

# Danone's Methane Ambition

**JANUARY 2023**

Danone aligns with the Global Methane Pledge and targets 30% reduction in methane emissions from fresh milk by 2030. We are the first major food company to adopt a methane-specific climate commitment.

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# EXECUTIVE SUMMARY

Danone is proud to be a global dairy leader. We believe in the power and relevance of dairy to deliver a healthy, sustainable future. Fifty years ago, Antoine Riboud set out a radical vision for business leadership, a vision that integrates business, social progress, and environmental stewardship. That intention lives on today in all that we do. This is why we have decided to tackle the methane challenge head-on.

- 1. Cutting methane emissions is the most immediate opportunity we have to slow down global warming and prevent irreversible damage to the planet.**
  - **Methane is a potent greenhouse gas.** Methane has more than 80 times the warming power of carbon dioxide over the first 20 years after it reaches the atmosphere. At least 25% of global warming is currently driven by methane linked to human activities.
  - **Methane reduction will deliver immediate benefits.** Acting now to reduce methane emissions will provide [immediate benefits](#) to the climate that carbon dioxide reductions cannot achieve on their own. For this reason, over 150 countries came together in 2021 and signed the Global Methane Pledge, agreeing to reduce methane emissions by 30% by 2030.
  - **Dairy can play a meaningful role in reducing methane.** [Methane emissions from agriculture and livestock](#) make up approximately 40% of global methane emissions, with roughly 32% come from livestock activities and 8% from rice cultivation. Dairy cattle represent an estimated 8% of methane emissions.
- 2. In 2022, Danone was among the first companies to have our 1.5°C Forest, Land and Agriculture (FLAG) target** approved by the Science Based Targets initiative. Methane reduction is essential to meeting our 1.5°C ambition.
- 3. By 2030, Danone is therefore targeting a 30% absolute reduction in methane emissions from fresh milk for our dairy products<sup>1</sup>** compared to a 2020 baseline, aligning our efforts with the Global Methane Pledge and confirming methane reduction as an essential pillar of our 1.5°C journey. Fresh milk is our number 1 ingredient and represents roughly 70% of our methane emissions. Globally speaking, Danone aims to remove 1.2 million tons of CO<sub>2</sub> eq. of methane emissions by 2030.
- 4. To address our remaining methane emissions<sup>2</sup> and spark broader change, we will engage with our dairy ingredients suppliers and the dairy industry** to encourage alignment and progress towards the Global Methane Pledge target.
- 5. To achieve our methane target, farmers must be equipped to lead.** The majority of methane emissions are on the farm. To meet this target, we will support dairy farmers to reduce methane by: improving herd and feed management, reducing manure-related emissions, and developing innovative methane inhibitor solutions. Doing so is not only important for climate but will strengthen farm resilience and ensure dairy farming is fit for the future.
- 6. Dairy can be, and must be regenerative.** These pathways to reduce methane must be a part of a holistic regenerative dairy approach that strengthens soil health, improves biodiversity, protects water, promotes animal welfare, ensures decent working conditions, and supports farmer livelihoods.

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<sup>1</sup> This is the milk we use for our yogurt and other fresh dairy products. It represents roughly 70% of our total methane emissions. The other 30% are linked to indirect dairy ingredients we buy from suppliers.

<sup>2</sup> Approximately 30% of our methane emissions.

**7. Dairy is a source of livelihoods for 1 billion people and an essential part of healthy, sustainable and accessible diets.** It contains a high concentration of Calcium, Vitamin D, and nutrient-rich proteins, all essential for the body, especially when reducing meat consumption.

**8. We're not starting from zero, but we need to move faster.** In driving methane reduction, we will accelerate progress and build on existing assets:

- We already achieved an estimated 14% absolute methane reduction between 2018 and 2020.
- We are building expertise with regenerative agriculture projects on dairy farms in 14 countries, through our regenerative agriculture program, Danone Ecosystem and initiatives like Farming for Generations.
- We are measuring GHG emissions across our dairy business. Since 2017, Danone has been conducting country-by-country assessments to track GHG emissions from fresh milk, and we are currently on track to measure 92% of our milk volumes.
- We are piloting innovative technologies and approaches that are already showing promising results, such as:
  - Feed additives that reduce the methane created by microbes in the cow's stomach (similar to digestive aids people take)
  - Symbrosia - a seaweed enteric methane emission inhibitor - Danone Manifesto Ventures is an investor.
  - ZELP - a patented cow-wearable tech, which reduces cows' methane emissions while improving animal welfare, through increased health monitoring).
- We are mobilizing our brands to engage consumers on methane reduction and regenerative dairy. Danone brands are already part of the change, such as Danone brand, Actimel, and Les Deux Vaches.

