

DSF Annual Reporting for the 2021 Calendar Year



The Dairy Sustainability Framework (DSF) monitors and reports the annual sustainability progress of the global dairy sector. The DSF accounts for more than 30% of global milk production and quantifies progress via 11 sustainability (economic, social and environmental) criteria and associated indicator metrics.

Data included in this report is from the 2021 calendar year and reported by DSF members in 2022. The process by which the DSF manages and processes the data is audited by the University of Nottingham (UK).

Estimated global milk production (all species) in 2021 (source: FAO Food Outlook, June 2022) is 927.8 million tonnes (up from 906 million tonnes in 2020). Of this, 892 million tonnes (866 billion litres), is the global dairy cow (85%) and buffalo (15%) milk production applied in the DSF calculations.

2021 Highlights

- DSF milk volume grew 23 billion litres in 2021, despite a reported reduction in farm, cow numbers and associated milk volume
- Reductions are a result of membership changes, market challenges and sector consolidation, predominantly in emerging dairy economies with a high percentage of smallholder operations
- The DSF now represents 31% of total global milk production, which equates to 52% of the global formal milk market
- Six new members in 2021 contributing an additional 27 billion litres to the DSF total milk volume
- The COVID pandemic globally impacted the ability of DSF members to implement their sustainability strategies and slowed progress against some of the criteria
- Greenhouse Gas Emissions, Animal Care and Biodiversity continue to be the most prioritised criteria globally

DSF Development

- The DSF Strategic Plan continues to drive the DSF development activities.
- Improved DSF Communications:
 - Greater level of translated materials for members, potential members and stakeholders
 - Recording of additional labour related social sustainability data initiated, for reporting 2023 onwards
 - 8 topical webinars and the annual DSF (virtual) Members Meeting delivered
- Three member Criteria based 'Communities of Interest' now operational with a total of 12 sessions conducted where members collaborated to identify solutions to common global sustainability challenges
- Continuation of the DSF implementation Pilots in Kenya, Rwanda, Vietnam and India with the support of the International Fund for Agricultural Development and Global Dairy Platform
- Initiated the scoping of the DSF strategy for Latin America with DSF Governor organisation for the region, Fepale.
- DSF recognised as one of the Game-Changing actions for the Food Systems Summit
- DSF participated in development and is an active member of the steering group for the Pathways to Dairy Net Zero initiative
- The Covid pandemic enabled the DSF to reach a wider set of stakeholders by the application of technology and an increased offering of 'on-line' activity

