Conference on 50 years of EU membership and Irish Agriculture

Productivity and Technology Development

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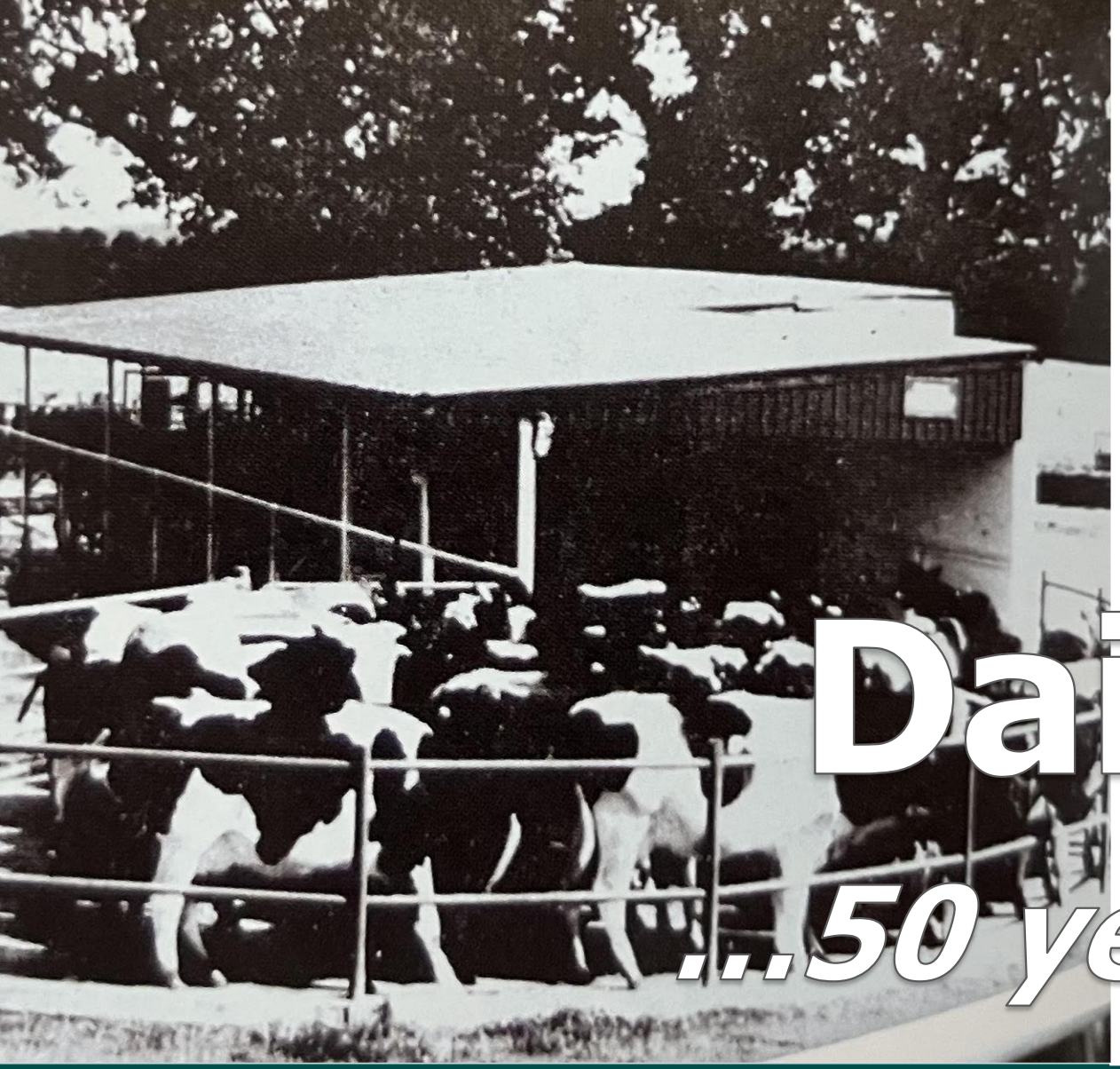
Director of Research Teagasc

Ashtown Research Centre
Friday, 27 October 2023

Outline of Presentation

Critical review of the Irish Dairy, Beef, Sheep, Tillage & Pig sectors since joining the EU;

1. Trends in performance over the period 1973 to 2022 using CSO data
2. Key productivity measures over the period 1995 to 2022 using NFS data
3. Advancements in key technologies
4. Future opportunities for the sectors



Dairy

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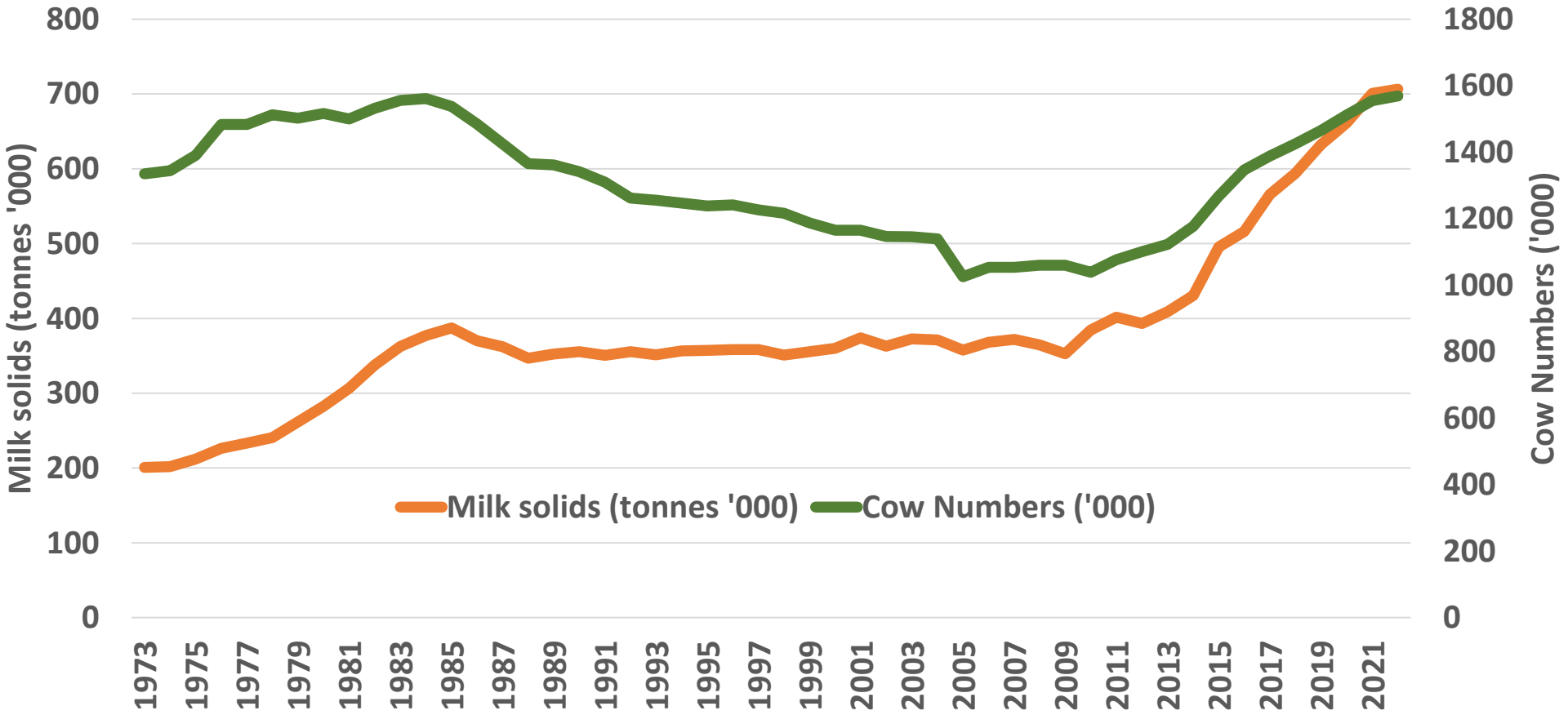
Trends in national milk solids production and dairy cow numbers : 1973 to 2022



