

CHAPTER 24

Agricultural change and the growth of the creamery system in Monaghan 1855-1920

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Introduction

This chapter examines how Monaghan's agricultural economy evolved in the period between the Famine and the partition of Ireland in 1921. It begins with an outline of the general features of Irish agriculture in the 19th century which provides a context for analysing trends within county Monaghan itself. A benchmark profile is then presented of the key features of the county's farm economy at the beginning of the review period, against which subsequent change is compared. The process of change is initially analysed for the period 1855-1880, prior to the introduction to Ireland of the creamery system which was to have a major impact on farming in Monaghan. The development of this system is then described in some depth, followed by a review of how agriculture in general changed in the county between 1880 and 1920. A concluding section summarises the main findings of the chapter and the subsequent evolution of Monaghan's creamery sector.

Irish agriculture in the nineteenth century

Nineteenth century Irish agriculture was characterised by four main features: the landlord system, the predominance of small farms, pastoralism, and the orientation of commercial production to the British market. Under the landlord system, most of the land was divided into large estates which had been acquired by landlords of mainly British origin during the course of the seventeenth century. The land on these estates was worked by tenant farmers who, in most cases, had to devote at least some of their produce for off-farm sale in order to pay their rents. Most Irish farms were small: in 1855 (the first year for which fairly reliable statistics are available) almost one half (47%) of all farm holdings of in excess of one acre were less than 15 acres in size while almost three quarters

were of less than 30 acres. Holdings had been even smaller before the Great Famine of the 1840s: the amalgamation of smaller holdings into larger units which occurred in the decades after the Famine was well under way by 1855.¹ Small farms were particularly predominant in the provinces of Connacht and Ulster whereas larger farms were more common in east and south Leinster and central and east Munster.

Climatically, Ireland is generally more suited to pastoral compared with tillage agriculture. In 1855, 71% of all agricultural land was devoted to meadow (for haymaking) and pasture. The main tillage crops were oats and potatoes, primarily for on-farm consumption. In the wetter western counties the proportion of farmland under grass was 80% or more. In Ulster, by contrast, tillage constituted a much more important component of the agricultural economy, especially in counties Derry, Monaghan, Tyrone, Armagh and Down (in the latter two counties over half the farmland was devoted to tillage).

Given the dominance of pastoralism, predictably beef and butter were the leading commercial products of nineteenth-century Irish agriculture. A distinctive and interlinked spatial structure developed around these two products. Commercial butter production was concentrated in Munster, in the south, and in a northern dairying region stretching from county Sligo across south and central Ulster as far as the Derry/Antrim border area along the lower Bann river. These regions also produced the calves, the raw material for the beef industry, which for the most part were moved to the west midlands for initial rearing and then to the east midlands for final fattening prior to being shipped, either as live animals or meat, to the rapidly growing British urban/industrial market (which was also the final destination for most commercial butter production). In Munster, there was also considerable retention of calves for local beef rearing within the province, but this was much less the case in Ulster.

While not nearly as important as the British market, a significant and growing internal market for commercial agricultural produce existed within Ireland, mainly in Dublin and the emerging industrial region around Belfast. A small town at the beginning of the nineteenth century, Belfast had surpassed Dublin in population terms by the end of that century. The city and its surrounding industrial towns provided a significant outlet not only for locally-produced food but also for flax, the raw material for the linen industry. Production of this crop provides a partial explanation for the unusually high proportion of farmland devoted to tillage in the Ulster counties in the nineteenth century.

However, the high tillage proportion was also a reflection of the fact that Ulster farmers generally worked their land more intensively than in other parts of the island. Given the generally small size of farms, intensive production was necessary in order to yield reasonable living standards for the region's farmers. According to Livingstone, until well after the Famine a farmer in county Monaghan with

just ten acres would have had 'respectable' status, with a horse and two cows, and capable of employing one or two labourers.²

It has been suggested that the so-called 'Ulster Custom', which gave the province's tenants the right to compensation for improvements made to their holdings, and therefore a stronger incentive to invest than was available in other parts of Ireland, underpinned the region's superior agricultural productivity. However, the provenance and impact of the Ulster Custom have been the subject of much discussion.³ The custom is thought to have been introduced in order to attract British settlers during the period of the Ulster Plantation in the seventeenth century; but it is possible that these settlers were of a superior entrepreneurial disposition in any case.

It is also possible that the Protestantism of the settler population may have had a bearing on their superior productivity, for example via a stronger work ethic or more advantageous treatment by landlords of similar persuasion. Protestants were the dominant element in the farming population of the six counties which were partitioned from the rest of Ireland in 1922, but their impact was also significant in the three non-partitioned Ulster counties, as indicated by the Protestant proportion of the total population in these counties in the 1881 population census: Cavan (19%); Donegal (23%); Monaghan (26%).

Monaghan's agricultural economy in 1855

The previous section provided a general overview of the nature and structure of Irish agriculture in the nineteenth century and thus a useful backdrop to the analysis of agricultural development in county Monaghan in the second half of that century. In what follows, while some comparisons are made between Monaghan and adjoining counties, because of the particular focus later on in this chapter on dairying and the creamery industry, there are also comparisons with counties Limerick and Tipperary South Riding (henceforth 'South Tipperary') which between them encompassed the so-called 'Golden Vale' (extending through east Limerick into the western part of South Tipperary), where the Irish dairy industry was most intensively developed.

As elsewhere, in the nineteenth century most of Monaghan's farmland was divided into large landlord estates. In 1876, 44 landlords owned three quarters of the county's land, with an average size of 3,010 acres per estate.⁴ The average for the ten largest estates was 14,320 acres with the largest estate amounting to 26,386 acres. The quality of estate management was variable and this had an important bearing on farming performance within estates, as did other variables such as land quality, holding size and the personal abilities of individual farmers.

Detailed and reliable information on agricultural structure and land use in the county did not become available until the mid 1850s. While the government

had instituted an annual census of land use and livestock numbers on all Irish farm holdings (conducted by the constabulary) in 1847, Ó Gráda has suggested that considerable doubt surrounds the accuracy of these agricultural censuses in the early years but that their reliability greatly improved in the 1850s.⁵ In this section, therefore, a snapshot of key features of county Monaghan's agricultural economy as depicted by the agricultural census of 1855 will be presented.⁶

While nineteenth-century Ulster was generally characterised by a predominance of small farms, this was particularly the case with Monaghan. In 1855 holdings of between 1-15 acres accounted for two thirds (65.5%) of all holdings in excess of one acre in the county (table 24.1), a proportion which was significantly higher than in the adjoining Ulster counties of Fermanagh (42.1%), Tyrone (48.9%), and Cavan (51.9%), albeit less than in Armagh (73.7%). There were very few large farms in the county; the 503 holdings in excess of 50 acres represented just 2.7% of the total. In Meath, immediately to the south, the corresponding proportion was 25.8% (the majority of them over 100 acres), while in the Munster dairy heartland counties of Limerick and South Tipperary the respective proportions were 26.3% and 21.1%.

