest through the production of FEC (Faecal Egg Count) EBVs.

The FEC EBV identifies sheep whose genetic make up confers resistance to nematode parasites and low values indicate more resistance. Selecting rams with highly negative FEC EBVs means they have the potential to perform better e.g., in terms of growth rate, require less frequent treatment with anthelmintics, shed fewer nematode eggs in their dung, therefore reducing the levels of larval challenge for other sheep, and reduce the worm burden on heavily stocked pastures over time.

Flocks that will benefit most are those already experiencing a high level of worm challenge, where anthelmintic use is restricted e.g. organic flocks and where flocks are breeding their own female replacements.

<table>
<thead>
<tr>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed the uptake of genetically superior recorded animals</td>
</tr>
<tr>
<td>Exploit new technologies to provide animals fit for purpose in a modern day sheep flock</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>The performance of recorded animals has been proven to offer benefits over average animals in terms of growth rates, carcase quality, maternal ability.</td>
</tr>
<tr>
<td>New technologies exist to further develop the type of sheep required for modern sheep systems e.g. breeding for worm resistance</td>
</tr>
</tbody>
</table>
Chapter 9: The value in the fifth quarter today and tomorrow

Introduction

During the slaughter and dressing process, the removal of the non-carcase material generates other products collectively termed fifth quarter products, or offal. Historically, this phrase was used to highlight the fact that these items had the capability to generate additional value and were often retained by the abattoir to cover the cost of slaughter with no cash charge to the farmer.

Fifth quarter products represent a significant opportunity to add value to a carcase by seeking out markets where they are sought after, most usually overseas, and facilitating ways for producers to reach these markets.

The case for offal

Fifth quarter tissues are broadly split into two categories:

- Edible tissue (red offal) – the most valuable tissues include liver, heart, kidney & tail. A market exists for sheep intestines to be used as casings for sausage production.
- In-edible tissue (green offal) – most usually require further processing prior to consumption or manufacture and includes the stomach, digestive tract and the skin. The skin has the most value of all the in-edible tissues and can be made into products such as rugs, clothing and gloving leathers.

The higher value fifth quarter tissues only represent a small proportion of total tissues. Other fifth quarter tissues, for example those designated as Specified Risk material (SRM) and gut content, are of no value and currently incur disposal charges of approximately £50 per tonne.

The value opportunity for these products, or indeed the disposal cost, need to be considered carefully in the processing sector as this can have a significant impact on viability. A recent New Zealand processor indicated that approximately 20% of the plant income was generated from fifth quarter material, highlighting the importance of exploiting the full market potential of these valuable by-products.

The average proportions of offal derived from each sheep carcase are shown below.

Figure 9.1: Average proportions of offal derived from each carcase

Source: RAC Rumenco Annual Fellowship No.5 2009
Table 9.1 below gives more detail and highlights the individual contribution of all the parts of the sheep carcase removed as offal.

**Table 9.1: Individual contribution of all the parts of the sheep carcase removed as offal**

<table>
<thead>
<tr>
<th>Category</th>
<th>Live weight in kgs</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carcase (ex K,KKCF)</td>
<td>17.60</td>
<td>47.44</td>
</tr>
<tr>
<td>KKCF</td>
<td>0.60</td>
<td>1.62</td>
</tr>
<tr>
<td>Kidneys</td>
<td>0.10</td>
<td>0.27</td>
</tr>
<tr>
<td>Gut contents</td>
<td>4.50</td>
<td>12.13</td>
</tr>
<tr>
<td>Intestinal fat</td>
<td>0.50</td>
<td>1.35</td>
</tr>
<tr>
<td>Caul fat</td>
<td>0.65</td>
<td>1.75</td>
</tr>
<tr>
<td>Intestines</td>
<td>1.20</td>
<td>3.23</td>
</tr>
<tr>
<td>Stomachs</td>
<td>1.00</td>
<td>2.70</td>
</tr>
<tr>
<td>Heart, lungs, trachea</td>
<td>1.00</td>
<td>2.70</td>
</tr>
<tr>
<td>Liver, gall bladder</td>
<td>0.65</td>
<td>1.75</td>
</tr>
<tr>
<td>Pancreas</td>
<td>0.10</td>
<td>0.27</td>
</tr>
<tr>
<td>Spleen</td>
<td>0.10</td>
<td>0.27</td>
</tr>
<tr>
<td>Fleece and pelt</td>
<td>4.10</td>
<td>11.05</td>
</tr>
<tr>
<td>Feet</td>
<td>0.72</td>
<td>1.94</td>
</tr>
<tr>
<td>Head, tongue</td>
<td>1.50</td>
<td>4.04</td>
</tr>
<tr>
<td>Blood</td>
<td>1.70</td>
<td>4.58</td>
</tr>
<tr>
<td>Cerebro-spinal fluid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skirt</td>
<td>0.20</td>
<td>0.54</td>
</tr>
<tr>
<td>Reproductive organs</td>
<td>0.13</td>
<td>0.35</td>
</tr>
<tr>
<td>Lymph nodes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste &amp; Tail</td>
<td>0.75</td>
<td>2.02</td>
</tr>
<tr>
<td></td>
<td>37.10</td>
<td></td>
</tr>
</tbody>
</table>

It can therefore be seen that the 'waste' streams consist of a significant amount of material and present a challenge for the processing sector.

