

The New Merchants of

DOUBT

The corporate playbook by
Big Meat and Dairy
to distract, delay, and derail
climate action



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Glossary

AGRI Committee	Committee on Agriculture and Rural Development in the European Parliament
AHDB	Agriculture and Horticulture Development Board, <i>a statutory levy board in the UK, funded by farmers, growers and others in the supply chain, which is running industry-friendly projects, ranging from advertising and marketing campaigns to research</i>
AmCham EU	American Chamber of Commerce to the European Union, <i>advocates for transatlantic trade and investment and supports American businesses in Europe</i>
AAA	Animal Agriculture Alliance, <i>non-profit organisation advocating for the interests and sustainability of animal agriculture (US)</i>
AFIA	Animal Feed Industry Association, <i>represents the interests of the animal feed and pet food industry (US)</i>
AnimalhealthEurope	<i>represents manufacturers of animal medicines, vaccines and other animal health products in Europe</i>

ATAC	Agricultural Technical Advisory Committee for Trade in Animal and Animal Products (US)
AVEC	Association of Poultry Processors and Poultry Trade in the EU countries
BEUC	Bureau Européen des Unions de Consommateurs, <i>or European Bureau of Consumers' Unions is an umbrella group, representing the interests of European consumers</i>
CAFOs	Confined Animal Feeding Operations (US definition)
CAP	Common Agricultural Policy (EU), stands for the agricultural policy in the European Union – one of the oldest policies, which has been subject to numerous reforms. CAP receives around a third of the entire EU budget, which is distributed to European farmers in the form of agricultural subsidies.
CCF	Center for Consumer Freedom Berman-affiliated food industry group (US)
CLEAR	Clarity and Leadership for Environmental Awareness and Research Center University of California Davis, <i>industry funded research institute at UC Davies (US)</i>
CGIAR	Consortium of International Agricultural Research Centers

CDGs	Civil Dialogue Groups, <i>advisory bodies to the European Commission providing expertise and stakeholder perspectives on agricultural policy and rural development</i>	DAFC	Danish Agriculture and Food Council, <i>supports Denmark's agriculture and food sectors through advocacy, research, market promotion, and sustainability initiatives</i>
CLITRAVI	Liaison Centre for the Meat Processing Industry in the EU	DG AGRI	Directorate General for Agriculture and Rural Development, <i>a department of the European Commission responsible for policy development and funding of agriculture</i>
CMA	Competition and Markets Authority, <i>the main competition regulator in the UK, responsible for strengthening business competition and preventing and reducing anti-competitive activities. The CMA published a green claims code for businesses and has ramped up enforcement actions on greenwashing.</i>	ECR	European Conservatives and Reformists Group of MEPs, <i>a political group in the European Parliament advocating for conservative and reformist policies</i>
ECVC	European Coordination Via Campesina, <i>a confederation of unions and organisations of peasant farmers, small and medium-scale farmers, and agricultural workers</i>	EDA	European Dairy Association
COP26, COP27, COP28	United Nations Climate Change Conferences – usually followed by a number to indicate the year of a meeting.	EEA	European Economic Area
Copa-Cogeca	Copa and Cogeca, <i>the united voice of farmers and agri-cooperatives in the EU, the biggest farm lobby in the European Union, claiming to represent over 22 million farmers</i>	EEA	European Environment Agency
CPA	Collaboration Platform on Agriculture, <i>a forum for agricultural stakeholders from the US and EUn to exchange information and coordinate activities</i>	EFFAB	European Forum of Farm Animal Breeders
		ELV	European Livestock Voice, <i>a coalition of stakeholders from the European livestock sector claiming to be advocating for sustainable and responsible livestock farming</i>
		EDF	Environmental Defence Fund, <i>advocates for environmental protection through science-based policy and market incentives (US)</i>

