

# Understanding methane: science, policy, finance and actions

## Key messages

Wednesday 17 May 2023

Webinar

Hosted by

International Dairy Federation Head Office



## **UNDERSTANDING METHANE: SCIENCE, POLICY, FINANCE AND ACTIONS**

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## BACKGROUND

Methane has become the focus of global climate change and environmental meetings, as well as public conversations around livestock and dairy. But what do we really know about methane? Do we understand its true nature, its natural cycle and its actual global warming potential? The IDF webinar held on 17 May 2023, “Understanding methane: science, policy, finance and actions” aimed at putting the methane conversation in context and address all these questions.

## Programme

<b>Welcome and opening remarks</b>	IDF President, Piercristiano Brazzale IDF Director General, Caroline Emond
<b>Setting the scene: the science around methane</b>	<b>Definitions – Why methane matters</b> - <a href="#">Video</a> By Myles Allen, Professor of Geosystem Science in the School of Geography and the Environment and Department of Physics, University of Oxford <b>Enteric methane mitigation: The demand for strategic science</b> - <a href="#">Video</a> By Joseph McFadden, Associate Professor of Dairy Cattle Biology, Animal Science Northeast Agribusiness and Feed Alliance Sesquicentennial Faculty Fellow, Cornell University
<b>Global policy landscape on methane reduction</b>	<b>Agriculture methane: policy for action</b> By John Tausel, Senior Director for Global Agriculture Methane, EDF - <a href="#">Video</a> <b>Global Methane Hub Agriculture Program</b> By Hayden Montgomery, Agriculture Programme Director, Global Methane Hub - <a href="#">Video</a> <b>Global perspective on the acceleration of methane emissions reduction from dairy systems</b> By Aimable Uwizeye, Livestock Policy Officer with the FAO, Animal Production and Health Division - <a href="#">Video</a>
<b>From policy to action</b> <b>Showcasing dairy companies' initiatives for tackling methane emissions reduction</b>	<b>Why methane matters?</b> By Sarah Lockwood, Regenerative agriculture program Director, Danone - <a href="#">Video</a> <b>How FrieslandCampina works towards credible methane reduction</b> By Dr Sanne Dekker, Research Specialist Environmental Impact Assessment, FrieslandCampina - <a href="#">Video</a> <b>Methane reduction</b> By Dr Andrew Fletcher, Programme Leader Sustainable Food Systems, Fonterra - <a href="#">Video</a> <b>U.S. Dairy 2050 Environmental Goals Focus on Methane Emissions</b> By Karen Scanlon, SVP, Environmental Stewardship, Dairy Management Inc - <a href="#">Video</a> <b>NDDB's initiatives towards methane emission reduction</b> By Meenesh Shah, Chairman, National Dairy Development Board, India - <a href="#">Video</a>

<p><b>Available resources to accelerate change</b></p>	<p><b>Learnings from Rabobank’s pilots in financing the transition to low-dairy GHG - <a href="#">Video</a></b>  By Marijke Schouten, Lead Decarbonizing Supply Chains, Rabobank</p> <p><b>Policy incentives, public and private partnership case study - <a href="#">Video</a></b>  By Christopher Adamo, Vice President Public Affairs &amp; Regenerative Agriculture Policy, Danone North America</p> <p><b>How Pathways to Dairy Net Zero is Accelerating Global Climate Action - <a href="#">Video</a></b>  By Kevin Burkum, Chief Communications Officer, Global Dairy Platform</p> <p><b>Result-based scheme and funding sources to accelerate carbon farming transition - <a href="#">Video</a></b>  By Jean Baptiste Dollé, Environment Head Department, French Livestock Institute (Institut de l’Elevage)</p> <p><b>Mobilize finance in methane mitigation - <a href="#">Video</a></b>  By Paul Myer, CEO, Athian</p>
<p><b>Concluding remarks</b></p>	<p>IDF Director General, Caroline Emond</p>

## **INTRODUCTION**

IDF Director General, Caroline Emond

When addressing Methane emission from the sector, it could be useful to take some time to review the big picture.