Table 24.1: Distribution of agricultural holdings 1+ acres in Monaghan 1855 & 1880

Acres	1855	1855%	1880	% Ch 1855 -1880	1880%	1914	% Ch 1880 -1914	1914%
1<5	3,041	15.9	2,121	-30.3	12.3	1,197	-43.6	8.5
5<15	9,498	49.6	8,060	-15.1	46.8	5,694	-29.4	40.6
15<30	4,948	25.8	4,985	+ 0.7	29.0	4,616	-7.4	32.9
30<50	1,171	6.1	1,420	+21.3	8.3	1,694	+19.3	12.1
50<100	378	2.0	493	+30.4	2.9	642	+30.2	4.6
100+	125	0.7	128	+ 2.4	0.7	184	+41.5	1.3
Total	19,161	100	17,207	-10.2	100.0	14,027	-18.5	-18.5

The intensive nature of Ulster agriculture was reflected in the relatively high proportion of agricultural land devoted to tillage (outside of the more marginal and hilly land of Antrim, Donegal and Fermanagh). In Monaghan in 1855 almost one half (47.8%) of all agricultural land (excluding rough grazing and other marginal land) was devoted to tillage (table 24.2), compared with 26.6% in neighbouring Meath and 21.5% and 28.7%, respectively, in Limerick and South Tipperary. By far the most important crop was oats (61% of all land devoted to tillage), with potatoes (18.5%) and flax (8.6%) taking up most of the remaining crop acreage (Monaghan had the highest proportion of tilled land devoted to flax

of all the Ulster counties). In the dairying regions of the south, while potatoes took up a somewhat larger proportion of a (relatively) much smaller tilled area, oats cultivation was much less important (particularly compared with barley and wheat) while the production of flax was almost non-existent.

Table 24.2: Agricultural landuse in Monaghan 1855 & 1880

	1855 (acres)	%	1880 (acres)	%	Change % 1855-80
Tillage	137,186	47.8	102,354	36.1	-25.4
<i>Of which</i>					
<i>Oats</i>	<i>83,562</i>	<i>29.1</i>	<i>53,460</i>	<i>18.9</i>	<i>-36.0</i>
<i>Potatoes</i>	<i>25,399</i>	<i>8.8</i>	<i>19,452</i>	<i>6.9</i>	<i>-23.4</i>
<i>Flax</i>	<i>11,858</i>	<i>4.1</i>	<i>16,659</i>	<i>5.9</i>	<i>40.5</i>
Grassland ¹	149,968	52.2	181,215	63.9	20.8
All farmland ²	287,154	100.0	283,569	100.0	-1.2

¹ Pasture and meadow; ² Excluding rough grazing and fallow land

Pastoral agriculture (embracing both permanent pasture and meadow land) was therefore a much less important component of Monaghan's agricultural economy than was the case in the beef and sheep rearing districts of the Irish midlands and the mixed dairying and beef/sheep areas further south. However, reflecting again the proclivity of Ulster farmers towards more intensive agriculture, dairying in Monaghan dominated the county's pastoral farming. Thus, two thirds (66.5%) of all adult cattle (aged over one year) comprised milch cows in 1855 (table 24.3), a similar proportion to the neighbouring Ulster counties but contrasting sharply to Meath's proportion of 16.5%, reflecting the extent to which that county's agriculture was devoted to beef cattle. Furthermore, while Limerick and South Tipperary had similar percentages of milch cows in the adult cattle population (71.5% and 64.5%) (table 24.4), Monaghan portrayed a significantly higher density of cows per 100 acres of grassland (25.9 compared with 19.7 for Limerick and 17.2 for South Tipperary). While to an extent this difference was attributable to higher stocking rates for milch (i.e. dairy) cows in Monaghan, it also reflected greater competition from sheep for available grassland in the Munster counties: in 1855 the density of sheep per 100 acres of grassland was 17.8 in Limerick and 38.7 in South Tipperary compared with just 8.7 in Monaghan.

Given the differing proportions of farmland devoted to crops and sheep, overall the relative importance of dairying in the agricultural economy (measured as the number of milch cows per 100 acres of all agricultural land) was broadly similar in Monaghan (13.5) to that in Limerick (15.5) and South Tipperary (12.3) (table

Table 24.3: Livestock numbers in Monaghan 1855 & 1880

	1855	1880	Change % 1855-80
Total cattle	75,662	72,844	- 3.7
Cattle 1+ yrs	58,377	55,838	- 4.3
<i>Of which</i>			
<i>Milch cows</i>	38,804 (66.5%)	28,777 (51.5%)	-25.8
<i>Beef cattle 1+ yrs</i>	19,573 (33.5%)	27,061 (48.5%)	+38.3
Cattle <1 yr	17,285	17,006	- 1.6
Sheep	13,093	12,803	- 2.2
Pigs	19,027	13,483	-29.1
Poultry	252,662	394,674	+56.2

**Table 24.4: Dairying indicators in Monaghan,
Limerick and South Tipperary 1855**

County	Milch cows % adult cattle	Milch cows/100 acres grassland	Milch cows/100 acres all farmland
Monaghan	66.5	25.9	13.5
Limerick	71.5	19.7	15.5
S. Tipperary	64.5	17.2	12.3

24.4). Higher milk yields in the latter counties (the result of more favourable resource endowments including bigger farms, superior capital resources and better soils and climate) meant that their relative milk production levels were significantly higher than in Monaghan. Furthermore, data from the 1855 agricultural census show that the typical dairy herd in Monaghan consisted of only 2-3 cows, compared with 5-10 in Limerick and Tipperary.⁷ With at least one cow required to satisfy domestic needs of milk and butter, this meant that a much lower proportion of the milk produced was available for commercial use in Monaghan.

The keeping of pigs and poultry was also an important element in the Monaghan small-farming economy in 1855 (table 24.3). In that year the number of pigs in the county was almost the same as the number of holdings of over one acre, suggesting that pigs were mainly reared for home consumption. However, there were over 13 head of poultry per holding of over one acre, indicating that there was a significant level of commercial production in this sphere, involving both meat and eggs.

The early agricultural censuses published results at the level of the barony units into which each county was divided, and facilitate analysis of intra county spatial variation. Most of the agricultural indicators reviewed here showed only minor variations between Monaghan's five baronies (Cremorne, Dartree, Farney, Monaghan and Trough). However, there were substantial differences between the county's southernmost barony, Farney, and the rest of the county in certain respects. Firstly, a higher proportion of Farney's farmland was devoted to tillage, while grain accounted for a considerably higher proportion of the tillage acreage than elsewhere in the county (table 24.5). This could be mainly explained by the very high proportion of tillage land devoted to barley compared with the other baronies. There was clearly an overspill effect here from the adjoining county Louth, where barley took up no less than 22% of the tillage acreage. Farney also had a distinctive pastoral sector, with milch cows comprising a much lower proportion of the adult cattle population than elsewhere in the county, again indicating similarities with the adjoining counties of Louth and Meath, where dairying was much less developed. In Farney, milch cows had far more competition from sheep for available grassland (another characteristic of Louth/Meath). With more land devoted to tillage and more competition from beef cattle and sheep, the overall importance of dairying in Farney (as measured by the average number of milch cows per 100 acres of all farmland) was therefore much lower than in the other baronies.

Table 24.5: Agricultural landuse variation by barony, Monaghan 1855

Barony	Tillage % Farmland	Grain % Tillage	Barley % Tillage	Flax % Tillage	Milch cows % Adult cattle ¹	Sheep/ 100 acres grassland	Milch cows/ 100 acres farmland
Trough	43.8	59.2	0.9	10.7	65.6	7.2	13.4
Monaghan	45.1	64.1	0.5	10.5	69.1	6.9	15.1
Dartree	44.1	60.5	0.3	13.6	72.9	6.9	14.6
Cremorne	49.7	66.7	0.1	9.9	68.8	4.9	14.6
Farney	53.3	73.2	5.8	1.3	54.4	18.8	9.8
County	47.8	65.9	1.7	8.6	66.5	8.7	13.5

¹ Adult cattle: Milch cows and beef cattle aged over one year.