ENVI Committee	Industry, Research and Energy Committee in the European Parliament	FSFS	Framework on Sustainable Food System, <i>outlines guidelines and strategies to promote environmentally friendly and socially responsible practices across the EU's food production and distribution networks</i>
EPA	Environmental Protection Agency (US)		
EPP	European People's Party, <i>a political party in the European Parliament, composed of centre and centre-right political groups</i>	GHG	Greenhouse Gas
EQIP	Environmental Quality Incentives Program, <i>offers financial and technical support to US agricultural producers for implementing conservation practices that enhance environmental quality on their land (US)</i>	GMP	Global Methane Pledge, <i>an initiative launched at COP26 in Glasgow aiming to reduce methane emissions by 30% by 2030, with over 150 governments signed up</i>
FAIRR	Farm Animal Investment Risk and Return, <i>investor network evaluates and addresses environmental, social, and governance risks associated with farm animal production for sustainable investment decisions</i>	GRSB	Global Roundtable for Sustainable Beef, <i>an international organisation dedicated to advancing sustainable practices in the global beef industry through collaboration and standards development</i>
FAO	Food and Agriculture Organisation of the United Nations	Greenpeace CEE	Greenpeace Central and Eastern Europe
FDF	Farmers' Defence Force, <i>a new political party established following farmers' protests against nitrogen reform in the Netherlands</i>	GWP	Global Warming Potential, <i>a measure used to evaluate the relative impact of different greenhouse gases on global warming over a specified time period, usually compared to carbon dioxide</i>
FEFAC	The European Feed Manufacturers' Federation, <i>represents compound feed producers, influencing policies for feed safety and sustainability</i>	GWP*	Global Warming Potential Star, <i>an alternative metric to account for temperature change impact of methane emissions</i>
		IATP	Institute for Agriculture & Trade Policy (US)
		IPPC	Intergovernmental Panel on Climate Change

IED	Industrial Emissions Directive (EU)	MCC	Mathias Corvinus Collegium, <i>Hungarian Orban-backed think tank that focuses on promoting conservative and nationalist ideologies</i>
IMTF	International Meat Trade Federation, <i>a UK trade association representing predominantly UK companies involved in importing and exporting meat</i>	NDC	Nationally Determined Contributions <i>are plans that each country has to submit to UNFCCC to reduce national emissions and adapt to the impacts of climate change</i>
Interbev	French livestock and meat lobby	NCBA	National Cattleman's Beef Association, <i>represents 175,000 beef producers in the US members include companies like Tyson Foods and Cargill</i>
ITRE Committee	Industry, Research and Energy Committee in the European Parliament	NEC Directive	National Emissions Ceiling Directive (EU) <i>sets national emission reduction commitments for Member States and the EU for five important air pollutants: nitrogen oxides (NOx), non-methane volatile organic compounds (NMVOCs), sulphur dioxide (SO2), ammonia (NH3) and fine particulate matter (PM2.5).</i>
IRA	Inflation Reduction Act (US) is a landmark US law adopted in 2022, which represents the biggest US investment in clean energy and climate change mitigation	NET ZERO	<i>means that any emissions are balanced by absorbing an equivalent amount from the atmosphere. In order to meet the 1.5°C global warming target in the Paris Agreement, global carbon emissions should reach net zero around mid-century. Many countries and companies are setting net zero targets</i>
LRF	Federation of Swedish Farmers	NCI	New Climate Institute, <i>a research organisation focused on developing innovative solutions to address climate change and support sustainable development policies worldwide (Germany)</i>
LSU	Livestock Units, <i>a standardised measure used to compare different types of livestock based on their feed requirements and environmental impact</i>		
MERAP	Methane Emissions Reductions Plan (US)		
MLA	Meat and Livestock Australia, <i>supports Australia's red meat and livestock sector with research, development, and marketing to enhance profitability, sustainability, and global competitiveness</i>		

