

**End of Project Reports: Sheep Series No. 7**

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# **COMPETITIVENESS OF IRISH SHEEP PRODUCTION**

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*Research Centre, Athenry, Co. Galway*

# **Competitiveness In Irish Sheep Production**

by

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## SUMMARY

The main objective of this study was to examine and compare lowland sheep production in France, the UK, New Zealand and Ireland. Ireland, the UK and New Zealand were selected as being the main exporting countries, whilst France is the main EU importing country and is also a major sheep producer.

Sheep is not a major contributor to agricultural output in the 3 EU countries but contributes 17.5% to output in New Zealand. New Zealand had the largest breeding flock size at 1,890 ewes compared to 223 ewes in the UK and 112 and 104 ewes in France and Ireland respectively. French and UK lamb carcass weights were similar at 17.5kg compared to 18.5kg in Ireland and 15.9kg in New Zealand. French farmers obtained the highest prices for their lamb, whilst UK and Irish prices were broadly similar and approximately three times greater than New Zealand lamb prices. Total receipts to Irish farmers i.e. lamb sales and subsidies were approximately 4.5 times greater than receipts to New Zealand producers. Lamb carcass classification schemes were in operation for many years in all countries except Ireland where a scheme was introduced in recent years.

UK producers had the best technical performance producing 18.3 lambs per hectare compared to 11.7 in Ireland, 9.8 in France and 12.7 in New Zealand. Financial output per ewe was highest in France but direct and overhead costs were also much higher resulting in France having a lower net margin than either the UK or Ireland but higher than New Zealand due mainly to low product prices. The total cost of producing 1kg of lamb carcass was highest in France at IR£3.44, compared to IR£2.06 in the UK, IR£1.92 in Ireland and IR£1.20 in New Zealand.

New Zealand sheep producers have a comparative advantage over EU producers and can produce lamb at less than half the cost in addition to having a much higher throughput per labour unit. The most notable features of New Zealand sheep production in relation to EU production are the larger scale of operation; low direct costs of production; low labour input; the high level of specialisation and the level of technical efficiency achieved.

## INTRODUCTION

In the EU the sheep sector accounts for only 1.7% of gross agricultural output and 4% of total meat production. Approximately 700,000 farmers keep sheep in the EU and these are located mainly within the disadvantaged areas. Sheepmeat production has remained virtually static within the EU since the introduction of quotas in the early 1990s. The UK is the largest producer, accounting for 34% of EU sheepmeat in 1995, followed by Spain (20%), France (12%), Greece (11%) and Ireland (8%). The UK is also the largest consumer and internal exporter of sheepmeat within the EU with France being the largest importer. The EU was only 83% self sufficient in 1994 but this has increased from 80% in 1981. Other supplies are imported, mainly from New Zealand, which provided 81% of EU imports in 1995. Output from sheep and wool in New Zealand in 1995 contributed 17.5% of gross agricultural output. Wool output in Ireland contributed 4.5% to total sheep output, whilst wool in New Zealand contributed almost 40% of sheep output. Sheep numbers in New Zealand have been declining since the mid - 1980s following removal of subsidies.

Sheep production was investigated under the following main headings :-

- (i) Size and structure of sheep production were looked at in terms of sheep numbers, flock sizes and meat production. Consumption of lamb and degree of self-sufficiency in sheepmeat were also reported on.
- (ii) Imports and exports of sheepmeat by country of origin were examined. Lamb prices, seasonality of production, and the contribution of premia and headage payments to final producer returns were investigated. Lamb marketing and carcass classification were briefly considered.
- (iii) Technical performance of lowland sheep production and New Zealand was investigated. Stocking rate, weaning percentage, mortality rate and carcass weight produced per hectare were reported on. Performance comparisons were confined to lowland flocks due to difficulties in comparing mountain sheep production.
- (iv) Financial performance of the sheep enterprise in each country was compared. Again the data related to lowland flocks in order to make the comparisons meaningful. Output, costs, gross and net margin data were presented for all countries.