**Consumer/market trends**

Over the past 20 years, consumption/value of fifth quarter products has reduced due to a variety of reasons including:

- Increased demand for more convenience foods
- Younger consumers unable or unwilling to devote the necessary time to cooking
- Health concerns in relation to meat consumption, and perhaps a degree of confusion in the consumer mind over meat safety
- Although more multiple retailers are increasingly using in-store butchers, allocation of shelf space is dictated by consumer demands and consequently offal products are often restricted to the more traditionally accepted items such as liver
- Changes to the Food Labelling Regulations in 2003 redefined the generic term “meat” to exclude non-carcase meat (offal) from contributing towards the meat content of processed products
- The value of skins is subject to volatility in the world market and changes in fashion, both of which are outside the control of meat plants.
On the home market, the consumption of offals has been in steady decline probably due to the rising affluence of the population. While offals were a staple part of the national diet historically, higher disposable incomes have led to a desire to eat whole muscle meat rather than offals. In addition, the public perception of offals and the skill/knowledge of how to prepare and cook offals has been poor. However, recent developments in the food service sector have put offals back on the menu, including liver and bacon with onions.

To aid the uptake and interest on the products, EBLEX has produced a booklet entitled “It's all about offal” which gives information on how to prepare and cook offals in a number of interesting dishes (Figures 10.2 and 10.3 below). This, coupled with increased promotion of offals by high profile chefs on television cookery programmes, has led to renewed interest. Consumption has jumped 67% from 2003 to 2008 and the market was valued at £62million (Mintel). More recent market analysis by the Agriculture and Horticulture Development Board has reported a fairly stable domestic offal market from 2008-2010 with a consumption of 16,000 tonnes and a market value of around £40million. Of this, liver is responsible for well over half the domestic volume consumed and demonstrates growth of 8% for 2009-2010 while consumption of kidneys and other offals has experienced slight volume decline. It perhaps suggests that, unlike other parts of Europe and the world, offal consumption will remain at fairly low levels domestically and that any market growth will be modest.

One could also add that the opportunities to increase the usage and value of offal therefore lie on the export market and that this market is experiencing growth and includes some products that would not be consumed in the UK regardless. An example of this would be the EU opportunity for tripe, a product consumed in very low volumes in the UK but with an EU market of 150,000 tonnes. It is also worth noting that the value of offals in Europe and further afield is above that of the UK so we have a market opportunity to sell product that has very little value or market domestically to a market overseas that pays a fair price and needs volume.

The challenge for the sector is to identify and exploit these markets to extract the maximum value from the carcase.

Figure 9.2: Lambs kidneys and how to prepare them prior to cooking
Increasing the demand/value and reducing the disposal cost of the fifth quarter

The demanded/value of fifth quarter products could be increased by:

- Investing in the skills and equipment in the slaughter sector to ensure the production of a high quality product that the market demands.

- Continuing to promote the dietary benefits of offal. Offals are generally one of the best sources of iron. The National Diet and Nutritional Survey has identified the need for special attention to increase iron intake in children’s diets.

- Reducing the proportion of lamb’s liver damaged by fluke and other parasites. The market for lamb liver is very strong, particularly for ready meals. However, about 40% are unsuitable for this higher value market and are sold for pet food due to liver fluke damage. Producers should adopt a targeted anthelmintic policy in order to improve quality.

- Reducing the number of livers and hearts that have excessive meat inspection and dressing damage to ensure a saleable product is achieved for the export market.

- The development of export markets worldwide continues to be explored. There may be specific opportunities for lamb plucks.

- Continuing to target white linen restaurants and pub chains to include offal dishes on their menus.

- Continue to focus on the export market and accessibility of certain markets with Governmental bodies.
The future

The opportunities for the sector to reduce disposal costs and add value to fifth quarter products are great but there are some clear challenges. **The sector needs to become more focused on the value of fifth quarter products and market these accordingly.**

In addition, the enforcement agencies and representative bodies need to co-ordinate activities to ensure that the sector has the greatest opportunity to access overseas markets for fifth quarter products while continuing to promote offal consumption domestically.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Develop the expertise and processes in the processing sector to maximise opportunities for fifth quarter products</td>
<td>• Demand exists in export markets at premium prices</td>
</tr>
<tr>
<td>• Improve consumer demand for fifth quarter products on the home market</td>
<td>• Technologies and expertise exist to allow UK processors to take advantage of export and domestic demand for many products otherwise seen as costly waste products</td>
</tr>
</tbody>
</table>
Chapter 10: Campaign for Wool

A sustained period of low wool prices and producers opting to breed sheep which shed wool rather than harvest it would suggest an uncertain future for the wool industry. This contribution from John Thorley (Chairman Campaign for Wool) brings news of a positive initiative which should help reverse that trend.

Introduction

The Campaign for Wool is the initiative of HRH The Prince of Wales. The campaign has been created to get better returns to sheep farmers and to all the people and trades in the wool chain, from sheep to end user.

Due to the advent, particularly of man made fibres which have grown exponentially in the past 50 years, the value of wool has been in steady decline with many forecasting its ultimate demise. In recent years, this has gained credibility by the growth in the number of sheep which have been bred either to produce small amounts of wool or to naturally shed their wool without the need for shearing.

It was this prospect of having a national flock which did not produce wool, the steep reduction in numbers of sheep throughout the world and the prospect of the companies which were major users not having the raw material which their companies depended upon which finally sparked the need for a call to action to recreate positive interest in its resurgence.

When The Prince of Wales drew attention to the fact that the price obtained for wool didn’t pay for shearing and that 50 years previously it would have made a substantial contribution to the farm income, especially of hill farmers who had little alternative but to keep sheep and that those same hill and upland farms were now under severe financial pressure, it became clear that action was necessary. The other part of the equation being that the vast proportion of the trades which operate in wool processing had disappeared with just a few hanging on and the majority having been exported to low cost economy countries.