NFU	National Farmers' Union (UK) <i>is the largest UK farm lobby group</i>	USMC	US Mexico-Canada Trade Agreement
PCSC	Partnership for Climate Smart Commodities, <i>an initiative aimed at expanding markets for agricultural commodities produced using climate-smart practices to reduce greenhouse gas emissions and enhance carbon sequestration</i> (US)	US Pork Board	<i>represents America's 60000 pig farmers who pay into the Pork Checkoff which supports US pig farmers through research, education, and promotion, optimising market presence</i>
SBTi	Science Based Targets Initiative, an organisation helping companies to put in place climate and net zero targets, often referred to also as science-based targets.	WUR	Wageningen University and Research, <i>institution specialising in agriculture, food, and environmental sciences, known for its research and education in these fields</i> (Netherlands)
SAI	Sustainable Agricultural Initiative Platform, <i>a global organisation that promotes sustainable agricultural practices through collaboration and innovation among food and drink industry stakeholders</i>		
SUR	Sustainable Use of Pesticides Regulation (EU)		
UECBV	European Livestock and Meat Trades Union		
UNFCCC	United Nations Framework Convention on Climate Change		
USDA	United States Department of Agriculture		
USDEC	US Dairy Export Council, <i>promotes the interests of the American dairy industry globally through advocacy, market development, and trade policy initiatives</i>		

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Executive Summary

This report reveals the tactics of Big Meat and Dairy companies to delay, distract and derail action on food system transformation, mirroring the tactics previously used by tobacco and the fossil fuel industry. Food systems are responsible for around a third of total greenhouse gas emissions, with approximately 60% of that coming from animal agriculture,¹ which is also the single largest source of man-made methane emissions.

The science is clear: we cannot stay close to a 1.5-degree temperature increase trajectory, as stipulated by the Paris Agreement, if we do not significantly cut methane emissions² and reduce consumption of animal products,³ which are both projected to increase. The agricultural sector is both uniquely dependent on the stable climate system, and one of the biggest contributors to climate change, both directly (through methane and nitrous oxide pollution from animals) and indirectly (as one of the major drivers of deforestation and land use). A recent survey of over 200 climate scientists has shown that they believe that the emissions from livestock must peak by 2025 in high- and middle-income countries and be cut globally by 50% by 2030.⁴

Despite their huge negative impact on climate, biodiversity and human health, big meat and dairy corporations have largely been off the hook, regarding environmental regulation. Our investigation reveals that the industry has largely succeeded in convincing policymakers of agricultural exceptionalism, getting a number of concessions, exemptions and delays to climate action in the sector. In several countries, the industry managed to convince policymakers to adopt all-carrots-and-no-sticks approaches to regulating agricultural emissions, which means that any change in farming practices is voluntary and depends on additional financial incentives, while significant public subsidies that the sector already receives remain off limits for any reforms. Unfortunately, current agricultural subsidies largely support the existing status quo of big farms, benefiting large companies in the middle of the chain (so-called Big Ag) and have been putting small family farms out of business.

To better understand Big Ag's influence, we analysed actions by 22 of the biggest meat and dairy companies across four continents, looking at their voluntary climate commitments, greenwashing claims, investments in advertising vs low carbon solutions and their political engagement, which included political donations, meetings with politicians, money spent on lobbying, as well as what narratives they are pushing either directly or indirectly through the work of industry associations. We looked at how the industry is co-opting science by funding its own research to downplay the sector's impact on climate and promoting its preferred solutions, mostly in the form of voluntary technological fixes. The report provides a detailed analysis of different corporate narratives to consumers, media, and policymakers, showing how the industry distracts us with the smokescreen of voluntary climate targets, environmentally friendly products, and seemingly ambitious investments in emissions reduction technologies, while behind the scenes, it mobilises significant resources to delay and derail progressive environmental legislation.

Delay, distract and derail tactics

Our investigation broadly divided the corporate playbook of Big Meat and Dairy into three key tactics: distract, delay and derail. This builds on our previous research into the corporate playbook of Big Plastic, which we published in the landmark report Talking Trash,⁵ which launched in 2020. Some of the companies and industry associations overlap, but the way the tactics play out in each sector is different. We found strong correlations with the tactics of climate denial by Big Oil, which are referred to throughout the report.