**9. We will measure and report transparently** on our progress, as part of our extra-financial disclosure.

**10. We can't do it alone.** Rapidly reducing methane emissions is a collective challenge. Danone will build on existing partnerships and is launching a new, **strategic partnership with Environmental Defense Fund (EDF) to support its methane ambition.** Together, Danone and EDF will work on:

- Improving science, data and reporting for methane emissions in agriculture
- Advancing innovative financing models (economic analysis and case-studies, co-funding models and smallholder livelihoods)
- Catalyzing industry and policy leadership through collaboration and advocacy

**11. Collective action is key:** We invite business, government, and communities to work together by:

- Accelerating strategic partnerships across business, government, and NGOs
- Developing policies that are economically and socially viable for farm communities and uphold the principles of animal welfare
- Equipping farm communities to adopt methane reduction & regenerative dairy practices
- Collaborating across the dairy sector: farmers, input suppliers, processors, and retailers
- Holding each other accountable for progress

# WHY METHANE MATTERS

**Methane is the fastest way to slow global warming.** It is a short lived and highly potent GHG with a Global Warming Power 80 times that of carbon dioxide (over a 20-year time scale). It is responsible for about 25-percent<sup>3</sup> of human-led increase in global temperature.

Given methane's unique properties, **a reduction in its emissions will have immediate benefits on climate that reductions in carbon dioxide cannot achieve on their own**, putting the planet on the best possible path to a 1.5-degree future<sup>4</sup>.

Additionally, new research<sup>5</sup> indicates that setting 2050 net zero goals does not guarantee the achievement of Paris Agreement climate target. Rather, **countries and companies should set near-term milestones for methane on top of multi-GHG targets.**

To date, **150 countries have signed the Global Methane Pledge, agreeing to reduce methane emissions 30% by 2030.** Companies are being asked to follow suit: indeed, the UN High-level Expert Group report, *Integrity Matters: Net-zero Commitments by Businesses, Financial Institutions, Cities and Regions*, recommends that businesses not only set targets covering all emissions in their supply chains but include separate targets for material non-CO2 greenhouse gas emissions', such as methane. Setting specific targets can help companies maximize the near-term benefits of methane reduction.

## METHANE AND DAIRY

**Dairy is a source of livelihoods for 1 billion<sup>6</sup> people and an essential part of sustainable, healthy and accessible diets.** It contains a high concentration of essential nutrients, including Calcium, Vitamin D, and nutrient-rich proteins, which play an important role in nutrition, especially when reducing meat consumption<sup>7</sup>. Dairy is also easy, enjoyable and affordable. Given its economic, nutritional and cultural importance, Danone considers it essential to secure of place of dairy in sustainable diets, now and in the future.

**Dairy has an important role to play in delivering methane reductions needed to achieve 1.5°C.** Methane emissions from agriculture and livestock make up approximately 40% of global methane emissions, with roughly 32% coming from livestock activities and 8% from rice cultivation. Dairy represents an estimated 8% of methane emissions.

As indicated in the *IPCC Special Report: Global Warming of 1.5°C*, **dairy's carbon dioxide emissions need to strive to Net Zero by 2050, while its methane reduction should range from 24-47%<sup>8</sup>.** To support the role of dairy in driving GHG reduction, Danone joined other dairy leaders and the Global Dairy Platform to launch 'Pathways to Net Zero' in 2021.

Driving **methane reduction in dairy can bring broad co-benefits:** as stressed by UN Environmental Program (UNEP), "*Fast and ambitious methane mitigation is one of the best strategies available today to deliver immediate and long-lasting multiple benefits for climate, agriculture, human and ecosystem health.*"

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<sup>3</sup> See: [Methane: A crucial opportunity in the climate fight - Environmental Defense Fund \(edf.org\)](#)

<sup>4</sup> See: [The evidence is clear; the time for action is now. We can halve emissions by 2030. — IPCC](#)

<sup>5</sup> See: [Path to net zero is critical to climate outcome | Scientific Reports \(nature.com\)](#)

<sup>6</sup> <https://globaldairyplatform.com/>

<sup>7</sup> See: AO (2011). Dietary protein quality evaluation in human nutrition <http://www.fao.org/ag/humannutrition/35978-02317b979a686a57aa4593304ffc17f06.pdf>

Note that dairy has a lower environmental footprint than beef meat. Indeed, the production of milk protein releases 5 times less greenhouse gases and requires 6 times less land than the production of protein from herd beef meat, on average. See: Poore & Nemecek. (2018). Reducing food's environmental impacts through producers and consumers. *Science* 360, 987–992.

