

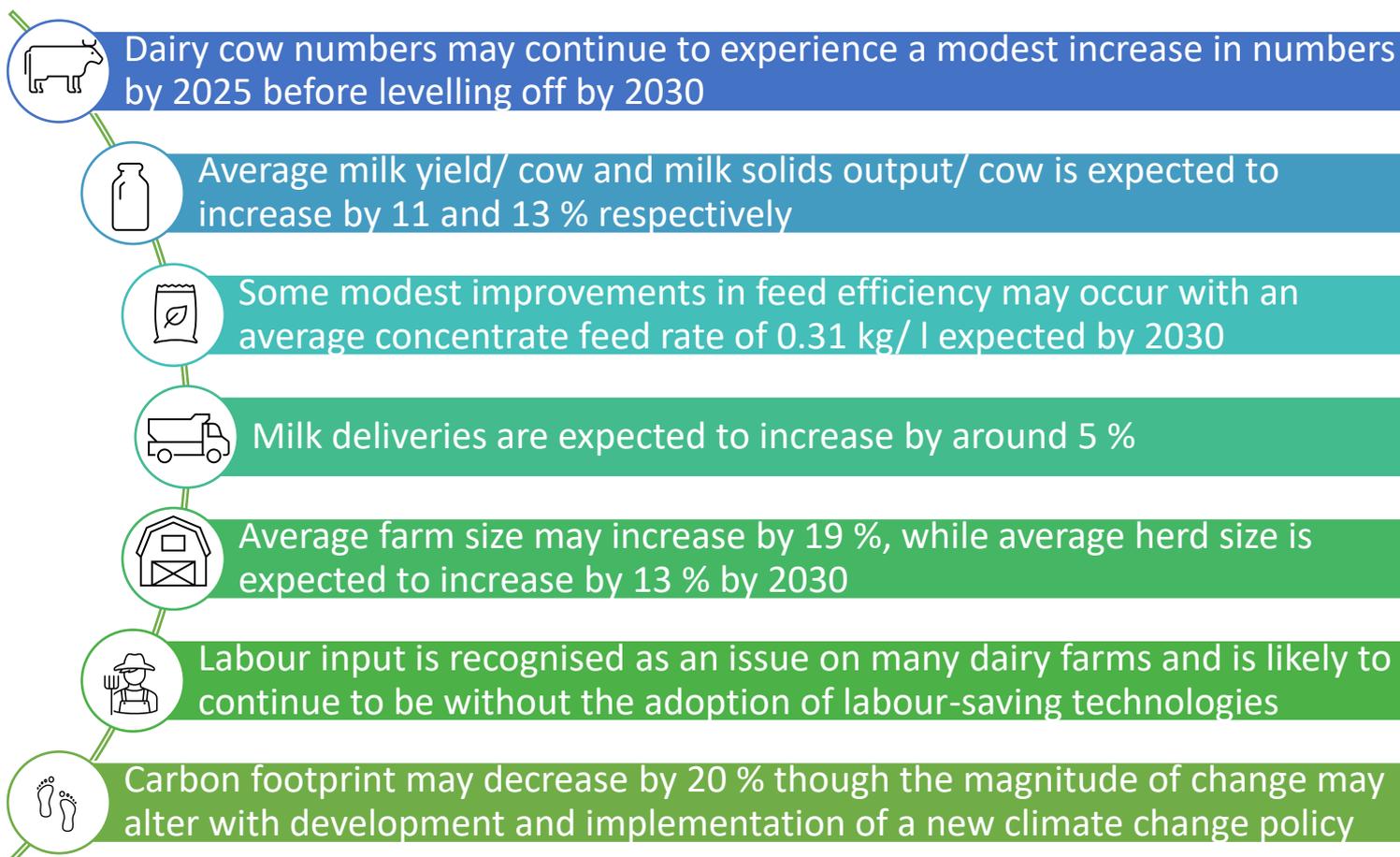
# Analysis of the Northern Ireland dairy sector to 2030

Expected increase in deliveries but in an uncertain context



WORK PACKAGE 4  
DAIRY SECTOR ANALYSIS

## Overview of outlook to 2030:



- Projections are subject to no trade disruptions arising from circumstances such as Brexit, future trade agreements or other events
- Projections may also change following the creation and implementation of environmental legislation to address ammonia and carbon issues within Northern Ireland