Distract

Big Meat and Dairy companies are masters of distraction when it comes to drawing attention away from their lack of climate action. A significant proportion of these tactics can also be dubbed 'greenwashing', which includes claims on the packages of their products, as well as weak net zero targets and other marketing efforts to present their products as climate-friendly, natural and an essential part of a healthy diet. By putting up a green smokescreen through such subtle tactics, companies are creating a collective placebo effect, misleading us into believing change is happening, when the environmental impact of the sector has, in fact, deteriorated.

The investigation has shown that the industry is especially concerned about younger generations, which are more worried about climate change and personal health, and therefore specifically targets Gen Z with its misleading advertising campaigns, using influencers and social media. We found seven examples of companies and trade groups using social media efforts to target young people; on TikTok, YouTube, Instagram and other channels, often making misleading claims, such as presenting meat and dairy as healthier dietary choices for young consumers in already high-consuming countries like the UK.

Social media tactics also translate into direct attacks on vegan diets and alternative protein, which are dubbed as ultra-processed, unhealthy options, through various advertising and misinformation campaigns that could be traced back to the meat and dairy industry. Industry giants are getting help in forming these narratives from a variety of PR consultants and agencies. They are working with at least two leading PR companies that helped write Big Oil and Tobacco's corporate playbook over the last century. This includes US PR company, Edelman, one of the world's oldest and most famous PR companies that has recently boasted of its success in deterring young audiences from plant-based alternatives to dairy products.