<sup>8</sup> See : <https://www.ipcc.ch/sr15/chapter/spm/>

Indeed, **dairy methane reduction must be part of a holistic, 'regenerative dairy' approach** that strengthens soil health, improves biodiversity, protects water, promotes animal welfare and supports farmer livelihoods. To achieve this, we must also adopt a farmer-centric approach that ensures support for resilient and economically viable farms, and also brings benefits to broader communities.

## DANONE'S METHANE AMBITION

Danone is proud to be a global dairy leader. We believe in the power and relevance of dairy to deliver a healthy, sustainable future.

We have been working to reduce GHG emissions, including methane emissions from dairy, for over a decade. In 2022, **Danone was among the first companies to have our 1.5°C Forest, Land and Agriculture (FLAG) target approved by the Science Based Targets initiative**. Methane reduction is essential to meeting this target.

We believe **now is the time to go further in reducing agricultural methane emissions**, through a holistic, regenerative dairy approach that strengthens farmer livelihoods and brings broad co-benefits for nature and communities. This is why:

- **By 2030, Danone is targeting a 30% absolute reduction in methane emissions** from fresh milk for our dairy products<sup>9</sup> against a 2020 baseline, aligning our efforts with the Global Methane Pledge and confirming methane reduction as an essential pillar of our 1.5°C journey. Fresh milk is our number 1 ingredient and represents roughly 70% of our methane emissions.
- **To address the remaining 30% of our methane emissions and spark broader change, we will engage with our dairy ingredients suppliers and the dairy industry** to encourage alignment and progress towards the Global Methane Pledge target.
- This is the first methane-specific climate commitment by a major food company. Globally speaking, **Danone aims to remove 1.2 million tons of CO2 eq. of methane emissions by 2030**.
- **To achieve our methane target, farmers must be equipped to lead**. The majority of methane emissions are on the farm. To meet this target, we will support dairy farmers to reduce methane by: improving herd and feed management, reducing manure-related emissions, and developing innovative methane inhibitor solutions.
- **To support the implementation of this goal, Danone and Environmental Defense Fund are launching a strategic partnership, focused on:**
  - Improving science, data and reporting for methane emissions in agriculture
  - Advancing innovative financing models (economic analysis and case-studies, co-funding models and smallholder livelihoods)
  - Catalyzing industry and policy leadership through advocacy
- **Methane emissions represent 25% of Danone's full scope emissions** and 42% of our agricultural emissions<sup>10</sup>.
- **We will measure and report transparently** on our progress, as part of our extra-financial disclosure.

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<sup>9</sup> Roughly 70% of our total methane emissions. The other 30% are linked to indirect dairy ingredients we buy from suppliers.

<sup>10</sup> Measured in CO2 equivalent (GWP100 from IPCC AR6, CH4=27).

# WHAT WE HAVE DONE SO FAR

We have already **achieved an estimated 14% methane reduction between 2018 and 2020**, through our work with dairy farmers to adopt Regenerative Agriculture practices.

**Methane reduction is an integral part of 'regenerative dairy'**, a holistic, outcome-based approach to dairy farming that is grounded in the principles and proven practices of Regenerative Agriculture (see *Appendix 1 for more detailed definition*).

**Regenerative dairy starts with farmers.** Today, Danone works directly with 58,000 dairy farmers, including many smallholders. We source most of our milk locally, within 200 km around our factories.

Danone has been working with many of these farmers and other partners **to define and deploy regenerative agriculture practices on dairy farms**, including practices to activate the **following levers for methane reduction**:

- **Better herd & feed management:** improving animal health and welfare, ensuring a high-quality diet composition, achieving better feed efficiency to improve yield and reduce enteric methane emissions per liter of milk,
- **Manure management:** using a variety of solutions adapted to farms' needs such as manure pits with slurry store, solid/liquid separators or anaerobic digesters to decrease methane emissions.
- **Breakthrough methane inhibitors:** investing in innovative solutions such as feed additives which can, for instance, directly prevent micro-organisms' production of methane in the rumen.

See *Appendix 2 for more detail on methane reduction levers*.

