



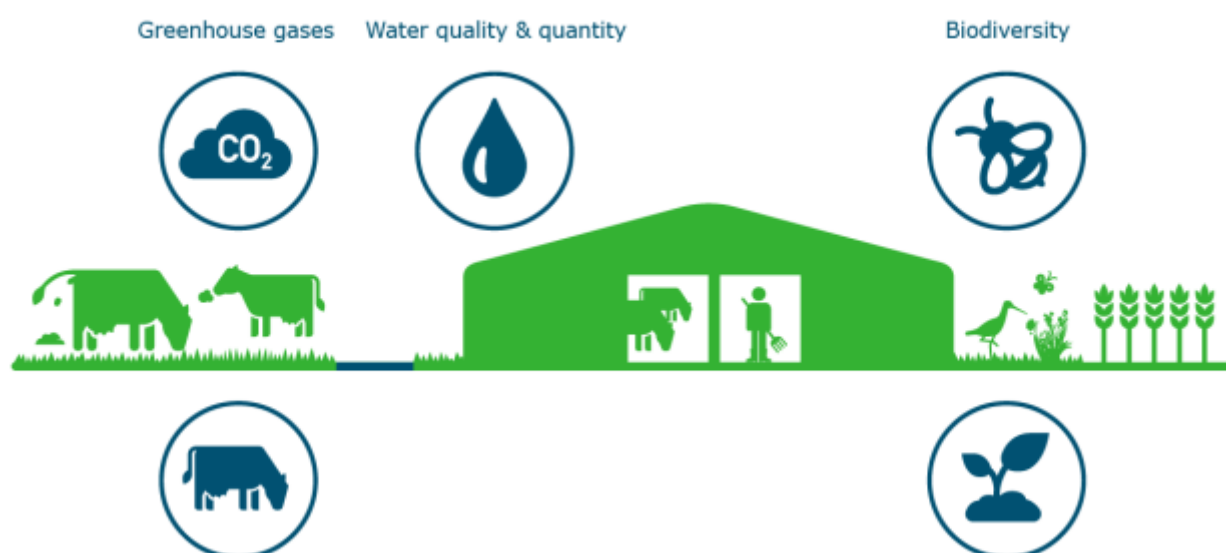
Dossier

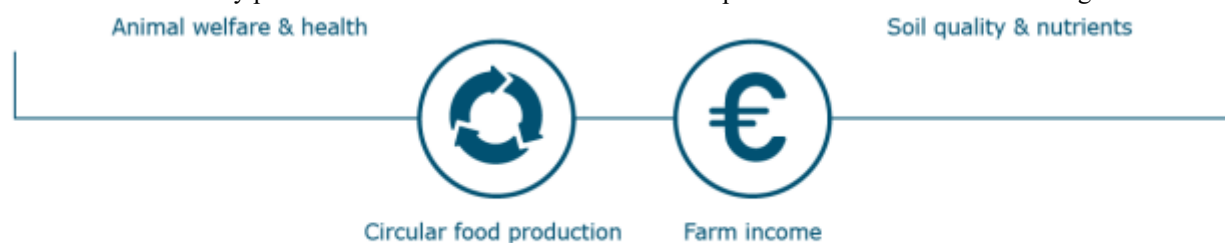
Working towards sustainable dairy production

Dairy processors worldwide are aware of the impact of sustainability on the dairy sector. The sector contributes to nutritious and healthy diets, but at the same time it has impact on climate change, animal welfare, biodiversity and soil fertility. Wageningen University & Research (WUR) develops, applies and disseminates new working methods that contribute to sustainable dairy farming.

Improving sustainability

What is needed to improve sustainability in the dairy chain? Which practices are available for different farm types? And how can we ensure that these practices are really implemented by the farmers? Together with partners, WUR studies these key questions and collaborates with the dairy industry on implementing the answers.





Dairy sustainability topics - Click on the image to enlarge



1. Greenhouse gases

Dairy farms emit greenhouse gases and this has impact on climate change. The reduction of emissions on dairy farms focuses on methane (CH₄) and nitrous oxide (N₂O) and to a lesser extent on carbon dioxide (CO₂). Feeding and manure management offer opportunities for reduction. Farms can also contribute to the reduction of greenhouse gasses in the air by taking measures that sequester carbon in soils through the increase of the soil organic matter.

Download:

- [Brochure: Ten questions and answers about methane \(https://edepot.wur.nl/630735\)](https://edepot.wur.nl/630735)



2. Soil quality & nutrients

Improving soil quality focuses on optimal crop yields combined with adding to soil ecosystem functions such as water regulation, nutrient cycling and soil microbial and plant biodiversity. Nutrient application will be adapted to minimise nutrient losses such as nitrogen and phosphorus to water and air. Sequestration of carbon in soils is an important measure to improve soil quality and to contribute to the reduction of greenhouse gasses in the air.