New DSF members in 2021



+45,662
farms



+3.1 million
cows



+49
processing Plants



+46,101
dairy farmers



+41,951
employees



+26.9 billion
litres of milk

2021 Snapshot - Total Membership



493,110
farms



34.2 million
cows



3,086
Processing Plants



549,100
farmers



2.4 million
employees



265 billion
litres of milk

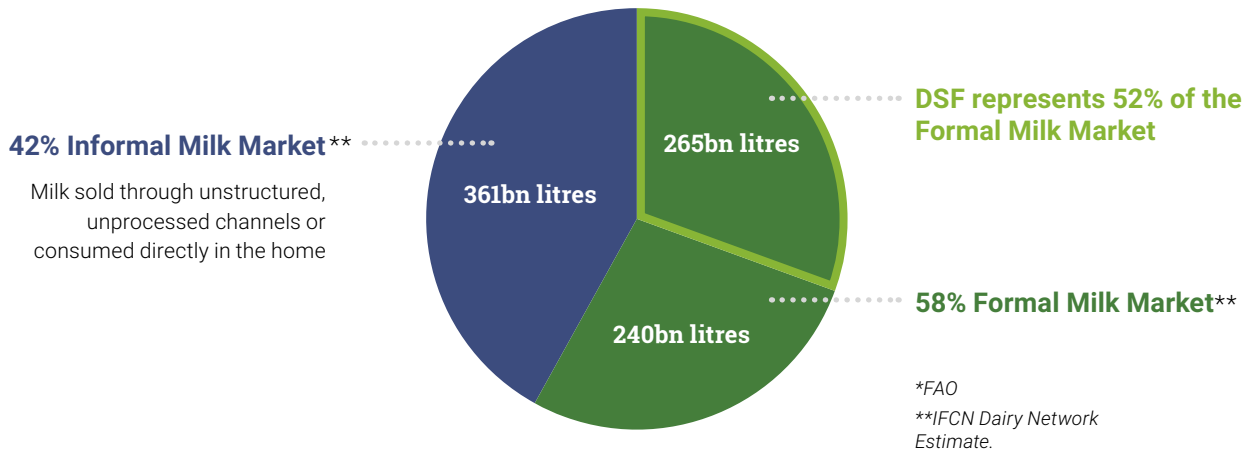


>25 million
hectares

DSF and Global Milk Production - 2021

Global Milk Production: 866 Billion Litres*

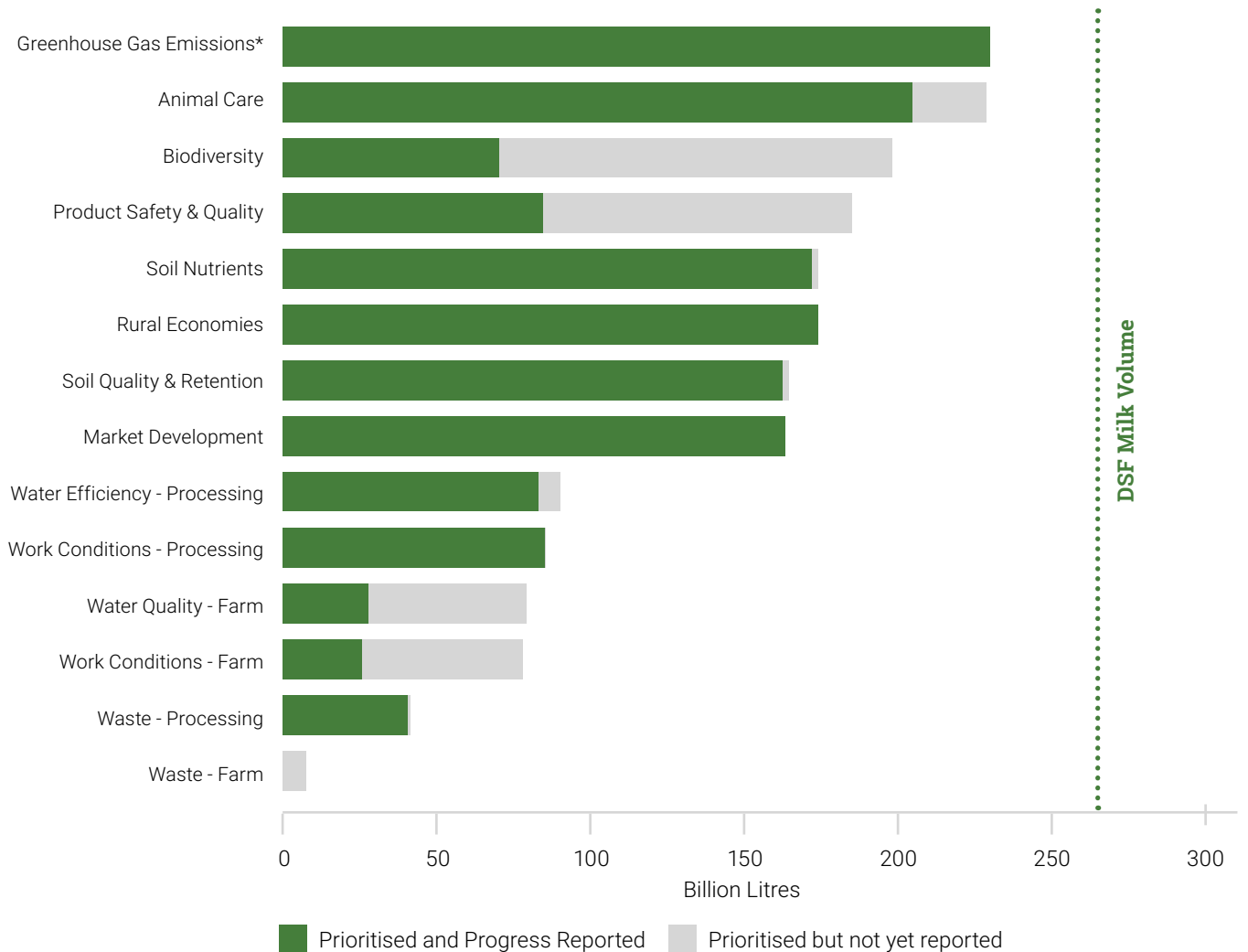
DSF milk volume: 265 Billion Litres



2021 DSF Milk Volume, Priorities and Reporting

Milk Production in Billion Litres

- The majority of new members are yet to complete the process of prioritising the DSF Criteria, this impacts the % criteria prioritisation when considered in relation to total DSF milk volume.
- The fluctuations associated with these changes are reflected throughout the report.



*Reporting for entire global dairy sector provided by FAO analysis.

Water, Working Conditions and Waste Criteria have two indicator metrics as they cover both farm and processing levels of the dairy value chain.

Action on Priorities

As operations return to normal after COVID, reporting reflects the challenges associated with re-establishing existing and implementing new proactive sustainability programs.

Key

1. Criteria: e.g. GHG Emissions
2. **Strategic Intent:** When prioritised this is the members focus.
3. **Indicator Metric:** Members provide this annual reporting to the DSF
4. The progress report: 2021 aggregated reporting and new baseline