## 1. Developing and deploying tools for farmers

- Since 2017, Danone has been conducting **country-by-country assessments on 85% of our milk volumes using the [Cool Farm Tool \(CFT\)](#) worldwide** (14 countries) and CAP2ER tool for France. The CFT was developed and is overseen by a multistakeholder coalition that includes food manufacturers, retailers, input suppliers, NGOs, and universities. It allows quantification of impacts at farm-level across four areas: GHG footprint, water footprint, biodiversity and food & waste. The tool's strength lies in its global application, but is designed for continuous improvement.
  - Additionally, we have worked with U.S. partners Sustainable Environmental Consultants to develop their [R3 tool](#) - "Robust, Resilient and Reliable" - to help farms understand the potential return on investment of regenerative agriculture practices.
- To support dairy farmers in transitioning to regenerative practices, **we developed the [Danone Regenerative Agriculture Scorecard](#) and the [Danone Environmental Handbook](#)** in partnership with WWF France. These tools support farmers in identifying where they currently are on their regenerative agriculture journey, and what best practices they can apply to go further. Alongside questions on soil, water and biodiversity, it includes a dedicated section on manure management, which is directly relevant to GHG emissions and in particular methane.
- **Danone created Farming for Generations (F4G) in 2019**, a global alliance which brings together companies specialized in animal health and welfare, animal nutrition, crop nutrition and science and artificial intelligence, as well as NGOs like World Wildlife Fund for Nature, Compassion in World Farming, and Wageningen University.
  - F4G has developed **a [practical toolbox of best-in-class solutions for dairy farmers, including solutions for methane reduction](#)**. These include factsheets and other resources dedicated to enteric emissions reduction, [herd optimization](#), and [manure management](#). These resources are available in 10 languages, to facilitate upskilling throughout our farmer community. Most are made available for dairy farmers everywhere on our [Regenerative Agriculture Knowledge Center](#).

## 2. Developing transformative projects with farmers

Today, we have supported regenerative agriculture projects for dairy farms in 14 countries. While these projects are holistic in nature<sup>11</sup>, reduction of GHG emissions, including methane, has been a priority.

- **Herd management and feed fundamentals**

- **In Mexico**, Danone [is working](#) with Danone Ecosystem, the Inter-American Development Bank, Technoserve and local partners to support 500 small-holder farmers in transitioning to regenerative dairy practices. Support has included measures to improve herd management and productivity, including connected collars that monitor cow rumination and movements. This project reduced GHG emissions by 13% in 2 years and improved farm economics: every dollar invested in the project generated \$34 in incremental income for smallholder farmers.
- **In France**, [Les Deux Pieds sur Terre](#) project co-created with Danone Ecosystem, Danone and Institut de l'Elevage focuses on 3 areas of action: herd management, improvement of feed autonomy and soil protection. This program has strengthened awareness of best practices among 86% of our dairy farmer partners in France, and enabled an 8% reduction in GHG emissions.<sup>12</sup>
- **In the US**, Danone [has been working](#) with Neogen, as part of Farming for Generations, to improve breeding strategies on farms. The partnership enabled the implementation of a Dairy Dashboard, with tailored strategic breeding plans. After 4 years of implementation, genetic misidentification of calves declined from 28% to 0%, the culling rate was reduced by 2% due to a healthier herd, and the production level of solids per cow also improved to a rate of 2.5kg/day, resulting in an overall healthier, more productive and efficient herd.

- **Manure management**

- **In France**, Danone Ecosystem [helped 41 farmers](#) to form a cooperative to provide manure to a biodigester owned by the municipal authorities on Evian impluvium. The manure was centrally collected and converted into biogas (injected into the public gas network) and digestate. This project, as part of Évian's journey in preserving the source and promote sustainable agricultural practices in the Évian-les-Bains area, allowed: for farmers to save up to 70% on fertilizer expenses; for groundwater to be protected and keep the same quality it had 200 years ago; and for GHG emissions to be reduced while generating clean energy.
- **In Belgium**, Danone Ecosystem, Danone Belgium- and local partner, VCM, created the [Wings](#) project to advise and support farmers on manure management and its optimization to limit emissions. It also helped farmers identify financing solutions, fostered knowledge transfer, facilitated the purchasing of pocket biodigesters and the implementation of the project's models.
- **In the U.S.**, Danone North America has already funded a variety of infrastructure projects across dairies of different sizes and in different growing climates, to improve manure management while also exploring manure as a more efficient alternative to synthetic fertilizer. These projects allowed us to confirm that better manure management can not only reduce methane but also potent N2O.