Changes in Monaghan's agricultural economy 1855-1880⁸

In the quarter-century after 1855, Monaghan's agricultural economy underwent significant changes in terms of farm size distribution, the division of land use between tillage and grassland and, within pastoral farming, between beef-rearing and dairying. As regards the first of these, the process of consolidation of holdings engendered by the Famine continued, with the total number of holdings of 1+

acres falling by 5.3% nationally between 1855 and 1880. In Ulster, where small holdings were more predominant than elsewhere, the rate of fall was higher, at 8.2%, while in Monaghan, the rate of decline in the number of holdings was higher again, at 10.2% (table 24.1). This fall was entirely concentrated among holdings of between 1-5 acres and 5-15 acres, whose numbers fell by 30.3% and 15.1%, respectively. Most of the land released from this decline in the number of smallholdings found its way to holdings of between 30-100 acres, whose number rose by 23.5%, with little change occurring in the number of holdings in the 15-30 and 100+ acre categories. Nevertheless, in 1880, small holdings of less than 15 acres still predominated, although their share of the total fell from 65.5% in 1855 to 59.1% in 1880.

In terms of agricultural landuse, Ireland experienced a major fall (of 27.5%) in the acreage devoted to tillage between 1855 and 1880 (table 24.6). The main factor was the repeal (in 1846) by the British government of the Corn Laws which opened up the UK (including Ireland) market to cheaper grain imports from abroad, leading to a general fall in grain prices. The ensuing fall in grain production in Ireland impacted in particular on wheat production (to which Ireland is not well suited climatically): its acreage fell by two thirds between 1855 and 1880, almost twice as great as the overall fall in the grain acreage (37.6%). There was also a substantial fall (16.5%) in potato cultivation nationally, linked in part to the post-Famine decimation of the cottier/labourer stratum which had been heavily dependent on the potato for its subsistence. In Ulster, the fall in the acreage of both grain and potatoes was less severe than in the rest of Ireland, while a sharp rise (74%) in the acreage devoted to flax production (spurred by the growth of Belfast's linen industry) further tempered the decline of tillage (almost all of Ireland's flax production was concentrated in Ulster).

Monaghan differed markedly from the rest of Ulster in terms of changes in tillage production which was more in line with national trends during this period (table 24.6). Here, the rate of decline in the acreage devoted to grain production (37.2%) was just below the national average, reflecting the fact that grain production in Monaghan was dominated by oats, whose decline in national acreage was only half that of wheat. At the same time, the fall in the potato acreage (23.4%) was well above the national figure (table 24.2). While Monaghan's flax acreage did expand substantially (40.5%), this remained over half the overall rate for Ulster. Overall, therefore, Monaghan's rate of tillage acreage loss (25.4%) was much closer to the national figure (27.5%) than to Ulster's (17.1%).

The decline in tillage meant that the share of Irish agricultural land accounted for by grassland rose from 71.3% in 1855 to 79.3% in 1880. The growth in the area devoted to grassland (11.9%) was not matched by the growth rate (6.8%) of the adult bovine population (dairy cows and beef cattle aged over one year), indicating a fall in the intensity of grassland use (table 24.7). This is at least partially

Table 24.6: Change (%) in tillage acreage 1855-1880

	Tillage	Grain	Wheat	Potatoes	Flax
Ireland	-27.5	-37.6	-66.6	-16.5	+62.3
Ulster	-17.1	-30.5	-44.7	- 5.2	+74.0
Monaghan	-25.4	-37.2	-72.7	-23.4	+40.5

explained by a significant shift from more intensive dairying to less intensive beef rearing; thus, while the milch cow population fell by 10.5%, that of adult beef cattle rose by 27.1%. Sheep rearing had little impact on the level of grassland utilisation as the national sheep flock remained largely unchanged over the period.

The decline in dairying between 1855 and 1880 was directly related to the fall in the price of Irish butter in the English market. Whereas Ireland had been the dominant supplier of butter imports into this market, from 1860 on there was rapid growth in imports from continental Europe (especially from Denmark, France and the Netherlands) where superior production methods and organisation generated a constant year-round supply of high-quality product. Irish butter sales became largely confined to the industrial districts of Wales and northern and north western England where the butter price was lower than that in London due to intense local competition from margarine.⁹ Between 1870 and 1885 alone, the nominal price of Irish butter in the British market fell by almost 30%.¹⁰

Ulster's farmers in particular responded to the fall in butter prices by switching to the production of beef, whose price remained strong; whereas its share of the national dairy herd in 1855 was 33%, the province accounted for 56% of the fall in that herd's size up to 1880. By contrast, Munster (representing 35% of the national dairy herd in 1855) experienced only a marginal fall in its milch cow population. This, at least in part, reflected the greater centrality of dairying to the agricultural economy throughout much of the south and therefore the greater commitment to the industry on the part of specialist dairy farmers. In the mixed Ulster farming economy, by contrast, the rearing of cows was more interchangeable with other farm enterprises. Thus, Ulster farmers remained more committed to grain and potato production while also greatly expanding the acreage under flax.

In Monaghan, the shift from dairying to beef cattle was even more pronounced than in Ulster generally. Milch cow numbers fell by 25.8% compared with 17.6% for Ulster as a whole, while adult beef cattle numbers increased by 38.3%, over three times the overall Ulster rate of 11.3% (table 24.7). This reflects the greater tendency on the part of Ulster farmers outside of Monaghan to focus on flax rather than beef cattle production. The switch between milch cows and beef cattle in Monaghan was such that, whereas there were twice as many milch cows as adult beef cattle in the county in 1855, by 1880 their numbers were roughly equal

(table 24.3). In 1855 Monaghan had 13.5 milch cows per 100 acres of agricultural land, the seventh highest density among Irish counties; by 1880 the density had fallen to 10.1, eleventh among Irish counties.

Table 24.7: Change (%) in pastoral agriculture 1855-1880

	Grassland acreage	Adult cattle population	Milch cow population	Beef cattle population
Ireland	+11.9	+6.8	-10.5	+27.1
Ulster	+ 7.4	- 6.3	-17.6	+11.3
Monaghan	+20.8	- 4.3	-25.8	+38.3

Two further interesting developments in Monaghan's farming economy in this period were a substantial fall (29.1%) in the number of pigs, and a very sharp increase (56.2%) in the number of poultry in the county (table 24.3). These were both in line with national trends. The fall in the size of the pig herd was, in terms of relative magnitude, similar to that of the dairy herd and it is likely that there was a link between the two, as skim milk left over from butter making was an important component of the diet of pigs and its supply decreased in line with the decline of the dairy herd. It may be that some farms switched from pigs to poultry as an alternative 'farmyard' enterprise, but poultry numbers also grew strongly in parts of the country where there was little change in dairy cow numbers.