The global dairy sector is strongly committed to climate action as the significant support to Pathways to Dairy Net Zero initiative is showing.

IDF has been working tirelessly to develop methodologies and guidelines to support those efforts on climate. It is then very important to understand the topic of methane.

It should also be noted that the dairy sector represents a fraction of livestock, agriculture and food sectors footprint and has been actively working on improving.

It goes without saying that all human activity has a footprint on environment. The impact of massive use of fossil fuel and coal in many non-agriculture sectors is part of the big picture on climate change and cannot be ignored because they are too difficult to address. Reducing methane in fossil fuel and gases would have a greater impact than in livestock.

One should note that the global dairy sector is also committed to maximize the contribution of dairy to the UN Sustainable Development Goals. That commitment is expressed in the Dairy Declaration of Rotterdam signed in 2016 with IDF – FAO. Dairy contributes significantly to SDG 1,2,3,5, 7,8, 12,13. Thus, the importance of reminding of the substantial contribution of dairy to nutritional security, livelihood, biodiversity and eco-systems services.

Addressing climate change should not come at the expense of other key elements such as nutrition and livelihood.

We all need to be innovative in finding ways to address the OECD triple challenge of providing food security and nutrition to a growing global population, providing livelihoods to those along the food supply chain, and contributing to environmental sustainability.

## KEY MESSAGES

### Session 1: Setting the scene: the science around methane

#### 1. Definitions – Why methane matters

By Myles Allen, Professor of Geosystem Science in the School of Geography and the Environment and Department of Physics, University of Oxford

[Video](#)

- We need farmers' help to meet climate goals, including by reducing methane emissions, but focusing policy on emissions inputs, based on the misleading concept of "CO<sub>2</sub>-equivalent-emissions", is not helping.
- Under standard accounting rules, a crop farmer who contributes to reducing global temperature by planting trees would be rewarded, while a livestock farmer who contributes to reducing global temperature by reducing methane emissions would simply be penalized less, even though both farms may have identical impacts on global temperatures past, present and future.
- Re-focusing climate policy on warming outcomes, by aligning incentives with actual impact on global temperature, could make it **easier** to include agriculture in climate policy, **fairer** on livestock farmers and result in **faster** reductions in the current rate of warming.

#### 2. Enteric methane mitigation: The demand for strategic science

By Joseph McFadden, Associate Professor of Dairy Cattle Biology, Animal Science Northeast Agribusiness and Feed Alliance Sesquicentennial Faculty Fellow, Cornell University

[Video](#)

- The scientific approach to study enteric methane mitigation must be strategic and coordinated with international engagement leveraged to ensure that solutions develop for the wide-breadth of unique production systems.
- The scientific approach must be holistic to ensure that methane reducing efficacy is evaluated in parallel with observed measurement of rumen digestion and nutrient flow, energetics, animal health, and production and composition of animal-sourced foods including residues of human safety concern.
- We cannot ignore the interactions between enteric methane mitigation strategies and host and microbial genetics, environment, or diet, which have the potential to influence the degree of efficacy.
- Enhancing the efficiency of meat and milk production in developing countries has potential to reduce methane intensity, improve animal health, and enhance farmer income.

## Session 2: Global policy landscape on methane reduction

### 3. Agriculture methane: policy for action

John Tausel, Senior Director for Global Agriculture Methane, EDF

[Video](#)

- How we get to net-zero is a critical consideration. Early action and focus on methane as part of net-zero commitments is the most impactful pathway to limit climate change.
- Solutions to agriculture methane should address emissions while also considering global nutrition and farmer livelihoods. Farmer-centered tools are key for scaled adoption of practices.
- Global policies such as the Paris Agreement and Global Methane Pledge are creating a focus by countries to address agriculture methane.
- Policy should focus on overcoming barriers to developing and deploying on-farm solutions to methane emissions including: significantly funding more research, providing robust and timely regulatory review of solutions, and financing on-farm adoption of tools for meaningful emissions reductions.
- Partnerships are essential to more effective policy creation and implementation.

