




Dairy Sustainability Framework

REPORTING SECTOR PROGRESS SINCE 2013



# DSF Annual Sustainability Progress

2024 Calendar Year Reporting



The Dairy Sustainability Framework (DSF) monitors and reports the sustainability progress of the global dairy sector. The DSF accounts for approximately 29% of global milk production and quantifies progress via 11 sustainability criteria (economic, social and environmental) applying dedicated indicator metrics for each Criteria. This equates to 52% of global dairy cow and buffalo formal milk production.

Data included in this report is from the 2024 calendar year and reported by DSF members in 2025. The process by which the DSF manages, processes and aggregates the data is independently audited by the University of Nottingham (UK).

Estimated global milk production (all species) in 2024 (source: FAO Food Outlook, June 2025) was 982.5 million tonnes. Of this, 944.8 million tonnes (917.3 billion litres), is the global dairy cow (85%) and buffalo (15%) milk production applied in DSF calculations for the 2024 year.

## Highlights and General Information

- Global buffalo and cow milk production increased by 16.2 billion litres in 2024, compared to 2023.
- The combination of market consolidation (Aggregating Members experiencing lower levels of representation resulting in less processing plants and farms) in the more mature dairy markets and the inclusion of new DSF members for the Stage 1 Pilots, results in the DSF reporting on the same number of litres as reported in 2023 – 265 billion litres – totalling 29% of global milk production, equivalent to 52% of total global formal cow and buffalo milk production.
- The DSF has updated the GHG data for the global dairy sector, using calculations undertaken by Scotland's Rural College, demonstrating the change over time in both intensity and absolute emissions by the sector.
- The DSF launched two Stage 1 Pilots in India in partnership with the National Dairy Development Board of India and one in Zimbabwe in partnership with the Zimbabwe Association of Dairy Farmers.
- The CEOs of Shreeja Mahila Dairy and the Jharkhand State Cooperative Milk Producer Federation, India, presented at the DSF annual meeting, sharing the value of a sustainability approach in their unique dairy operations.
- Stage 1 Pilot Membership in 2024 contributed 174,646 farms and 462 million litres of milk to the DSF.
- The DSF Criteria prioritisation is stable for the 2024 reporting year with Animal Care retaining the 'top spot' across the global dairy sector.
- Consolidation continues to be evident in the developed dairy economies. This is predominantly reflected in terms of cow numbers and farms/farmers. Overall milk production in these regions is reducing at a gradual rate. Developing regions are seeing increases across all aspects of production to support demand.
- Levels of gender reporting for farmers, employees and processing plant staff continues to provide a more accurate and gender focused picture of the sector's employment contribution across the value chain.

## DSF Development

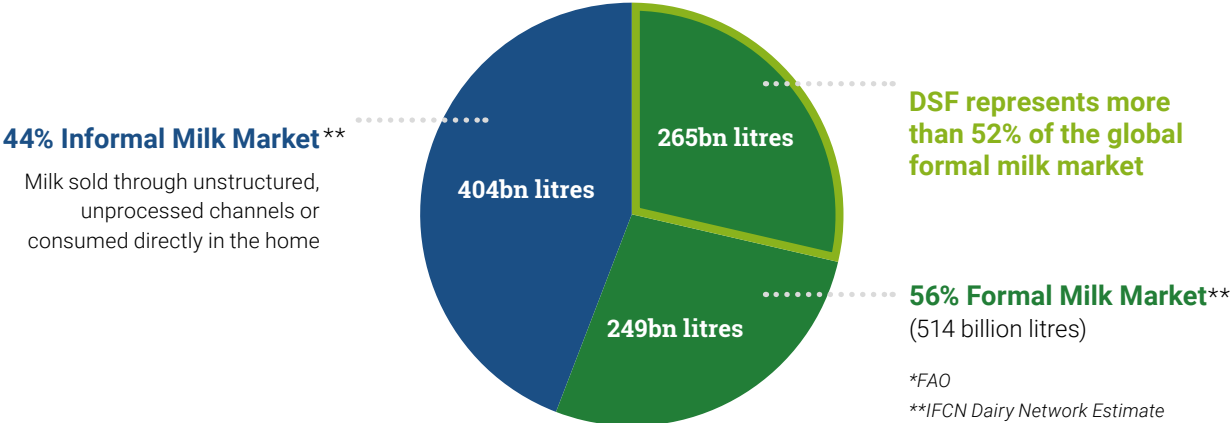
- From 2024, the DSF annual report is available in 7 languages with the most recent inclusion being Hindi.
- Criteria overviews providing a more comprehensive profile of each of the 11 DSF Criteria, were published following an independent review.
- The DSF LATAM Strategy (Partnership between Fepale, DSF, GDP, IICA and CAF) continued to move positively through its approval process with the Latin American Development Bank (CAF).
- The DSF commissioned the development of new materiality assessment training resources to support the Stage 1 implementation.
- The DSF launched a series of nine Management Plan templates to accelerate the reporting process for members who do not have access to existing local reporting resources.
- The DSF Governors initiated development of the DSF 2025-2030 Strategy in collaboration with DSF Members and Advisory Council.
- The DSF platform continues to provide a range of opportunities for members to connect and identify solutions to common sustainability challenges. Webinars, DSF Criteria focused Communities of Interest, 2024 Annual Meeting in Paris, are just three examples of membership collaborative opportunities.