As regards developments at intra-county level, the 1880 agricultural census does not provide data on tillage acreages by barony. In relation to the pastoral sector, the key feature was the very distinctive performance of Trough, Monaghan's northernmost barony (table 24.8). Firstly, the rate of fall in the milch cow population was significantly higher than in the other baronies. In all of the latter baronies, the rate of increase in the beef cattle population was greatly in excess of the rate of fall in the milch cow population, leading to sharp falls in the proportion of the adult cattle population accounted for by milch cows. However, the rate of growth in Trough's beef cattle population (just 8.3%) was very modest compared with the rest of the county. The higher rate of fall in the milch cow population meant that, whereas Trough's milch cow density (number per 100 acres of all farmland) matched the county average in 1855, it had fallen significantly behind that average by 1880. In addition, the very modest rate of growth in the beef cattle population meant that, by 1880, Trough's beef cattle density, which was the second highest in 1855, was well-behind the other baronies by 1880. It would appear from these data that the decline in tillage in Trough was not nearly as sharp as elsewhere in the county. One possibility is that the growth in flax cultivation was disproportionately concentrated in this barony which adjoins County Tyrone where there was particularly strong growth (of

83.4%) in the flax acreage between 1855 and 1880. In conclusion, one can say that, in 1880, the dairy industry had an equally strong presence in the three central baronies, of Monaghan, Dartree and Cremorne, and was significantly weaker at the northern and (especially) the southern end of the county.

Table 24.8: Changes in pastoral agriculture by barony, Monaghan 1855-1880

Barony	Milch cow pop. Ch %	Beef cattle pop. Ch %	Milch cows % Adult cattle ¹		Milch cows/ 100 acres farmland		Adult beef cattle/100 acres farmland	
			1855	1880	1855	1880	1855	1880
Trough	-32.0	8.3	65.6	54.4	13.4	9.3	7.1	7.8
Monaghan	-25.9	37.1	69.1	54.7	15.1	11.0	6.7	9.1
Dartree	-22.9	47.1	72.9	58.5	14.6	11.4	5.4	8.1
Cremorne	-26.0	46.4	68.8	52.7	14.6	10.9	6.6	9.8
Farney	-24.7	39.6	54.4	39.2	9.8	7.6	8.2	11.9
County	-25.8	38.3	66.5	51.5	13.5	10.1	6.8	9.5

¹ Adult cattle: Milch cows and beef cattle aged over one year.

The introduction of the creamery system¹¹

A technological innovation in the early 1880s was to have a profound impact on the Irish dairying industry in general and, in time, on Monaghan's agricultural economy. This innovation was the mechanisation of milk processing, involving both the separation of cream from raw milk and the churning of cream into butter. This facilitated much faster and more efficient processing, while the centralised processing of the milk supply in industrial units, which became known as creameries, produced butter of higher and more uniform quality. Previously, butter had been produced by a slow and laborious process on individual farms.

The first steam-powered creamery is thought to have been established on the estate of Lord Middleton in east Cork in 1882. The first largely farmer-owned creamery was set up in 1884 in Hospital, county Limerick although it was not run on strictly co-operative lines. A number of such farmer-owned creameries were established in the Munster dairying region while many privately-owned 'proprietary' creameries were also set up as the 1880s progressed. The 1890s saw the advent of a number of large corporate entities, mainly based in England, into the industry.¹² The first creamery to be registered as a co-operative was established in Drumcolliher, county Limerick, in 1889, but it was not until the founding in 1894 of the Irish Agricultural Organisation Society (IAOS), under the leadership of Sir Horace Plunkett and dedicated to the development of farming co-operatives, that this form of creamery began to establish a strong presence in the industry. The

establishment of the IAOS coincided with the commencement of a long-term recovery in butter prices, in line with a general improvement in the UK economy following the depressed conditions of the 1870s and 1880s. Steadily-increasing price growth, lasting up the First World War, provided a benign economic environment favourable to the formation of dairy co-operatives.

The northern dairying region was slower than its southern counterpart to adopt the creamery system, and the co-operative creamery system in particular, the first co-operative in the region having been established in Drumcliffe, county Sligo, in 1895. This follows the normal pattern regarding the adoption of innovations, where larger operators are more inclined to act as pioneers with smaller operators coming on board once the innovation is shown to be worthwhile.¹³ Private investors were particularly reluctant to get involved in the northern region, where lower milk yields and smaller farms meant that larger numbers of farmers spread over a wide area were required for a viable operation. There is evidence from the south that, at least in the earlier years of the creamery system, farmers only resolved to set up co-operatives where private creameries were not available locally.¹⁴ The relative absence of private investment in the creamery system in the north helps explain the fact that, once the system began to develop in that region, it was dominated by co-operatives (in sharp contrast to the situation in the south, where privately-owned creameries predominated).

This was certainly the case with county Monaghan, where the co-operative system became well-established following its initial introduction in 1898 but where private creameries were completely absent.¹⁵ A feature of the early creamery system in Monaghan was the very small number of 'central' (i.e. butter-making) creameries in the county: five by 1910. Most creameries in the county (as elsewhere in the northern dairying region) took the form of so-called 'auxiliary' creameries i.e. creamery units which simply separated cream from whole milk, the cream then being conveyed to central creameries for churning into butter. This was a relatively efficient way of generating sufficient volumes of cream to support a butter-making operation from suppliers spread over a wide area. Thus, in addition to Monaghan's five central creameries in 1910 there were 20 auxiliaries. In the south, where higher milch cow densities meant that most creameries had access to sufficient milk supplies in their immediate localities to support a butter-making operation, auxiliaries were a much rarer phenomenon: in 1910 Limerick possessed 36 central co-operative creameries and only two associated auxiliaries.

While some auxiliary creameries were owned by the central creameries to which they supplied cream (these auxiliaries being known as 'part-and-parcel' auxiliaries, but referred to here as branch creameries), many were also owned separately by independent co-operative societies and were known as 'independent' auxiliaries which entered into agreements with central creameries to churn cream on their behalf. Of Monaghan's 20 auxiliary creameries in 1910, 12 were independent auxiliaries and eight were branch creameries.

Development of the creamery system in County Monaghan, 1898-1920

Geographically, the early development of county Monaghan's creamery system had two distinctive features. Firstly, creameries became concentrated in the central part of the county (fig. 24.1). Of the two baronies which had distinctively low milch cow densities in 1880 (table 24.8), no creamery was ever located in Trough, at the northern end of the county, while it was not until 1928 that Farney, in the south, received its one and only creamery (Magheracloune). Secondly, creameries were first established in the northwest of the county, close to the border with Fermanagh, from where they spread eastwards and south eastwards across the centre of the county; a classic example of what is called the 'neighbourhood effect' in the spread of innovations where areas close to a place which has already adopted an innovation become exposed to that innovation and are therefore more likely to adopt it themselves. The creamery innovation entered Monaghan as a spillover from the adjacent counties of Fermanagh and Cavan, where creameries had already been established, and from there fanned out sequentially into other areas in the county where dairying was an important part of the agricultural economy.