### 4. Global Methane Hub Agriculture Program

Hayden Montgomery, Agriculture Programme Director, Global Methane Hub

[Video](#)

- The global methane hub encompasses 150 countries committed to work together in order to collectively reduce global anthropogenic methane emissions across all sectors by at least 30 percent below 2020 levels by 2030.
- It supports the achievement of the goals of the Global Methane Pledge. The hub will focus on the energy, agricultural, and waste sectors which account for 96% of human-caused methane emissions. Our vision is to collaborate with governmental and non-governmental entities to scale up cost-effective solutions in methane mitigation and contribute to transformational change.
- The global methane hub is proposing a global strategy to address enteric fermentation. A scientific committee supports the development of a coordinated research strategy to explore promising methane mitigation technologies and the underpinning research of methane mitigation mechanisms to create new technologies.

### 5. Global perspective on the acceleration of methane emissions reduction from dairy systems

Aimable Uwizeye, Livestock Policy Officer with the FAO, Animal Production and Health Division

[Video](#)

- Global methane emissions from the livestock sector, including dairy systems, contributed to the current increase in global average temperature, but the emissions are evenly distributed across different regions of the world.
- The ruminant livestock, in particular, dairy systems have the potential to reduce methane emissions through technical and policy solutions, however, this reduction can be only achieved if barriers and challenges to the adoption of best practices, technological and innovative practices are addressed across different dairy systems.
- FAO, in partnership with partners, is supporting countries to raise the ambitions of their nationally determined contributions, by integrating more livestock-related mitigation and adaptation interventions, in their national climate actions and policies.
- Methane reduction actions can provide multiple benefits in terms of food security, adaptation to climate change and reduction of pollution, poverty, and loss of biodiversity.
- More research is needed to get insights into the economic impact of methane reduction strategies to better formulate impactful climate finance and investment in low- and middle-income countries.

### **Session 3: From policy to action - Showcasing dairy companies' initiatives for tackling methane emissions reduction**

#### **6. Why methane matters?**

Sarah Lockwood, Regenerative agriculture program Director, Danone

[Video](#)

- Danone embedded sustainability at the heart of its business performance with the Danone Impact Journey
- Focus and speed are of essence: methane reductions is one of the key levers to achieve our 1.5C SBTi FLAG target and the fastest way to curb GHG emissions of dairy farms.
- We must unlock systemic solutions for future-fit dairy farms and tailor them to the diversity of farming systems (small, medium and large farms, with various degrees of feed autonomy and/or grazing and considering the multiple realities depending on the geography):
  1. Ensure fundamentals (water access, animal health,..)
  2. Implement actions that will bring holistic and durable change (optimized herd and feed management, manure valorisation)
  3. Consider feed additives solutions as last mile in most efficient systems.
- Let's take this journey together and collectively address methane reductions.

#### **7. How FrieslandCampina works towards credible methane reduction**

Dr Sanne Dekker, Research Specialist Environmental Impact Assessment, FrieslandCampina

[Video](#)

- To achieve climate targets reduction of methane emissions is key.
- To achieve climate targets you first need to set them, measure them and then create a business model for mitigation options.
- Mitigation options for methane are numerous, but in various state of development.

- Collaboration on methane reduction is key to get up to speed.

## 8. Methane reduction

Dr Andrew Fletcher, Programme Leader Sustainable Food Systems, Fonterra

[Video](#)

- Enteric methane is by far the biggest portion of Fonterra's footprint, and is thus our focus.
- The pastoral nature of our farming systems (our natural strength) make this challenging, and short lived feed inhibitors may have limited use.
- Our approach to technologies is guided by the four Good4s, which we bring into our collaborations with technology developers.
- NZ uptake is supported by a move to on-farm emissions pricing via a collaboration with government, which also ensures any emissions reductions stay within the agricultural value chain.
- To accelerate the validation and commercial availability of technologies for farmers we have formed a JV with other agricultural organisations and the government.