1973 ▶▶ **2022**

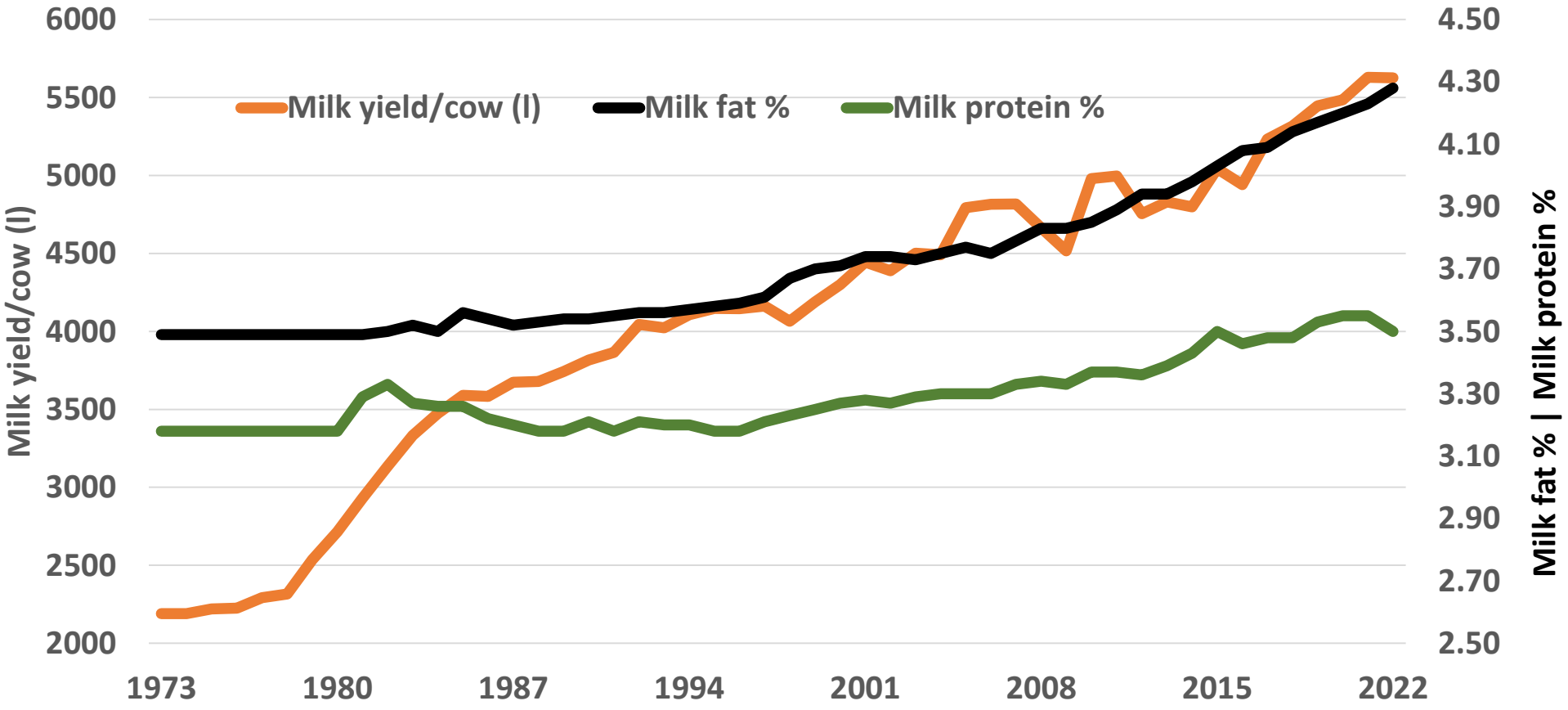
Milk solids production (t '000) increased by 202% (from 201 to 706)

202% increase

Dairy cow numbers ('000) increased by 18% (from 1,335 to 1,569)

18% increase

Trends in milk yield per cow and milk composition: 1973 to 2022



1973 ▶▶ 2022

Milk yield per cow increased by 157% (from 2,190 to 5,625)

157% increase

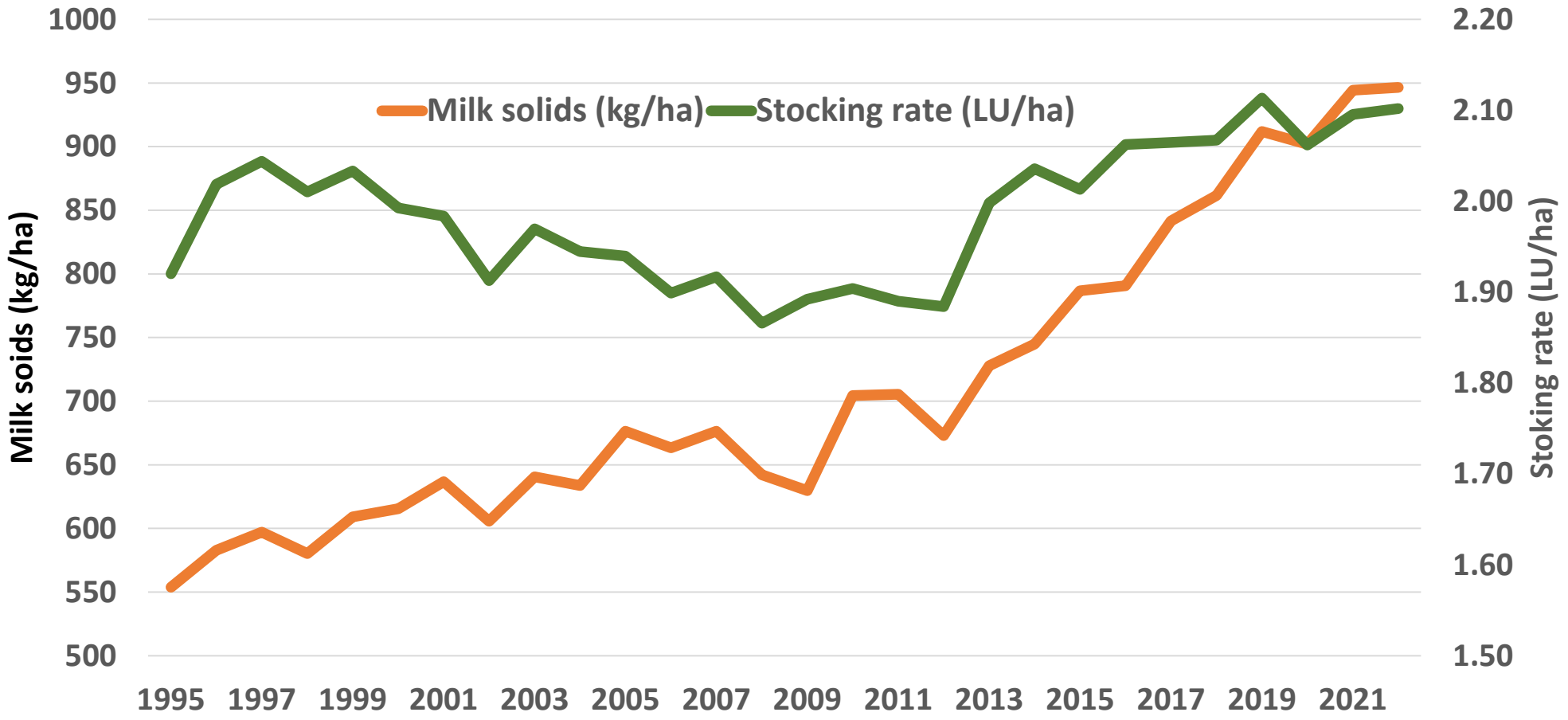
Milk fat % increased by 0.79% units (from 3.49 to 4.28)

0.79%units

Milk protein % increased by 0.32% units (from 3.18 to 3.50)

0.32% units

Trends in milk solids/ha, stocking rate, nitrogen and concentrate input on dairy farms: 1995 to 2022



1995 ▶▶ 2022

Milk solids per ha increased by 393 kg (61%) 558 to 931

Stocking rate increased by 5% LU/ha (1.99 to 2.09)