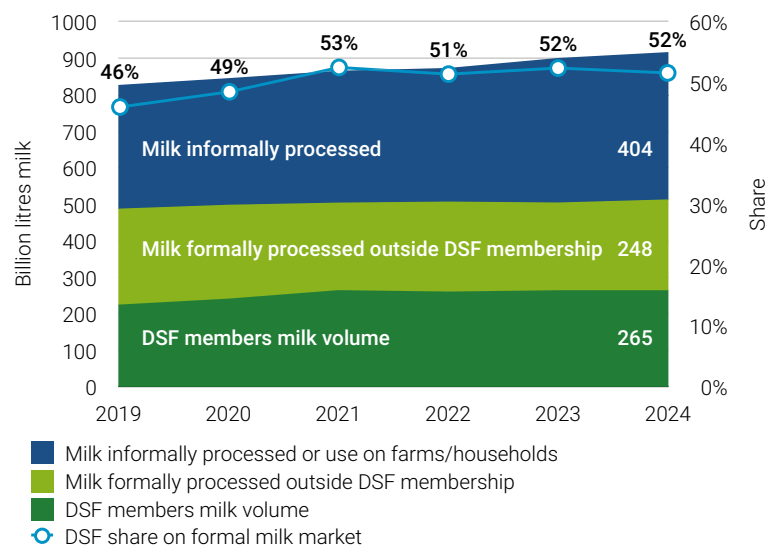
# DSF & Global Milk Production 2024

Global milk production: 917 billion litres produced by both cows and buffalo\*

DSF membership milk volume: 265 Billion Litres

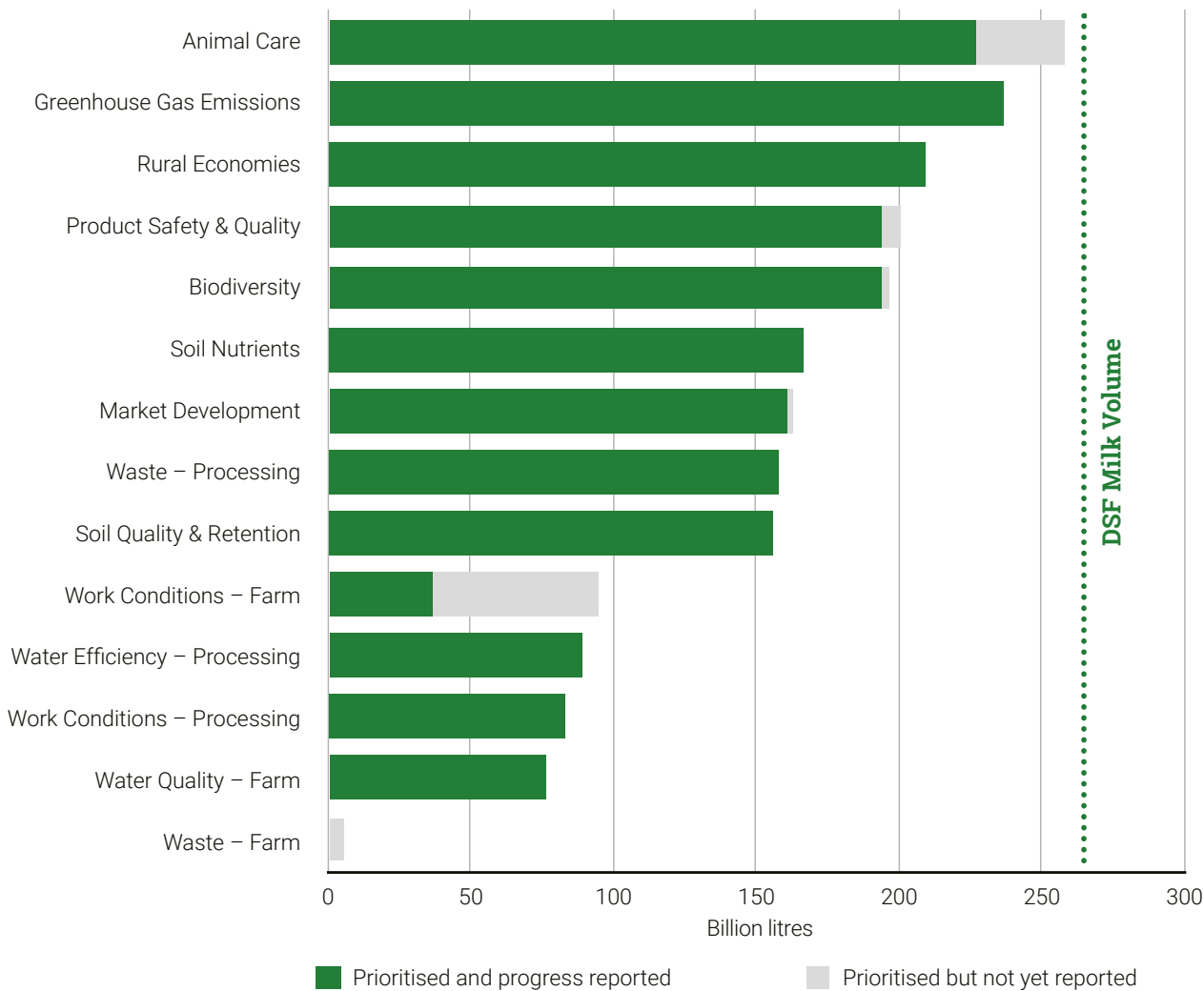


## DSF & Global Milk Production – 5-year Trend



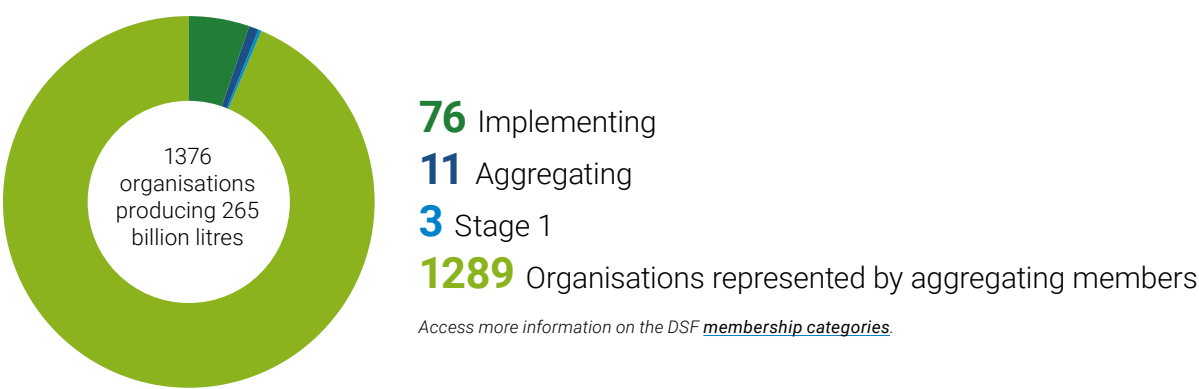
# 2024 DSF Milk Volume, Priorities and Reporting

- Criteria prioritisation remains the same order as reported in 2023 with Animal Care remaining at the top of the global prioritisation with a 1.7% increase.
- Two criteria received increased reporting, Water Availability and Quality (at farm and processing level) and Biodiversity, as members' programs are generating reportable data against these prioritised criteria.