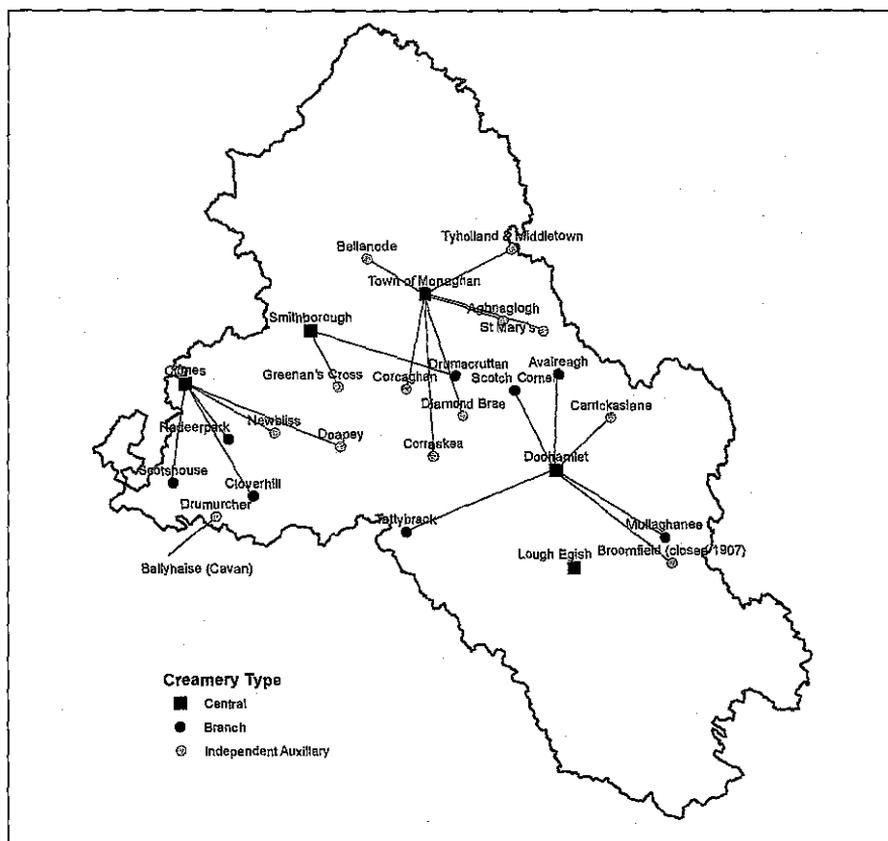


Fig. 24.1: Creameries in County Monaghan, 1910.

Proinnsias Breathnach

In 1898, Monaghan's pioneering creamery year, no less than eleven creameries began operations in the county (see Appendix). This was part of a general surge in co-operative creamery formation in the northern dairying region with a total of 54 creameries being established in that year, twice the number already in existence. Monaghan and Armagh were the last two counties in the region to adopt the creamery system. Just two of the creameries established in Monaghan in 1898 were central creameries and they were located very close together. Clones Agricultural and Dairy Society (CADS¹⁶) was established as (initially) a stand-alone central creamery while the Great Northern CADS, based at Smithborough, was established simultaneously with nine auxiliary branches, which occupied a wedge of territory across north central Monaghan as far as Aghnaglogh near the Armagh border. This was a very ambitious venture which, at an early stage, began to experience severe difficulties. In 1899 no new creameries were established in Monaghan but a new co-operative, Roslea CADS, began operations in Fermanagh as an independent auxiliary supplying separated cream to Clones for churning into butter.

In 1900, six further creameries were established in Monaghan, two located south of Clones, close to the Cavan border: Drumurcher, a branch of the Cavan Creameries central at Ballyhaise and Cloverhill, Clones CADS's first branch creamery. The other four were part of a new co-operative, County Monaghan Central CADS, whose central creamery was located at Doohamlet (between Ballybay and Castleblayney), with branches at Avalreagh and Scotch Corner (to the north of Doohamlet, between Castleblayney and Monaghan) and Tattybrack (to the west of Doohamlet, near the Cavan border between Ballybay and Cootehill). In 1900, the turnover of Monaghan's three central co-operatives largely reflected the number of auxiliaries supplying each, with Great Northern the largest entity followed by County Monaghan Central and Clones in that order (table 24.9, in which co-operatives are listed according to foundation date).¹⁷

Two new creameries emerged in 1901: Town of Monaghan CADS, a central creamery which continues today as one of the two major dairy processing units in the county and Clontibret (located between Monaghan and Castleblayney), which became County Monaghan Central's fourth branch. Two further creameries followed in 1902: Scotshouse (a branch of Clones) and Mullaghanee, south of Castleblayney (a branch of County Monaghan Central). In addition, Clones acquired a further branch when it took over Roslea creamery, which had previously been supplying Clones as an independent auxiliary.

In 1903 the Great Northern co-operative essentially disintegrated. The simultaneous establishment of a central creamery and nine branches was a venture that was not underpinned by an adequate capital base or managerial capacity, leading quickly to major financial difficulties.¹⁸ It is instructive that a

based at Ballyhaise, which had 14 branches within a year of starting up in 1900, encountered similar difficulties. The IAOS response to these problems was to press for the reconstitution of branch creameries as independent co-operative societies which, it was thought, would provide them with more sustainable foundations.¹⁹ However, the proliferation of independent auxiliaries which ensued created its own problems. Conflict was to develop between independent auxiliaries and the societies which owned the central creameries which they supplied over such issues as the charges levied for, and the priority given to, churning auxiliary cream.²⁰ In addition, independent auxiliaries tended to play off central creameries against each other, as observed by John O'Donnell, former manager of the Town of Monaghan co-operative, who noted how the latter co-operative was greatly dependent for many years on cream supplies from independent auxiliaries many of which tended to move (or at least threaten to move) between central creameries in the county. As he wrote:

There was always a certain amount of testing and trial by the independent auxiliaries to [sic] different central creameries in that era. An unspoken courtship, as it were, as each auxiliary tried to secure what seemed the best for its suppliers.²¹

The instability of supplies resulting from this situation clearly created planning problems for the co-operatives operating central creameries.

Eight of Great Northern's nine branches acquired independent auxiliary status in 1903, with Dunraymond changing its name to Diamond Brae in the process (see Appendix). Only two of the new independent auxiliaries, Aghnaglogh and Greenan's Cross, continued to supply cream to Great Northern while four (Bellanode, Corcaghan, Corraskea and Diamond Brae) transferred to Town of Monaghan with two (Doapey and Newbliss) transferring to Clones. Drummacruttan was the only one of the nine original branches to remain part of Great Northern. County Monaghan Central was also impacted by the conversion of its Clontibret branch to an independent auxiliary (under the title St. Mary's) and the transfer of its cream supplies to Town of Monaghan, although this was offset through securing the supplies of newly-established independent auxiliaries at Broomfield and Carrickaslane (south and north, respectively, of Castleblayney). Meanwhile, a new Clones branch creamery was set up at Radeerpark, located between Newbliss and Scotshouse.

However, from a long-term perspective, the most important new development of 1903 was the commencement of operations on the part of Lough Egish CADS, located beside the lake of that name, southwest of Castleblayney. The establishment of a central creamery at this unpropitious location was not favoured by the IAOS and, with plans for a set of surrounding auxiliaries failing

to materialise, turnover remained very low compared with the other Monaghan co-operatives for a long time (table 24.9). However, showing commendable resolve, the co-operative survived and eventually became the dominant dairy processor in the county.

The only significant new development in 1904 was the establishment of Tyholland & Middletown CADS, east of Monaghan town, close to the Armagh border, as a central creamery. This was the last creamery to be set up in Monaghan until Magheraclone in 1928, suggesting that the county was by then reaching the limit of its potential regarding the establishment of new creameries. By 1905, Clones, which had added three branches (in addition to Roslea) and two independent auxiliaries since 1900, was by far the largest central co-operative in the county in turnover terms (Table 24.9). The defection of supplying auxiliaries saw Great Northern's turnover falling to less than half its 1900 level, and it was now greatly surpassed by County Monaghan Central and Town of Monaghan, the latter having experienced particularly rapid growth following the acquisition of three independent auxiliaries in 1903. Their lack of auxiliaries saw Lough Egish and Tyholland & Middletown languishing at a much lower level of operation than the county's other central co-operatives.

