

**A CENSUS ATLAS OF IRISH AGRICULTURE**

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## SUMMARY

### Objectives, Data and Methods

- Computerised mapping systems were developed to analyse agricultural census statistics and data from agricultural policy administration sources. The objective was to identify local geographical variations in the structure and trends in the agricultural economy by mapping the available information, principally at the level of the District Electoral Division (DED) and the Rural District (RD). There were 3,113 DEDs and 156 RDs in the analysis.
- The main database was the 1991 Census of Agriculture, the latest available. Some statistics are updated annually and where possible these were used in tabular form to trace the 1991-1997 trends for Regional Authority areas.

### Farm Structure

- Average farm size is increasing, but quite slowly. It was 29.4 ha in 1997 compared to 26.0 ha in 1991. The average size of farm in ESUs varied from over 25 in parts of the south to less than 9 in large parts of the west and north-west.
- Farm fragmentation is most severe in Mayo, Galway, Clare and West Cork but it is also evident in Kilkenny and Wexford — possibly due to land purchases and renting.
- Land transfer patterns vary across regions. Rates of farm inheritance are highest in the west. Purchases are highest in Meath, Kildare and Wicklow.
- In extensive parts of the south-east and north-east over one-third of farm operators rent land.
- Part-time farming is highest in the western and south-western counties and also in Meath, Kildare and Wicklow.
- Numbers in agricultural occupations understate the volume of labour input on Irish farms; family members, other than those with agricultural occupations, contribute substantially to farm work. Labour intensities per farm are highest in DEDs across the south.

### Land Use and Livestock Production

- Decline in tillage farming was widespread during the 1980s, and modest declines continued in the West and Mid-West regions during the 1990s. Geographically, tillage farming is now highly concentrated.
- These are three main areas of high intensity grazing: Carlow, Wexford and the neighbouring parts of Kilkenny; Meath and Louth; south and east Cork, south Tipperary and west Waterford. There is a smaller area in north and east Galway associated with sheep farming.

- There have been major changes in the number of dairy herds and animals since the introduction of milk quotas in 1984. The greatest relative declines were in Connacht and Donegal. Suckler cow numbers expanded in the western areas but also in the traditional dairying areas of Munster and Cavan/Monaghan, where substitution for dairy cows took place.
- Traditionally, calves tended to be marketed from the south-west to Connacht for rearing, and then finished on the better quality grasslands of the east. This pattern has been modified somewhat in that more calves are now being retained in the southern dairying areas, in response to milk quota impositions.
- Sheep numbers in the State almost trebled during the 1980s but increases were not maintained during the 1990s. Sheep rearing is now mostly associated with the mountain areas and their adjacent lowlands in the west and in south Leinster.
- The single extensive area of decline in both tillage and livestock production has been in east Connacht, clear evidence of disengagement from conventional farming in the region.

### **Farm Productivity**

- In 1991, the national average number of ESUs per ha of area farmed was 0.45; the number ranged from 0.55 in the South-West region to 0.28 in Leitrim, Sligo and Donegal (the Border 'west' region).

### **Responses to Policy Measures**

- In 1995 total income supports (market and non-market payments) per ha were highest in the dairying areas of the south and north-east.
- Participation in the Rural Environment Protection Scheme during 1994 to 1998 was highest in the extensive grazing areas of Connacht, Ulster and the midland counties, as well as in south Kerry and West Cork.
- The take-up rate of the Farm Retirement Scheme is highest in the more commercial farming regions of the south and south-east.
- Afforestation rates during 1982 to 1996 were highest in Donegal, Mayo, Leitrim and Clare.

### **Conclusion**

- There are distinctive farming regions in the country whose boundaries span unevenly across county limits. These are undergoing different processes of change depending on their resource base, their responses to economic imperatives, and the policy environment.
- Commercial farming has become increasingly associated with areas south and east of a line from Limerick to Dundalk.
- It is likely that policies and trends post 2000 will further increase the differences in resource use between commercial farming and other areas.