The wool sector

World wool production declined from 1,965 million tonnes of clean wool in 1989 to 1,100 million tonnes in 2009 as a result of a world wide reduction in demand. It fuelled a steady decline in producer prices which was felt in all the major wool producing countries. The decline in the Australian breeding sheep flock has taken numbers from just under 200 million head to around 70 million, New Zealand from around 75 million to 24 million and UK from around 21 million to under 14 million – the latter in less than 10 years.

At the same time there’s been a growing interest in the rising cost of oil and that it provides the basis not only for most man-made fibres, but also a significant part of artificial fertilizer and virtually all the power to cultivate land. Couple this with the fact that we live in a world whose population continues to grow and we start to see opportunities return for sheep and its manifold products of meat, wool, milk and the vitally important by product of soil fertility.

History tells us that the sheep was man’s first domesticated animal and, as such, the provider of an important array of essentials at a time when civilisation was in its formative stages. It retained an importance right up to the advent of oil and all the apparent ‘benefits’ which accrued as a consequence.

Finite resources and steeply rising prices of oil present modern agriculture with challenges to which it will have to adapt. It is becoming clear some costs of production will rise due to the increased fuel costs and a need for soil to be fertilised by natural means in order to continue to produce crops for a growing population. Both provide the opportunity for a resurgence of interest in the production of high quality fibre which is sustainable, renewable and natural.
The growing interest in renewable resources opens up fascinating possibilities for sheep producers. The humble sheep is an animal which can be farmed on poor soils at highly variable altitudes and climates, converting low cost, relatively primitive herbage into quality products including meat and wool.

None of this of course makes sense unless the price obtained for wool gets back to a place where there is an acceptable return to the primary producer and the trades in the processing chain.

That really is where the Campaign for Wool kicks in and is likely to prove of considerable value as it has already attracted the support of the most important wool producing countries throughout the world. A substantial budget has been put together and for the first time there has been a convergence of interests so that when the steering group of the campaign sits down together, it covers not only UK interests but an international dimension involving most commonwealth and former commonwealth countries – with the whole entity being augmented by the presence of a significant input from the International Wool Textile Organisation (IWTO).

So far it covers not only apparel and fashion, but also stretches across carpets, interior design fabrics, architecture, insulation and a variety of other aspects which have less economic impact but which are nevertheless important entities when put together.

Of crucial potential to the way wool is perceived is the fact that it not only has unique properties which enable it to be naturally fire retardant, but it also has the ability to improve air quality in a room by controlling humidity. The natural fire retardant quality of wool is a matter of serious advantage and moves are afoot to promote these benefits to reduce fire risk in homes, as well as in shops and public buildings.

Quite clearly wool is a product which has endured varying popularity throughout history and as times change and we approach a period when there will need to be less reliance on anything which is made from fossil fuel, it would seem that wool will again become a product whose time has returned.

The purpose of the campaign is to stimulate the economics of the industry and promote the versatility of wool. Despite the wide and varied use of wool in the past, looking ahead it is what can be done today with the broad spectrum of yarns and fabrics as a consequence of the range of available fibre.

The Campaign for Wool, which now has HRH The Prince of Wales as its patron, is set to run for at least the next five years. It is hoped, against the background of the progress made in six months with many producers experiencing a sensible lift in prices, that wool will once again contribute to the income obtained by a sheep farmer and not be a drain on the resource.

**Challenge**

- Develop demand for wool and woollen products
- Develop a more sustainable price for wool

**Opportunities**

- Wool is a natural and sustainable product which has potential for renewed uses in the face of rising oil prices
- Wool has positive environmental credentials
Chapter 11: EBLEX - driving the industry forward

Introduction

**Levy boards have a unique place in the English agricultural sector.** They fulfil a role on behalf of their levy payers which brings the benefit of collective organisation and funding to provide more efficient ways of delivering research and development, market information and intelligence, product marketing and communications.

Funded by statutory levy, EBLEX exists to enhance the sustainability and profitability of the English beef and lamb sector. There are around 53,000 English cattle holdings and 46,000 English sheep enterprises. EBLEX is one of six divisions of the Agriculture and Horticulture Development Board (AHDB) and it deals exclusively with beef and sheep meat production by English enterprises.

**EBLEX is uniquely placed to help equip the industry** with the knowledge it needs to become more profitable, sustainable and efficient but it cannot tackle all the issues alone and must work closely with producers and stakeholders to safeguard an affluent future for sheep producers and processors.

**EBLEX activity – working for the industry**

This report has highlighted some of the main challenges and opportunities facing the sector, some short term, others requiring a co-ordinated long term approach. As the organisation for the sheep sector, EBLEX will continue to be instrumental in meeting these challenges.

Levy income from 2009/2010 was £5.936 million from the sheep sector, equivalent to 47.8 per cent of the overall total. This money is used to fund a huge range of activity across ten key strategies, as well as strategy support services, working to helping the beef and lamb supply chain to be more efficient and add value to the beef and sheep meat industry. The work includes research and development and promoting better returns for producers, through communications, to trade development, marketing and export activity to identify and develop new markets for producers. Each is carefully budgeted and the corporate planning reviewed on a rolling three-year programme to ensure it is offering value for money.

The work of EBLEX is overseen and steered by a board of 15 members appointed from across the beef and lamb sector, chaired by Norfolk producer John Cross. They guide the delivery strategy to ensure EBLEX activities provide value for the producers’ investment. The board ensures that EBLEX serves the best interests of producers and processors linked to the beef and sheep meat industry.

Already we are looking at the specifics of how we can tackle the issues facing the industry. This can be through specific projects, like the research we have commissioned in the Halal sector, or a longer-term focus, like developing overseas markets.

**Research and development**

On behalf of beef and sheep producers, EBLEX undertakes a programme of research and development to look at more efficient ways of operating. This work ranges from climate change, to fertility, to feed efficiency, to meat quality, forage and cultivating optimum grass varieties.