## **Data Sources And Methodology**

Data on flock structure, prices and seasonality were obtained from government sources and marketing organisations. Data on technical and financial performance of lowland sheep production at farm level were obtained from farm survey data in all countries. The UK data refer to England, Wales and N. Ireland and are based on the results of a survey of lowland sheep producers carried out by the University of Exeter in 1994. The study involved a random sample covering 410 flocks and the results obtained from the survey were subsequently weighted to provide population estimates. Data on the performance of the Irish sheep sector are based on the results of a random sample of 102 sheep producers taken from the 1994 National Farm Survey. The Irish sheep data were also weighted to provide population estimates for the sheep sector. Unfortunately, there are no similar national data available for French sheep production. Following discussions with INRA (National Agricultural Research Agency), and with the French Agricultural Advisory Service, two regions were selected to represent lowland French sheep production, viz - the Limousin and Poitou - Charantes regions. These are the 2 largest lowland sheep producing regions in France and account for 20 per cent of all ewes in France. An annual survey on financial and technical performance of commercial sheep production is carried out by the regional advisory service. These data were taken to represent the French sheep situation and 1994 results were used. Technical and financial performance data of New Zealand sheep producers were obtained from the annual surveys carried out by the New Zealand Meat & Wool Boards' Economic Service on intensive grass based finishing farms on the South Island. To facilitate comparisons all prices, costs and returns are stated in Irish currency with other currencies converted at annual, average market exchange rates.

## Results & Discussion

### *Lamb carcass weight*

New Zealand has the largest sheep flock at 34.4 million(m) ewes in 1995 compared to 20.1m in the UK, 7.8m in France and 4.7m in Ireland. Average number of ewes per flock in 1995 was 1,890 ewes in New Zealand, 223 in the UK and 112 and 100 in France and Ireland respectively. Average flock size is still increasing in New Zealand. Average carcass weights for lamb in France, UK, Ireland and New Zealand are shown in Table 1.

**Table 1: Lamb carcass weights (kg) in France, the UK, Ireland and New Zealand**

| <b>Year</b> | <b>1990</b> | <b>1992</b> | <b>1994</b> | <b>1996</b> |
|-------------|-------------|-------------|-------------|-------------|
| France      | 17.6        | 17.5        | 17.2        | 17.6        |
| UK          | 17.1        | 17.5        | 17.4        | 17.8        |
| Ireland     | 18.8        | 18.9        | 18.6        | 18.6        |
| N. Zealand  | 13.7        | 14.1        | 15.4        | 15.5        |

French and UK carcass weights were almost identical over the period. The French carcass weights have remained virtually constant whilst average carcass weight in Ireland has tended to fall. Irish carcasses have been on average 1kg heavier than French or the UK carcasses. The Irish carcass weights shown are based on results of Teagasc surveys of lamb carcasses at various export abattoirs on a range of dates during the main slaughtering period. New Zealand carcass weights have increased by 13% over the 6-year period and the trend to produce heavier lambs suitable for the EU market is likely to continue.

## Market prices

Table 2 shows the average lamb price in France, the UK, Ireland and New Zealand from 1985 to 1995. French and UK prices have been converted to Irish punts using annual, average market exchange rates.

**Table 2: Lamb prices (IR£/kg) in France, UK, Ireland and New Zealand 1985-1995**

| Year      | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|-----------|------|------|------|------|------|------|------|
| France    | 2.79 | 2.44 | 2.55 | 2.49 | 2.63 | 2.75 | 2.72 |
| Ireland   | 2.28 | 1.90 | 2.00 | 1.81 | 1.99 | 2.23 | 2.12 |
| UK        | 2.13 | 1.90 | 1.62 | 1.81 | 2.15 | 2.32 | 2.27 |
| N Zealand | 0.72 | 0.52 | 0.51 | 0.49 | 0.86 | 0.85 | 0.68 |