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### **OBJECTIVES AND DATA SOURCES**

This project sought to develop computerised mapping systems using census and public administration data to identify geographical variations, their determinants and processes, in the Irish rural economy. This was in response to a growing demand that public policies focus more explicitly on a spatial (as distinct from a sectoral) approach to implementing rural change and development. In the event, the project concentrated on agricultural statistics.

National and county statistics in agricultural, economic and demographic databases can mask important differences at sub-county or local area level. There is, for example, considerable information available on the country's agriculture but much of the published data treats the industry in aggregated statistical terms as a sector of the national economy. There are distinctive farming regions, however, whose boundaries are not coterminous with county limits; these regions are undergoing quite different processes of change in response to economic and technological imperatives, and to the policy environment. Moreover, modern systems of data assembly and information output now make it possible to analyse variations at local area level, while modern mapping techniques enable complex data sets to be reduced to more simplified and visually attractive formats.

A full report on the project is being published by Teagasc, in association with the Department of Geography, NUI Maynooth, in September 1999 under the title: S. Lafferty, P. Commins and J. A. Walsh, *Irish Agriculture in Transition: A Census Atlas of Agriculture in the Republic of Ireland*.

### **Methods and Data Sources**

Three main data sources were used. The main database was the 1991 Census of Agriculture – the latest census available. Census returns were obtained for some 3,100 District Electoral Divisions (DEDs) having agricultural activity. Where appropriate, change was tracked by comparing the 1991 Census with that of 1981, using Rural Districts (RDs) as the spatial unit. RDs are aggregates of DEDs and the relevant number of RDs is 156 (i.e., treating the rural parts of county Dublin as one RD). Secondly, some agricultural statistics are updated annually from sample surveys by the Central Statistics Office. Where possible these were used in tabulations to trace the 1991-1997 trends and in this case the spatial units used were the Regional Authority areas. Thirdly, certain administrative data, where categorised at DED level were supplied by

the Department of Agriculture and Food; these were used to assess the up-take and spatial distribution of responses to selected policy measures.

Maps of raw data and of derived indices were generated with the MapInfo mapping package. The class intervals used in almost all maps were based on the 'natural break' option which ensures that the data for each class are clustered as close as possible by minimising the internal variation with the range of each class while maximising differences between classes.

In general, the results show that while pasture for grazing livestock is the most general land use in the State's 4.4 million hectares of farmed land there are also complex local variations in farming activity. These differences can be traced to a mix of factors: the natural resource base, historical influences, economic pressures in the agricultural sector, the impact of developments in the wider economy, and public policies.

## **FARM STRUCTURE**

### **Farm Size and Fragmentation**

Despite the outflow of labour from farming average farm size increases quite slowly. It was 29.4 ha in 1997 compared to 26.0 ha in 1991. *Maps 1 and 2* show average farm size for DEDs in 1991 in hectares and in European Size Units respectively. European Size Units (ESUs) are a measure of farm business size where 1 ESU is equal to 1,200 ECU of Standard Gross Margin. The average ESU per farm varied from over 25 in localised parts of the south to less than nine in large parts of the west and north-west.

Comparison of *Maps 1 and 2* shows broad agreement except that parts of Donegal, Mayo, Galway and Clare have large farms (in surface areas) which are small in business scale. The opposite is true for north Kerry and Cavan/Monaghan – both dairying areas.

Half of the farms in the State consist of two or more land parcels while almost 10 per cent comprise four or more parcels (Table 1).

**Table 1: Percentage of farms classified by number of separate parcels, 1991**

Region	Number of land parcels				
	1	2	3	4	5 +
Dublin	56.8	20.8	10.5	5.1	6.9
Mid-East	60.1	25.3	9.4	3.2	2.1
South-East	45.3	29.6	13.9	5.7	5.6
South-West	52.6	29.8	10.2	4.1	3.3
Mid-West	46.2	31.2	13.6	5.1	3.9
West	38.6	32.2	15.5	6.8	7.0
Border (west)	53.0	29.2	10.1	4.3	3.4
Border (east)	52.0	29.5	11.5	4.2	2.8
Midland	49.3	29.8	12.4	4.6	3.9
Ireland	48.0	30.0	12.5	5.0	4.4

**Source:** Census of Agriculture 1991.

While farm fragmentation is most severe in parts of Mayo, Galway, Clare and West Cork, it is also evident in Kilkenny and Wexford – possibly due to land purchases over time (see below).