**Table 24.9: Monaghan central co-operatives: turnover trends (£)
1900-1920 (1900 prices)**

	1900	1905	1910	1915	1920
Clones	5,488	12,571	24,035	34,443	35,623
Gt. Northern/Smithborough	10,761	5,152	3,443	5,705	2,295
Co. Monaghan Central	6,980	8,454	9,788	14,964	12,615
Town of Monaghan		8,040	9,701	13,501	13,661
Lough Egish		2,006	4,175	3,599	3,054
Tyholland & Middletown		1,290	1,931	5,350	12,562

In 1906 Tyholland & Middletown converted to an independent auxiliary of Town of Monaghan; Broomfield creamery was taken over by County Monaghan Central as a wholly-owned auxiliary; and Aghnaglogh independent auxiliary transferred its supplies from Great Northern to Town of Monaghan, further weakening the Smithborough-based central. In the following year, Drumurcher converted to an independent auxiliary supplying Cavan Central CADS, which had replaced the collapsed Cavan Creameries co-operative at Ballyhaise. The year 1907 was notable for the first creamery closure in Monaghan with the cessation of Broomfield, whose supply area was constrained by the prior opening of Mullaghanee, just 2.5km to the north, and the simultaneous opening of Crossmaglen CADS 6km to the east. It was taken over by County Monaghan Central in 1906 and closed the following year.

With its turnover almost doubling since 1905, by 1910 Clones was not only by far the largest central co-operative in Monaghan (table 24.9) but also the eighth largest dairy co-operative in Ireland. To an extent this growth was attributable to the development of a farm requisites business (which accounted for 17% of turnover in 1910) and strong growth in demand for its churning service on the part of the Doapey independent auxiliary, but the main contributor to Clones' expansion was increased milk supply from within its own catchment area. The volume of milk supplied to the co-operative's central creamery and branches grew from 487,000 gallons in 1903 to 1.076 million gallons in 1913 (the IAOS annual reports do not provide this information for the intervening years). Growth at County Monaghan Central and Town of Monaghan was much more modest while the decline of Great Northern (shorn of its Aghnaglogh independent auxiliary in 1906) continued unabated. Lough Egish showed considerable improvement after its modest beginnings while Tyholland & Middletown (now an independent auxiliary) occupied a marginal position in the county's creamery system.

Monaghan's creameries for the most part experienced very rapid growth in the period 1910-15, fuelled partly by growing milk supplies but mainly by rising butter prices, especially following the outbreak of the First World War in 1914. In 1911, Great Northern was reconstituted as Smithborough CADS and managed to reverse its declining fortunes with a two thirds increase in turnover between 1910-15. It achieved this despite losing its last remaining branch creamery in 1911 when Drumacruttan converted to an independent auxiliary and transferred its supplies to Town of Monaghan. Clones continued its vibrant expansionary path with its turnover rising by 43% (allowing for inflation) over the period: in 1914 Clones occupied sixth position among Ireland's largest co-operatives in turnover terms and second position (after Killeshandra) in terms of volume of milk supplies. County Monaghan Central's growth rate was even stronger at 53%, while Town of Monaghan's, while still a considerable 39%, was significantly held back by the impact of Tyholland & Middletown's reversion to central co-operative status in 1912, for which the acquisition of Drumacruttan as an independent auxiliary provided only partial compensation. Tyholland & Middletown's resumption of central status ushered in a period of particularly rapid growth, its turnover nearly trebling between 1910 and 1915. The sole exception to the general pattern of growth in this period was Lough Egish, where there was an actual decline in turnover, due mainly to a very significant fall in milk supplies.

The rapid growth in the turnover of Monaghan's central co-operatives largely ground to a halt in the period 1915-1920, due mainly to the imposition of price controls on butter and a sharp fall in milk supplies. The latter was driven by three main factors: firstly, rising prices for beef relative to butter which spurred many farmers to sell milch cows and heifers into the beef trade, thereby reducing

the size of the milch cow population; secondly, compulsory tillage regulations which reduced the amount of grassland available for pastoral agriculture; and thirdly, shortages of fertiliser supplies which impacted negatively on milk yields.

However, Tyholland & Middletown bucked the general trend in producing quite spectacular growth (135%) in this period. Contrary to the experience of the county's other co-operatives, Tyholland managed to raise its milk supplies – by one third – in this period. This may have been associated with the transfer of supplies following the closure of the nearby Aghnaglogh independent auxiliary in 1917. The acquisition of Carrickaslane as an independent auxiliary (transferring from County Monaghan Central) in 1917 also provided a significant boost to Tyholland and Middletown's turnover. Of Monaghan's other central co-operatives, Clones and Town of Monaghan both managed to increase their turnover marginally, County Monaghan Central and Lough Egish both fell back by 15% while Smithborough resumed its precipitous long-term decline with a 60% drop in real turnover.

While Monaghan's creamery system was dominated by its butter-producing central co-operatives (with their branch auxiliaries), the county's relatively large group of independent auxiliaries also played a significant role. The cream produced by these auxiliaries was churned into butter (for a fee) by the central co-operatives, the butter then being returned for independent sale by the auxiliaries in question. Apart from the short-lived Broomfield independent auxiliary and Tyholland & Middletown, which spent six years as an independent auxiliary before converting back to central status, twelve independent auxiliaries were established in Monaghan between 1903 and 1911. While these were broadly of similar size (in turnover terms) in their early years, their subsequent development trajectories varied greatly (table 24.10). Although most shared with the central co-operatives an experience of strong growth in the period 1910–1915, this was not the case with near neighbours Aghnaglogh and St. Mary's (Clontibret), both of which declined in this period. Aghnaglogh had been the strongest of the ten independent auxiliaries which were established in 1903, but experienced continuous decline thereafter before ceasing operations in 1917. This created no benefits for St. Mary's, which suffered further sharp decline in the period after 1915 before finally expiring in the 1920s. By contrast, Doapey experienced spectacular growth up to 1915, at which stage its turnover was not only substantially greater than all other independent auxiliaries in the county, but also exceeded that of Lough Egish central co-operative, and was similar to those of Smithborough and Tyholland & Middletown. Indeed, given what for an auxiliary was an unusually high level of annual milk supply (229,000 gallons in 1916), it is somewhat surprising that Doapey did not convert to central co-operative status.

**Table 24.10: Monaghan independent auxiliary co-operatives:
turnover (£) trends 1905-1920 (1900 prices)**

	1905	1910	1915	1920
Aghnaglogh	1,124	792	692 ¹	
Ballinode	707	669	2,283	2,421
Carrickaslane	1,312	1,833	2,967	1,006 ¹
Corraskea	1,038	703	1,091	913
Corcaghan	601	955	1,797	1,229
Diamond Brae	1,076	1,085	1,773	1,273
Doapey	1,488	3,475	5,314	4,203
Drumacruttan			1,071	1,069
Drumurcher		1,783	3,148	1,946 ¹
Greenan's Cross	934	1,375	2,215 ¹	1,531 ¹
Newbliss	856	1,621	2,582	1,877
St. Mary's	1,134	1,175	916	415 ¹

¹ Estimated

Overall, the independent auxiliaries generally accounted for 20-25% of the total turnover of Monaghan's dairy co-operatives in the period under consideration here. Figure 24.2 combines the central and independent auxiliary sectors together to show aggregate turnover trends for Monaghan's dairy co-operatives between 1898 and 1920. This shows strong and consistent growth up to 1907 followed by a period of relative stasis until 1911, then even stronger growth up to 1916, following which there was a sharp fall for two years leading to recovery in 1919-20. The 1916 peak aggregate turnover figure (£110,630 in 1900 prices) is roughly equal to €15 millions in 2016 prices.