It also encompasses the work of Signet Breeding Services which works with the pedigree sector to gather information on breed traits to develop Estimated Breed Values (EBVs).
These help producers work towards producing genetically superior stock suited to produce offspring for their target markets.

Findings from the research are communicated to producers and industry stakeholders in a variety of ways, from on-farm events and conferences, to publications, briefings and through articles in the trade press.

**Better Returns Programme (BRP)**

The EBLEX Better Returns Programme encourages sheep producers to evaluate their businesses to identify where improvements can be made, in terms of cost reduction, environmental impact and animal performance.

Skills and knowledge transfer work is carried out through a programme of events around the country, regular communication by direct mail, email or through the media on specific topics, and the preparation of technical manuals and other resources for producers.

EBLEX produces a whole suite of technical manuals and interactive tools to help producers deal with common problems and improve efficiency.

**Market intelligence**

EBLEX maintains and continues to develop targeted market information that helps to bring greater transparency to the beef and sheep sectors and enable businesses to make informed decisions.

Information available includes individual and regional auction market prices, deadweight cattle and sheep prices, UK slaughter numbers, import and export data together with consumer trends for beef and lamb. Reports on the current market conditions and forecasts are published, while key European and world markets are monitored with developments and statistics reported to industry stakeholders.

This flow of information is fed into the beef and sheep supply chain using specific reports, trade press and the internet.

**Marketing**

Through consumer marketing, EBLEX aims to enhance the image of red meat as a healthy, nutritious food. It seeks to improve how consumers value and understand assured beef and lamb through advertising campaigns in press, online and TV.

The EBLEX trade marketing team works with abattoirs, cutting plants, processors, wholesalers, catering butchers, foodservice operators, independent retail butchers and multiple retailers and is often the first point of contact on carcase utilisation, cutting specifications, recipe development, and critical operational effectiveness.

Increasingly, efforts are directed at bringing together various parts of the supply chain to help improve product quality and operational efficiency, including in the growing Halal sector.

**Trade development**

EBLEX undertakes trade development work in foreign markets on behalf of producers. This is both to stimulate demand for quality beef and lamb and help exporters, or would-be exporters, find a route to new and developing markets.
There is a dedicated office in France which is a key market for UK lamb exports, liaising with retailers and trade organisations, exhibiting at shows, showcasing quality beef and lamb to journalists, and playing an active part in joint marketing campaigns designed to boost sales of beef and lamb.

Further afield, our export team connects producers with potential new markets for their products, through a network of experienced associates.

Communication

EBLEX works hard to ensure the work we are doing is effectively communicated to stakeholders and levy payers. This is delivered through a pro-active media strategy working with trade press titles, the recently re-launched website at www.eblex.org.uk, social media and targeted publications to push key messages. EBLEX has a team of regional representatives to take its work out to industry helping transfer knowledge to producers, supporting EBLEX general activity within the region and acting as a first point of contact for any issues that arise.

The future

**EBLEX will continue to invest in the activities above to help drive the industry forward for a profitable and sustainable future.** We will work closely with stakeholders, industry partners and producers to identify areas where specific activity is needed and aim to deliver this in a cost-effective, timely fashion.

A whole industry approach is needed to effectively move forward. Holding a unique position in the industry, EBLEX is ideally positioned to facilitate progress and change but cannot succeed alone.

Sustainable practices going hand in hand with increased efficiencies on farm rely on greater numbers of sheep producers recording their costs of production and addressing areas where they are underperforming. A willingness to know more about the market they are selling to and whole carcase utilisation, with a knowledge of specific markets for specific cuts here and abroad, will also improve returns. Involvement in events and monitoring projects will increase the effectiveness of industry-wide initiatives to improve performance. Exploring outlets for offal and wool can create additional income streams and cut waste and greater attention to genetic improvement will lead to a more profitable flock.

Only by adopting a holistic approach across all areas will we attain a sustainable and rewarding price for our sheep meat products.

**Challenge**

- To enhance the profitability and sustainability of the sector by improving efficiency, adding value to Lamb and providing relevant services.

**Opportunities**

- To provide continued professional leadership to achieve practical real changes across the whole UK Sheep Industry to achieve a thriving and sustainable future.
- To excite a vision of a thriving sustainable sector
- To maximise the value of the sheep carcase to the benefit of the whole industry
Appendix 1: The role of the levy organisations

EBLEX is one of six divisions of the Agriculture and Horticulture Development Board (AHDB) and it deals exclusively with beef and sheep meat production by English enterprises.

The other levy organisations under AHDB are:

- BPEX – for the pig industry in England
- HGCA – for cereals and oilseeds in the UK
- DairyCo – for milk in Great Britain
- PCL – for potatoes in Great Britain
- HDC – for the horticultural sector in Great Britain.

AHDB is a non-departmental Government body (NDGB). This means it operates independently of Government but in close collaboration with the Department for the Environment, Food and Rural Affairs (DEFRA), the section to which it is accountable at a statutory level.

It is based at Stoneleigh, in Warwickshire, and provides central services for the six levy boards, including finance, human resources and IT, but responsibility for strategy and delivery within each sector rests with the respective levy body.