### **Land Acquisition (Owned Land)**

Farm land owned in 1991 had been acquired in the following ways: inheritance (after death of previous owner) 44.6 per cent; 'gift' transfer (during lifetime of previous owner) 31.5 per cent; purchase 21.6 per cent; other means 2.3 per cent.

Highest rates of inheritance were in the west while lifetime transfers were common in the south-west. Purchases tend to be highest near the urban centres but especially in Meath, Kildare and Wicklow (see *Map 3*).

### **Renting-In Land**

Most land renting also takes place in the eastern half of the State and in east Donegal. In extensive parts of the south-east and north-east over one-third of farmers rent land (*Map 4*), as the practice is associated with tillage farming.

### **Labour and Part-time Farming**

In 1991 73 per cent of farm holders regarded working on their own farms as their sole occupation (Table 2).

**Table 2: Percentage distribution of family farms classified by occupational importance of farmwork for the farm holder, 1991**

Region	Total No. of family farms	Percentage distribution		
		Sole Occupation	Major Occupation	Subsidiary Occupation
Dublin	1,468	65.5	5.0	29.5
Mid-East	11,477	69.3	6.0	24.7
South-East	20,249	79.1	3.8	17.1
South-West	28,071	77.7	5.4	16.9
Mid-West	20,013	75.7	5.1	19.2
West	38,893	70.6	7.8	21.6
Border (west)	20,241	68.4	6.5	25.1
Border (east)	14,274	72.2	4.8	23.0
Midland	15,207	73.9	4.3	21.8
Ireland	169,893	73.4	5.7	20.8

Source: Census of Agriculture 1991.

The lowest percentages of sole occupation farm holders are in Meath, Kildare, and Wicklow and in the western and north-western counties. In the east those not involved in full-time farming tend to have other employment whereas in the west this category includes a high proportion of persons who have disengaged from all full-time economic activity.

Numbers in agricultural occupations, however, understate the volume of labour input on Irish farms because many family members who are not officially recorded as having agricultural occupations may contribute to farm work. Their inputs, as well as those of the 'official' farm labour force, are recorded as annual work units (AWUs). One AWU is equal to 1,800 hours or more per person per annum.

In 1991 the national AWU per farm was 1.49 but labour intensities were highest in DEDs across the south (*Map 5*). Since 1991 the labour inputs by farm holders' spouses (predominantly women) have fallen remarkably as the incidence of off-farm employment has increased (McDonagh *et al.*, 1999).

### **Mechanisation**

Tractor statistics and their horse power ratings are indicators of mechanisation on farms. Tractor numbers increased dramatically in the 1960s and 1970s after which the rate of expansion moderated. In 1991 there were contrasts between the north and north-west and the south and south-east but the differences would be even more accentuated if only the larger tractors (over 80 HP) were selected.

## LAND USE

Pasture for grazing livestock is the main single form of land use but its 1991 incidence varied from over 60 per cent of agricultural area in use (AAU) in the north Midlands, east Connacht and north Munster, to less than one-third in the mountainous areas in the western counties where rough grazing predominates (Table 3). Silage is closely associated with the dairy farming districts of Munster and the north-east. Hay accounted for less than 10 per cent of AAU in 1991 but more than double the national proportion in parts of Roscommon, Leitrim, south-west Galway and west Clare. These are typically districts of small-scale farms with low intensity cattle production.