Monaghan's agricultural economy in 1914²²

It is impossible to isolate the impact of the development of the creamery system on Monaghan's agricultural economy, due to the variety of factors, such as varying price movements for different products, government measures relating to farming, and other political developments which can influence agricultural change. This was particularly the case during World War 1 and its aftermath, when a range of special circumstances obtained. This section will outline the structure of Monaghan's agricultural economy in 1914, before the onset of war conditions (whose impact on agriculture only began to be felt in a significant way in 1915) and attempt to assess the position of dairying in the context of the overall pattern of change since 1880.

Two key structural elements of Monaghan's agricultural economy (*viz.* the landholding and landownership structures) underwent substantial change in the

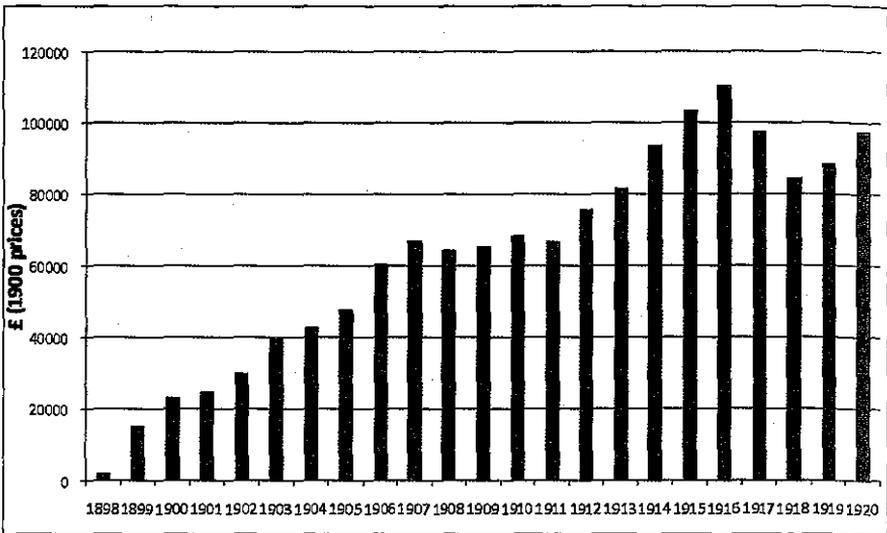


Fig. 24.2: Aggregate turnover of Monaghan dairy co-operatives 1898-1920 (1900 prices).

period 1880-1914. As regards the landholding structure, the post-famine process of consolidation of agricultural holdings continued, with the total number of holdings of 1+ acres falling by 18.5% (table 24.1). While the process of decline became particularly pronounced in the 1<5 and 5<15 acre size categories, it now extended into the 15<30 acre category also, with the number of holdings of 30+ acres increasing overall by 23.5%, albeit from a low base. Nevertheless, in 1914, 82.0% of the county's holdings were of less than 30 acres in size, a decline of just 6.1 percentage points since 1880.

Potentially of much greater significance for agricultural performance in Monaghan was the profound change which occurred in the landownership structure in this period due to the transfer of land ownership to former tenants under the various land acts. Nationally, by 1914, 62 per cent of all holdings were owner-occupied compared with just three per cent in 1870; in Monaghan the proportion was even higher, at 74 per cent. However, while it was commonly argued that owner-occupation would incentivise farmers to expand production (as occurred in Denmark in the second half of the nineteenth century), this has been disputed in the Irish case by Crotty, Solow and Winstanly, with O'Rourke pointing out that real agricultural output in 1914 was actually lower than in 1870.²³

What is certain is that Monaghan, like the rest of Ireland, experienced very substantial change in agricultural land use in the period 1880-1914, although whether this was accompanied by rising productivity is not clear. As in the rest of Ireland, the long-term post-Famine shift from tillage to pastoral agriculture continued (table 24.11). Across the island, there was a further major fall in the wheat acreage, which in 1914 stood at just 8.3% of its 1855 level. In Ulster,

which produced the most flax, there was a sharp reversal of the strong growth experienced up to 1880, due to the sourcing by Belfast linen producers of cheaper supplies from eastern Europe. In Monaghan, where the share of the tillage acreage taken by flax (16.3%) was the highest of any county in 1880, the decline in the flax acreage substantially exceeded the national average, with its share of the much-reduced tillage acreage falling to just 4.0% in 1914. The rate of decline in Monaghan's barley acreage was over three times the national figure, but this crop occupied only a very small proportion (2.2%) of the county's tillage acreage in 1880. Oats had accounted for just over half of Monaghan's tillage acreage in 1880, and although its rate of decline exceeded the national figure, the more rapid fall in other tillage crops saw the oats share of tillage rise, to 56.9%. The relatively low rate of decline in potatoes, Monaghan's second most important tillage crop, reversed the trend in the previous period when the fall in the potato acreage was significantly above the national average.

Table 24.11: Rates of decline (%) in tillage acreage 1880-1914

	All tillage	Wheat	Oats	Barley	Potatoes	Flax
Ireland	-26.6	-75.2	-25.6	-21.0	-29.0	-68.7
Ulster	-29.4	-77.9	-25.5	-38.4	-18.8	-68.1
Monaghan	-36.3	-60.3	-30.6	-69.5	-8.9	-84.4

While the high rate of decline in the tillage acreage was reasonably uniform across Ireland, the manner of its replacement by pastoral land uses varied greatly by county. While nationally the sheep population hardly changed at all, in some counties (especially in Ulster) it grew very strongly while in others (including Monaghan, going against the Ulster trend) it declined (Table 24.12). The sharp rise in Ulster's sheep population was at the expense of growth in the milch cow and beef cattle populations, which in both cases was well below the national average. However, here Monaghan also went against the provincial trend, with its milch cow population growing at a slightly faster rate than nationally and the growth of its beef cattle population occupying an intermediate position between the national and provincial levels.

Table 24.12: Growth rates (%) in pastoral agriculture 1855-1880

	Sheep pop.	Milch cow pop.	Beef cattle pop.	Meadow acreage	Pasture acreage
Ireland	1.1	17.2	33.2	30.2	2.6
Ulster	37.5	7.6	17.6	39.1	8.5
Monaghan	-17.0	17.4	26.0	59.1	13.3

About two thirds of the national total of 843,500 acres of land released through the decline of tillage was converted to meadow (used to make hay) with the other third converted to pasture. This had the effect of adding very substantially (30.2%) to Ireland's total meadow acreage but only marginally (2.6%) to pasture land.²⁴ Given the strong growth in the dairy and (especially) the beef herds, this indicates significantly increased stocking rates on pasture (reversing the 1855-1880 trend) and correspondingly greater provision of hay for winter feeding. The latter may be attributed, at least in part, to the growth in the use of creameries for milk processing, as these would have encouraged suppliers to increase production of winter milk to make better year-round use of processing equipment. However, the main driving force behind the switch to pastoralism in the 1880-1914 period was the consistent rise in the price of beef relative to other farm products, including butter. Thus, even in Limerick, Ireland's leading dairying county, while the growth of the dairy herd over the period (22.9%) was above the national average (and was accompanied by large-scale proliferation of creameries), this was dwarfed by a 65.1% increase in the beef herd.