*\*Reporting for entire global dairy sector provided by SRUC analysis.  
Water, Working Conditions and Waste Criteria have two indicator metrics as they cover both farm and processing levels of the dairy value chain.*

## DSF Membership by Category



## New DSF Members in 2024 (including Stage 1 Pilots)

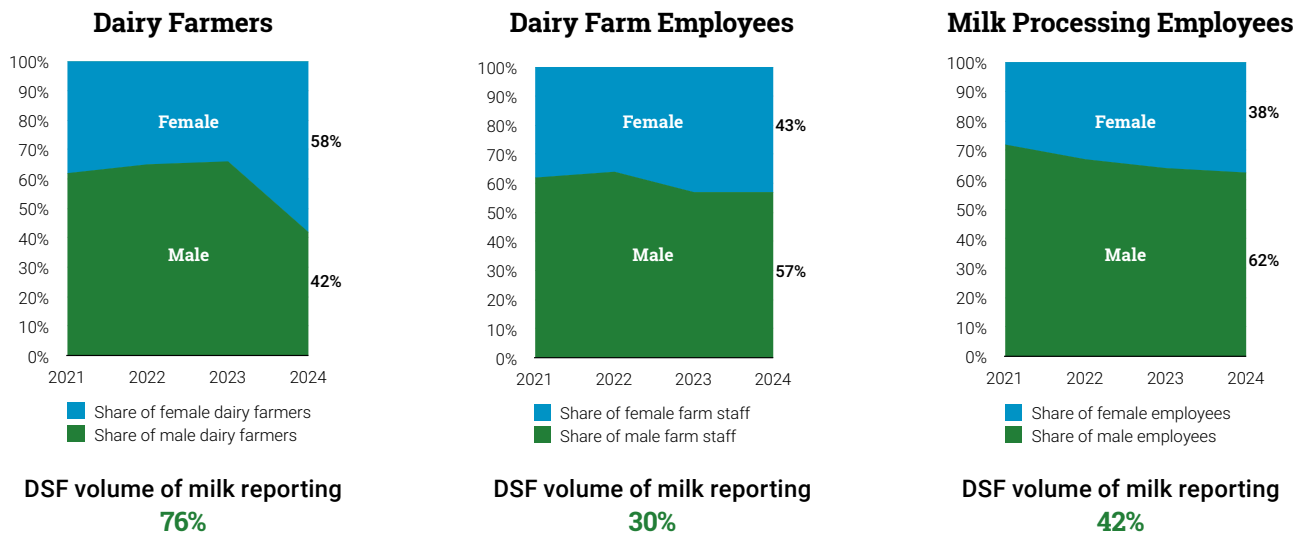


## 2024 Snapshot - Total Membership



• The majority (FAO estimates in excess of 90% of all farms) of the world's dairy farms are family farms that include more than one family member, which can result in more than one farmer per farm.

## Gender and Employment



• The increase in the number of female dairy farmers in 2024 is aligned with the engagement of women only cooperatives as DSF members.