**Table 3: Percentage distribution of principal agricultural land uses, 1991 and 1997<sup>1</sup>**

Region	Pasture	Silage	Hay and permanent meadow	Rough grazing	Total crops, fruit and horticulture	Area farmed (ha)
Dublin	37.2	7.1	7.2	4.5	44.0	49,212
Mid-East	52.0	14.6	8.6	6.3	18.4	418,546
South-East	49.7	19.3	8.2	5.7	17.1	743,676
South-West	43.4	20.9	5.1	22.2	8.5	837,356
Mid-West	54.5	20.1	11.3	11.6	2.5	563,371
West	54.4	13.5	10.6	19.9	1.4	718,779
Border (west)	45.4	9.2	9.7	32.8	2.9	400,826
Border (east)	55.8	21.0	9.7	5.8	7.8	281,430
Midland	56.6	17.5	10.4	7.0	8.6	428,558
Ireland 1991	50.6	17.2	8.9	14.5	8.8	4,441,754
Ireland 1997	51.3	21.0	7.6	10.7	9.4	4,431,600

<sup>1</sup>1997 figures are estimates based on CSO annual crops and livestock survey

**Source:** Census of Agriculture 1991; Crops and Livestock Survey 1997

There was widespread decline in tillage farming during the 1980s especially in the west and north-west (*Map 6*). Some recovery took place during the 1990s though modest declines continued in the West and Mid-West regions (Table 4). Crops now account for some 9 per cent of AAU. By 1991 the geographical incidence of tillage had become highly concentrated, with specialist tillage farms most evident in north Dublin, Louth, south Kildare, south Cork and south Wexford (*Map 7*).

**Table 4: Average annual percentage change in area under selected crops, 1980-1991 and 1991-1997<sup>1</sup>**

Region	Wheat		Oats		Barley		Sugar Beet		Potatoes		Total Crops <sup>2</sup>	
	80-91	91-97	80-91	91-97	80-91	91-97	80-91	91-97	80-91	91-97	80-91	91-97
Dublin	14.0	0.4	24.0	-2.3	-5.9	-1.1	-2.2	-	-0.6	2.0	-0.4	0.8
Mid-East	5.4	1.8	5.7	2.0	-5.2	-0.2	2.4	-1.3	-1.6	-1.9	-2.4	1.8
South-East	2.2	2.6	8.7	-2.1	-3.8	-0.7	-0.2	-1.2	-3.2	-2.8	-2.3	0.5
South-West	14.7	-0.2	0.6	0.2	-4.6	-0.4	0.3	0	-4.4	-2.9	-2.8	0.8
Mid-West	-0.9	-7.9	-4.3	2.0	-1.6	-0.3	2.0	-3.3	-6.9	-6.7	-2.4	-0.2
West	-5.8	-5.6	-6.1	-4.9	-5.5	-0.5	-6.6	-	-8.0	-5.6	-6.1	0.8
Border (west)	3.8	-1.1	-6.9	-0.2	-4.0	-1.9	-9.1	0	-4.8	-2.9	-4.6	-0.4
Border (east)	22.9	2.9	-4.4	13.0	-3.8	-0.6	-1.6	-	-3.9	0	-1.2	1.3
Midland	0.4	3.7	-0.7	-0.9	-3.6	1.3	1.7	3.5	-7.1	-2.4	-3.0	2.3
Ireland	5.6	1.6	-1.5	-0.8	-4.3	-0.3	0.1	-0.5	-4.6	-1.9	-2.7	1.0

<sup>1</sup>1997 figures are estimates based on CSO annual crops and livestock survey

<sup>2</sup>Includes fruit and horticulture.

**Source:** Agricultural Statistics 1980; Census of Agriculture 1991; Crops and Livestock Survey 1997.

## LIVESTOCK PRODUCTION

Livestock and livestock products represented almost 90 per cent of the gross value of agricultural output in Ireland in 1997. This percentage has remained quite steady over time.

In 1991 there were approximately 6.5 million livestock units (LUs) in the State, constituted as follows: beef cattle 43 per cent; dairy cattle 21.7 per cent; sheep 21 per cent; and other animals (mainly suckler cows) 14.3 per cent. The spatial distribution of LU densities per 100 ha of grassland is strongly related to variations in land quality. There are three main areas of high intensity grazing: in Carlow, Wexford and contiguous parts of Kilkenny; in Meath and Louth; and south and east Cork, south Tipperary and west Waterford. A somewhat unexpected area of intensive grazing is that of the north and east Galway where sheep farming is prominent (*Map 8*).