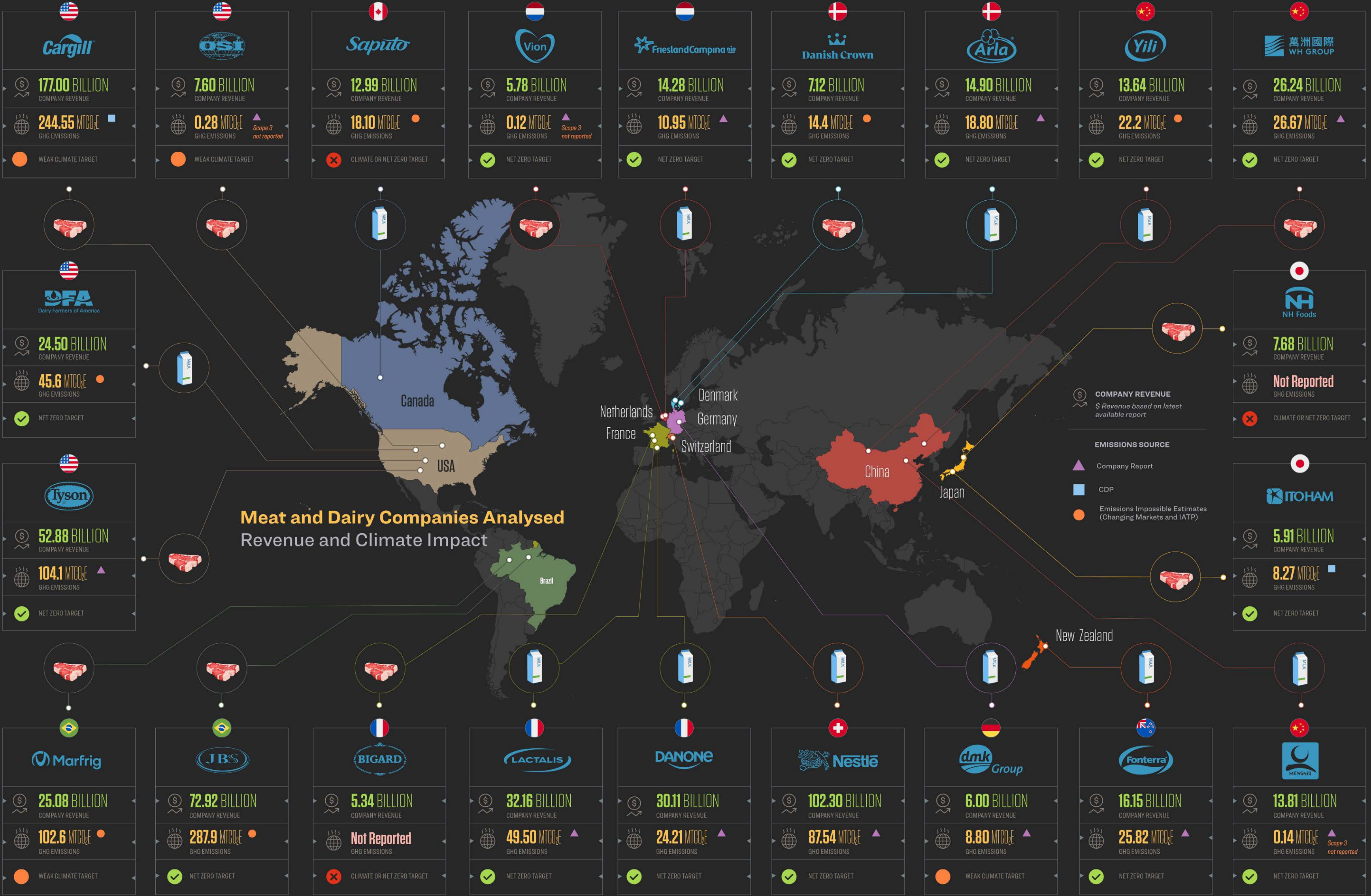
Despite the talk of climate action, corporate climate, or net zero targets largely fail on the integrity test. Of the 22 companies investigated in this report only 15 have some kind of net zero target. We compared these targets to the main elements in the standard provided by the UN Expert group, published in the Integrity Matters report at COP27 and revealed that none of the companies meets the standard. Danone leads the pack, when it comes to the scientific integrity of its target, as it roughly aligns to a 1.5-degree trajectory. It is the only company in the sector with a specific commitment to cut methane emissions by 30% by 2030 and a shift to plant-based products, while Nestlé is slowly moving in the right direction. Other companies fall behind on the level of ambition and holistic approach, such as a clear commitment to cut supply chain emissions, including methane. This results in companies like JBS having their commitments removed by the Science-Based Targets Initiative (SBTi), which has become controversial due to the weakening of its standards.

Instead of investing in true plans and trajectories to cut their emissions, the report reveals that companies prefer to invest in the science that suits their agenda. This becomes particularly evident when it comes to downplaying the impact of methane emissions from the sector. We found two main and somewhat conflicting narratives, which were both pushed by industry-funded academics to downplay the impact of

methane emissions. The first is around livestock methane being part of the biogenic cycle and, therefore, naturally absorbed by the vegetation, conveniently ignoring the significant short-term warming impact of this potent gas. The second narrative focuses on the new climate metric, GWP*, claiming that even small reductions could lead to the sector becoming 'climate neutral'. GWP* is being pushed by at least ten industry groups and allied entities in at least four continents, including at the EU level. Academics from UC Davis and Oxford University - both of which have received funding from industry - have also been part of industry's push for the metric and advocated for the industry's use of GWP* in ways that would significantly weaken climate commitments.

The third industry-funded scientific narrative revealed in this report focuses on the emissions reduction potential of regenerative agriculture. More than half of the companies analysed in the report are embracing this term to claim their business can be good for the planet. Unlike agroecology, regenerative agriculture - used by companies including Nestlé, FrieslandCampina and Dairy Farmers of America - has no clear definition and often relies on dubious scientific claims around the soil's ability to store carbon. Its proponents claim that we do not need to reduce livestock numbers, and just changing practices to regenerative grazing can be part of climate solutions by offsetting (part of) the industry's emissions and helping nature. Six companies are involved in 'Regenerating Together' - an industry initiative which says it is working to provide a definition of regenerative agriculture to improve outcomes, but which promotes a profit and yield-driven model and fails to introduce any curbs on methane emissions or reducing livestock numbers.