Nitrogen decreased by 19 kg/ha (191 to 172)

Concentrate increased by 527 kg/cow (657 to 1,184)

Beef

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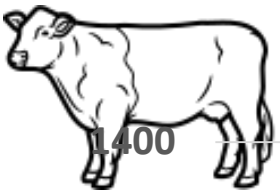
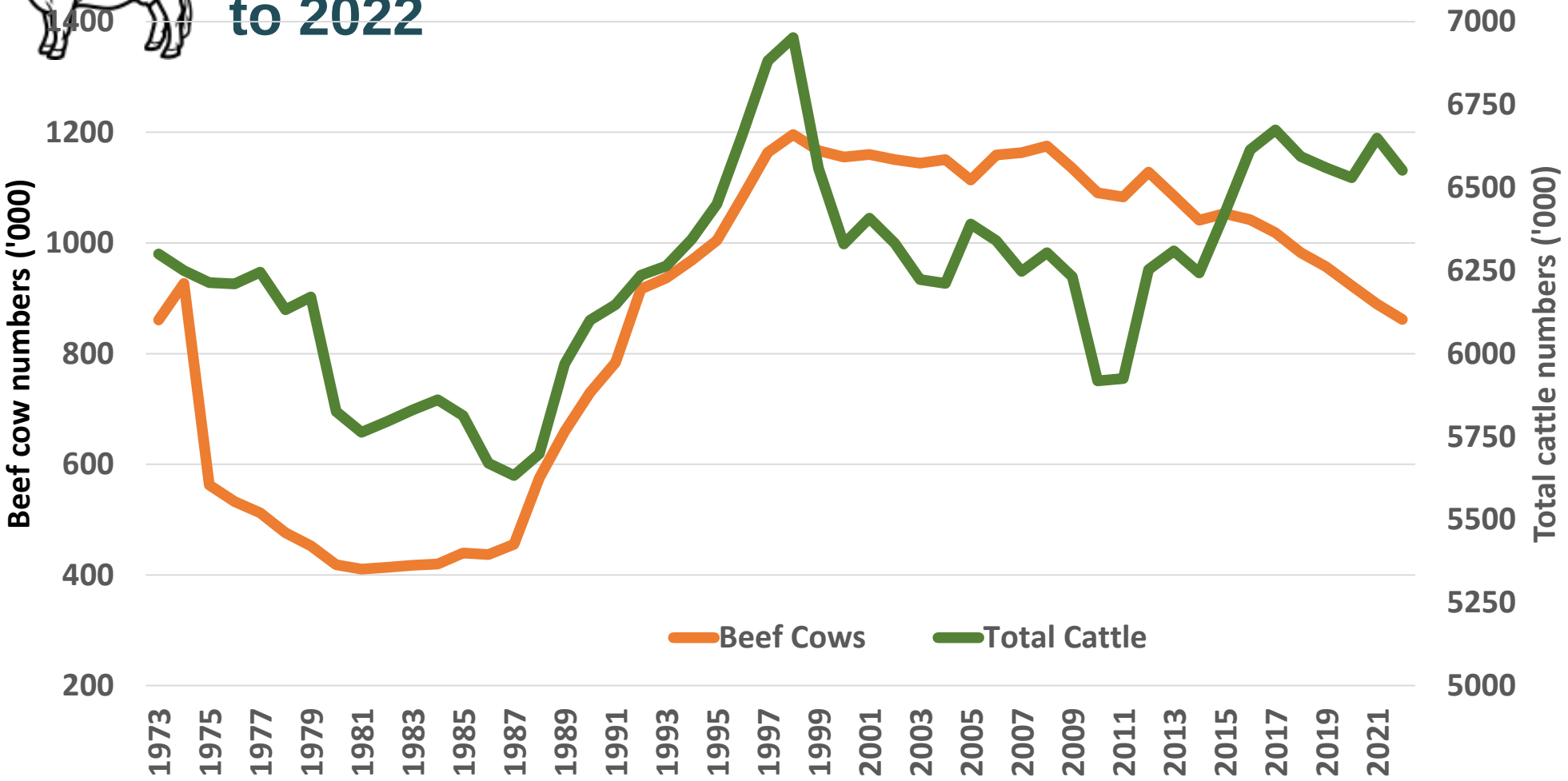


Trends in beef cows and cattle numbers: 1973 to 2022



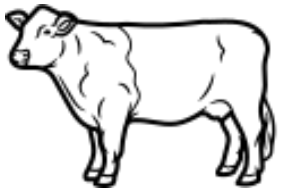
1973 ▶▶ **2022**

Beef cow numbers ('000) are similar (861 in 1973 and 862 in 2022)

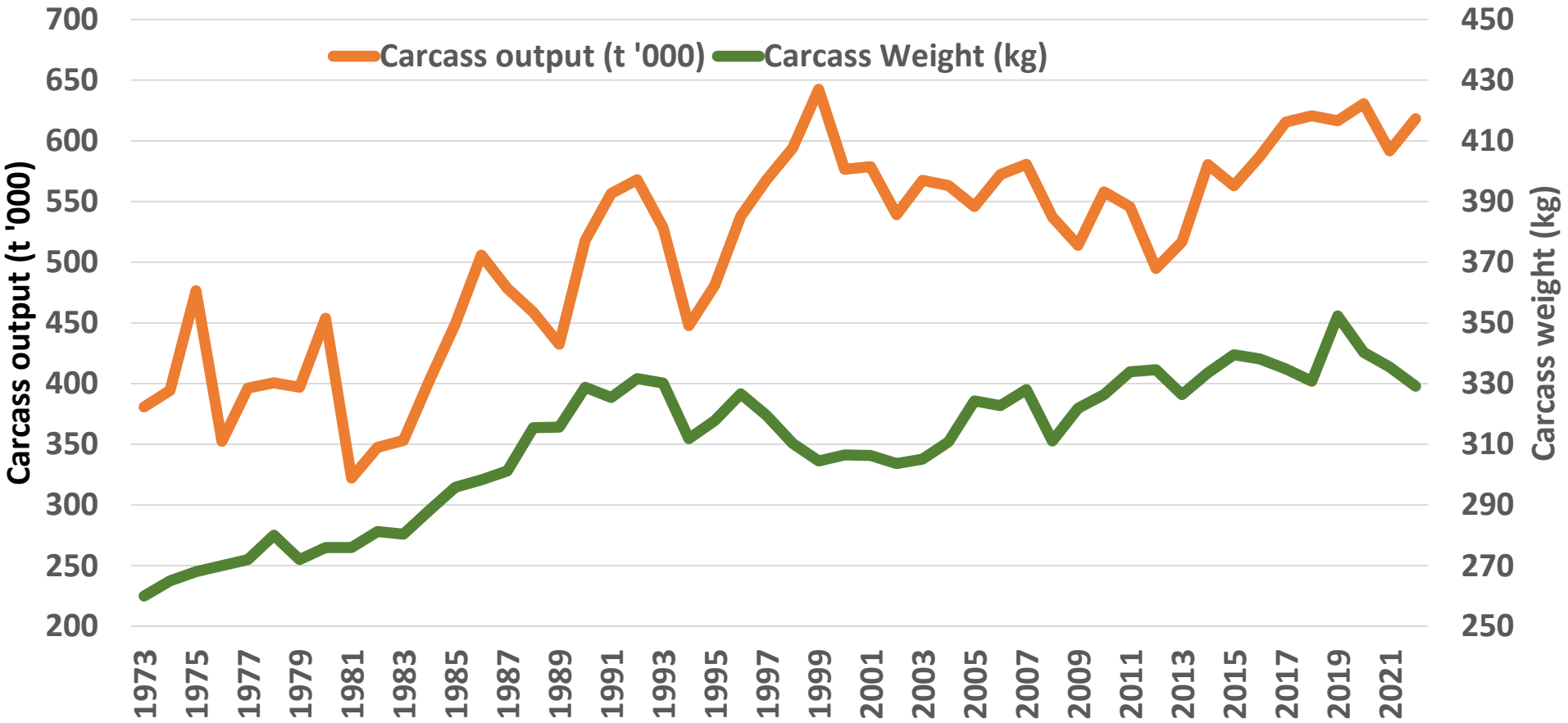
Similar

Cattle numbers ('000) increased by 4% (from 6,300 to 6,552)