### Dairying and Suckler Cows

There have been dramatic changes in the number of dairy herds and animals since the introduction of milk quotas in 1984 (Table 5). The greatest relative declines have been in the north and west of a line from Limerick to Cavan and, particularly, in Donegal, Leitrim,

Roscommon, Mayo and West Galway. On the other hand there have been significant increases in the number of 'other cows' and in the numbers of farms on which they are kept (Table 6). The main areas of expansion in suckler cow numbers were the traditional dairying areas of Munster and Cavan/Monaghan – where some substitution for dairy cows took place.

**Table 5: Change in number of dairy cows and dairy heifers-in-calf, 1980-1991 and 1991-1997<sup>1</sup>**

Region	Actual change 1980-91	Average annual percentage change 1980-91	Actual change 1991-97 <sup>1</sup>	Average annual percentage change 1991-97 <sup>1</sup>	Actual change 1980-1997 <sup>1</sup>	Total percentage change 1980-97 <sup>1</sup>
Dublin	-1,000	-1.2	-200	-0.5	-1,200	-15.8
Mid-East	-10,400	-0.8	+3,700	0.6	-6,700	-5.7
South East	-47,000	-1.2	+16,600	0.9	-30,400	-8.7
South-West	-85,500	-1.4	+43,700	1.6	-41,800	-7.6
Mid-West	-73,600	-2.1	+9,800	0.7	-63,800	-20.0
West	-48,600	-3.3	+7,400	1.4	-41,200	-30.7
Border (west)	-25,000	-3.4	+1,600	0.7	-23,400	-35.3
Border (east)	-31,400	-2.1	+8,900	1.4	-22,500	-16.2
Midland	-20,700	-1.6	+4,300	0.7	-16,400	-13.9
Ireland	-343,200	-1.7	+95,800	1.1	-247,400	-13.7

<sup>1</sup>1997 figures are estimates based on CSO annual crops and livestock survey.

Note: Increases between 1991 and 1997 are accounted for by a decline of 15,000 dairy cows and an increase of over 110,000 dairy heifers-in-calf.

Source: Census of Agriculture 1991; Crops and Livestock Surveys 1997

**Table 6: Change in number of 'other' cows and 'other' heifers-in-calf, 1980-1991 and 1991-1997<sup>1</sup>**

Region	Actual increase 1980-91	Average annual percentage increase 1980-91	Actual increase 1991-97 <sup>1</sup>	Average annual percentage increase 1991-97 <sup>1</sup>	Actual increase 1980-97 <sup>1</sup>	Total Percentage increase 1980-97 <sup>1</sup>
Dublin	1,200	4.2	3,100	13.6	4,300	165.4
Mid-East	23,400	5.7	24,400	6.7	47,800	127.1
South-East	46,200	6.5	53,600	8.0	99,800	153.5
South-West	64,700	12.3	67,800	10.1	132,500	277.8
Mid-West	61,800	10.1	66,200	9.4	128,000	230.2
West	72,600	5.1	88,900	7.4	161,500	126.0
Border (west)	26,200	3.0	38,100	6.1	64,300	81.6
Border (east)	35,400	10.3	36,700	9.2	72,100	231.1
Midland	30,600	4.8	52,900	9.9	83,500	143.2
Ireland	362,100	6.5	431,700	8.3	793,800	157.2

<sup>1</sup>1997 figures are estimates based on CSO annual crops and livestock survey.

Source: Census of Agriculture 1991; Crops and Livestock Surveys 1997

Maps 9 and 10, however, show the continued geographical differences with respect to the distribution of dairying and 'other' cows.

### Cattle Production

Specialist beef farms are found in almost every DED in the country but the highest concentrations are in Mayo, north Roscommon, Sligo, Leitrim and the midland counties, together with Clare and west Galway.

