

IDF

DAIRY SUSTAINABILITY OUTLOOK

Research progress | Global insights | Expert opinion

Sustainable development is a collective effort that depends on collaboration between governments, international organisations and the private sectors, along with individuals. The International Dairy Federation (IDF) recognises the challenges and opportunities and is committed to contributing relevant scientific information and good practice to the discussion. The IDF Dairy Sustainability Outlook aims to provide a viewpoint on sustainable development of relevant importance for the dairy sector. It offers an opportunity for those involved in the field to share ongoing projects and new research on sustainability of importance for the dairy sector.

International Dairy Topics takes a look at some of the research and new initiatives that are taking place around the world.

United Kingdom: Reducing food loss and waste – an ambition for UK dairies

Henry Clifford, Dairy UK

Globally, it is estimated that roughly one-third of the food produced for human consumption – approximately 1.3 billion tonnes – is lost or wasted.

The impact of this cannot be understated. Beyond the loss of valuable dairy nutrition, the financial cost of food loss and waste is estimated to exceed \$1 trillion every year, and if food wastage were a country it would be the third-largest emitter of greenhouse gases in the world.

Food loss and waste can occur at every stage from farm to fork, and whilst the predominant causes or sources may vary around the world, the consequences; unnecessary economic, social and environmental burdens are faced by all.

In the UK between processing and the home, an estimated 330,000 tonnes of milk gets wasted each year.

Although only 2.2% of UK raw milk production, this still accounts for

roughly 3.2% of the total food waste footprint of the UK. Whilst losses are reported all along the dairy supply chain the vast majority (90%) is attributed to consumer food waste.

Recognising the social, economic, and environmental burden of food loss and waste, Dairy UK is committed to reducing food waste at all points in the dairy supply chain, and is working closely with dairy processors and industry partners like WRAP (Waste & Resource Action Programme) to support a step-change in consumer perceptions on food waste.

As a signatory of both the Courtauld Commitment and the UK Food Waste Reduction Roadmap, Dairy UK is committed to helping the UK dairy sector to deliver on its part in achieving Sustainable Development Goal 12.3 and achieving a 50% per capita reduction in food waste by 2030. ■

South Africa: Reaching low-income consumers through quality education on dairy health and nutrition

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Milk South Africa, Pretoria, South Africa

The Consumer Education Project of Milk SA (CEP of Milk SA) introduced a training programme to address malnutrition, poverty and hunger through quality education to communities in South Africa that are nutritionally at risk.

South Africa's population of 58 million people is culturally diverse. The country consists of nine provinces and there are 11 official languages.

About a third of South Africans live in rural areas. Poverty affects more than half of the population and one in five households is reported to run out of money for food during a month. For many South Africans, access to affordable, nutritious foods is limited.

The high rate of unemployment and associated poverty in South Africa, although less than in many other countries, has resulted in many

nutritional challenges among its population. These include overweight and obesity; deficiencies in vitamin A, iron, calcium and potassium; diets without sufficient energy and nutrient density; hypertension and diabetes.

This education programme aims to reach nutritionally vulnerable South Africans from the low socio-economic sector of the population. Its focus is to communicate the value of milk and other dairy products in the daily diet, as included in the South African FBDGs, to improve the well-being of the population.

Since 2014, the CEP of Milk SA has presented this education programme in each of the nine provinces in South Africa, with 92% of rural regions and townships reached. A total of 4500 health promoters have been trained so far. ■

Global: The Dairy Sustainability Framework - Annual Progress

Brian Lindsay, Dairy Sustainability Framework

Like all sectors, dairy understands it must improve the sustainability of its products. The Dairy Sustainability Framework (DSF) with broad multi-stakeholder support, was created by the sector in order to share and improve its sustainability activities, regardless of production system or geography.

Importantly, DSF goes beyond implementation to provide global monitoring and validated aggregated reporting to monitor the continuous improvement of the global dairy sector.

The DSF currently reports the sustainability progress on 30% of global milk production. By working closely with organisations such as the International Dairy Federation, that number should increase over time.

DSF membership ranges from individual dairy processors (implementing members) that conduct sustainability improvement

programmes with their suppliers, to aggregating members that coordinate a number of dairy industry stakeholders and provide an annual aggregated progress report to the DSF.