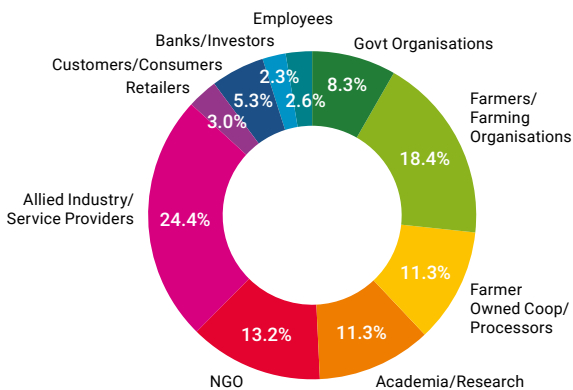
• The DSF is now offering an "Other" category for gender; however, currently there is insufficient data to be able to report.

## Local Multi-Stakeholder Management Groups

An integral component of the DSF implementation process is the formation and coordination by each member of a Local Multi-stakeholder Management Group (LMG). This group of stakeholders has an interest in dairy sustainability and is used by DSF members to appreciate an external perspective that supports the identification of sustainability priorities and how they can be addressed. Listening to the views of external experts and stakeholders is critical to the success of the DSF delivery process.

DSF members provide a breakdown of their LMGs. The chart demonstrates the composition of these groups across the DSF membership.

'Employees' is a new category included this year.







# Action on Priorities

The data provided by the DSF membership is clearly starting to reflect the diversity of global dairy production and processing. It highlights the unique needs of different geographies, stages of development and structural change across the sector as it drives towards more sustainable and resilient value chains.

## Key

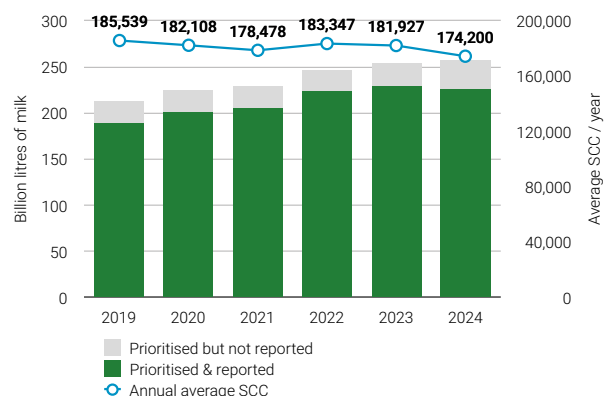
1. Criteria: e.g. GHG emissions.
  2. **Strategic Intent**: When prioritised, this is the member's focus for any improvement strategy implemented.
  3. **Indicator Metric**: Members provide data under their prioritised metrics for their annual reporting to the DSF.
- Members report the number of farms they represent.
  - Assumption: 1 plan per farm.



## Animal Care

Dairy animals are treated with care and are free from hunger, thirst, discomfort, pain, injury and disease and are able to engage with relatively normal patterns of behaviour.

Reporting: Arithmetic mean of Somatic Cell Count (SCC) across the reporting period.



- Animal Care retains its number 1 prioritised DSF Criteria position for the 2024 year, increasing the volume of milk volume equivalent by 4.3 billion litres reflecting a higher milk output from a lower number of farms, coupled with a lower average Somatic Cell Count.

The DSF Board agreed in 2023 that the indicator metric for Animal Care will change in 2027 to "Animal Health and Welfare Plans implemented." As the membership transitions across to this new metric, the DSF has initiated collecting data and is able to report progress.

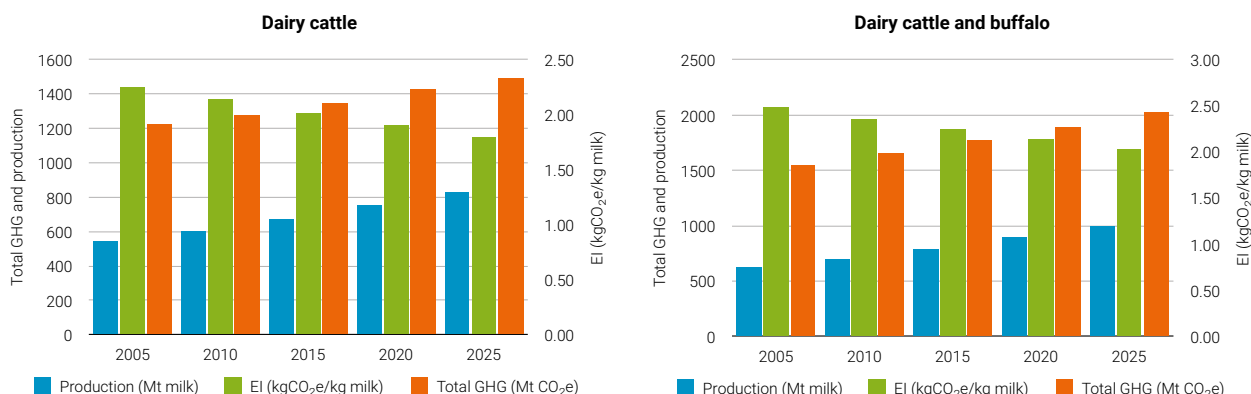
All members who prioritised Animal Care	2023	2024
No. of Animal Health & Welfare (AHW) plans	74,040	117,693
No. of farms	428,507	418,115
% of farms with an AHW plan	17.3%	28.1%



## GHG Emissions

GHG emissions across the full value chain are quantified and reduced by all economically viable means.