Traditionally, there has been a high level of regional specialisation in cattle production. Calves tended to be marketed from the south-west to Connacht and the west midlands for rearing. As these cattle neared the finishing stage they were sold onto the larger farms and better quality grasslands in the east. While this pattern has generally persisted, analyses of the spatial differences in cattle of different ages show that there is now a greater tendency for calves to be retained in the southern dairying areas, in response to quota impositions in milk production.

### Sheep

The total number of sheep in the State almost trebled between 1980 and 1991, but the increases were not maintained during the 1990s (Table 7). Sheep rearing is mostly associated with the mountain ranges and their adjacent lowlands in the west and in Leinster. The most significant lowland areas of sheep farming are in east Galway and south Roscommon, with some production in the midlands.

**Table 7: Change in numbers of sheep, 1980-1991 and 1991-1997<sup>1</sup>**

Region	Actual change 1980-91	Average annual % change 1980-91	Actual change 1991-97 <sup>1</sup>	Average annual percentage change 1991-97 <sup>1</sup>	Actual change 1980-97 <sup>1</sup>	Total percentage change 1980-97 <sup>1</sup>
Dublin	51,800	14.5	-5,400	-1.1	46,400	143.2
Mid-East	838,200	17.8	-123,600	-1.6	714,600	167.0
South East	1186,400	18.3	-235,700	-2.2	950,700	161.4
South-West	713,500	15.6	-100,600	-1.5	612,900	146.9
Mid-West	272,200	24.0	-57,300	-2.6	214,900	208.4
West	1158,400	10.2	-33,300	-0.3	1125,100	109.4
Border (west)	642,100	13.1	-27,300	-0.4	614,800	138.1
Border (east)	229,000	24.1	-34,000	-1.8	195,000	225.4
Midland	505,200	28.4	-86,200	-2.2	419,000	259.8
<b>Total</b>	<b>5596,800</b>	<b>15.5</b>	<b>-703,400</b>	<b>-1.3</b>	<b>4893,400</b>	<b>148.7</b>

<sup>1</sup>1997 figures are estimates based on CSO Annual Crops and Livestock Survey.

Source: Agricultural Statistics 1980; Census of Agriculture 1991; Crops and Livestock Survey 1997.

### Change in Total Livestock Units

There has been a steady expansion in total livestock production (as measured in livestock units) during both the 1980s and 1990s (Table 8). Over the 1980s the biggest increases occurred in the south-east due mainly to the expansion in sheep numbers. The single extensive area of decline was in east Connacht – clear evidence of a disengagement from farming in this area (*Map 11*).

**Table 8: Number of Livestock Units, 1991 and changes, 1980-1991 and 1991-1997<sup>1</sup>**

Region	Total LUs 1991	Density per 1000 ha grassland 1991 <sup>2</sup>	Actual change 1980-91	Percentage change 1980-91	Actual change 1991-97 <sup>1</sup>	Percentage change 1991-97 <sup>1</sup>
Dublin	51,200	1859.2	5,900	1.2	-4,700	-1.5
Mid-East	651,600	1908.9	110,046	1.8	6,300	0.2
South-East	1,205,300	1955.7	218,456	2.0	36,600	0.5
South-West	1,224,200	1597.1	138,548	1.2	110,100	1.5
Mid-West	806,300	1467.7	30,757	0.4	77,600	1.6
West	1,070,000	1510.0	103,056	1.0	106,200	1.7
Border (west)	469,300	1206.1	50,568	1.1	43,700	1.6
Border (east)	425,900	1640.5	40,606	1.0	41,800	1.6
Midland	650,100	1659.8	49,615	0.8	53,700	1.4
Ireland	6,553,900	1618.2	747,552	1.2	471,300	1.2

<sup>1</sup> 1997 figures are estimates based on CSO annual crops and livestock survey

<sup>2</sup> Grassland includes pasture, hay, silage and rough grazing (commonage not included).