Each sector is funded by statutory levy. This means it is enshrined in law and must be paid by producers and in some cases processors of the raw product. They are not funded by the general public (public money in the beef and lamb sector, levy is collected at the point of slaughter of the animals or point of sale for live export if that is the case. Levy is collected from more than 200 abattoirs which are supplied by beef and sheep enterprises across England. The levy cost is split between producers and processors. These rates are currently:

<table>
<thead>
<tr>
<th></th>
<th>Slaughter/ export levy £/head</th>
<th>Producer levy £/head</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>£1.075</td>
<td>£3.495</td>
</tr>
<tr>
<td>Calves (not exceeding 68 kg deadweight or under 6 months of age if exported)</td>
<td>£0.07 (7 pence)</td>
<td>£0.07 (7 pence)</td>
</tr>
<tr>
<td>Sheep</td>
<td>£0.165 (16.5 pence)</td>
<td>£0.505 (50.5 pence)</td>
</tr>
</tbody>
</table>

Total levy income from 2009/2010 was £5.936 million (47.8 per cent) from the sheep sector and £6.491 million (52.2 per cent) from cattle. Spend of the levy is split accordingly across the species.

How the levy income is used

Working towards a goal of improved profitability for the sector, EBLEX activity is split into two distinct areas:

- helping the beef and lamb supply chain to be more efficient
- adding value to the beef and sheep meat industry.
EBLEX regional coverage

Our regional team

EBLEX has a regional team dedicated to producers and processors in different parts of the country. They are the first point of contact for levy payers.

Clive Brown
Regional Manager - Western Region
Rosedale House
Ashham Bryan College
Ashham Bryan
York, YO23 3FR
T: 0870 241 8528
F: 0844 484 5271
E: clive.brown@eblex.org.uk

Steve Powdrell
Regional Manager - North East Region
Rosedale House
Ashham Bryan College
Ashham Bryan
York, YO23 3FR
T: 0870 241 8528
F: 0844 484 5271
E: steve.powdrell@eblex.org.uk

Jonathan Eckley
Regional Manager - South East Region
The Loadstone Suite
Creech Castle
Bathpool
Taunton, TA1 2DX
T: 0870 608 6610
F: 0871 504 3581
E: jonathan.eckley@eblex.org.uk

Phil Hadley
Regional Manager - South West Region
The Loadstone Suite
Creech Castle
Bathpool
Taunton, TA1 2DX
T: 0870 608 6610
F: 0871 504 3581
E: phil.hadley@eblex.org.uk

Michael Richardson
EBLEX contact – Eastern Region
Ashton House
Ambury Road South
Huntingdon
Cambridgeshire, PE19 3EH
T: 0870 242 1894
F: 0844 404 5272
E: michael.richardson@eblex.org.uk

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### Table 1.4: EU sheep population (December)

<table>
<thead>
<tr>
<th>000 head</th>
<th>2008</th>
<th>2009</th>
<th>% change 2009/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU*</td>
<td>90,429.2</td>
<td>88,575.6</td>
<td>-2.0</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>1,474.8</td>
<td>1,400.3</td>
<td>-5.1</td>
</tr>
<tr>
<td>Germany</td>
<td>1,919.9</td>
<td>1,851.7</td>
<td>-3.6</td>
</tr>
<tr>
<td>Ireland</td>
<td>3,422.9</td>
<td>3,182.6</td>
<td>-7.0</td>
</tr>
<tr>
<td>Greece</td>
<td>8,994.0</td>
<td>8,966.0</td>
<td>-0.3</td>
</tr>
<tr>
<td>Spain</td>
<td>19,952.3</td>
<td>19,569.0</td>
<td>-1.9</td>
</tr>
<tr>
<td>France</td>
<td>7,715.2</td>
<td>7,528.2</td>
<td>-2.4</td>
</tr>
<tr>
<td>Italy</td>
<td>8,175.2</td>
<td>8,012.6</td>
<td>-2.0</td>
</tr>
<tr>
<td>Hungary</td>
<td>1,236.0</td>
<td>1,223.0</td>
<td>-1.0</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1,545.0</td>
<td>1,091.0</td>
<td>-29.4</td>
</tr>
<tr>
<td>Portugal</td>
<td>3,144.6</td>
<td>2,897.8</td>
<td>-7.8</td>
</tr>
<tr>
<td>Romania</td>
<td>8,881.6</td>
<td>9,431.6</td>
<td>+6.2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>21,873.0</td>
<td>21,272.0</td>
<td>-2.7</td>
</tr>
<tr>
<td>Other*</td>
<td>2,094.7</td>
<td>2,149.8</td>
<td>+2.6</td>
</tr>
</tbody>
</table>

* Excludes Denmark, Belgium, Latvia, Finland, Estonia and Czech Republic who have yet to file 2009 census results
Source: Eurostat

### Table 1.5: EU sheep breeding flock (December)

<table>
<thead>
<tr>
<th>000 head</th>
<th>2008</th>
<th>2009</th>
<th>% change 2009/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU*</td>
<td>67,201.1</td>
<td>65,708.1</td>
<td>-2.2</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>1,244.9</td>
<td>1,178.1</td>
<td>-5.4</td>
</tr>
<tr>
<td>Germany</td>
<td>1,373.1</td>
<td>1,339.0</td>
<td>-2.5</td>
</tr>
<tr>
<td>Ireland</td>
<td>2,527.3</td>
<td>2,369.4</td>
<td>-6.2</td>
</tr>
<tr>
<td>Greece</td>
<td>6,904.0</td>
<td>6,552.0</td>
<td>-5.1</td>
</tr>
<tr>
<td>Spain</td>
<td>15,416.3</td>
<td>15,420.6</td>
<td>-</td>
</tr>
<tr>
<td>France</td>
<td>5,888.3</td>
<td>5,769.4</td>
<td>-2.0</td>
</tr>
<tr>
<td>Italy</td>
<td>7,209.6</td>
<td>7,101.2</td>
<td>-1.5</td>
</tr>
<tr>
<td>Hungary</td>
<td>964.0</td>
<td>968.0</td>
<td>+0.4</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1,160.0</td>
<td>526.0</td>
<td>-54.7</td>
</tr>
<tr>
<td>Portugal</td>
<td>2,073.9</td>
<td>1,915.1</td>
<td>-7.7</td>
</tr>
<tr>
<td>Romania</td>
<td>7,597.4</td>
<td>8,067.9</td>
<td>+6.2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>14,013.0</td>
<td>13,841.0</td>
<td>-1.2</td>
</tr>
<tr>
<td>Other*</td>
<td>829.3</td>
<td>660.4</td>
<td>-20.3</td>
</tr>
</tbody>
</table>