4% increase



Trends in carcass output and carcass weight: 1973 to 2022



1973 ▶▶ 2022

Carcass output (‘000) increased by 62% (381 to 618)

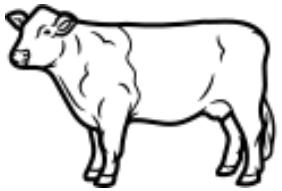
62% increase

Carcass weight (kg) increased by 27% (from 260 to 329)

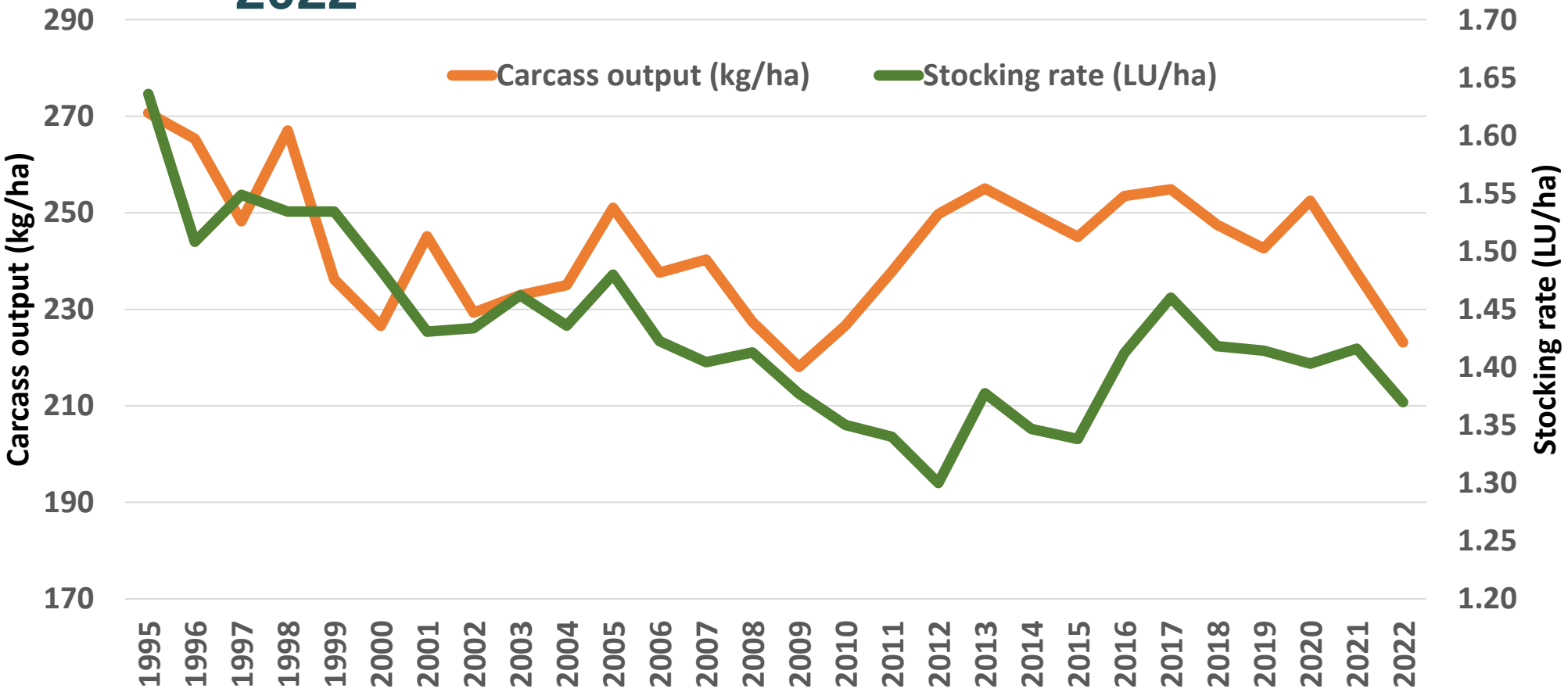
27% increase

Slaughtering numbers (‘000) increased by 34% (1,400 to 1,878)

34% increase



Trends in carcass output/ha, stocking rate, nitrogen, concentrate and on beef farms: 1995 to 2022



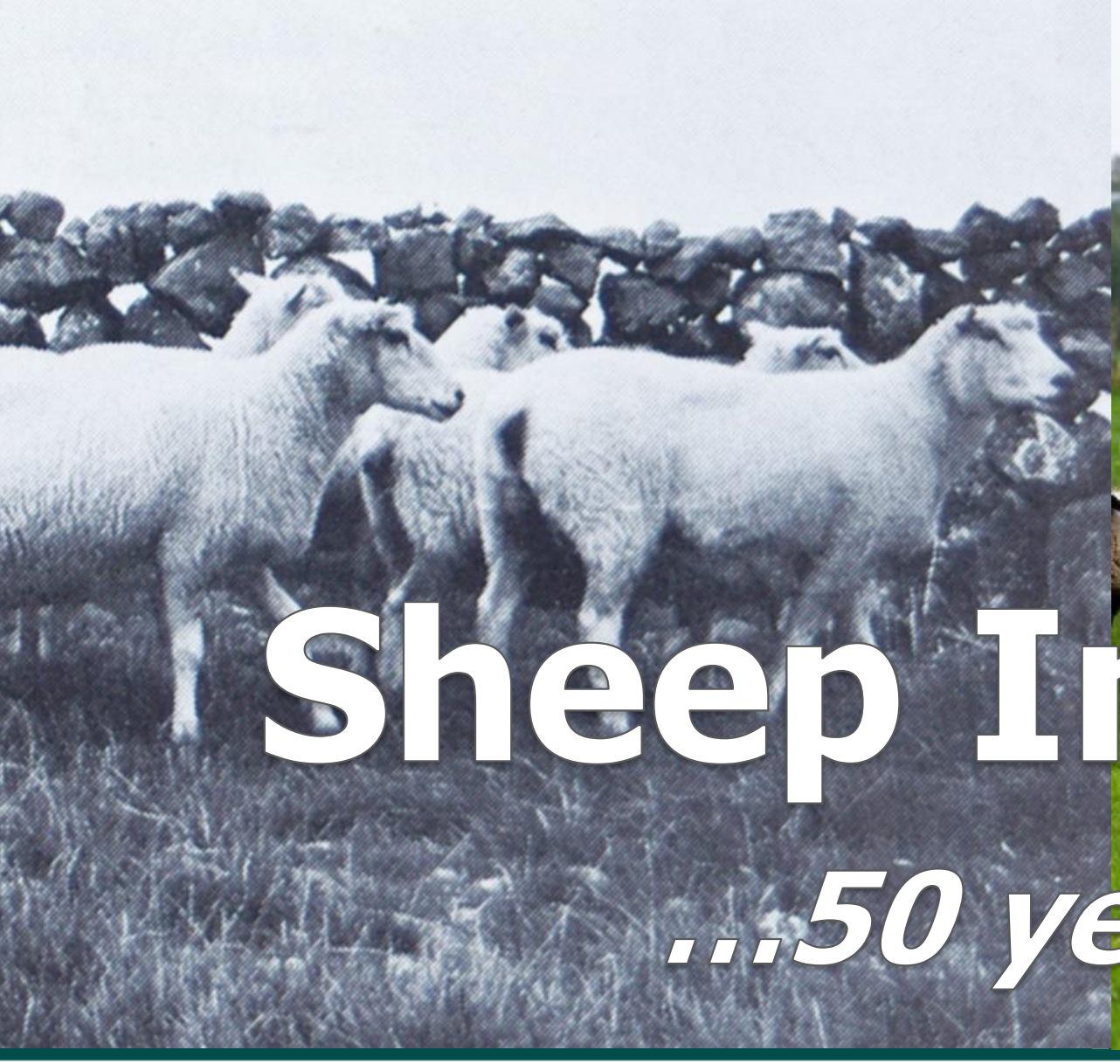
1995 ▶▶ 2022

Carcass output/ha decreased by 48 kg (271 to 223)