5. Supporting information: Additional information supporting the reporting.

- Members report the number of farms they represent
- Assumption: 1 plan per farm

* 2021 performance against the 2020 baseline is reported in the first doughnut in blue.

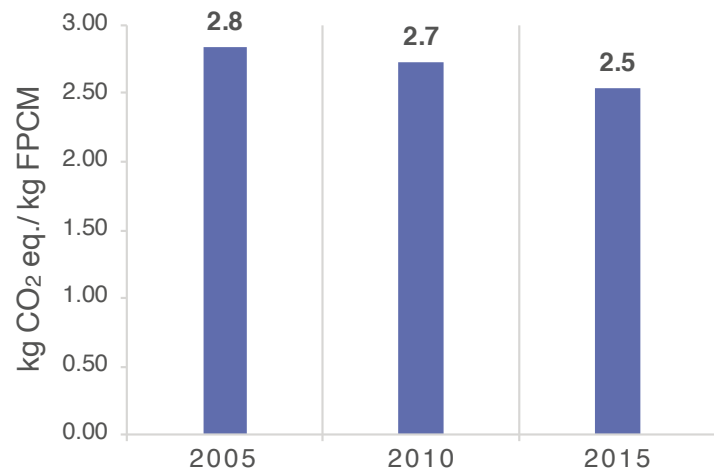


GHG Emissions

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

As part of the collaborative efforts in the Pathways to Dairy Net Zero initiative, The DSF is working with the FAO who will be providing the next global update to the 2005-2015 report (2015-2020) of the sector's emissions applying the recently launched GLEAM 3 model.

FAO "Climate Change and the Global Dairy Sector" report, 2005-2015:



FAO GLEAM 2.0.

- <http://www.fao.org/3/CA2929EN/ca2929en.pdf>
- DSF members who prioritise this criteria are required to undertake LCA analysis using the IDF Common Carbon Footprint Approach for the Dairy Sector.



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.

Arithmetic mean of Somatic Cell Count across the reporting period.

	2018	2019	2020	2021	Change from 2020 to 2021
Volume of milk reporting (billion litres)	213.3	188.8	200.5	205.1	+4.6
Average annual weighted (by milk volume) SCC*	201,000	183,539	182,108	178,478	-2.0%

- The milk volume of those organisations reporting increased by 4.6bn litres
- 0.5% of volume came from new prioritisation.

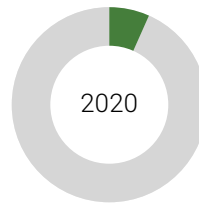
* Reducing Somatic Cell Count (SCC) is a positive indicator of cattle health



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 - number of Biodiversity Plans implemented.