## 3. Investing in innovative methane inhibitor solutions

We have a dedicated team of experts that is actively exploring various breakthrough innovations and technologies on market, evaluating their potential with academia and scientific partners and investing in pilots.

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<sup>11</sup> These projects are designed to produce broad climate, nature, animal and social benefits.

<sup>12</sup> CO2 eq./Litre of collected milk between 2016 and 2020 in Danone's partners dairy farms in France



- Our **recent pilot in Belgium using a new feed additive, [Bovaer](#), was the first major scale study and the longest commercial trial ever conducted**. It is showing promising results, with an 18.3% reduction in methane enteric emissions, safety for cows and consumers and ease of use for farmers. The project started on 3 farms and has now been scaled up to 11 farms.
- In addition, Danone Manifesto Ventures is investing in startups developing methane inhibitors solutions. These include:
  - In 2021, an **investment in the UK-based startup [ZELP](#)** (Zero Emissions Livestock Project). ZELP developed a cow wearable accessory that it says could aim to reduce methane emissions by more than half.
  - In 2022, an **investment in the US-based startup [Symbrosia](#)**. Symbrosia developed a seaweed-based feed additive, SeaGraze, that it says could reduce livestock methane emissions by over 80%.

## HOW WE WILL ACCELERATE

### 1. Quantifying and reporting impacts

Measurement of methane reduction will be critical to ensuring we are delivering impact. **We are actively working with the Cool Farm Alliance to better model and report methane emissions through the Cool Farm Tool (CFT).**

In 2022 CFT has:

- **Updated the methane Global Warming Potential according to the Latest IPCC report** (Assessment Report 6), GWP100 methane equal 27.
- **Introduced Feed Additives into the assessment**, improving the methodology for modelling reductions in methane emissions particularly in livestock farming. This increased granularity in evaluating GHG emissions will provide us more accuracy in our emissions monitoring.

In 2023, CFT:

- **Will enable separate monitoring of methane emissions**, thereby allowing reporting separately on methane emissions versus total emissions. Overall, this will allow us to develop more targeted action plans and report with greater transparency on our progress.

Recently we also started the roll out of CFT assessments in Morocco, which will **bring our assessment coverage from 85% to 92% of our milk volumes**.

In addition, we will **work with dairy ingredient suppliers and the broader industry to increase transparency on methane emissions**. To this end, through the Sustainable Dairy Partnership (SDP), Danone and other dairy companies launched the SDP carbon module\* towards more transparency in GHG emission reporting, including a separate reporting of methane emissions.

More broadly, Danone will **support continuous improvement of methane reduction measurement**, as research and technological solutions evolve, working with farmers, partners, and other stakeholders.

### 2. Expanding on-farm projects

**Danone will work with farmers and partners to ramp up on-farm projects across diverse farming systems (smallholder, organic, pasture-based, mountain farms, larger farms)**, in order to reach our 30% by 2030 target and drive broader agricultural methane reductions.

Most reductions in our fresh milk supply will be delivered through **accelerating our efforts to optimize overall farm performance** through better herd and feed management, manure management, and using complementary solutions such as feed additives to go the last mile. Solutions will be prioritized with farmer partners according to geography, farming model and overall farm context.

In the short term, **we will launch or accelerate 4 initiatives for methane reduction, in Africa, Europe and the United States.**

**In Africa**, we have already deployed regenerative agriculture projects to support more than 12,000 smallholder dairy farmers across Morocco, Egypt and Algeria, and are looking to double this figure in the coming 4 years. Such projects enable farmers to increase their yield, mainly through better herd and feed management, and therefore to reduce the carbon intensity and methane emissions associated with dairy in Africa.

- In Morocco, [H'lib Bladi](#) project was launched in 2015 with Danone Ecosystem, with the goal of developing sustainable dairy production for smallholder farmers (which represent more than 50% of country fresh milk production).
- Phase 1 was focused on improving technical knowledge, strengthening dairy collection centers and therefore improving the yield (almost multiplied by 2) and quality of milk.
- After successfully onboarding almost 2 000 farmers (including 200 “high potentials” with even stronger and more personalized support) over the past few years, this project will be scaled in a ‘phase 2’, to be launched in 2023.
- The goal of phase 2 will be to train 10,000 farmers across 170 milk collection centers over the country. We expect that this level of scale will increase milk production by + 10 ML of milk per year (i.e. +0.5% for Moroccan milk production).