3. Biodiversity

Land use for growing dairy cattle feed will impact local and global biodiversity. Developing best practices that contribute to biodiversity is an emerging topic in dairy research. Examples of these practices are: the reduction of emissions that are harmful to nature, less use of biocides, and less use of soy from areas at risk of deforestation. Collaboration with nature conservation organisations, landscape restoration and protection of rare species also contribute.

Water quality & quantity

Water can have many roles on the farm: facilitate growth of crops, drinking water for animals and use for cleaning. Minimising the impact of the farm on the quality of surface and ground water is the first sustainable objective. This is connected to the use of fertiliser, manure, biocides and other types of water contamination. The second one is to use water efficient, both for crop and for milk production.



5. Animal welfare & health

Creating conditions to enable normal patterns of animal behaviour by adjustments of housing and application of grazing will have a positive impact on welfare and health. The introduction of measurements on animals to monitor animal welfare is an important field of research to better understand welfare and discomfort. Feet and legs, mastitis and heat stress are important issues that require further improvement to increase animal welfare.



6. Circular food production

The aim of a circular food system is to optimize the use of available biomass resources in the world. One of the goals in this circular approach is to avoid the use of human-edible biomass (such as grains and pulses) as food source for animals. This would contribute to the world food security. The challenge for the dairy sector is to reconsider the position of the dairy cow in a circular food system. Future feed rations should focus more on residuals from plant production and by products from the food industry.

Download:

- [Brochure: Manure a valuable resource \(https://edepot.wur.nl/294017\)](https://edepot.wur.nl/294017)
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7. Rural livelihoods

The dairy sector contributes to the economic viability and resilience of many rural communities and to supplying nutritious food in many countries. Building stronger dairy chains responding to market needs and securing safe and nutritious dairy foods are crucial goals in dairy development. Incorporating sustainability themes including the optimal use of land resources are important aspects to build strong international dairy

chains that contribute to economic growth.

Finding answers together

Experts from Wageningen University & Research have many years of experience in working on a broad range of sustainability themes and practices to improve results.

WUR can develop tailor made sustainability programmes including monitoring schemes and the design of interventions to ensure the implementation of the practices by dairy farmers.

Contact our sustainability experts

We provide effective solutions to issues faced by public and private clients. Contact our experts and let's work on finding answers together!



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Expert Economic Research

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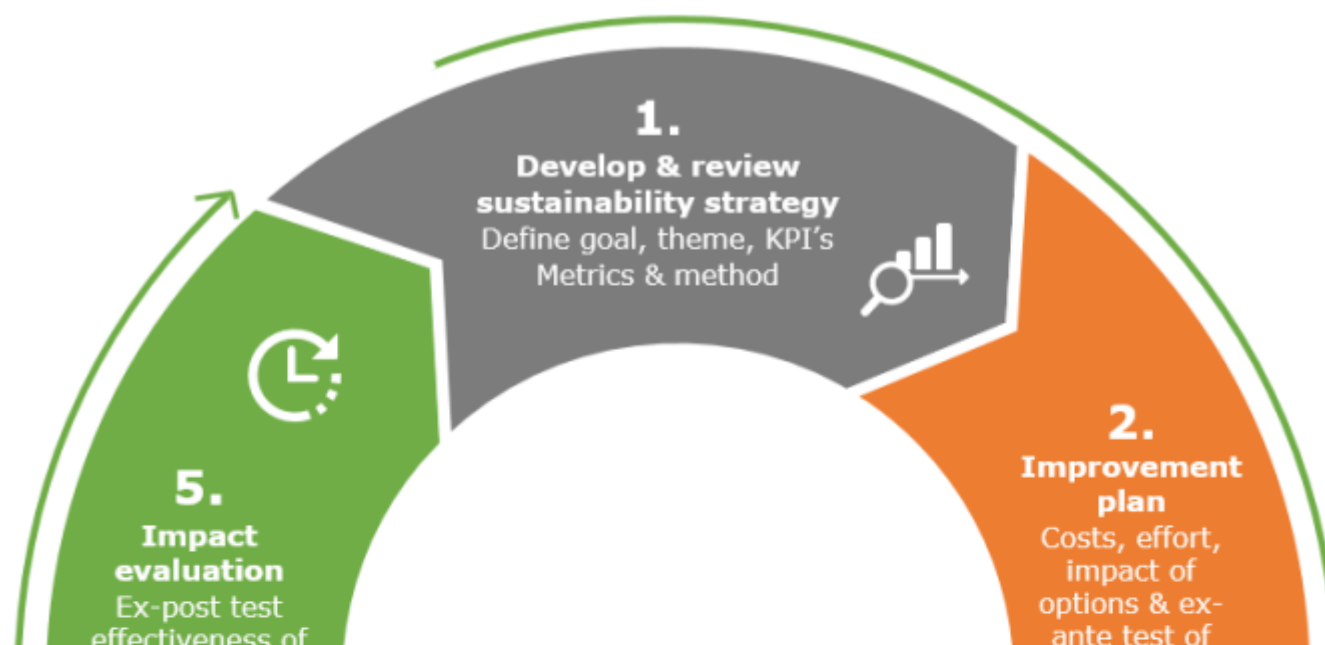