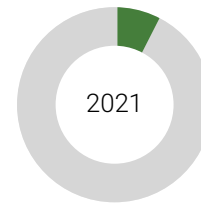


6.9% of farms implementing Biodiversity Plans

0 change in 2021

381,499 farms
Prioritising

-43,115



7.7% of farms implementing Biodiversity Plans

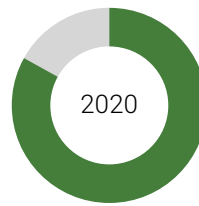
338,384 farms
Prioritising



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

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

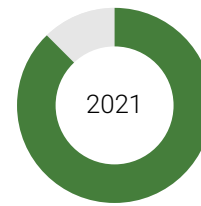


83.3% with a Product Safety Assessment and Recall Plan in place

0 change in 2021

18 members
Prioritising

+6



87.5% with a Product Safety Assessment and Recall Plan in place

24 members
Prioritising

Public Product Recalls

2019	2020	2021	Change from 2020 to 2021
37	34	180	+146

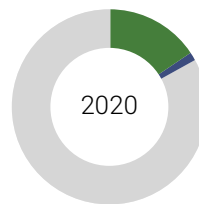
- The rise in public product recalls is due to more members now able to report this information.



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 - number of NMP's implemented.

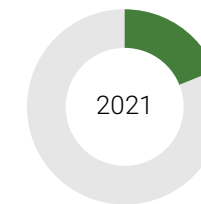


15.6% of farms implementing Nutrient Management Plans

+1.5% farms implementing Plans in 2021

384,765 farms
Prioritising

-37,585



19% of farms implementing Nutrient Management Plans

347,180 farms
Prioritising



Rural Economies

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

Total annual payments made to farmers for milk.

	2019	2020	2021	Change from 2020 to 2021
Milk volume reporting (billion litres)	138	172	174	+2
Total annual payment made to farmers in US \$ (Billion)	\$59.28	\$71.75	\$77.62	+\$0.87

- An increase of 2 billion litres prioritising this Criteria from 2020 levels
- Average milk value is \$0.45/litre

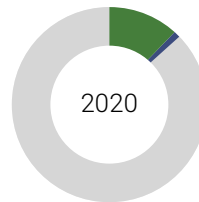
Exchange rates sourced through IFCN applying OandA.com data



Soil Quality and Retention

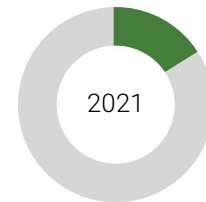
Soil quality and retention is proactively managed and enhanced to ensure optimum productivity.

Soil quality is maintained or improved by good management practices defined in a Soil Quality Management Plan (SQMP) - number of SQMP's implemented.



370,327 farms
Prioritising

12.3% of farms implementing Soil Quality Management Plans
+1.3% farms implementing Plans in 2021



342,181 farms
Prioritising

16.2% of farms implementing Soil Quality Management Plans

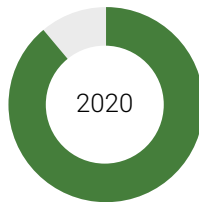
-28,146



Market Development

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

Process in place to inform producers of market opportunities and challenges.



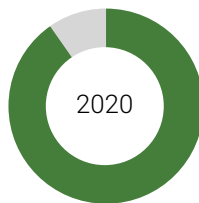
9 Members
Prioritising

89% of Members prioritising Market Development had a process in place to inform farmers of market opportunities and challenges



12 Members
Prioritising

100% of Members prioritising Market Development had a process in place to inform farmers of market opportunities and challenges



355,209 farms
Prioritising*

90.5% farms reached
-11.4% farms reached in 2021



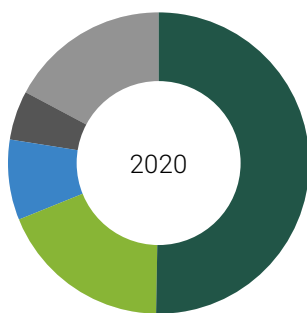
313,464 farms
Prioritising

100% farms reached

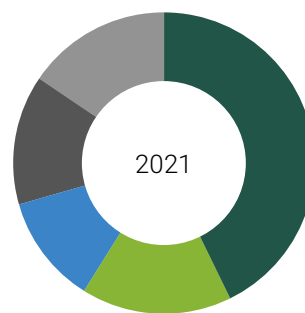
-41,745

*Number of farms supplying DSF members that prioritised this Criteria. i.e. potential reach.