## 9. U.S. Dairy 2050 Environmental Goals Focus on Methane Emissions

Karen Scanlon, SVP, Environmental Stewardship, Dairy Management Inc

[Video](#)

- Methane reduction and mitigation is a primary focus for the U.S. dairy industry as it makes progress toward the collective, industry wide goal to achieve GHG neutrality by 2050. Enteric and manure methane emissions account for approximately two-thirds of a dairy farm's total GHG footprint
- The U.S. dairy industry has a comprehensive strategy that leverages value chain support, to
  - **Lead with action** that prioritizes efforts that directly reduce or mitigate methane emissions
  - **Enable adoption** by developing market-based incentives and eliminate barriers to accelerate implementation
  - **Scale impact** by catalyzing adoption of known solutions
  - **Increase solutions** through development and commercial availability of effective and economically viable technologies and practices.
- One effort to increase solutions is the [Greener Cattle Initiative](#), a dairy and beef value chain initiative, that directs \$5 million over the next five years to feed the pipeline of new enteric emission reduction research and technologies.

## 10. NDDB's initiatives towards methane emission reduction

Meenesh Shah, Chairman, National Dairy Development Board, India

[Video](#)

- Indian dairying sector is a unique small holder based dairy farming system where the key principle towards reduction in methane emission has been incentivizing farmers for sustainable practices and not penalizing.
- To catalyse the methane reduction, the incentives also need to ensure better income to farmers by sustained efforts towards productivity enhancement and better health while optimizing the resource use.

- Several initiatives have been taken by the National Dairy Development Board to tackle methane emission. Some of the prominent ones have been- promotion of Balanced Ration, Total Mixed Rations, Other feed related initiatives (silage/feed additives) to milch animals and innovative manure management practices.
- The manure management model being promoted and implemented by NDDDB at the small holder dairy farmers backyard has been providing multifarious benefits apart from the reduction in methane emission, like- sufficing the cooking energy need of farmers, additional income to farmers from sale of digested slurry and organic fertilizers for the field etc. This model has been further scaled up to produce Bio-CBG as well as meeting the energy needs of Dairy Plants.
- Efforts of NDDDB in reaching out to farmers and implementing innovative solutions have resulted in marked reduction in the methane emission which are being taken forward at a much larger scale across the country.
- NDDDB is also looking forward for appropriate carbon financing models which would be a good incentive for taking forward the mission of reduction in methane emission.

## Session 4: Available resources to accelerate change

### 11. Learnings from Rabobank's pilots in financing the transition to low-dairy GHG

By Marijke Schouten, Lead Decarbonizing Supply Chains, Rabobank

[Video](#)

- Over the last 3 years Rabobank has conducted dairy pilots in the US to help 27 farmers reduce their methane emissions via feed additives. From these pilots we have a few key takeaways about the drivers and obstacles farmers face in transitioning to low-emissions practices which are as follows:
  - Barriers: dairy producers often lack the knowledge of what practices to adopt and how, have limited access to voluntary carbon markets and miss the incentives to make these changes (especially when this means they must fund seemingly “risky” practice changes out of their own pocket).
  - Drivers: when looking for practices they'll adopt farmers are interested in easy-to-implement measures which require limited changes in farm management, don't impact herd health and have clear returns on investment.
- Taking these learnings into account Rabobank is looking to develop financial structures such as carbon-linked supplier finance or leasing to ensure better cash-flow and risk-sharing for farmers.