Like Big Oil before them, Big Meat and Dairy companies ensure that industry-funded academic research is used both to downplay the sector's impact on climate and to promote their preferred solutions with policymakers. As we show in the subsequent chapters, this is often used to delay and derail climate action in the sector.



Delay

Closely linked with distraction tactics, delay tactics allow companies to ask governments to slow down any regulation by claiming that they are already taking voluntary action. However, the reality is somewhat different. This investigation shows that companies spend much more money on advertising than they do on low-carbon solutions. Despite featuring techno-fixes in their PR and marketing materials, our research shows that they spend only 1% of their revenues on research and development. The actual amount that goes into low-carbon solutions is probably only a small fraction of this, as most companies do not break down where their R&D spending is going. Three companies - Fonterra, Nestlé, and Arla - all spend more on advertising than they do on research and development across their business. JBS - the only company to declare the spend it will give to research and development efforts towards its net zero goal specifically - spends more on advertising than it does on these efforts. Its spending on net zero efforts equates to \$20 million (€18.99 million) per year, which works out as just 6.2% of its annual advertising and marketing budget (€294 million), and just 0.03% of its 2022 annual revenue (\$69 billion or €63 billion).

Our research shows that in recent years, at least 16 of the 22 companies have publicly promoted the potential of technical fixes to reduce emissions, such as methane-suppressing feed additives. However, only one company (Danone) has made commitments to transformative action by setting a methane reduction target, while seven other dairy companies, including Nestlé, have committed to start reporting and come up with a plan to cut their methane emissions. Our review of scientific literature shows that many technical fixes promoted by the industry have questionable impacts on methane emissions reductions, but even when some of them

prove promising, the companies often refuse to scale them up due to cost barriers. Instead of investing in techno-fixes that they spend so much time promoting in their PR materials, they request more public money to finance their use.

Regarding the transition to more plant-based diets, we found a glaring lack of action. Science clearly shows that major changes in the way food is produced is needed to meet the goals of the Paris Agreement and that a dietary shift can provide significant emissions reduction opportunities. One study found that a dietary shift could reduce annual CO₂ emissions by 3.10 Gt CO₂. This reduction could more than double to 6.22 Gt CO₂ equivalent, if the land that is spared is used to draw down carbon.⁶ However, our research shows that although some companies are investing in alternative protein, this is with a view of growing an additional market and not as part of a transition towards more plant- and less-and-better animal products. One of the tactics is selling the growth of its meat and dairy products under the banner of being 'diversified' food or protein company. This echoes the tactics of oil and gas giants such as BP and TotalEnergies, which have promoted themselves as diversified energy companies, all while continuing to invest nearly all of their business into oil and gas.

Derail

These tactics are the most aggressive of them all, and we reveal how they have played out in two of the biggest livestock-producing regions: the US and the EU. Derail tactics include spending millions on political donations, direct and indirect lobbying through industry groups to ensure industry influence and the highest level of access. We reveal examples of conflicts of interest, where elected politicians benefit from the agricultural subsidies they are supposed to reform, and examples of revolving doors, where key policy experts come from the industry and return there after the end of their public office. The most prominent example of revolving

doors is the current US Agriculture Secretary, Tom Vilsack, who previously worked as the president of the US Dairy Export Council, and before that, as the US Agriculture Secretary under Obama. He is a strong proponent of voluntary action and has overseen large hand-outs to the industry in the form of incentives and subsidies, including in methane biodigesters, while denying that there is any need to reduce livestock production in the US.