* Excludes Denmark, Belgium, Latvia, Finland, Estonia and Czech Republic who have yet to file 2009 census results
Source: Eurostat
Table 1.6: EU sheep meat production forecast by country*

<table>
<thead>
<tr>
<th>(000 tonnes, carcase weight equivalent)</th>
<th>2008</th>
<th>2009</th>
<th>% Change</th>
<th>2010 (f)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross indigenous production</td>
<td>1,026</td>
<td>953</td>
<td>-7</td>
<td>913</td>
<td>-4</td>
</tr>
<tr>
<td>UK</td>
<td>332</td>
<td>309</td>
<td>-7</td>
<td>283</td>
<td>-8</td>
</tr>
<tr>
<td>Spain</td>
<td>168</td>
<td>134</td>
<td>-20</td>
<td>133</td>
<td>-1</td>
</tr>
<tr>
<td>France</td>
<td>119</td>
<td>109</td>
<td>-8</td>
<td>109</td>
<td>-</td>
</tr>
<tr>
<td>Greece</td>
<td>104</td>
<td>104</td>
<td>-</td>
<td>104</td>
<td>-</td>
</tr>
<tr>
<td>Irish Republic</td>
<td>56</td>
<td>53</td>
<td>-5</td>
<td>50</td>
<td>-6</td>
</tr>
<tr>
<td>Italy</td>
<td>42</td>
<td>41</td>
<td>-2</td>
<td>41</td>
<td>-</td>
</tr>
<tr>
<td>Consumption</td>
<td>1,288</td>
<td>1,212</td>
<td>-6</td>
<td>1,174</td>
<td>-3</td>
</tr>
<tr>
<td>Imports (a)</td>
<td>271</td>
<td>271</td>
<td>-</td>
<td>274</td>
<td>+1</td>
</tr>
<tr>
<td>Self Sufficiency (%)</td>
<td>80</td>
<td>79</td>
<td></td>
<td>78</td>
<td></td>
</tr>
</tbody>
</table>

(a) Excluding offals, including meat equivalent of live animals

* Includes goat meat

(f) Forecast
Source: AHDB/EBLEX

Table 1.8: UK sheep meat production and forecasts

<table>
<thead>
<tr>
<th>(000 head)</th>
<th>2008</th>
<th>2009</th>
<th>% change</th>
<th>2010(f)</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sheep flock</td>
<td>21,856</td>
<td>21,272</td>
<td>-3</td>
<td>21,500</td>
<td>+1</td>
</tr>
<tr>
<td>Slaughterings</td>
<td>14,353</td>
<td>13,213</td>
<td>-8</td>
<td>12,658</td>
<td>-4</td>
</tr>
<tr>
<td>Net production</td>
<td>326</td>
<td>303</td>
<td>-7</td>
<td>277</td>
<td>-9</td>
</tr>
<tr>
<td>Consumption</td>
<td>365</td>
<td>341</td>
<td>-7</td>
<td>315</td>
<td>-8</td>
</tr>
</tbody>
</table>

(f) Forecast
Source: AHDB/EBLEX

Table 1.9: Lowland flock costings

<table>
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<th>2008/09 £ per ewe</th>
<th>Average</th>
<th>Top third</th>
<th>Difference</th>
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<tr>
<td>Output</td>
<td>74.6</td>
<td>92.6</td>
<td>+18.0</td>
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<tr>
<td>Replacements</td>
<td>8.5</td>
<td>9.9</td>
<td>+1.4</td>
</tr>
<tr>
<td>Total variable costs inc replacements</td>
<td>35.5</td>
<td>40.2</td>
<td>+4.7</td>
</tr>
<tr>
<td>Gross margin</td>
<td>39.2</td>
<td>52.4</td>
<td>+13.2</td>
</tr>
<tr>
<td>Fixed costs</td>
<td>43.9</td>
<td>28.1</td>
<td>-15.8</td>
</tr>
<tr>
<td>Net margin</td>
<td>-4.7</td>
<td>24.3</td>
<td>+29.0</td>
</tr>
<tr>
<td>Non-cash costs</td>
<td>31.6</td>
<td>35.8</td>
<td>+4.2</td>
</tr>
</tbody>
</table>

Source: AHDB, EBLEX
Table 1.10: UK sheep meat imports

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sheep meat</td>
<td>114.1</td>
<td>111.9</td>
<td>115.7</td>
</tr>
<tr>
<td>New Zealand</td>
<td>84.7</td>
<td>82.9</td>
<td>87.7</td>
</tr>
<tr>
<td>Australia</td>
<td>12.7</td>
<td>12.4</td>
<td>12.8</td>
</tr>
<tr>
<td>EU-27</td>
<td>13.1</td>
<td>13.2</td>
<td>10.8</td>
</tr>
</tbody>
</table>

Source: GTIS, Her Majesty’s Customs & Excise

Table 2.11: UK sheep meat exports

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sheep meat</td>
<td>68.8</td>
<td>86.8</td>
<td>94.5</td>
</tr>
<tr>
<td>France</td>
<td>50.3</td>
<td>60.6</td>
<td>63</td>
</tr>
<tr>
<td>Belgium</td>
<td>5.9</td>
<td>6.8</td>
<td>9.8</td>
</tr>
<tr>
<td>Germany</td>
<td>3</td>
<td>4.6</td>
<td>5.2</td>
</tr>
<tr>
<td>Italy</td>
<td>3</td>
<td>4.3</td>
<td>5.2</td>
</tr>
<tr>
<td>Ireland</td>
<td>3.6</td>
<td>5.8</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Source: GTIS, Her Majesty’s Customs & Excise