The division of released tillage land between meadow and pasture, and its resultant proportionate contribution to the meadow and pasture acreages, varied widely between the counties. In Monaghan, less than half (45.6%) of the released land was given over to meadow, but this had the effect of raising the meadow acreage by 59.1% - twice the national average (table 24.12) - reflecting the low pre-existing meadow acreage. By contrast, the pasture acreage rose by just 13.3%, although this was five times the national average and well above the norm for Ulster. Given the rates of increase for the county's dairy and beef herds, and the simultaneous decline in the sheep population, this would indicate that the rise in Monaghan's stocking rate on grazing land was much lower than in some other parts of the country.

Pig and poultry production remained Monaghan's star agricultural performers in the 1880-1914 period (table 24.13). While both of these sectors grew strongly throughout most of Ulster, Monaghan led the way by a considerable margin in both cases (but especially with respect to poultry). One can see here the emergence of a form of regional specialisation for which Monaghan became renowned subsequently. We can also see here indications of the emergence of specialised production within the county's farming community itself. Traditionally in dairying districts, most farmers kept pigs which were fed skim milk left over as a by-product of butter production. However, in this period the growth in Monaghan's pig population (168.8%) was almost ten times that of the milch cow population (17.4%). In Limerick, by contrast, there was only a small difference between the respective growth rates (30.6% and 22.9%). Clearly, therefore, one can see here a growing disconnect between the two industries in Monaghan, and the emergence on some farms of relatively large-scale pig production operations.

Table 24.13: Growth rates (%) in pig and poultry numbers

	Pig pop.	Poultry pop.
Ireland	53.6	100.4
Ulster	96.4	139.4
Monaghan	168.8	181.3

Conclusion

This chapter has reviewed, in regional and national contexts, how Monaghan's agricultural economy evolved in the period 1855-1920, including a detailed case study of the impact of the growth of the creamery system in the county in the second half of the period. The process of change was multifaceted, with some elements of the farming system undergoing consistent unidirectional change and others experiencing sequential phases of growth and decline. Thus, there was consistent consolidation of holdings (although most still remained small), movement away from tillage (apart from a temporary surge in flax production which was reversed after 1880) and strong growth in beef production. A fall-off in dairying and pig production before 1880 was reversed thereafter. To an extent the recovery of dairying may have been linked to the widespread establishment of creameries in the county from 1898 on, but more likely the need to provide calves for the burgeoning beef industry was the key driving force here. The emergence of Monaghan as a leading centre of pig and poultry production was a particular feature of the 1880-1914 period.

While the development of the creamery system may not have had a major impact on agricultural land use in Monaghan in the short term, it did underpin and facilitate major growth of dairying and dairy processing in the county much later in the 20th century. However, it would have been difficult to predict the main actors in this growth from the configuration of the system in 1920. Clones's pre-eminent position was badly affected by the loss of one third of its milk supplies following the introduction of new milk supply arrangements in Northern Ireland during the Second World War. The onset of financial difficulties in the early 1960s led to its absorption by Town of Monaghan CADS in 1963, a development which put the latter on a new plane of operation. Much earlier, in 1936, a similar turn of events had projected Lough Egish CADS to the forefront of Monaghan's creamery scene when it absorbed County Monaghan Central CADS which had also become beset by financial problems. By then, however, Lough Egish had left its difficult early years behind through the judicious expansion of its own local supply base. All of Monaghan's other dairy co-operatives either went out of business or were absorbed into Lough Egish and Town of Monaghan. When Lough Egish amalgamated with Cavan's Killeshandra CADS in 1991, the resultant entity, Lakeland Dairies, became Ireland's fourth largest dairy processor with turnover of €545M in 2014; Town of Monaghan was in sixth place with a turnover of €220M.²⁵

Appendix 1: Development of the Monaghan creamery system 1898-1920

Year	Creamery Development
1898	Clones CADS established Great Northern CADS established at Smithborough, with branches at Aghnaglogh, Bellanode, Corcaghan, Corraskea, Dunraymond, Doapey, Drummacruttan, Greenan's Cross and Newbliss
1900	County Monaghan Central CADS established at Doohamlet with branches at Avalreagh, Scotch Corner and Tattybrack Cloverhill established as branch of Clones Drumurcher established as branch of Cavan Creameries (Ballyhaise)
1901	Town of Monaghan CADS established Clontibret established as branch of County Monaghan Central
1902	Scotshouse established as branch of Clones CADS Mullaghanee established as branch of County Monaghan Central Roslea (Fermanagh) converts from independent auxiliary to branch of Clones
1903	Lough Egish CADS established Broomfield independent auxiliary established, supplying County Monaghan Central Carrickaslane independent auxiliary established, supplying County Monaghan Central Radeerpark established as branch of Clones Aghnaglogh and Greenan's Cross convert to independent auxiliaries and continue to supply Great Northern Bellanode, Corcaghan, Corraskea and Diamond Brae (formerly Dunraymond) convert to independent auxiliaries and transfer supplies from Great Northern to Town of Monaghan Doapey and Newbliss convert to independent auxiliaries and transfer supplies from Great Northern to Clones St. Mary's (formerly Clontibret) converts to independent auxiliary and transfers supplies from County Monaghan Central to Town of Monaghan
1904	Tyholland & Middletown CADS established
1906	Tyholland & Middletown converts to independent auxiliary supplying Town of Monaghan Broomfield converts to branch of County Monaghan Central Aghnaglogh transfers supplies from Great Northern to Town of Monaghan
1907	Broomfield closed, suppliers transferred to Mullaghanee Drumurcher converts to independent auxiliary supplying Cavan Central CADS, Ballyhaise
1911	Great Northern CADS reconstituted as Smithborough CADS Drumacruttan converts to independent auxiliary and transfers supplies from Great Northern/Smithborough to Town of Monaghan
1912	Tyholland & Middletown reverts to central status
1917	Aghnaglogh closes Carrickaslane transfers milk supplies from County Monaghan Central to Tyholland & Middletown

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15. The 1893 agricultural census does report the presence of one private creamery in county Monaghan, but no documentary evidence for this has been found.
16. In this chapter, the acronym CADS applies only to co-operatives operating central creameries.
17. It has been necessary to adjust the turnover data (obtained from the IAOS Annual Reports) shown in Tables 9 and 10 for the heavy inflation which accompanied the First World War (and continued up to 1920) in order to ascertain the 'real' level of economic performance of Monaghan's dairy co-operatives in this period. While inflation rates were very low in the pre war period, for consistency all turnover data have been converted to 1900 price equivalents, using the index numbers compiled for the UK by O'Donoghue *et al.* Kennedy *et al.* suggest that there was a reasonable level of correspondence between Irish and British price levels in this period. In the few cases where the relevant data for particular co-operatives were not available for particular years, these data have been estimated using turnover trends both in the co-operatives in question and aggregate trends for all Monaghan co-operatives. See J. O'Donoghue, L. Goulding and G. Allen, 'Consumer price inflation since 1750', *Economic trends* (UK Office for National Statistics), 604, 2004, pp 38-46; K.A. Kennedy, T. Giblin and D. McHugh, *The economic development of Ireland in the twentieth century* (London, 1988).
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19. Brian MacDonald, *Lakeland Dairies: the triumph of co-operation 1896-1996* (Killeshandra, County Cavan and Tullynahinera, County Monaghan, 1996).
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23. This excludes the additional mountain grazing land which was included in the 1914, but not the 1880, agricultural census.
24. Data for 1914 derived from *Agricultural Statistics of Ireland, with detailed report for the year 1914* (Dublin, 1916).
25. Irish Co-operative Organisation Society, *Co-op Ireland Directory 2015* (Dublin, 2015).