This makes the interests of the powerful agricultural companies even more entrenched at the highest political level, resulting in the sector setting its own political agenda, which translates into all-carrots-and-no-sticks approaches to emissions from agriculture. The special treatment this polluting industry gets is reflected in the US Inflation Reduction Act (IRA) – touted by the government as the ‘*largest investment*’ in reducing carbon pollution in US history.⁷ But, when it comes to mitigating the impact of the meat and dairy industry, particularly in relation to methane emissions, it is severely lacking, as it comes with no strings attached to prove actual emissions reductions. USDA is already providing funding of almost \$20 billion to reduce greenhouse gases from agriculture (much of this going to techno fixes, such as biodigesters and feed additives), but will only study possible climate benefits in 2024. Alongside all these carrots, in a pre-emptive strike to prevent methane regulation, the industry-funded Senators and Congressmen from both parties even proposed amendments to ban reporting of methane emissions from farms completely.

In the EU, the farm lobby successfully decimated the Green Deal, which set out to transform Europe’s economy to produce net-zero emissions by 2050. A key part of the Green Deal was the Farm to Fork strategy, which promised to create a ‘*green and healthier agriculture*’ system, significantly reducing chemical pesticides and fertilisers. Farm to Fork recognised that moving to a ‘*more plant-based diet with less red and processed meat*’ would reduce the food system’s environmental impact.⁸

New laws and revisions of existing policies were promised. In this report, we review eleven policy initiatives resulting from the Green Deal and show how most of them were either weakened or completely dropped. This has repercussions way beyond the current legislature, as the powerful Copa-Cogeca lobby group also managed to remove an obligation to reduce agricultural emissions by 30% from the long-term 2040 climate target.

Our investigation revealed that between them, the 22 big meat and dairy firms, and the 25 key trade groups they’re members of, have had close to 600 top-level meetings with the European Commission (commissioners, their cabinets, and director generals) since November 2014.^A They also hired specialised public relations consultancies, used industry-dominated NGOs and set up new groups, such as European Livestock Voice, which was behind several misinformation campaigns to derail legislation and to push the industry agenda. Only seven of the companies declare their lobby efforts in the EU Transparency register, and they employ 16 lobbyists and declare annual spending of €1.8-2.4 million per year lobbying EU institutions. This shows that indirect lobbying through industry groups, where Big Meat and Dairy companies are members, is much more prevalent as a tactic: these groups have together spent €9.35- €11.54 million per year lobbying the EU and employ 72 lobbyists. These publicly disclosed figures are just the tip of the iceberg of their influence, as companies also deploy numerous public affairs firms and lobbyists at the national level.

Blocking action to cut agricultural methane was a specific target of these lobbyists. With the help of industry-funded scientists, lobbyists present methane emissions as part of a biogenic cycle and are promoting the industry friendly metric GWP* in various public consultations and meetings. This report reveals a number of tactics

A For lobby groups that aren’t agriculture-specific but cross-sectoral, this figure only includes meetings on relevant topics (e.g. agriculture, climate, sustainability, consumer-labelling) as opposed to all of their meetings.

to block any measures to regulate methane in the EU. For Copa-Cogeca and the European Dairy Association (EDA) lobbying centred around the argument that cutting methane emissions would be subject to double regulation. This tactic was used in response to the National Emissions Ceiling (NEC) directive, Effort Sharing Regulation and Industrial Emissions Directive. In the end, not a single one of these regulates agricultural methane, and the fearmongering of double regulation designed to kill any regulation succeeded. The EDA's internal background document on the 'Dairy sector and the Green Deal' even stated that: *'With regards to clean air, the ammonia targets of the NEC are still under implementation [Methane targets thankfully were ejected out of the deal - we may need to make sure they do not come in again].'*⁹

Putting the tactics into play

The report also investigates how these tactics play out in real-time in different geographies. The EU and the US are powerful examples of how the political influence of Big Meat and Dairy and their industry groups have resulted in the sector setting its own regulatory agenda, translating into all-carrots-and-no-sticks approaches to emissions from agriculture.