Table 1.12: UK sheep meat production and consumption forecast

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010(f)</th>
<th>2011(f)</th>
<th>2012(f)</th>
<th>2013(f)</th>
<th>2014(f)</th>
<th>2015(f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>326</td>
<td>303</td>
<td>277</td>
<td>277</td>
<td>288</td>
<td>289</td>
<td>290</td>
<td>290</td>
</tr>
<tr>
<td>Consumption</td>
<td>365</td>
<td>341</td>
<td>315</td>
<td>311</td>
<td>312</td>
<td>313</td>
<td>312</td>
<td>312</td>
</tr>
</tbody>
</table>

(f) Forecast
*Carcase weight equivalent
Source: AHDB/EBLEX
Appendix 3: Legislation that may have an influence on the sector

Legislation that may have an influence on the sector

The list has been compiled to the best of our ability and knowledge but should not be taken as definitive, some legislation is specific to cattle but may impact on businesses with multiple enterprises so have been included:

On-Farm
General

Animal By-Products Regulations 2003 (amended 2005)
Transmissible Spongiform Encephalopathies Regulations 2006 (amended 2008)
Bovine Meat (Restriction on Placing On the Market) Regulations 2005
Food Hygiene Regulations 2006
Animal Feed
Feeding Stuffs Regulations 2005
Genetically Modified Animal Feed Regulations 2004

Animal Health

Blue Tongue Order 2003
Disease Control (Standstill) Order 2004
Movement of Animals (restrictions) Order 2004
The foot-and-mouth Disease Regulations 2006
The foot-and-mouth Disease (control of vaccination) Regulations 2006
Tuberculosis control Order 1999
Tuberculosis (examination & testing) scheme Order 1999

Animal Identification

Welfare of Farmed Animals Regulations 2000

Transport

Welfare of Animals (Transport) Regulations 2006

Environment

Water and pollution

Nitrates Action Programme Regulations 2006 No. 489
The Groundwater Regulations 1998
Phosphorus (use in agriculture) regulations 2006
The Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 2003
Waste management and disposal
Waste and Contaminated Land Order 1997
Waste Management Licensing Regulations 2003
Waste Management Regulations 2006 No. 280
Waste Incineration Regulations 2003

In the Abattoir/Processing Plant

Animal By-Products Regulations 2003 (amended 2005)
Transmissible Spongiform Encephalopathies Regulations 2006
Bovine Meat (Restriction on Placing On the Market) Regulations 2005
Food Hygiene Regulations 2006
(This implemented the 2004 EU hygiene regulations that replaced 17 directives, including eight relating specifically to meat. The new regulations of specific reference to the meat sector are:
- 852/2004 (H1) This regulation lays down general rules for food business operators (FBO’s) on the hygiene of foodstuffs.
- 853/2004 (H2) This regulation lays down specific rules on the hygiene of food of animal origin for food business operators.)
The General Food Regulations 2004 No. 505 (178/2002)
Meat (Hazard Analysis and Critical Control Point) Regulations 2002
Meat (disease control) Regulations 2000
Meat Products Regulations 2004
Official Controls (Animals, Feed and Food) Regulations 2007
Meat (Official controls charges) Regulations 2008
Rendering (fluid treatment) Order 2001

Slaughter


Environment

Water and pollution

The Groundwater Regulations 1998
Pollution Prevention and Control Regulations 2003 (am 2007)
Waste management and disposal
Waste and Contaminated Land Order 1997
Waste Management Licensing Regulations 2003
Waste Management Regulations 2006
Waste Incineration Regulations 2003

Consultations often indicate possible changes in regulation, the following lists ongoing or recent consultations that may result in legislation that impacts on the sector. This list should not be taken as definitive:

Consultation on the impact of the CAP Health Check reforms relating to the Single Payment Scheme and other direct payments
A new independent body for animal health: A modern governance and funding structure for tackling animal diseases
Consultation on the implementation of Electronic Identification (EID) for Sheep and individual recording for Sheep and Goats
Changes to the Animals Act 1971 to clarify the application of strict liability to the keepers of animals
Environmental Standards in Farming - Consultation on proposed changes to standards in cross compliance Good Agricultural and Environmental Condition (GAEC) and related measures in England
Consultation on the proposal for a Council regulation on the protection of animals at the time of killing
Consultation on the Review of the Animal By-Products Regulation (EC) No. 1774/2002

Consultation on proposed changes to BSE Testing


Consultation on the implementation of Part 2 of the Commons Act 2006 (commons councils)

Consultation on changes to the Local Government Act 1972 to allow local authorities in England to work together on animal health

Consultation on 2008 Defra’s Contingency Plan for Exotic Animal Diseases

Consultation on the Draft Animal Health Bill

Consultation on the simplification of livestock movement rules and holding identifiers in England

Consultation on the Beef and Pig Carcase Classification (England) Regulations 2009

**Market support**

*The single payment scheme*

In June 2003 EU farm ministers adopted a fundamental reform of the Common Agricultural Policy. It meant that from 1 January 2005 there was a radical change to the way in which the EU supported the farming sector.

A single payment scheme replaced most of the direct aid previously paid to farmers for their crops and livestock. The *single payment* is not linked to what a farmer produces, i.e. it is decoupled. The amount of payment a farmer receives is calculated on the basis of the direct aid he received in the reference period 2000 to 2002. It is also linked to his respect of environmental, food safety, animal and plant health and animal welfare standards, as well as the requirement to keep all farmland in good agricultural and environmental condition. This is known as *cross-compliance*.