**In Europe**, we will expand existing support to dairy farmers on methane reduction. Two specific projects will be launched in 2023 in Spain and in Belgium. These projects will focus on:

- Better manure management practices and production of renewable energy:
  - In Belgium, we will support the development of manure pocket digesters and plan to pilot new manure transformation techniques (stripping and scrubbing);
  - In Spain, we will support the installation of large biodigesters on farm;
- Continuous productivity improvement thanks to best-in-class animal welfare and herd management practices, with tailored training and technical support to farmers; and
- Exploring innovative solutions such as feed additives to address remaining emissions gaps.

**In the US**, we will expand our existing regenerative dairy program, which is already comprehensive in the country<sup>13</sup>. The program aims to increase organic matter in soils, improve yields, reduce chemical use, restore biodiversity and enhance soil water holding capacity, thereby helping to provide farms with improved, long-term economic resilience. To date, it has reduced more than 54,000 tons of carbon dioxide equivalent (including methane) and prevented more than 480,000 tons of soil from erosion.

- Danone North America will be expanding this program, working with a set of value chain partners with support from the U.S. Department of Agriculture.
- Our goal will be to financially support dozens of projects across farms to reduce manure methane, including through new infrastructure investments such as liquid-solid separators, spreaders, composters, storage facilities and draglines for safe and proper handling of dairy manure on farms. Such investments can be cost prohibitive to farms in their own, but can reduce methane 20-35% on a given dairy.
- Danone will also work to support research and farm pilots to accelerate enteric methane emission solutions, while continuing to promote holistic regenerative practices for soil, water and biodiversity.

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<sup>13</sup> Our U.S. regenerative dairy program currently covers approximately 144,000 acres (93% of farms and 75% of Danone NORAM's milk supply) and is verified by Sustainable Environmental Consultants.

Collectively, we expect these **initiatives in Morocco, Spain, Belgium in the United States to deliver roughly 20% of our methane reduction** roadmap.

### 3. Accelerating strategic partnerships

Danone is accelerating its methane reduction journey building on existing partnerships but also building new ones.

One of these is with Environmental Defense Fund (EDF), which brings a wealth of experience and expertise working with corporate partners and farmers to advance climate-smart agriculture.

**EDF and Danone are launching a strategic partnership** to support Danone's ambitious efforts on methane reduction. This partnership will be centered around:

- **Improving science, data and reporting** for agriculture methane emissions;
- **Advancing innovative financing models** (economic analysis and case-studies, co-funding models and smallholder livelihoods); and
- **Catalyzing industry and policy leadership** through advocacy.

### 4. Policy engagement

Policy is critical to unlocking systemic solutions to support dairy farm transformation, from supporting research and innovation, to co-financing, to ambition-setting, to driving a level playing field.

Broadly speaking, we advocate for:

- Policies that clearly lay out the required reductions on methane, with **targets by sector, including food agriculture**.
- **Specific reporting on methane** by country, sector, investment portfolios and company, in the spirit of 'what gets measured gets done'.
- **Public support for improved research on GHG reduction** in agriculture, focusing on methane, while looking at benefits for nature.
- **Partnerships and co-financing to support farmers** in the transition. Today, less than 2% of climate mitigation investment tackles methane, even though it is a huge driver of climate change<sup>2</sup>. Governments can play a crucial role in rewarding farmers that adopt practices that drive methane reduction, whether by repurposing subsidies or via additional financing streams and market mechanisms. In doing so, they should look to encourage co-benefits for soil, water and biodiversity.

For example, we publicly advocated for support to farmers to create new solutions for climate change, including around methane reduction, in the Inflation Reduction Act in the United States.

More specifically, we see how transformation is accelerated when public and private sectors join forces on this issue. This can take many forms:

- **In the United States**, Danone North America is working in partnership with the US Department of Agriculture, to support farmers in reducing methane emissions. A value chain partnership, including DNA, was recently awarded 70M dollars by the USDA to support farmers, as part of its Climate Smart Commodities initiative. This includes significant investments in manure management equipment such as liquid-solid separators which reduces methane emissions and in many cases creates an alternative input to synthetic fertilizers.
- **In Europe**, we are supporting the European Commission's Climate Neutral Farms (ClieNFarm) project to co-develop and upscale systemic locally relevant solutions (organizational, financial, technical) to reach climate neutral, resilient and sustainable farms across Europe, integrating and improving existing solutions to achieve economically viable farming business models and systems by involving farmers, extension services, agri-food business, policymakers, finance and citizens.