Members undertake a materiality analysis to identify which of the 11 DSF Criteria (covering the three pillars of sustainability – Social, Economic and Environmental) they will focus on. DSF members acknowledge that all 11 criteria are vitally important but the materiality assessment helps identify which are the most pressing on which to focus.

Members remain in control locally and develop their own improvement programmes, be they at farm or manufacturing level (The DSF is a total value chain initiative).

The DSF provides knowledge/resource sharing and comparing platforms for members to benchmark and explore solutions in a pre-competitive environment. ■

Global:

Toolbox practices for the reduction of greenhouse gas emissions on dairy farms

Patricia Garcia Diaz, Sustainable Agriculture Initiative Platform

With 80-90% of greenhouse gas emissions from the dairy industry generated at farm level, dairy companies are looking for the best ways to tackle the challenges of greenhouse gas emissions and improve the environmental impacts of their dairy farms.

Academic institutions and companies have researched and tried different approaches and practices that have delivered various outcomes.

Phase 1 of this project aims to present an overview of relevant practices in a consistent manner to create a toolbox that companies could apply within their own dairy supply chains, recognising such things as: geographical locations, farm archetypes, potential for greenhouse gas reductions, implementation costs, potential barriers and incentives, to name some aspects. The overview will also include current research and what potential the research could offer.

Phase 2 envisages companies having sufficient knowledge to create net zero farm pilots to demonstrate good practices within their operating context, as required.

Phase 3 of the project could potentially provide opportunities for partnerships between companies to

scale the lessons learnt from phases 1 and 2 and help drive innovation and collaboration within the dairy industry to reduce greenhouse gas emissions.

The dairy industry recognises that greenhouse gas emissions produced at farm level are contributing to climate change.

To tackle this issue, SAI Platform's Dairy Working Group and the European Roundtable for Beef Sustainability (ERBS), created a workstream and joint project dedicated to identifying known and practical solutions to mitigate greenhouse gas at farm level.

The project focuses on capturing members' activities and insights to create a globally comprehensive toolbox of practices.

As a consolidated insight into operations already in practice and the potential of evolving practices for greenhouse gas reductions in dairy and beef farms, this toolbox provides the opportunity to scale activities on climate action.

Collaboration is key to this project, and partners are invited to pilot and test different practices together. The resulting toolbox will be used as a knowledge base and data centre that will serve the industry as a source of information to improve greenhouse gas impact at the farm level. ■

South Africa:

Environmental impact of rotationally grazed pastures at different management intensities

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Nitrogen fertilisation, irrigation and concentrate feeding are important factors in rotational pasture management for dairy farms in South Africa. The extent to which these factors affect environmental efficiency is subject to current and intense debate among scientists.

A three-year field study was conducted to investigate the yield response of different N-fertiliser treatments (0 (N0), 220 (N20), 440 (N40), 660 (N60) and 880 (N80) kg N ha⁻¹ year⁻¹) on grazed pastures and to calculate the carbon footprint (CF) of milk produced.

Excessive N-fertilisation (N60 and N80) did not increase herbage dry matter and energy yields from pastures.

However, N80 indicated the highest N-yield but at the same time also the highest N surpluses at field

level. A maximum fertiliser rate of 220 kg ha⁻¹ year⁻¹ (in addition to excreted N from grazing animals) appears sufficient to ensure adequate herbage yields (-20 t DM ha⁻¹ year⁻¹) with a slightly positive field-N-balance.

This amount will prevent the depletion of soil C and N, with low N losses to the environment, where adequate milk yields of -17 t ECM ha⁻¹ with a low CF (-1.3 kg CO₂ kg ECM⁻¹) are reached. Methane from enteric fermentation (-49% ± 3.3) and N₂O (-16% ± 3.2) emissions from irrigated pastures were the main contributors to the CF.

A further CF reduction can be achieved by improved N-fertilisation planning, low emission irrigation techniques and strategies to limit N₂O emissions from pasture soils in South Africa. ■

The IDF Dairy Sustainability Outlook can be downloaded for free from the IDF website: www.fil-idf.org