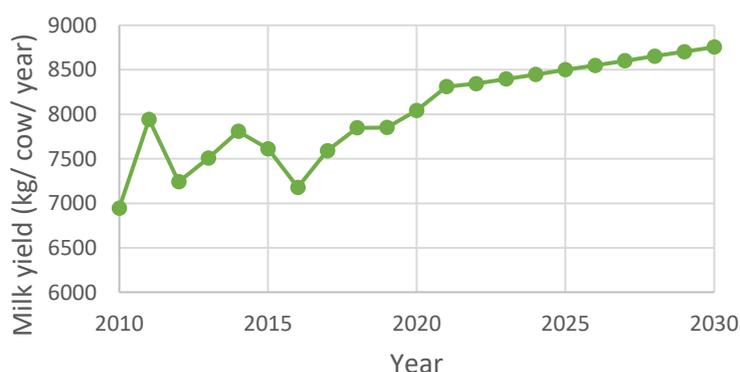
# Analysis of key performance indicators for the Northern Ireland dairy industry

A summary of the main key performance indicators (KPI) within the Northern Ireland dairy industry for 2019 and projected changes up to 2030 are given in Table 1. Data was collated from a variety of sources published by Department of Agriculture, Environment and Rural Affairs (DAERA) including the Statistical Review of Northern Ireland Agriculture (DAERA, 2021), the Farm Business Data Handbook (DAERA, 2020a) and dairy benchmarking results from the College of Agriculture, Food and Rural Enterprise (CAFRE).

A review of the figures would suggest that the number of dairy cows in Northern Ireland will not continue to increase at the rate observed between 2010 and 2019 and are likely to level off by 2030 (Figure 1)

It is also anticipated that the number of operational dairy farms will continue to decline by 2030, following a trend observed in previous years. The decline is expected to be greatest among herds with less than 100 cows, while a modest increase in the % of farms with over 100 cows may be observed. The reduction in herd numbers and little change in cow numbers would indicate that the average herd size of the remaining farms will increase by up to 13 % by 2030. Average farm size would be expected to increase to accommodate these changes.

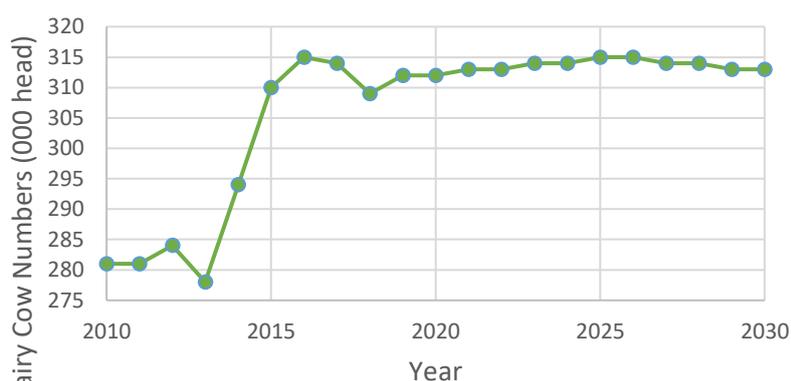
Figure 2. Projected Changes in Milk Yield to 2030



	Year		
	2019	2025	2030
<b>Milk production (000 t)</b>	2,389	2,594	2,678
<b>Number of dairy cows (000 heads)</b>	314	314	315
<b>Number of dairy farms</b>	3296	3,050	2,800
<b>Average farm size (ha)</b>	95	103	113
<b>Average herd size</b>	89	96	101
<b>% farms &gt; 100 cows</b>	36	39	41
<b>% farms 50 – 100 cows</b>	32	30	29
<b>% farms &lt; 20 cows</b>	11	5	3
<b>Milk yield (l/ cow/ year)</b>	7850	8,500	8,700
<b>Milk solids (kg/ cow/ year)</b>	573	626	645
<b>Stocking rate (LU/ ha)</b>	2.00	2.00	2.00
<b>Average chemical nitrogen fertiliser applied (kg N/ ha/ year)</b>	184	175	165
<b>Concentrate (kg/ cow/ year)</b>	2,591	2,720	2,697
<b>Milk from forage (kg/ cow/ year)</b>	2,092	2,455	2,707
<b>Net margin (excluding labour, conacre and finance) (£/ cow/year)</b>	502	Difficult to predict	
<b>Labour input (hour/ cow/ year)</b>	42	42	40
<b>Carbon footprint (kg CO<sub>2</sub>e/ kg FPC milk)</b>	1.32	1.15	1.05