- **In Latin America**, the Mexican government and Inter-American Development bank have played an essential role in accelerating impact for smallholder farmers in the Margarita project by supporting the project financially. Those contributions helped support trainings on best practices, improve infrastructure and equipment on the farms as well as provide technology access such as connected collars to the farmers.
- **In Africa**, the Algerian government supported smallholder farmers together with Danone Ecosystem and Danone to help them improve their practices and limit the effect of enteric fermentation. Training on herd management, animal welfare, local feed production and feed optimization were the key focus area of the H'lib Dzair project. The total funding of the project was 4M euros and enabled to support 1500 farmers.

## 5. Consumer Engagement

Brands have a role to play in helping consumers reconnect to where their food comes from and how its grown, in order to promote this shift to a more sustainable food system. Through what they eat and drink each day, consumers have the power to help shift demand in favor of practices that protect natural resources, support farmers, strengthen animal welfare and reduce methane emissions.

Our brands are engaging consumers in a number of ways:

**In Mexico**, Danone dairy brand launched a dedicated product line, **Leche de Origen**, to engage consumers on the role of smallholder farmers in producing dairy sustainably. This campaign built on the broader Danone Mexico project supporting 500 smallholder farmers, together with Danone Ecosystem and Inter-American Development bank (see page 8).

**In Belgium, Actimel** is working to expand and strengthen its efforts on regenerative agriculture with a key pillar on reducing emissions from fresh milk, including methane, nitrous oxide, and CO<sub>2</sub>. The brand succeeded in reducing its GHG emissions by 20% between 2017 and 2021. In 2022, it launched a campaign to bring consumers closer to its regenerative dairy journey, and achieved carbon neutral certification.

**In France, Les 2 Vaches** has launched consumer campaigns focusing on highlighting how dairy, when produced sustainably, is linked to better animal welfare and fair value sharing. The brands consumer outreach built on projects such as Les Deux Pieds sur Terre, which supports French dairy farmers in reducing their carbon footprints and improving soil health, while increasing their competitiveness and enhancing the image of agriculture among the general public (see page 8).

## 6. Collective mobilization

We invite business, government, and communities to work together towards methane reduction by:

- Accelerating strategic partnerships across business, government, and NGOs
- Developing policies that are economically and socially viable for farm communities and uphold the principles of animal welfare
- Equipping farm communities to adopt methane reduction & regenerative dairy practices
- Collaborating across the dairy sector: farmers, input suppliers, processors, and retailers
- Holding each other accountable for progress.

## APPENDIX 1

### DANONE WORKING DEFINITION OF REGENERATIVE DAIRY

Regenerative Dairy is a holistic, outcome-based approach to dairy farming that is grounded in the principles and proven practices of Regenerative Agriculture. Building on the natural potential and connection of the farm's resources (farming community, animals, plants, soil, water) and when adopted under the right conditions, Regenerative Agriculture practices - such as livestock integration, soil health practices (soil cover, limited tillage, crop rotations) and reintroduction of biodiversity on farm - have been proven to:

- Limit greenhouse gas emissions and support local biodiversity, carbon sequestration and water storage into the soil
- Uphold the highest standards of animal welfare
- Improve the overall resilience and long-term profitability of the farm, strengthening livelihoods of farmers, farm workers and their ecosystem.

At the center of Regenerative Dairy are principles and practices that ensure animal welfare and strengthens the positive impact that animals can have on the farm's ecosystem:

- Upholding the five freedoms of animals: freedom from pain, stress, hunger, thirst and discomfort by promoting natural behavior, with free circulation, and outdoor access where possible
- Working holistically on animal rearing, health and longevity
- Optimizing herd size and breeding plans, adapted to local constraints of the farm (e.g., climate adaptation, land availability)
- Reintegrating the animals into the landscape:
  - Encouraging feed autonomy and locally sourced feed, promoting [rotational] grazing wherever possible, promoting local landscape synergies [bi-products from neighboring industries], and phasing out feed with a risk of deforestation
  - Improving manure management through handling, storage and/or transformation, in order to bring back manure as organic fertilizer for soil health and/or valorize it as an alternative source of energy for the farm

Regenerative Dairy farms incorporate these animal integration practices alongside proven agronomic practices such as soil cover, no or limited tillage and crop rotation. Each dairy farm is unique and will have a different path to Regenerative agriculture.

Dairy farmers are the leaders in this transformation. With their expertise, combined with the potential of breakthrough innovations in dairy production, Regenerative Dairy can help build resilient food systems that benefit local farming communities and ensure dairy remains an essential, nutrient-rich source of nourishment for today's and future generations.