Stocking rates have reduced by 0.17 LU/ha (1.56 to 1.40)

Nitrogen decreased by 14 kg/h (73 to 59)

Concentrate increased by 271 kg/LU (378 to 649)



Sheep Industry

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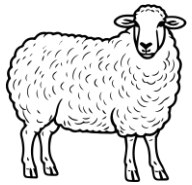
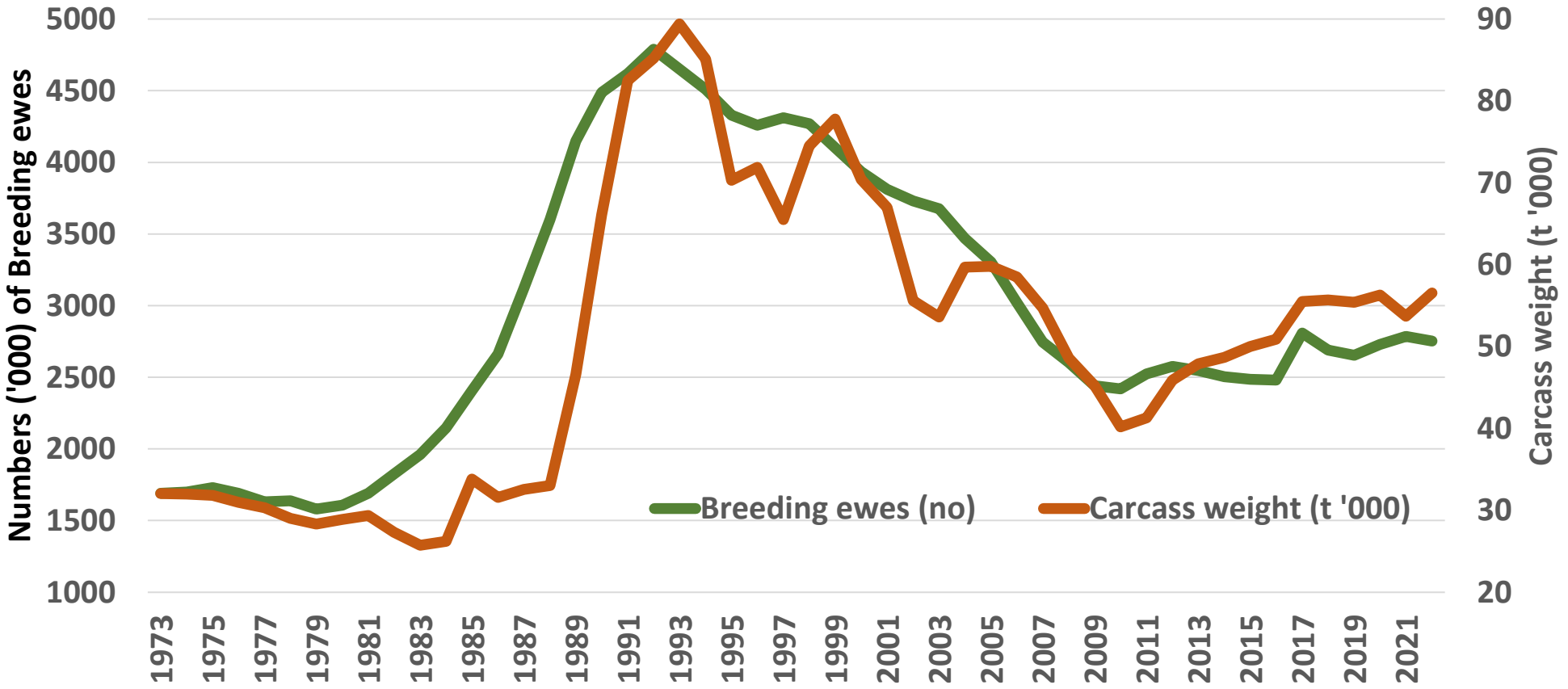


Trends in ewe numbers and carcass output: 1973 to 2022



1973 ▶▶ **2022**

Ewe numbers (‘000) increased by 63% (1,690 to 2,752)

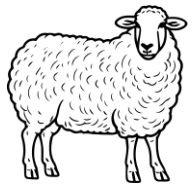
63% increase

Carcass output (‘000) increased by 78% (32 to 57)

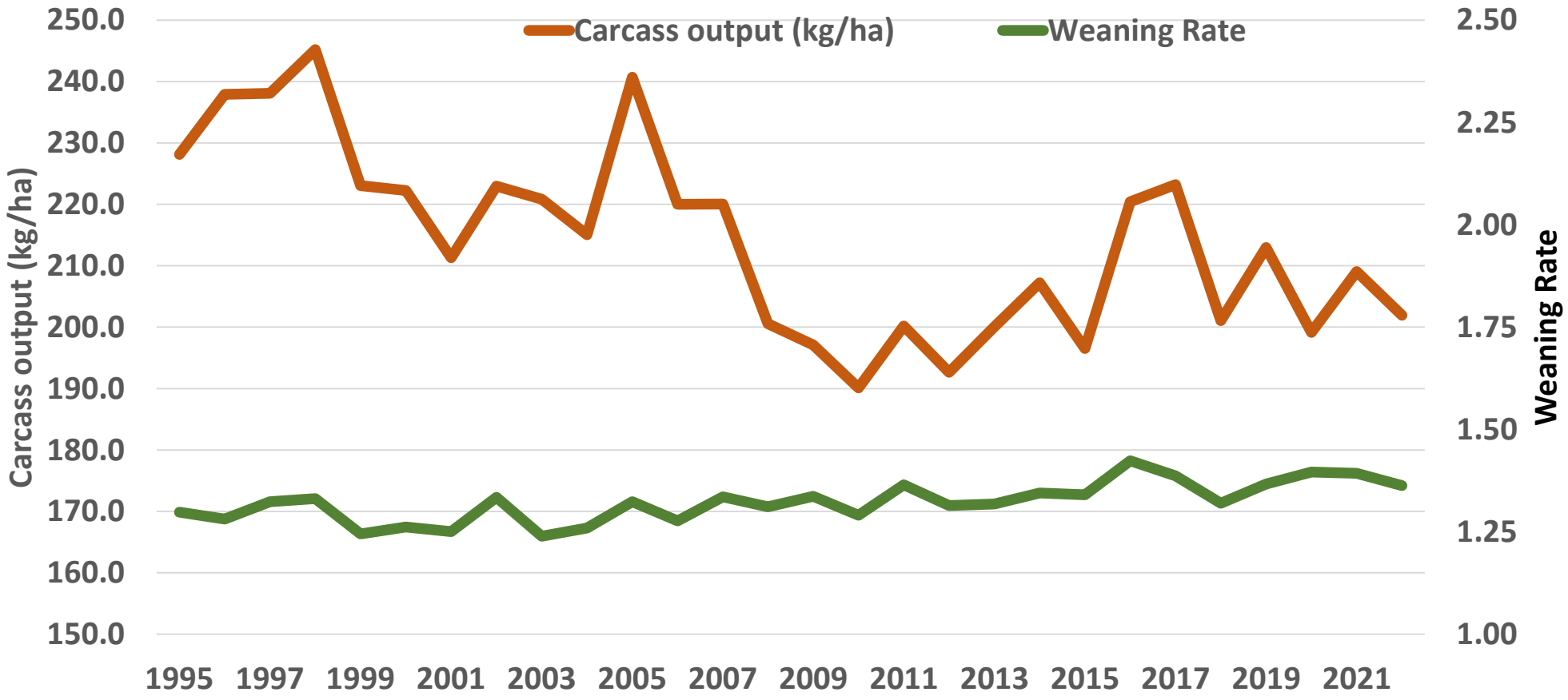
78% increase

Lamb numbers (‘000) increased by 71% (1,602 to 2,740)

71% increase



Trends in carcass output/ha, weaning rate, nitrogen and stocking rate on sheep farms: 1995 to 2022