The UK, along with nine other member states, elected to apply the single payment from 1 January 2005. Some other member states deferred its application for one or more years. The UK also opted for full decoupling, whereas certain other member states took the option of only partially decoupling.

**Eligibility for payment:**

Producers are eligible for the single payment if:
- they received payment for at least one of the beef premiums in the reference period
- or
- they received payment for the annual ewe and she-goat premium in the reference period
- or
- they inherited their holding, or part of the holding, from a farmer who met either of the above conditions
- or
- they received a payment entitlement from the national reserve or by transfer.
The basis on which the single payment is calculated varies by member state and by region within a member state. England is divided into three regions for the purposes of the single payment scheme: English moorland within the severely disadvantaged areas (SDA), English SDA non-moorland and English non-SDA.

**Allocation of payments:**

*Scotland and Wales* – the administrations decided to adopt the historic method of allocation of the single premium with effect from 1 January 2005, i.e. based on the support a farmer received in the reference period.

*Regions of England* – the preferred method of allocation is a flat rate payment. However, given that this would result in significant changes in distribution of payments between farmers within a given region, it was decided to phase the flat rate payment in over an eight-year transition period. In 2005 only 10 per cent of the financial ceiling was used for the flat rate payment but this will increase gradually each year until 2012 when all of the single payment will be paid on a flat rate basis. The balance of the financial ceiling available each year until 2012 will be used to top up the value of the flat rate entitlements, other than set-aside entitlements, held by individual farmers. This top up will be in proportion to a farmer's support history in the reference period 2000 to 2002.

*Northern Ireland* – the authority has adopted a hybrid model of applying the single payment scheme. It enables those producers who benefited from coupled support in the past to benefit to a similar degree from decoupled support in the future. Almost 80 per cent of the regional ceiling is distributed on the basis of historical claim patterns for beef, dairy, sheep and arable subsidies. The remainder of the ceiling is allocated to an area-based payment.

**Cross compliance:**

Cross compliance is a series of standards that farmers need to meet in order to receive their subsidy payment in full. There are two main elements, Statutory Management Requirements (SMRs) and Good Agricultural and Environmental Conditions (GAEC) standards. Farmers are inspected to check that they are meeting these standards, and breaches may result in sanctions being imposed.

**Private storage aid**

Private storage is a device for supporting the market for a particular species without meat being put into public stores. When a scheme is in operation, aid is paid to the owner of the meat, or trader, who agrees to store the meat for a specified period of time provided that certain conditions are complied with.

The granting of aid for private storage can be applied either throughout the EU or in individual member states if the market situation is particularly difficult. Rates of aid are introduced in the framework of a tendering procedure. However, the European Commission may decide to fix the rates of aid in advance if urgent recourse to private storage is necessary.

To be eligible for aid the meat must be stored in an EU approved cold store. Security must be lodged before the contract can be granted. The meat must be stored in a frozen state. At the end of the storage period documentary evidence concerning storage must be
produced before aid can be paid or security can be released. A single advance payment can be paid after three months storage provided that the owner lodges security equal to the advance payment plus 20 per cent.

**Trade Arrangements**

*Intra-EU trade*

Trade with the other 26 EU member states demands that UK traders must adhere to regulations common to all EU countries. Neither export nor import declarations are required to be made to HM Revenue & Customs.

*Imports from third countries*

Trade with non-EU countries is subject to more regulation. With the exception of pure-bred breeding animals, all cattle, sheep, pigs, beef, sheep meat and pig meat imported into the UK from outside the EU are subject to import tariffs set under the World Trade Organisation (WTO) agreement in 1995. Customs duty, payable as a percentage of the value of the imports, must also be paid on most cuts of sheep meat.

Approximately 90 per cent of UK sheep meat imports originate from non-EU countries. Almost all of the sheep meat enters the country under the annual EU tariff quota. It means that these imports are subject to either zero or reduced rates of import tariff.

*EU Quotas for sheep meat*

The annual sheep quotas operate on a calendar year and are managed on a ‘first come, first served’ basis. Imports are generally subject to zero customs duty and are tariff free. An import licence is not required. The third countries are in charge of allocating quota to their respective meat plants. A document of proof of origin is required in order to benefit from the quota. UK importers must present this document of origin to HM Revenue & Customs at the port of arrival, with the product, for clearance into free circulation.

The quantities that can be imported into the EU in 2010 are (tonnes): New Zealand 227,854; Australia 18,786; Argentina 23,000; Uruguay 5,800; Chile 6,400; Iceland 1,850; Norway 300; Greenland 100; Faeroes 20; Turkey 200; other 300.

UK traders are the main users of the New Zealand and Australian quotas. In 2009, 98 per cent of the New Zealand and Australian quotas were used.
## Glossary of terms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLUP</td>
<td>Best Linear Unbiased Predictor</td>
</tr>
<tr>
<td>BRP</td>
<td>Better Returns Programme</td>
</tr>
<tr>
<td>CT</td>
<td>Computerised Tomography</td>
</tr>
<tr>
<td>EBV</td>
<td>Estimated Breeding Value</td>
</tr>
<tr>
<td>EID</td>
<td>Electronic Identification</td>
</tr>
<tr>
<td>FMD</td>
<td>Foot and Mouth Disease</td>
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<tr>
<td>GHG</td>
<td>Greenhouse Gas</td>
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<td>GWP</td>
<td>Global Warming Potential</td>
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<td>LAA</td>
<td>Livestock Auctioneers Association</td>
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<td>LCA</td>
<td>Life Cycle Analysis</td>
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<td>Signet Breeding Services</td>
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