## **APPENDIX 2**

### **METHANE REDUCTION LEVERS IN DETAIL**

#### **1. Better herd & feed management to improve efficiency**

- Ensuring good livestock health is fundamental to animal welfare and brings co-benefits in terms of methane reductions, as healthier cows will increase lifetime production, thereby decreasing the relative methane emissions associated per Liter of milk. Lifetime production may also be improved through optimizing young stock/cow ratio.
- Herd management can also be improved through genetic selection. Monitoring and selecting genetic traits (such as higher milk solids production, better feed efficiency) which improve cow productivity, efficiency and longevity, as well as animal health and welfare. Using high-quality forage that is well-adapted to local conditions leads to better digestibility while meeting the nutritional requirements of cows. It is key for successful sustainable milk production, as it improves fiber digestibility, energy balance and total nutrient utilization. The better the quality of forage, the easier to ferment, the lower the enteric methane emissions result from the rumen.
- Adapt diet composition to influence the level of enteric methane emissions produced by the rumen. Ensuring a high-quality diet composition is important for improving animal health and welfare, reducing enteric methane emissions, and achieving higher milk yield and feed efficiency.

#### **2. Manure management**

- There are various ways to reduce methane emissions from improved manure management depending on the geography and design of the farm.
- Using anaerobic digesters to convert manure into biogas to produce renewable energy on farm is one way. Another is to cover manure pits with slurry store covers to reduce methane emissions being released into the atmosphere. And liquid-solid separators provide methane reductions as well while also offering an efficient cropland alternative to synthetic fertilizers creating another emission reduction opportunity.

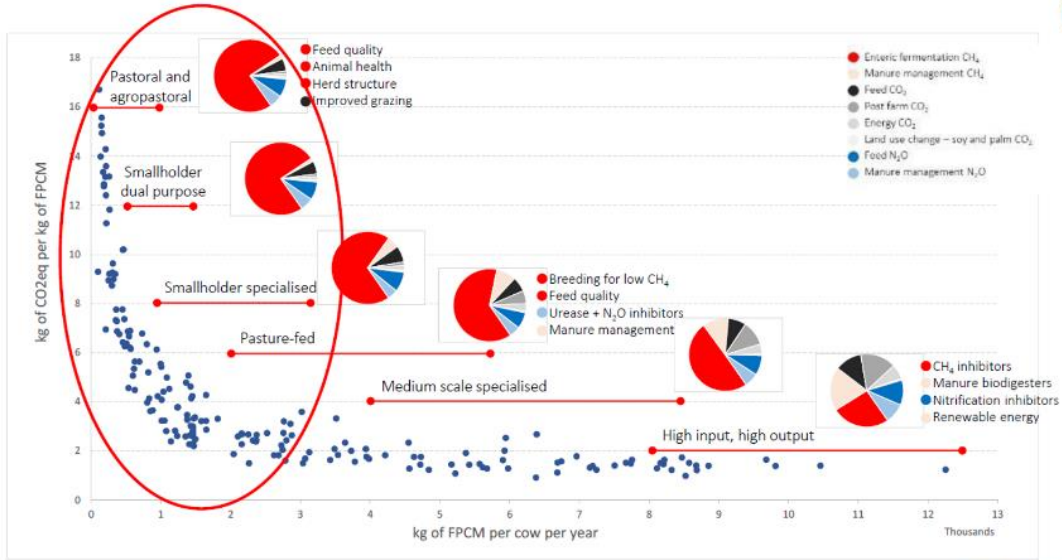
#### **3. Breakthrough methane inhibitors**

- Using feed additives can either directly prevent microorganisms' production of methane in the rumen or alter the metabolic pathways leading to a reduction of the substrate for methanogenesis.
- Using new technologies such as cow-wearables can also reduce methane emissions, by routing the methane through a catalytic mechanism that neutralizes and oxidizes the methane that is exhaled by the rumen, turning it into a combination of CO<sub>2</sub> and water vapor, which significantly reduces its contribution to global warming.

How these levers are prioritized and activated varies according to geography and farming model. Research below from FAO and Global Dairy Platform demonstrates the differences in GHG emission types and levels and therefore the types of reduction levers that may be prioritized. For smallholders, where GHG emission intensity is high, herd management and animal health are critical. For more larger, high-input/high-output models, emission intensity is lower and solutions like manure biodigesters or inhibitors may be prioritized.

# Latest research

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Source: FAO GLEAM 3, unpublished 2020 data