The EU prices shown are as reported for calculating the annual ewe premium. Sheep prices in all countries have remained virtually static in current terms, implying a considerable decline in real terms over the period shown. Average French prices were consistently higher than Irish prices over the period, 1985-1994 with differences ranging from 22% in 1985 to 38% in 1992. French producers received from 51 pence to 68 pence more per kg for their lamb than their Irish counterparts. The UK price was lower than the Irish price up to 1991 but moved ahead of the Irish price from 1992 onwards following the removal of the variable premium. The Irish lamb price therefore, is deteriorating viz a viz France and the UK in recent years. Lamb prices peaked at IR£0.72 per kg carcass in New Zealand in 1985 due to producer subsidies but following their removal, prices declined by over 50% in 1986. Prices declined to IR£0.18 per kg in 1988 before gradually increasing during the 1990's to reach IR£0.85 in 1994. On average, Irish prices were three times greater than New Zealand prices over the period shown. Prices for the EU countries shown in Table 2 do not include direct payments. Receipts from lamb sales and subsidies to Irish producers are over five times greater than their New Zealand counterparts. In addition there is much more year to year variation in lamb prices in New Zealand. Wool is a more important contributor to sheep farmers in New Zealand than in the EU. On intensive lowland farms, wool sales can form up to 40% of total sheep output, with the average wool produced per sheep shorn of 5.8kg.

## Marketing And Carcass Classification

Sheep marketing co-operatives are extremely important in France with 50% of carcass sales going through producer groups and 32% of the live lamb trade marketed through groups. This is in marked contrast to the Irish situation where only 12% of lambs slaughtered are marketed through producer groups.

Theoretically all lamb carcasses sold in France are graded on the EUROP classification grid. However in practice approximately 50% of carcasses are actually classified and paid for on that basis. Farmers, whose lambs are graded are paid and given written confirmation of the grade and price for their lambs. All sales through producer group are on the basis of classification.

The UK is similar to Ireland in that producer marketing groups play a very minor role. Export abattoirs in the UK purchase lambs graded on the EUROP carcass classification scheme. Approximately 30% of UK lambs are supplied direct to the abattoirs and are graded on purchase. In 1997, 4.4 million lambs were classified by the MLC. This represented 28% of total sheep slaughterings and approximately three quarters of sheep sold on a dead weight basis. The MLC monitor on an annual basis, the percentage of lambs in the "target" classification sector (E, U, or R and 1, 2 or 3 L), and in 1997, 49.1% of classified lambs were in this sector. The positive effect of the classification scheme on lamb quality can be shown by MLC classification records which show the percentage in the target sector increasing from 42% of lambs classified in 1990 to 49% in 1997.

A national carcass classification scheme was introduced for lamb in Ireland in early 1996. The scheme is operated by the meat plants but is independently monitored by the Department of Agriculture and Food. The classification system used is based on the EUROP grid. An agreed carcass classification scheme is crucial in providing information and an incentive for farmers to produce a quality product.

In New Zealand deregulation in the mid 1980's resulted in the ownership of meat processing plants changing from private to farmer co-operative ownership and companies with substantial producer ownership. The rationalisation which occurred resulted in five companies largely owned by farmers and producers accounting for over 95% of sheep and lamb throughput by the early 1990s. However, a number of small privately owned meat processing companies also emerged in the 1990s, which were market led to produce speciality products on an efficient basis. These smaller companies have concentrated on producing value-added products and many have concentrated on the production of chilled lamb with an extended shelf-life period. Lamb meat for export is classified by the New Zealand Meat Producers Board. The classification with an associated pricing schedule is set to encourage the type of lamb which will bring highest returns to the producer. The various classes are paid for on the basis of a weekly price schedule set every week of the killing season by the processing plants. Grading is on the basis of fat cover and weight. Carcasses are classified into either low (Y) or medium (P) fat cover. Carcasses with heavier fat cover are trimmed and are then graded into a further three fat classes (T, F and C). There are four weight grades L (9 to 12.5kg) M (13 to 16.0 kg), X (over 16.5 kg) and H (over 20.5 kg). The grading is carried out by meat company staff, which are monitored by Meat Board supervisors.