The DSF commissioned Scotland's Rural College (SRUC) to calculate updated GHG emissions from the entire global dairy cattle and buffalo production, building on the previous trendline generated by the FAO.



- The analysis indicates that between 2005 and 2025, dairy cattle milk production increased by 53% but the decrease in Emissions Intensity (EI) limited the increase in total GHG to 22%.
- For dairy cattle and buffalo combined, milk production increased (2005 – 2025) by 60% and total GHG by 31%.
- Estimated emissions intensity for dairy cow milk in 2025 = 1.79 kg CO<sub>2</sub>/kg/FPCM
- Estimated emissions intensity for buffalo milk in 2025 = 3.24 kg CO<sub>2</sub>/kg/FPCM
- Estimated combined emissions intensity in 2025 = 2.03 kg CO<sub>2</sub>/kg/FPCM

Reporting generated by Scotland's Rural College.

Calculations undertaken applying FAOStat Milk production data and FAO GLEAM 3 Emission Intensities (EI)

The Emissions Intensity was assumed to decrease at 1.1% per annum based on:

FAO and GDP. 2018. Climate change and the global dairy cattle sector – The role of the dairy sector in a low-carbon future. Rome.

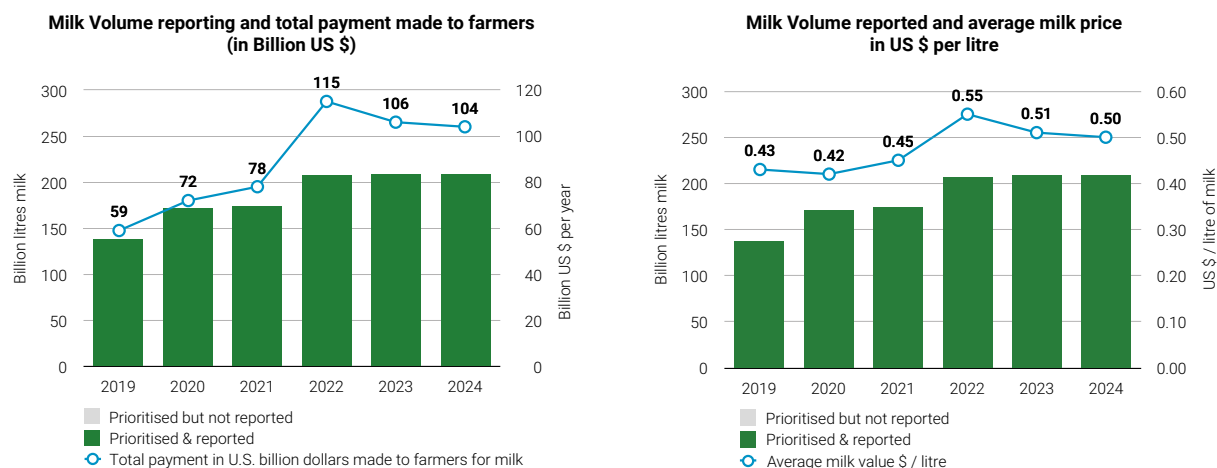
FAO. 2023. Pathways towards lower emissions – A global assessment of the greenhouse gas emissions and mitigation options from livestock agrifood systems. Rome.



## Rural Economies

The dairy sector contributes to the resilience and economic viability of farmers and rural communities.

Reporting: Total annual payments made to farmers for milk.



- For the last 5 years, 100% milk of the volume prioritised was also reported.

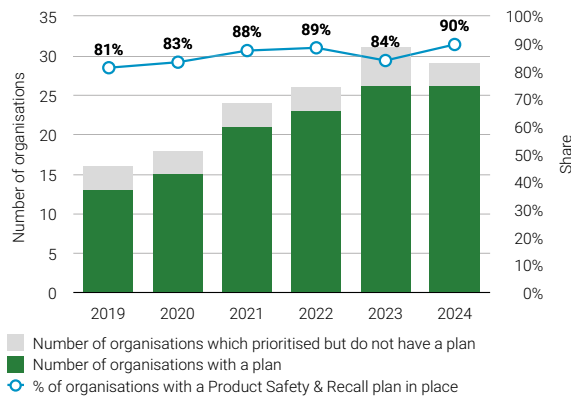


## Product Safety and Quality

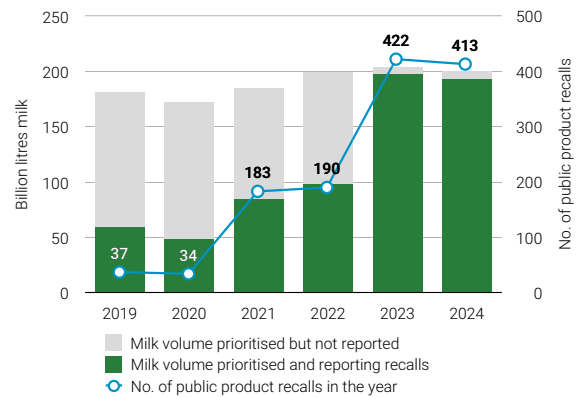
The integrity and transparency of the dairy supply chain is safeguarded, so as to ensure the optimal nutrition, quality, and safety of products.