1995 ▶▶ 2022

Carcass output per ha decreased by 31 kg (234 to 203)

Weaning rate increased by 0.08 lambs/ewe (1.30 to 1.38)

Stocking rates have reduced by 0.33 LU/ha (2.18 to 1.85)

Nitrogen decreased by 25 kg/ha (88 to 63)

Tillage

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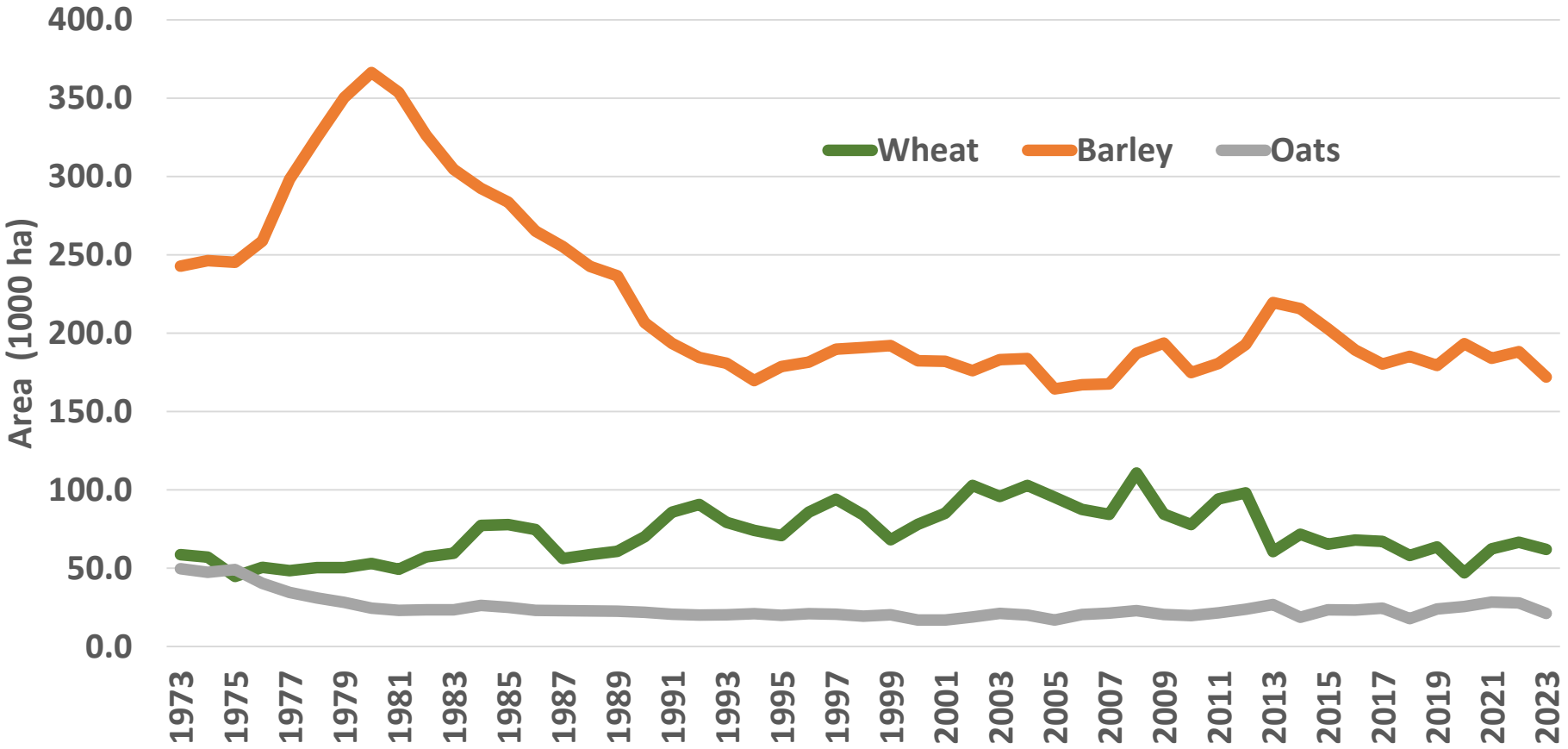
Trends in wheat, barley and oats area (1,000 ha): 1975 to 2023



1975 ▶▶ 2023

Wheat ('000 ha) increased by 10.3 ha (53.4 to 63.6)

19% decrease

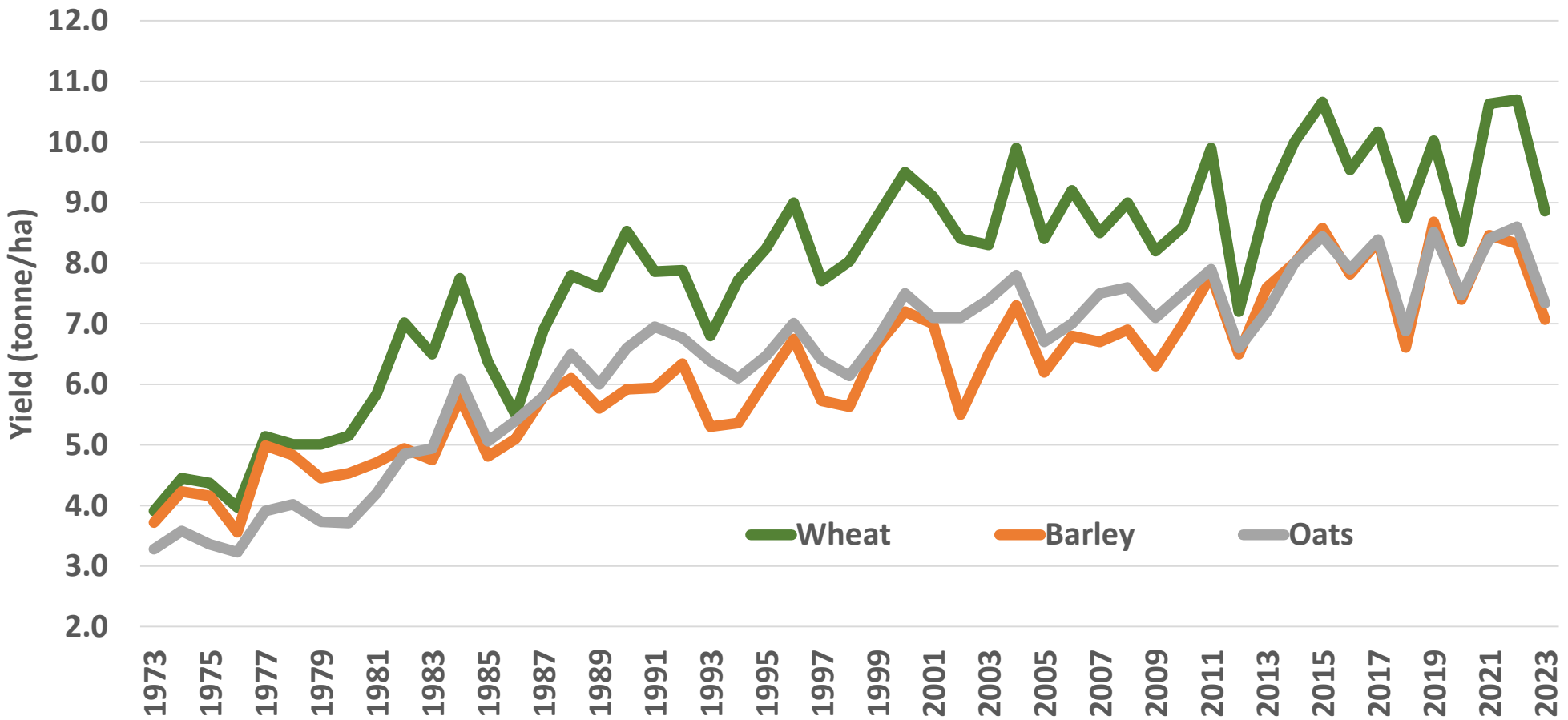
Barley ('000 ha) reduced by 63.4 ha (244.7 to 181.3)