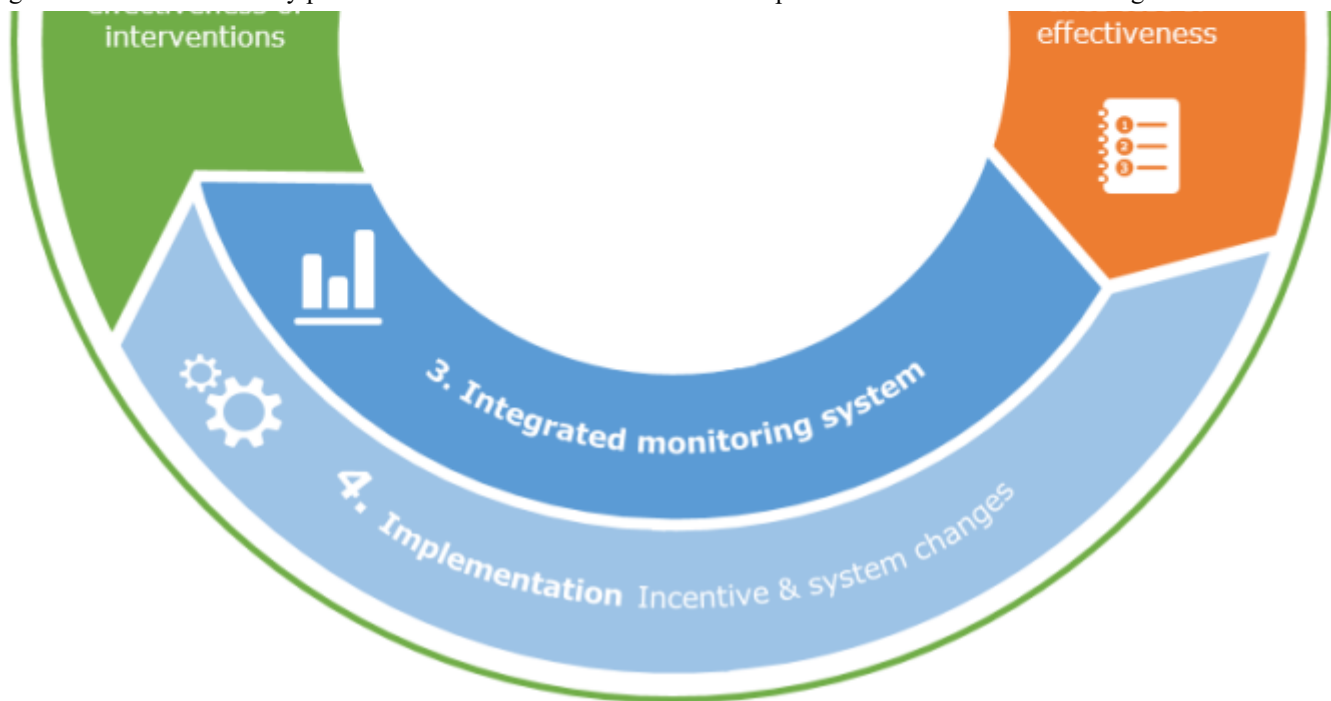
ir. JH (Jan Hendrik) Mica MSc

Expert Livestock Research

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Reach your sustainability goals in five steps or less





Click on the image to enlarge, and read more about how we can help you below

- + 1. Sustainability strategy development
- + 2. Farm level improvement plan
- + 3. Integrated monitoring system
- + 4. Implementation on farm level
- + 5. Sustainability impact evaluation
- + 6. Dairy development in emerging economies

Read our dairy production news



Kees Huizinga, From Wageningen to Ukraine: farming with vision

28 April 2025



Fact check: just how harmful is methane?

02 September 2024





AGROS project concludes contribution to sustainable agricultural sector with networking and knowledge event



11 April 2024



New project assesses methane mitigating feed additives and fat supplements



28 March 2024



'Hedgerow 2.0' planted on Agro-Innovation Centre De Marke



16 February 2024



Tests yield first successful methane sensor



15 February 2024



Animal resilience can be predicted and influenced



06 February 2024



5 million grant for breeding efforts to reduce methane



18 December 2023



Joint manure fermenter may help reduce ammonia and greenhouse gas emissions



06 December 2023



WUR is working with dairy supply chains to reduce carbon footprint of milk by 50%



12 July 2023