Reporting: Implementation of a Product Safety Assessment and Recall Plan (PS&RP) and the number of public product recalls during the reporting period.

Actual Members who have prioritised and those with a PS&R Plan, also shown as a % with a plan



Milk Volume prioritised & reporting and number of public product recalls



- Two organisations have deprioritised this criteria as a result of materiality outcomes. The process of materiality is a robust process enabling DSF Members to identify and focus on priority Criteria. Over time depending on local challenges, priority criteria may change.
- Overall, the trend is for an increasing percentage of organisations prioritising.

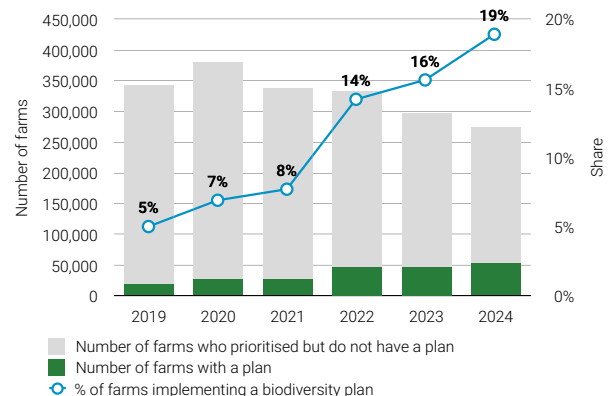


## Biodiversity

Direct and indirect biodiversity risks and opportunities are understood and strategies to maintain and enhance it are established.

A Biodiversity Plan (BP) is implemented to preserve, restore and improve biodiversity on-farm and across the supply chain.

Reporting: Number of Biodiversity Plans implemented.



- The trend line indicates a 12% increase in the number of biodiversity plans in 2024 despite a 7% reduction in the overall number of farms who prioritised biodiversity.

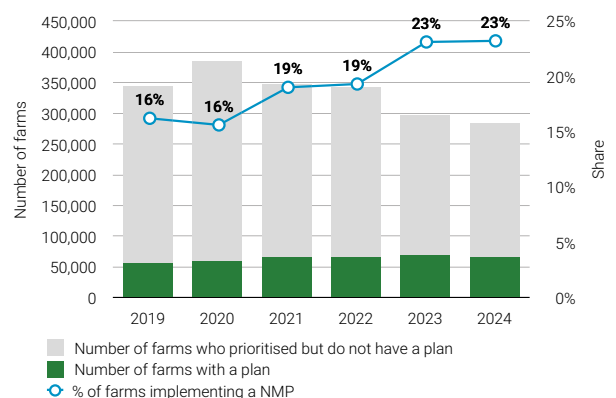


## Soil Nutrients

Nutrient application is managed to minimise impacts on water and air, while maintaining and enhancing soil quality.

Implementation of a Nutrient Management Plan (NMP) to enhance production and reduce water and air pollution.

Reporting: Number of NMPs implemented.



- From 2019, there has been a gradual increase (7%) in the percentage of farms with a NMP.

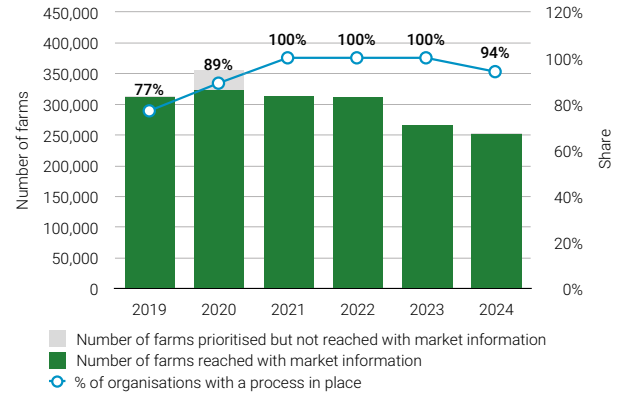




## Market Development

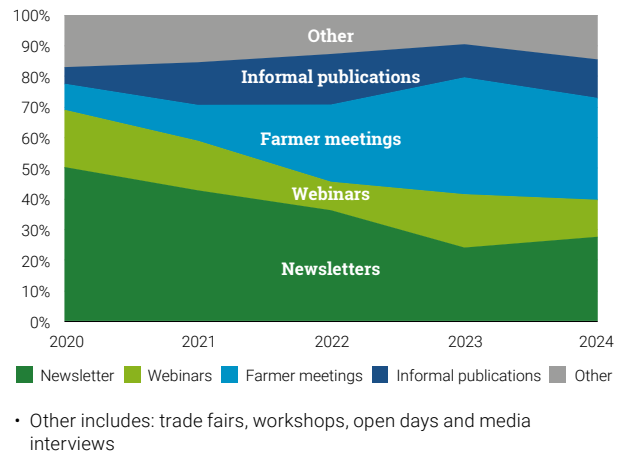
Members along the dairy value chain are able to build economically viable businesses through the development of transparent and effective markets.

Reporting: If there is a process in place to inform producers of market opportunities and challenges.