**Source:** Derived from Agricultural Statistics 1980; Census of Agriculture 1991; Crops and Livestock Survey 1997.

### FARM PRODUCTIVITY

Two measures of farm productivity were used based on the 1991 Census of Agriculture. The first was the average number of ESUs per ha of area farmed, for which the national average was 0.45 (Table 9). This ranged from 0.55 in the South-West region down to 0.28 in the Border (west) region of Leitrim, Sligo, and Donegal. The main contrasts were between the dairying areas of the south, the cattle production districts of northern Connacht and the sheep rearing parts of Donegal (*Map 12*).

A second measure of farm productivity used was the value of output per labour unit (ESUs per AWU). In 1991 the national average was 7.8 ESUs per AWU but the figure varied from 4.35 in the West region to over 10 in the eastern and south-eastern counties (Table 9). The differences at DED level are shown in *Map 13*.

**Table 9: Productivity measures, 1991**

Region	Total ESUs per ha AAU <sup>1</sup>	Index of ESUs <sup>2</sup> per ha AAU (Irl = 100)	Total ESUs per AWU <sup>3</sup>	Index of ESUs per AWU (Irl = 100)
Dublin	0.59	131	10.21	131
Mid-East	0.46	102	10.63	136
South-East	0.54	120	11.27	144
South-West	0.55	122	9.96	128
Mid-West	0.44	98	8.27	106
West	0.32	71	4.35	56
Border (west)	0.28	62	4.44	57
Border (east)	0.50	111	7.01	90
Midland	0.40	89	7.49	96
Ireland	0.45	100	7.81	100

<sup>1</sup> AAU = Agricultural Area Utilised

<sup>2</sup> ESU = European Size Unit (1 ESU = 1,200 ECU of Standard Gross Margins)

<sup>3</sup> AWU = Annual Work Unit (1 AWU = 1,800 hours or more per person per annum).

**Source:** Derived from: Census of Agriculture 1991.

## RESPONSE TO POLICY MEASURES

Policy measures influence geographical variations in land use and landholder behaviour. Data on the up-take of specific policies were available at DED or RD level except for a limited number of policy measures. Detailed information on policy responses have been provided in other reports as well as in the main output from this project (see Leavy 1998; McDonagh *et al.*, 1999; Leavy *et al.*, 1997). Consequently, the main points only are summarised here.

Investments per ha in farm development, through the Farm Improvement Programme of 1986-1994, were highest in the small-scale dairying districts of north Kerry, mid-west Cork, Kilkenny and Cavan/Monaghan. Investments were comparatively low in the west, north-west and midland areas.

Total income supports (market and non-market payments) per ha in 1995 were highest in the dairying areas of the south and north-east, and lowest along the west coast and in Connacht generally.

Participation in the Rural Environment Protection Scheme (REPS) during 1994 to 1998 was highest in the extensive grazing areas of Connacht, Ulster, the midland counties, as well as in south Kerry and West Cork.

In relation to the Farm Retirement Scheme 1994 to 1998, the take-up rate is not notably high in any area but participation is highest in the more commercial farming regions of the south and south-east.

Afforestation rates (private planting as percentages of AAU) during 1982 to 1996 were highest in the west and north-west (Donegal, Mayo and Leitrim), and also in Clare.

### **CONCLUSION**

Computerised mapping of agricultural statistics for the smaller spatial units (District Electoral Divisions and Rural Districts) identifies local variations in agricultural activity which are not apparent in county or regional data. Areas of common characteristics tend to span contiguous parts of several counties. This information facilitates a more targeted approach in implementing agricultural and rural development programmes.

Overlying local variations, however, are broad regional differences. The most general division of the State's territory is that formed by a line from Limerick to Dundalk. Commercial farming has become increasingly associated with areas south and east of this line. The scale of farm business is greater; there is a higher incidence of land mobility (through purchasing, renting and earlier family transfers); there is a greater concentration of dairying and tillage farming as well as higher productivity per ha and per unit of labour. North of this line (and also including parts of Kerry and West Cork) there is a higher uptake of the Rural Environment Protection Scheme and of afforestation.

Farm policies post 2000 are likely to increase the differentiation between commercial farming areas and those adopting other or less intensive forms of land use.

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