

# Sectoral Road Map: Dairying

## Market and policy issues

- Future prospects for the Irish dairy industry remain positive.
- Ireland's milk production will grow significantly over the next decade.
- However, milk price volatility will continue to be a feature of dairy markets. There will be increased opportunities to enter into 'forward contracts' or to utilise 'price risk management tools'.
- Our grass-based milk production system is our key comparative advantage over our international competitors.
- Milk of a higher quality will be required for the production of higher value products, including infant milk formula. There is the risk of significant reputational damage to the Irish dairy industry in the event of a product failure.
- Dairy farms will become increasingly specialised with many activities outsourced, creating a demand for a larger farm contracting sector.
- Alternative models of land use and management are already emerging and will become more popular.
- There is a requirement for an increased number of young, trained dairy farmers and skilled dairy farm operatives.
- The family farming model for milk production has served Ireland well and should be maintained into the future.



## Potential shape and size of sector in 2025

- National milk solids production (kg fat plus protein) will have increased by over 100% compared to the 2007-2009 period.
- There will be approximately 16,500 dairy farms, 1,500 of which will be new entrants to milk production.
- Dairy cow numbers will increase to 1.7 million, while average herd size will increase to over 100 cows.
- Average milk delivered per farm will increase to over 570,000 litres, at almost 3.6% protein and 4.25% butterfat.

Table 1: Technical performance for manufacturing milk producing herds.

	Current <sup>1</sup>	2025	Research target
Milk delivered (kg/cow)	5,036	5,739	5,800
Milk solids (kg fat plus protein/cow)	372	448	475
Protein %	3.42	3.56	3.70
Fat %	3.97	4.25	4.50
Somatic cell count (SCC) ,000 cells/ml	215	180	<120
Calving interval (days) <sup>2</sup>	394	385	365
Median calving date (herd) <sup>2</sup>	March 3	March 1	February 14
Herd Economic Breeding Index (EBI) (€) <sup>2, 3</sup>	55	180	230
Replacements bred to dairy AI entering herd (%) <sup>2</sup>	52	75	100
Six-week calving rate (%) <sup>2</sup>	57	75	90
Replacement rate (%) <sup>2, 4</sup>	23	20	18
Labour input (hours/cow/year)	30	22	<16
Stocking rate (LU/ha)	1.96	2.15	2.94
Herbage utilised (t DM/ha)	7.36	10.0	12.7
Concentrate per cow (kg)	1,008	750	400
Greenhouse gas (GHG) (kg CO <sub>2e</sub> /kg MS)	1.10	0.97	0.83
Nitrogen efficiency (%)	25.2	26.4	33.2
Fertiliser nitrogen applied (kg/ha)	176	230	250
Net margin at 28c/l (€/kgMS) <sup>5</sup>	0.34	1.57	1.76
Net margin at 28c/l (€/ha) <sup>5</sup>	250	1,503	2,449

<sup>1</sup> Three-year average for years 2013, 2014 and 2015. The source for data in this column is Teagasc National Farm Survey (NFS) data, except for <sup>2</sup> which is from the Irish Cattle Breeding Federation (ICBF) Calving Statistics 2008-2015 [http://www.icbf.com/?page\\_id=313](http://www.icbf.com/?page_id=313).

<sup>3</sup> Current herd Economic Breeding Index (EBI) has been adjusted to reflect August 2016 EBI base change.

<sup>4</sup> First lactation animals as % of total herd, ICBF.

<sup>5</sup> Full labour costs included based on hours/cow/year in each column.

## Environmental and land use implications

The increased size of the national dairy herd (including replacements), even allowing for the projected increase in stocking rate, will increase the land requirement for Irish dairying. The requirement to improve sustainability will require a reduction in nutrient loss to water, a reduction or at least stabilisation of GHG emissions and improvements in habitats for biodiversity. Some key actions to be undertaken:

- improve the uptake and usage of nutrient management planning;
- increase the proportion of nitrogen (N) in the form of urea, and particularly protected urea;
- improve soil fertility of dairy land, so as to increase N efficiency and reduce losses – increase the proportion of soils with pH >6.3 and soil phosphorus (P) Index = 3;
- increase slurry application using low emissions technologies;
- reduce energy costs and emissions by improving the energy efficiency of water heating, milk cooling and milking machines;
- increase implementation of appropriately designed ecological measures to halt the decline of biodiversity;
- implement targeted actions to reduce risk of point source (farmyard) and diffuse (land) losses of nutrients to water; and,
- focus on grassland management to increase output, improve N efficiency and lower methane emissions. This will reduce the carbon footprint of milk while increasing profitability.

## Research, advisory and education actions

Teagasc's well proven core activities in advisory, education and research will continue to be utilised in an integrated fashion to support the achievement of this dairy road map.

### Research actions

- Continue to develop and test technologies to increase grass production and utilisation and to further refine our grass-based milk production systems.
- Increase the number of farmers using PastureBase Ireland to >2,500 and incorporate commercial farm data into grass variety evaluations.
- Develop national genetic evaluations for health (e.g., tuberculosis) and feed intake to facilitate the inclusion of these traits in the Economic Breeding Index (EBI).
- Develop genome-based mating plans in association with the Irish Cattle Breeding Federation (ICBF) and evaluate these on commercial and research farms.
- Develop and evaluate technology to reduce antibiotic use on dairy farms.
- Incorporate and develop precision farming technologies that facilitate increased sustainability.
- Lead an industry-wide campaign to improve the attractiveness of dairy farming as a career.



## Advisory and education actions

- Promote resilient and sustainable dairy farming systems.
- Lead an industry-wide campaign to improve grass production and utilisation.
- Expand our discussion group network, with a particular emphasis on engaging recent graduates of Teagasc dairy education programmes.
- Place an increased emphasis on 'people in dairy' through the development of short courses and materials around employing and managing people, collaborative farming options and career progression pathways in dairying.
- Continue to collaborate with financial service providers to improve uptake of structured cash planning practices among dairy farmers.
- Continue to collaborate with milk processors through our joint industry programmes and with other industry stakeholders, e.g., Animal Health Ireland (AHI) and the ICBF to promote best practices and support innovation by Irish dairy farmers.
- Review existing education offerings to dairy students/farmers/others and develop 'fit-for-purpose' courses.
- Build the capacity of our advisers and teachers to effectively engage with our clients and students, thereby meeting the development needs of Irish dairy farmers.

**Table 2: Percentage of farms achieving selected Teagasc Dairying Road Map targets.**

Target	Current
Delivered per cow: ≥5,573 litres	32%
Milk solids per cow: ≥442kg	21%
Somatic cell count: ≤180,000 cells/ml	48%
Herbage utilised: >10.0t DM/ha	9%
Concentrate feed per cow: ≤750kg	31%
Cows per labour unit: >75 cows	19%

Source: Teagasc National Farm Survey average for three years, 2013, 2014 and 2015.

## Contact

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The road map for dairying is available on [www.teagasc.ie](http://www.teagasc.ie).