- The reduction in the number of farms reached with market information (-13K in 2024) under this Criteria is predominantly a result of market consolidation in the developed dairy economies.
- ~100% of farms have been reached with market information over the last four years.
- It is also interesting to note how the different channels of communication are evolving, with farmer meetings and newsletters remaining as the most popular methods.

How did DSF Members communicate with their supplying farmers about market opportunities (total number of activities)?



- Other includes: trade fairs, workshops, open days and media interviews

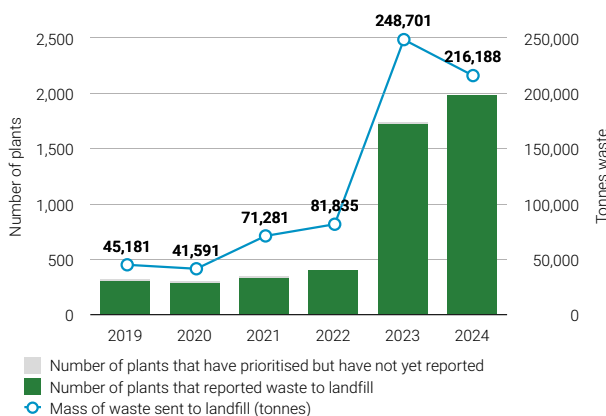


## Waste - Processing Level

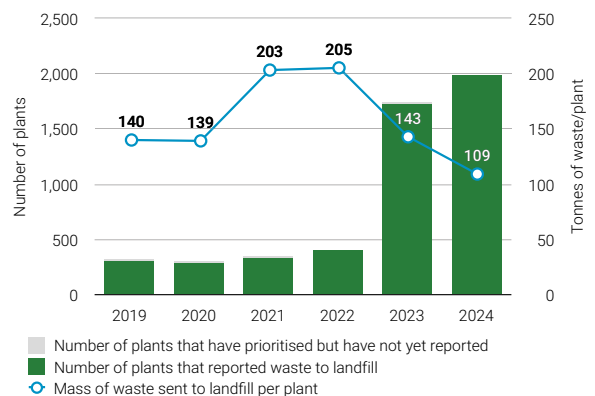
Waste generation is minimised, and where unavoidable, waste is reused and recycled.

Reporting: Mass of waste to landfill per year.

Plants prioritised and reported along with mass of waste to landfill



Plants prioritised and reported along with mass of waste to landfill per plant



- The charts are demonstrating how the growth in number of processing plants under this criteria is impacting the total volume of waste to landfill.
- It is encouraging to observe that since 2022, there has been a reduction in waste generated per processing plant.
- In the last five years, the percentage of plants reporting has increased from 94% to 100%, so the number of plants prioritised and not reported are not visible on the charts.

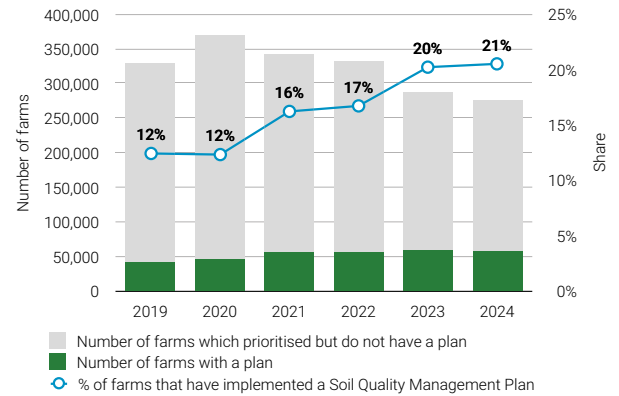


## Soil Quality and Retention

Soil quality and retention is proactively managed and enhanced to ensure optimum productivity.

Soil quality is maintained or improved by good management practices defined in a Soil Quality Management Plan (SQMP).

Reporting: Number of SQMPs implemented.



- It is encouraging to see the trend in the percentage of farms implementing a (SQMP) plan (an increase of 8.1% since 2019) continuing to increase even though the actual number of farms prioritising is decreasing.

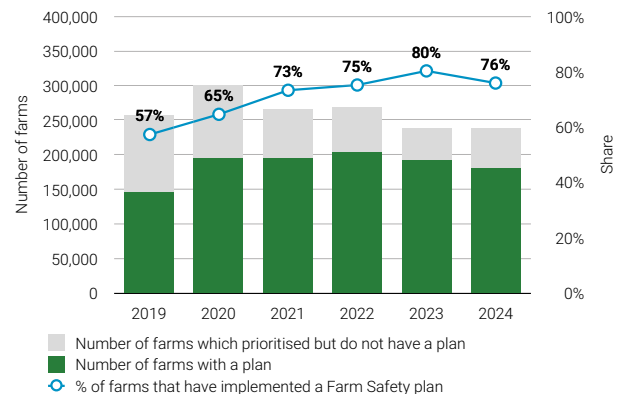


## Working Conditions – Farm

Across the dairy value chain, workers operate in a safe environment, and their rights are respected and promoted.

A Farm Safety Plan (FSP) is implemented to ensure worker safety.

Reporting: Number of FSPs implemented.