## **Financial Performance**

Financial data based on surveys of lowland sheep producers, for the four countries are presented in Table 3. The Poitou-Charente region was selected to represent France as no overall national data were available.

**Table 3 : Financial performance of sheep production in France, UK, Ireland and New Zealand - 1994**

|                           | France         | UK  | Ireland | New Zealand |
|---------------------------|----------------|-----|---------|-------------|
|                           | <i>IR£/ewe</i> |     |         |             |
| <b>Output</b>             | 88             | 69  | 71      | 24          |
| <b>Direct costs</b>       |                |     |         |             |
| -concentrate              | 17             | 10  | 9       | 1           |
| -forage                   | 6              | 6   | 6       | 3           |
| -other                    | 7              | 10  | 5       | 3           |
| <b>Total direct costs</b> | 30             | 26  | 20      | 7           |
| <b>Gross margin</b>       | 58             | 43  | 51      | 17          |
| <b>Overhead costs</b>     | 41             | 27  | 23      | 14          |
| <b>Net margin</b>         | 17             | 16  | 28      | 3           |
|                           | <i>IR£/ha</i>  |     |         |             |
| <b>Gross output</b>       | 735            | 909 | 641     | 249         |
| <b>Direct costs</b>       | 261            | 343 | 182     | 70          |
| <b>Gross margin</b>       | 474            | 566 | 459     | 179         |
| <b>Overhead costs</b>     | 340            | 356 | 206     | 150         |
| <b>Net margin</b>         | 134            | 210 | 253     | 29          |

French farmers had the highest output and gross margin per ewe, followed by the Irish and UK with New Zealand producers having the lowest output and margins. New Zealand had the lowest direct costs on a per ewe and per hectare basis followed by Ireland with France having the highest costs. UK producers had the highest output and gross margin on a per hectare basis due mainly to their high stocking rates. Overhead costs of production are also critical in determining the relative profitability of sheep production in each country. Overhead costs per ewe were highest in France due to higher building and machinery depreciation as well as higher interest and labour costs. However on a per hectare basis, the UK had the highest overhead costs due mainly to paid labour, depreciation and land rental, whilst New Zealand had the lowest costs.

Data in Table 4 summarises output, costs and margins per kg lamb carcass produced. This is an attempt to combine animal performance, as measured by weaning percentage and forage efficiency as measured by stocking rate, in one overall factor, i.e. kgs of lamb carcass produced per hectare and to use this to compare performance.

**Table 4: Output, costs and margins per kg lamb carcass in France, UK, Ireland and New Zealand (1994: IR£/kg carcass)**

|                    | France      | UK          | Ireland     | New Zealand |
|--------------------|-------------|-------------|-------------|-------------|
| <b>Output</b>      | 3.58        | 2.68        | 3.12        | 1.35        |
| Direct costs       | 1.45        | 1.01        | 0.87        | 0.38        |
| Gross margin       | 2.13        | 1.67        | 2.25        | 0.97        |
| Overhead costs     | 1.91        | 1.05        | 1.01        | 0.82        |
| <b>Total costs</b> | <b>3.36</b> | <b>2.06</b> | <b>1.88</b> | <b>1.20</b> |
| Net margin         | 0.22        | 0.62        | 1.24        | 0.15        |

The direct costs of producing a kg of lamb carcass in New Zealand was IR£0.38 compared to IR£0.87 in Ireland, IR£1.01 in the UK and IR£2.13 in France. New Zealand also had the lowest total costs at IR£1.20 to produce a kg of lamb carcass, whilst Ireland was the most competitive within the EU. New Zealand sheep producers have a comparative advantage over Irish and EU producers and can produce lamb at less than half the direct cost in addition to having a much higher throughput per labour unit. These advantages allow them to put their lamb on the European market at a lower price than either Irish or UK producers. Technical performance of lowland sheep production in each of the four countries is shown in Table 5.