### 12. Policy incentives, public and private partnership case study

By Christopher Adamo, Vice President Public Affairs & Regenerative Agriculture Policy, Danone North America

[Video](#)

- Many of Danone's efforts began in the US with the 5th year of the Soil Health Initiative. It started primarily with the farmland that feeds our dairies, but is now approaching 150,000 acres across the US. This voluntary programme is offered to Danone's suppliers. The programme is close to 100 farms, representing close to 70% of our milk volume.
- The Regenerative Agriculture Policy Programme provides various budgets and policy tools available to farms and supply chain stakeholders.
- Key partnerships & pilots to drive on-farm change are essential for success. Partnership for Climate Smart Commodities 5-year, \$70m programme aims to support the dairy industry to enhance our current regenerative agriculture programme with methane management training and equipment, and to reduce on-farm emissions to meet Danone's SBTi and methane targets.

### 13. How Pathways to Dairy Net Zero is Accelerating Global Climate Action

By Kevin Burkum, Chief Communications Officer, Global Dairy Platform

[Video](#)

- Pathways to dairy net zero aims at systematically introduce or enhance climate action in global dairy systems around the world. Nearly 200 organisations have signed on in support of pathways to dairy net zero representing nearly 40% of global milk production.

- There are going to be different ways for different geographies and different systems all over the world. The work has been focused on two primary areas: 1) research analysis tools and methods, and 2) demonstrating progress in both developed markets, as well as developing markets.
- The progress in developed dairy economies estimates that 40% reduction can be achieved changing existing practices through known levers. The next 35% of reductions will result from scaling existing and emerging technologies (digesters, feed additives to reduce enteric methane, etc). The remaining 25% is going to require long term, fundamental and applied research (such as microbiome changes or low methane cattle breeding).
- The initial focus for pathways to dairy net zero has been on emerging economies, where 80% of the dairy sector's global emissions come from. Work is going on in East Africa, and similar programmes are planned for South America as well as in Asia.

#### 14. **Result-based scheme and funding sources to accelerate carbon farming transition**

By Jean Baptiste Dollé, Environment Head Department, French Livestock Institute

[Video](#)

- Solution and tools exist to operate carbon (and sustainable) transition massively among farmers.
- Supporting farmers on technical issues is crucial to succeed.
- Diverse funding sources must be developed to reward farmers involved in carbon transition.
- Partnership and common approach are key points to achieve the climate goal in livestock systems.

#### 15. **Mobilize finance in methane mitigation**

Paul Myer, CEO, Athian

[Video](#)

- Methane reduction will require an industry-led approach that includes producers of all sizes in order to drive systemic change that will have a short-term impact on climate warming.
- Carbon insetting is the only way that the industry as a whole can reach their GHG reduction targets, and sharing the cost of interventions throughout the value chain will ensure ongoing funding for sustainable practice changes.
- On-farm innovation will provide producers with many options to implement sustainable practices, as long as there is a consistent funding mechanism that will support methane reduction innovation.
- An efficient carbon insetting marketplace requires aggregated data exchange throughout the supply chain, and the industry must break down the data silos that exist in order to enable sustainable change.
- The entire carbon credit process must be automated in order to scale to meet the demands of the diverse animal agriculture value chain. Automation of project development, intervention protocol evaluation, on-farm monitoring, credit validation and certification, and carbon credit accounting in real time will drive the systemic change that the industry needs to move the needle on climate change.

## **CONCLUDING REMARKS FROM IDF**

- The global dairy sector is committed to nourishing the global population with safe and nutritious foods through sustainable production systems.
- The sector understands the importance to reduce GHG emissions and is committed to climate action.
- Through its dynamic nature and forward thinking, the sector will be able to continue to innovate to reduce its environmental impact and be part of the solution to tackling climate change.
- Burgeoning good practices and technologies are enabling the livestock industry to lower GHG emissions from field to fork, and progress will accelerate even further in the coming years.
- This is exemplified in the Pathways to Dairy Net Zero Initiative, which has been formally presented at the UN Food Systems Summit as a proposed game changer.
- IDF supports the use of nutrition indicator in LCA, as proposed by the FAO in its report “Integration of environment and nutrition in life cycle assessment of food items: opportunities and challenges”.