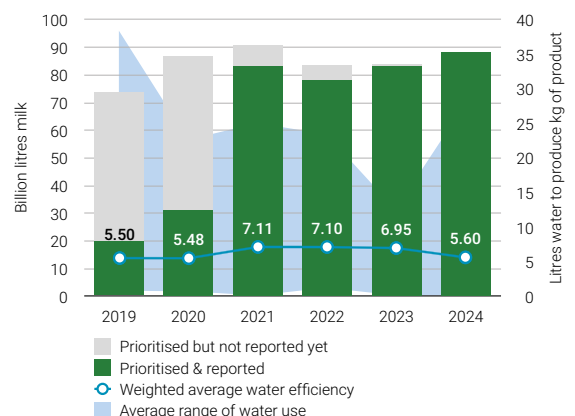


## Water Availability and Quality - Processing Level

Water availability as well as water quality is managed responsibly throughout the dairy value chain.

Water use efficiency for production and processing is measured.

Reporting: Average volume of water (litres) required to produce a kg of product, plus the range (highest and lowest values).



- The DSF does not seek detailed information regarding specific dairy products, it is though obvious this data covers a number of products as reflected by the range in water use efficiency.



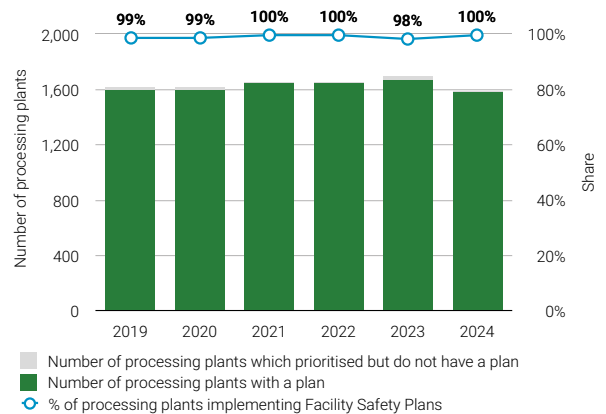


## Working Conditions – Processing

Across the dairy value chain, workers operate in a safe environment, and their rights are respected and promoted.

A Facility Safety Plan (FSP) is implemented to ensure worker safety.

Reporting: Number of FSPs implemented.



- A reduction in the number of processing plants is a result of identifying a historical reporting error that has now been corrected.

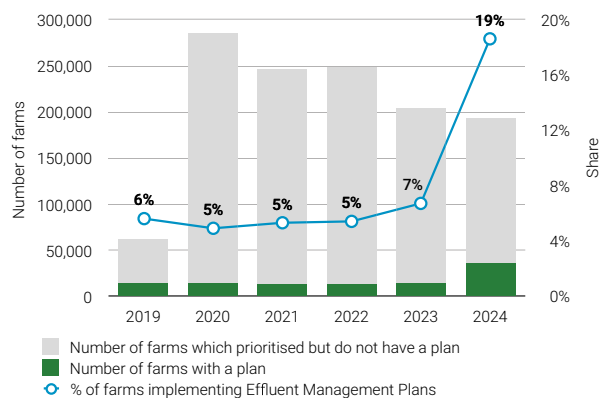


## Water Availability and Quality – Farm

Water availability as well as water quality is managed responsibly throughout the dairy value chain.

An Effluent Management Plan (EMP) is adopted to minimise impacts to water quality.

Reporting: Number of EMPs implemented.



- Despite a reduction of approximately 11,000 farms prioritising this Criteria since 2023, the number of farms that now have implemented Effluent Management Plans has increased by 12%, with the addition of a DSF member now being able to provide data.

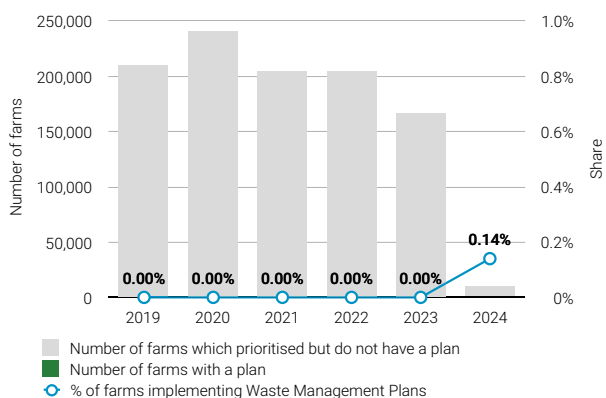


## Waste - Farm Level

Waste generation is minimised, and where unavoidable, waste is reused and recycled.

Implementation of a Waste Management Plan (WMP).

Reporting: Number of WMPs implemented.



- One DSF Member has undertaken a materiality review and has deprioritised this Criteria to focus on higher ranking Criteria. The impact of this change is a substantial reduction in the number of farms prioritising this Criteria.
- The small rise in plans being reported is due to one DSF member now being able to provide data.




Dairy Sustainability Framework

0255 W. Higgins Road  
Suite 820  
Rosemont, IL 60018  
USA

*Effective December 1, 2025,  
our mailing address will change:*

6133 N. River Road  
Suite 200  
Rosemont, IL 60018  
USA

[info@dairysustainabilityframework.org](mailto:info@dairysustainabilityframework.org)  
[www.dairysustainabilityframework.org](http://www.dairysustainabilityframework.org)

 [dairy-sustainability-framework](https://www.linkedin.com/company/dairy-sustainability-framework)