## Technical performance

The data in Table 5 show that the UK is far ahead of the other three countries in relation to the two key technical efficiency factors viz stocking rate and weaning percentage. This results in the UK producing 18.3 lambs per hectare compared to 10.4 in France, 11.0 in Ireland and 12.4 in New Zealand. Despite the large flock size in New Zealand, technical efficiency is as good if not better than in Ireland or France but lags behind that of the UK. However the different breeds of ewes between countries, with heavier bodyweights in the European countries make a precise comparison of stocking rate difficult.

**Table 5: Technical efficiency of lowland sheep production in France, UK, Ireland and New Zealand, (1994).**

|                       | <b>France</b> | <b>UK</b> | <b>Ireland</b> | <b>New Zealand</b> |
|-----------------------|---------------|-----------|----------------|--------------------|
| Ewes joined per flock | 441           | 242       | 88             | 2012               |
| Stocking rate         | 8.3           | 13.2      | 9.0            | 10.4               |
| Weaning (%)           | 125           | 139       | 122            | 122                |
| Lambs sold per ha     | 10.4          | 18.3      | 11.0           | 12.4               |

## CONCLUSIONS

- New Zealand has the longest sheep flocks with an average of 1,890 ewes compared to 223 in the UK, 112 in France and 100 in Ireland in 1995. Labour productivity was highest on New Zealand sheep farms.
- Lamb carcass weights in Ireland were on average 1 kg heavier than French or UK carcasses. Traditionally New Zealand carcass weight have been lighter than European carcasses but have increased from 13.7 to 15.5 kg over the last 7 years to meet EU requirements.
- Lamb prices in France were consistently higher than prices in Ireland or the UK due mainly to French consumers preference for native produce. New Zealand lamb prices were on average only one third of prices in the EU countries over the period 1985 to 1995. The most worrying aspect of lamb prices in all countries was that they have remained virtually static over the last decade implying a considerable decline in real terms. In addition to receiving the lowest lamb prices, New Zealand producers receive no subsidies which form a major part of output in EU countries.
- Lamb carcass classification schemes have been in operation for many years in all countries investigated except in Ireland where a scheme has been introduced in recent years. An agreed carcass classification scheme is a critical link between the producer, processor and final consumer.
- UK producers had the highest technical performance producing 18.3 lambs per hectare compared to 11.7 in Ireland, 9.8 in France and 12.7 in New Zealand.
- There is major scope for improving stocking rate on Irish farms. National Farm Survey data show that the top one third of sheep flocks have 14.8 ewes per hectare compared to the average of 10.5 and this is reflected in higher profit margins. Improved grassland management such as paddock grazing, efficient use of nitrogen combined with good fencing, handling facilities and housing are key factors to increasing stocking rate.
- Ewe productivity is also a key factor in relation to technical efficiency. Improvement in Irish weaning rates requires a sheep breeding policy which encourages the use of prolific breeds such as the Belclare.
- France had the highest production costs at IR£3.44 per kg carcass compared to IR£2.06 in the UK, IR£1.92 in Ireland and IR£1.20 in New Zealand. New Zealand sheep producers therefore have a comparative advantage over EU producers and can produce lamb at approximately half the cost in addition to having a much higher throughput per labour unit.
- French producers had the highest financial output per ewe but due to high direct and overhead costs obtained the lowest net and gross margins. New Zealand producers obtained the lowest profit margins due mainly to low product prices and the absence of direct payments.
- Irish producers obtained the highest profit margins due to having the lowest production costs within the EU and this is the most important factor in making our sheep industry competitive.
- The technologies to improve performance in the Irish sheep sector are readily available as a result of research carried out over the years. It is imperative that these technologies are adopted to ensure the future competitiveness of the sector.

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