Table 1. Key performance indicator projections to 2030

Figure 1. Projected Dairy Cow Numbers to 2030



Milk yield/ cow is expected to continue to increase by 11 % up to 2030 (Figure 2), while the combination of increases in milk yield and modest improvements in milk components would suggest that solids production/ cow may increase by 13 % by 2030.

The increase in milk yield/ cow and herd size would suggest that milk deliveries to processing facilities will continue to increase by a figure approaching 5 % by 2030 .

The increase in milk yield/ cow and herd size may have implications for labour use efficiency on these units. Increases in herd size and milk yield/ cow have previously been identified as limiting factors to labour use efficiency and dairy herd productivity on Northern Ireland dairy farms (Feng and Patton, 2018). Continued difficulties in sourcing additional labour would suggest that dairy farmers will need to consider adopting new technologies and other options such as contract heifer rearing to address this issue (Olagunju *et al.*, 2022).

Grazed and conserved forage makes up a significant component of the diet of dairy cows in Northern Ireland (67 %) and is expected to continue to do with some small improvements in feed efficiency projected by 2030



## Environmental footprint

The dairy industry in Northern Ireland is acutely aware of the problems posed by greenhouse gas (GHG) emissions, with agriculture accounting for around 26 % total emissions in Northern Ireland (DAERA, 2019). Discussions are ongoing on the development and implementation of a policy to address this issue which could in turn affect the suggested figures. In the meantime, it is possible that average carbon footprint of Northern Ireland dairy farms will decline by 20 % from 1.32 kg CO<sub>2</sub> per kg FPC milk as identified on a cross section of dairy farms by DAERA (2017) to 1.05 kg CO<sub>2</sub> per kg FPC milk. While a number of measures will need to be implemented to achieve this, the projected reduction in chemical nitrogen use and increased use of clover is expected to be a contributory factor to the change in carbon footprint.



## Environmental challenges

The projections shown are not fixed and are subject to change. There are a number of environmental issues which could alter the figures. For example, it has been highlighted that the development and implementation of a climate change policy to address GHG emissions may alter the projections.

Ammonia emissions into the air have been recognised to have a negative impact on the biodiversity of local ecosystems and it is estimated that Northern Ireland is responsible for 12 % of the total UK emissions, with 97 % of those emissions arising from agriculture and 62 % of those from cattle (DAERA, 2020b). The development and implementation of a policy to address issues arising from ammonia emissions could alter the highlighted projections

Changes in water quality (Doody and Adams, 2022) may also result to revisions to the Nutrient Action Programme which in turn may also influence the projections shown



## Macro environment

It is difficult to project incomes with a great degree of certainty as the figures are subject to many variables which have had an impact of prices and returns as evidenced by the data highlighted in the accompanying Dairy Indicator List and by Olagunju *et al.* (2022)

Factors associated with Brexit and future trade agreements are likely to have a major impact on these figures

## CONCLUSION

As environmental policies dealing with issues surrounding ammonia and carbon in Northern Ireland and future trade agreements continue to be developed and implemented it is difficult to accurately predict changes within the Northern Ireland dairy industry to 2030. However, it is possible that dairy cow numbers in Northern Ireland will level out towards 2030 but that milk yield and milk solids production will continue to increase.

The number of dairy farms in Northern Ireland are expected to continue to decline although there may be a modest increase in the number of farms with over 100 cows in these units. Labour use efficiency has been an issue on many dairy farms in Northern Ireland and is likely to continue to be. Factors such as environment policies dealing with issues such as ammonia, carbon and water quality will have an impact on the projections shown as will economic issues such as Brexit and the implementation of future trade agreements

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