26% decrease

Oats ('000 ha) reduced by 22.9 ha (48.6 to 25.7)

47% decrease

Trends in wheat, barley and oats yield (tonne/ha) on tillage farms: 1973 to 2023



1973 ▶▶ **2023**

Wheat (t/ha) increased from 4.2 to 10.1 (137%)

149% increase

Barley (t/ha) increased from 4.0 to 8.0 (100%)

100% increase

Oats (t/ha) increased from 3.4 to 8.1 (138%)

140% increase

Pig Production

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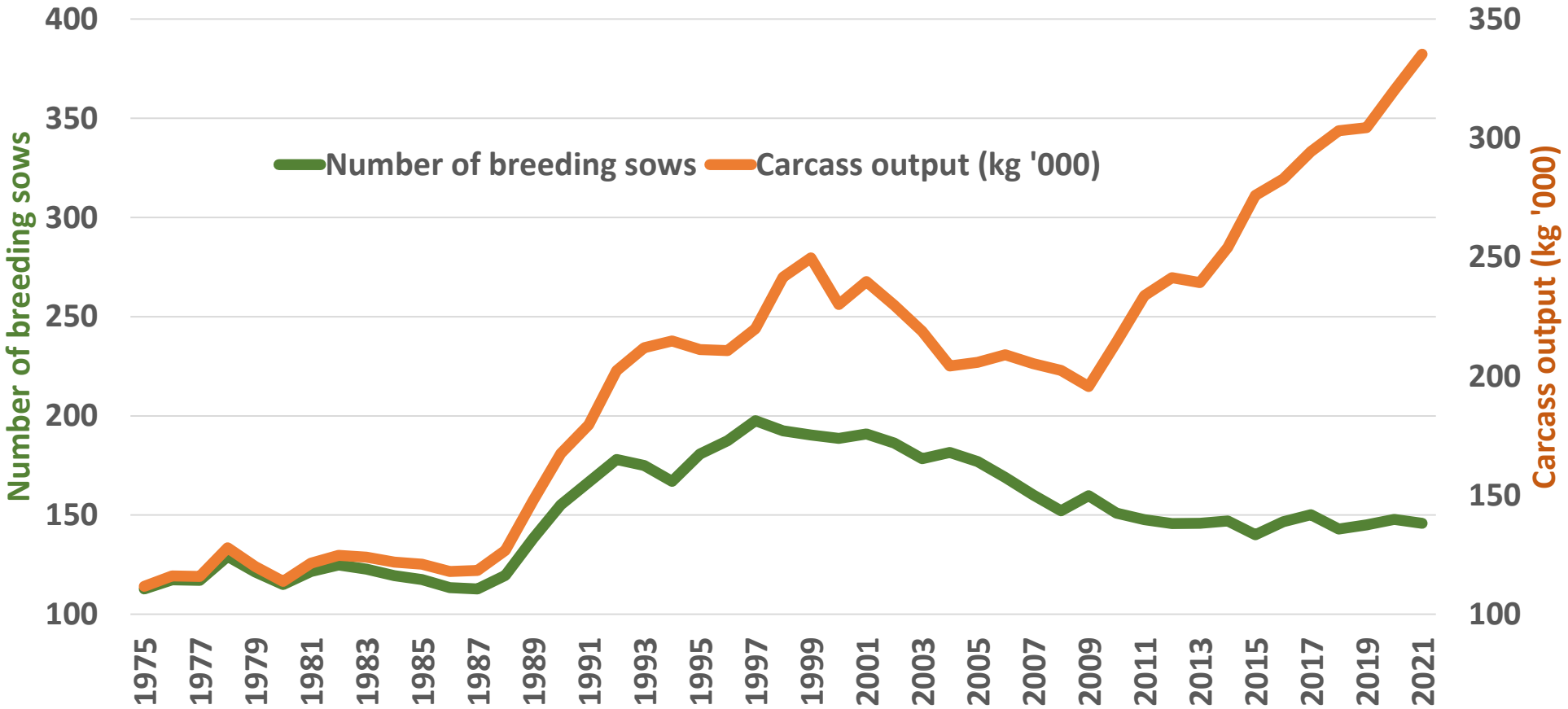
Trends in breeding sow numbers and carcass output: 1973 to 2021



1973 ▶▶ **2021**

Breeding sow numbers increased from 113,000 to 146,000 (29%)

Carcass output increased from 112,000 to 335,000 tonnes (199%)

Carcass output per sow increased from 990 to 2,298 kg (132%)

Key Technologies

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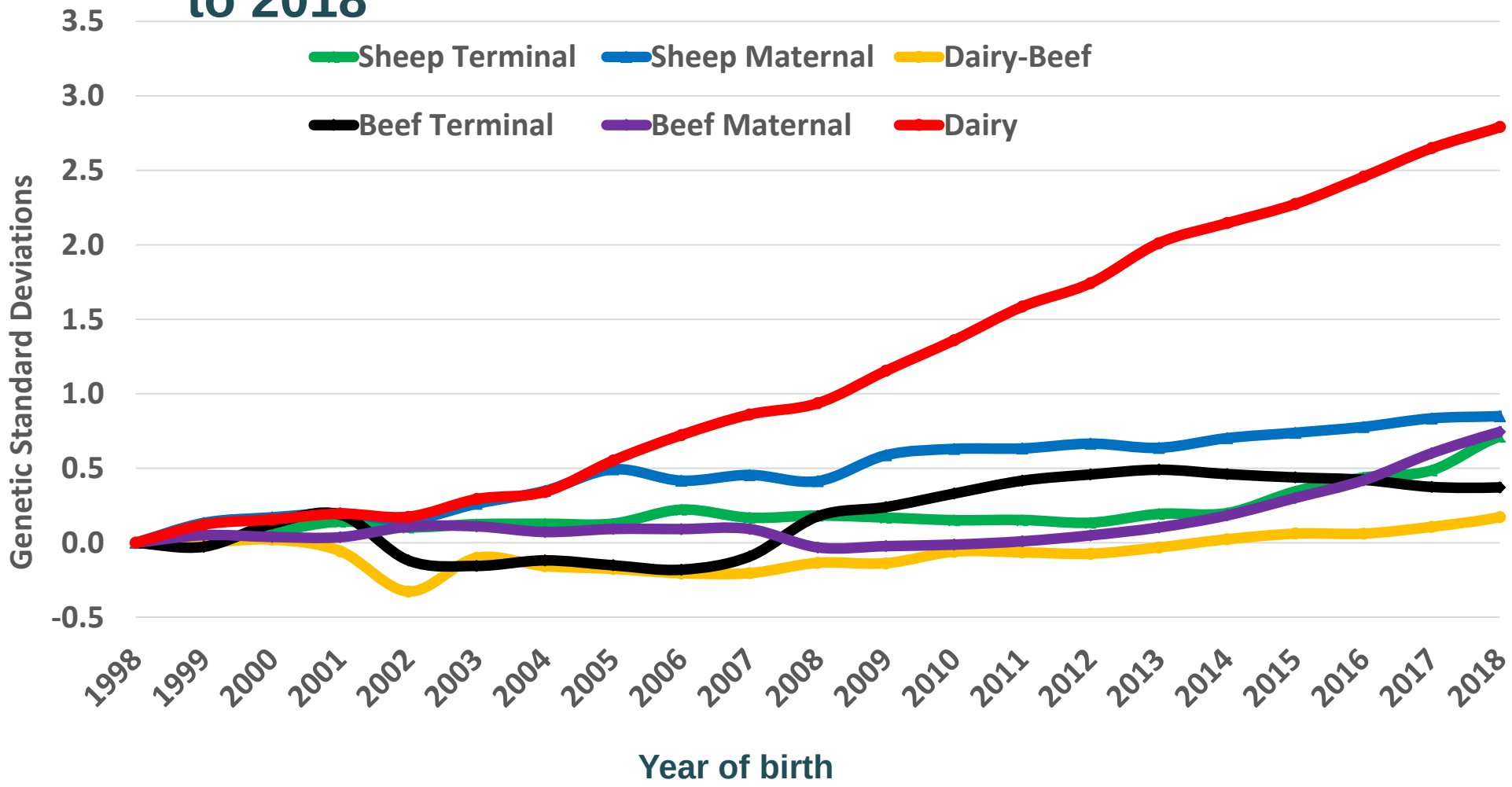
Genetic Trends for the Six Breeding Objectives: 1998 to 2018