How did DSF Members communicate with their supplying farmers during 2021 about market opportunities (Total number of activities)?



50.4% Newsletter
18.7% Webinars
8.5% Farmer Meetings
5.4% Informal publications
17% Other (videos, on-line Q and A, weekly market updates in website portal)



42.8% Newsletter
16.2% Webinars
11.7% Farmer Meetings
13.9% Informal publications
15.4% Other (videos, on-line Q and A, weekly market updates in website portal)

• Note the increase in farmer meetings and informal publications (as opposed to newsletters and webinars) implemented by members when connecting with valued suppliers post COVID.



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 - average volume of water (litres) per volume of product (kg).

	2018	2019	2020	2021	Change from 2020 to 2021
Weighted average water efficiency (litres water to produce kg product)	4.52	5.50	5.48	7.11	+1.63
Range	2.1 - 14.9	0.77 - 38.37	0.68 - 22.6	0.09 - 25.0	

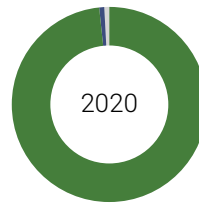
- 31% of DSF milk volume (in 2021) prioritised this criteria with additional members now able to report, an increase of 18% in milk volume from 2020.
- Indicator does not differentiate between milk and dairy products produced by DSF membership



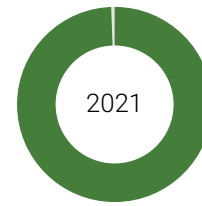
Working Conditions – Processing

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 - number of FSP's implemented.



98.6% of plants implementing Facility Safety Plans
+0.6% plants implementing Plans in 2021



99.6% of plants implementing Facility Safety Plans

1,620 plants
Prioritising



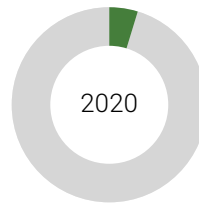
1,650 plants
Prioritising



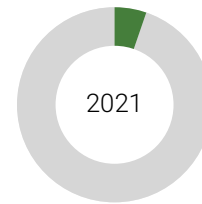
Water Availability and Quality – Farm

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 - number of EMP's implemented.



4.9% of farms implementing Effluent Management Plans
-0.3% farms implementing Plans in 2021



5.3% of farms implementing Effluent Management Plans

284,604 farms
Prioritising



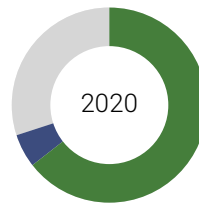
246,269 farms
Prioritising



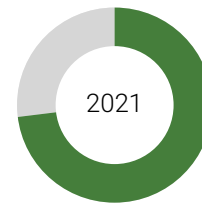
Working Conditions – Farm

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 - number of FSP's implemented.



64.5% of farms implementing Farm Safety Plans
+5.6% farms implementing Plans in 2021



73.2% of farms implementing Farm Safety Plans

299,933 farms
Prioritising



265,612 farms
Prioritising

- A growth of 5.6% in Farm Safety Plans is encouraging considering the reduced farm numbers. This equates to an additional 16,000 plans from DSF members who prioritised this criteria in 2020.



Waste - Processing Level

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

Mass of waste to landfill per year

	2019	2020	2021	Change from 2020 to 2021
Mass of waste to landfill (tonnes)	45,181	41,591	550,815	+509,224
No. of processing plants	323	299	351	+52

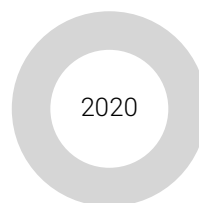
- Members who prioritised this criteria in 2020 reported a reduction of 7 processing plants and 844 tonnes less to landfill in the 2021 year.
- Members prioritising and reporting against this criteria for the first time in 2021, reported 52 new processing plants and an additional 509,224 tonnes to landfill.



Waste - Farm Level

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

Implementation of a Waste Management Plan (WMP) - number of WMP's implemented.



0% report having Waste Management Plans
0 change in 2021



0% report having Waste Management Plans

241,077 farms
Prioritising



204,835 farms
Prioritising

- The DSF will work with the membership prioritising this criteria to better understand the situation and provide support where appropriate to access the required reporting data.