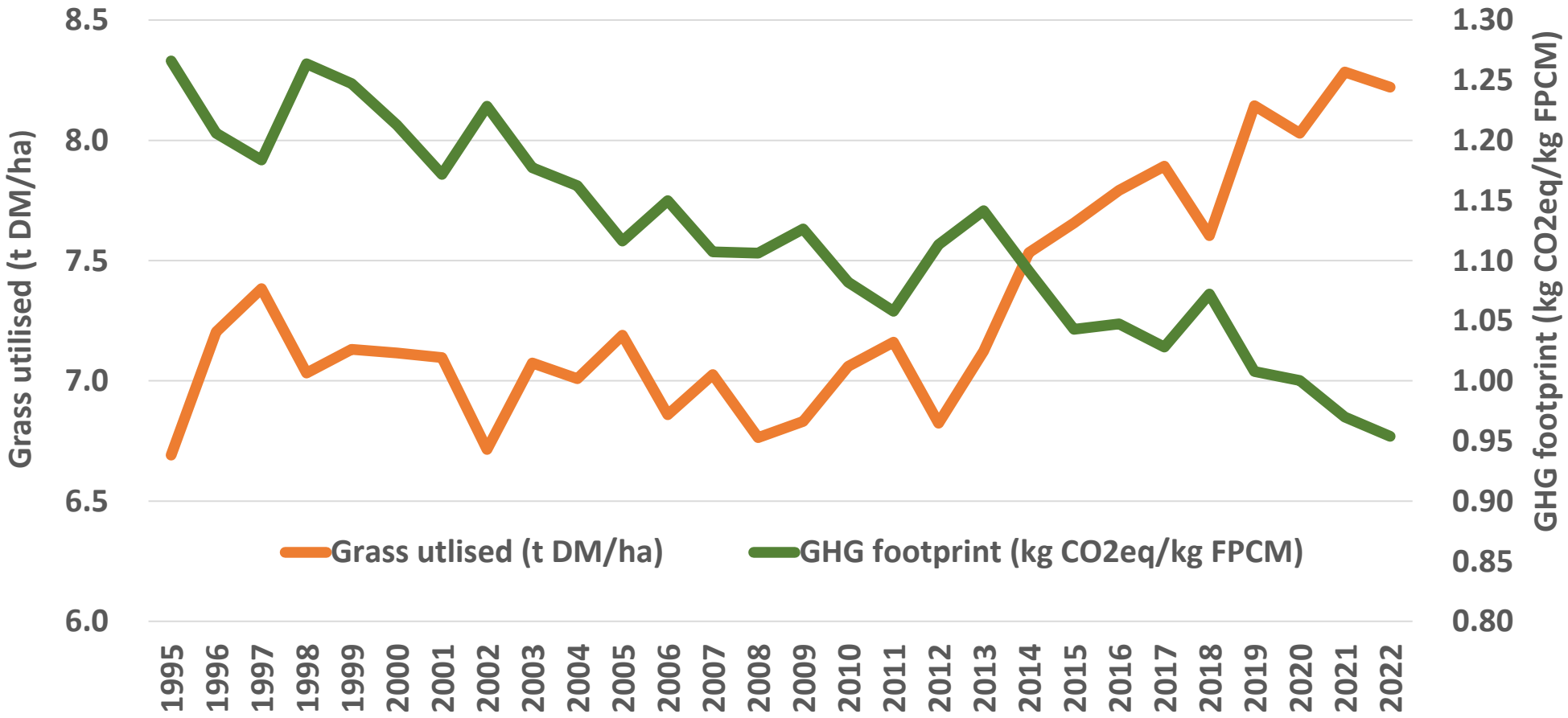
1998 ▶ 2018

Over the past 20 years genetic gain in sheep and beef breeding indexes has been low (between 0.37 and 0.84 in s.d. units) compared to dairy EBI (2.79 s.d. units).

Since the EBI was launched in 2001 the EBI of 1st lactation animal has increased from -€24 to €151.

Increase by €175

Trends in Grass Utilisation and Carbon Footprint on Irish Dairy Herds



1995 ⏩ 2022

Grass utilisation increased from 6.7 to 8.2 t DM/ha (1.7 tonnes per hectare)

22% increase

The Carbon footprint of Irish milk reduced from 1.27 to 0.95 kg CO2eq/kg FPCM. (Reduced by 0.32 kg CO2eq/kg FPCM)

25% decrease

Key Sectoral Advancements & Opportunities

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Dairy Sector

1. Access to the EEC facilitated the transformation of the Irish dairy industry at farming, processing and marketing level;
2. Milk production doubled both in the period immediately after accession to the EU and the period after the abolition of milk quotas in 2015;
3. In Ireland dairy farming is the most profitable enterprise, currently the **most competitive in the EU;**
4. **The sector's competitiveness is based on a highly efficient sustainable grass-based system which capitalises on grass-based dairy genetics;**
5. **Future challenges include the requirement to reduce emissions (GHG and Ammonia), improve water quality & biodiversity, attract skilled workforce and maintain its competitiveness.**

Beef Sector

1. Beef represents the second largest sector within Ireland's food and drink exports;
2. In the past decades the sector has grown from a frozen commodity business into the fifth largest global net exporter of high quality beef into high value markets;
3. At farm level there is a significant opportunity to increase the productivity of beef production from grass-based system;
4. The composition of the beef enterprise has changed significantly over the years in response to policy changes and the changing structure of the dairy herd;
5. Currently there is a great opportunity at farm level to develop a profitable grass-based dairy calf-to-beef sector based on high CBV dairy beef genetics in conjunction with sexed semen.

Sheep Sector

1. Returns from sheep compared favourably to other dry stock enterprises;
2. The increase in sheep numbers in the 1990's was driven by headage payment and decreased in the 2000's due to decoupling;
3. The lowland sector can achieve significant improvements in terms of ewe productivity and lamb carcass output per ha;
4. Returns from hill and mountain lamb production are insufficient to maintain farmers income but essential to maintain hill and mountain landscapes;
5. The future vision for the lowland sheep sector is to increase its sustainability based on improved genetics and grassland management, reduced dependency on anthelmintic & the production of food that meets consumer requirements.

Pig Sector

1. The pig sector has evolved from a farm enterprise dependent on the use of cheap dairy by products to a stand alone industry using cereal based diets;
2. Currently there are ~200 commercial sow breeding/integrated farms (average herd size of ~700 sows) plus ~80 specialised finishing farms;
3. The supply and price of feed grains and soya bean meal fluctuate widely and exerts a very significant impact on profitability at farm level;
4. Increases in pigs produced/sow/year (21.5 in 2000 to 27.5 in 2020) and an increase in slaughter weight has significantly increased meat sold/sow per year;
5. Future challenges include continuing volatility in feed prices, EU regulations in relation to health, welfare and environment plus the development of new market opportunities for Irish pork exports.

Tillage Sector

1. Irish grain prices vary considerably from year to year in response to world markets;
2. Irish wheat yields are on average the highest in the world, however, higher disease-control costs and narrow windows for drilling and harvesting can be difficult;
3. It is estimated that 50% of the increase in cereal yield is associated with genetically superior varieties and 50% with improved agronomy;
4. Developments in mechanisation have been fundamental in improving labour efficiency, quality of work, scale and timeliness of operations;
5. The sugar beet industry was important up to 2006 when it was decided to exit the industry; this is partly being replaced by oil seed rape & legumes;
6. Challenges include reducing reliance on plant protection products, however, there are opportunities to increase added value markets - oats & brewing & distilling.

EEC Membership in 1973

Ireland’s membership of the EEC in 1973 was the platform that transformed Irish farming from being a primary producer of raw material for the British processing industry to being an exporter of a diverse range of high quality agri-foods all over the world