These two powerful regions, where 13 of the 22 investigated companies have headquarters, are also key in setting the global agenda. The influence of Big Meat was clearly visible in the language of the Global Methane Pledge, where methane mitigation from agriculture is confined to "incentives and partnerships with farmers" - the victory that the meat industry celebrated. Similarly, our FAO case study shows that the industry successfully pushed their narratives on the primacy of increasing efficiency in the sector through various techno-fixes over the scientific consensus that the highest emissions savings potential comes from dietary shifts towards more plant-rich diets. Two important reports that the FAO published during COP28 in Dubai, Pathways towards lower emissions¹⁰ and Achieving SDG

2 without breaching the 1.5 °C threshold: A global roadmap,¹¹ were criticised for adopting industry-friendly narratives to food systems transformation and significantly downplayed the potential of dietary shift.¹²

Our report also reveals how similar tactics play out in other corners of the world.



New Zealand

Over the past two decades, New Zealand's dairy and meat industries, led by powerful lobby groups like Dairy NZ and Federated Farmers, have effectively stalled efforts to regulate agricultural emissions through a combination of political influence, disinformation campaigns, and promises of future technological solutions. For instance, the 2003 "Fart Tax" farmers' protest successfully derailed a modest levy proposal. Despite multiple attempts to introduce agricultural emissions pricing, as well as including agriculture in the Emissions Trading Scheme, the sector remains exempt from meaningful climate regulation, continuing to produce nearly half of the country's greenhouse gases at the expense of taxpayers. Recently, New Zealand's Māori leader, Mike Smith, celebrated a win when the Supreme Court ruled in his favour to take fossil fuel and dairy companies, including Fonterra, to trial on the basis that these companies have a legal duty to him and others in communities who are being impacted by climate change.¹³ This suggests that it might take legal action to finally change cut the country's outsized methane emissions.



Australia

In Australia, we investigated how the industry mobilised significant distract and delay tactics in response to the government's attempt to join the Global Methane Pledge. The industry used fearmongering to oppose this move, claiming that if the plan was to involve a reduction in agricultural production or livestock numbers,

this could jeopardise food security.¹⁴ The Big Ag lobby was afraid that signing the Pledge could introduce regulatory measures, such as a tax similar to the one in New Zealand, and suggested there should be a proper consultation to avoid protests by farmers.¹⁵ When joining the Pledge, the government convinced farmers through assurances that the Pledge was non-binding and by promising investment in the technical measures to cut emissions in the agriculture sector.¹⁶



The UK

Despite hosting the UN Climate Conference COP26 in Glasgow and committing to the Global Methane Pledge, the UK government has failed to implement a clear plan to reduce methane emissions. The influence of major agricultural lobby groups, such as the National Farmers Union (NFU), has clear fingerprints on policies that promote voluntary techno-fixes and biomethane digesters, often at the expense of smaller farms and comprehensive climate action, such as a shift to healthier diets in a country that overconsumes meat and dairy. Prime Minister Rishi Sunak's alignment with right-wing agendas and farmer protests net-zero policies is seen as a political move to gain support in the election year, despite public concern about climate change and a growing trend toward reducing meat consumption.



Brazil

Agricultural exceptionalism is clear throughout the Brazil case study. Brazil is the largest beef exporter in the world, heavily reliant on the agriculture sector for its GDP, and it has headquarters of three powerful meat companies: JBS, Marfrig and Minerva. The industry interests are deeply embedded in Brazilian policymaking on agriculture and its environmental and social impacts. Bolsonaro's government gave a huge boost to the interests of big farmers and landowners, leading to a significant rise in deforestation and the dismantling of regulations and safeguards. While the

Lula government is trying to reverse some of these environmental setbacks, the interests of Big Ag are firmly embedded in political decision-making bodies and public institutions. Their influence ranges from downplaying the sector's impact on climate and deforestation, such as promoting GWP*, to promoting incentives-only approach to regulation with a preference for techno-fixes and voluntary measures. The big three companies are also engaged in distract and delay tactics, greenwashing their products and targeting young people to enhance their reputation at home and abroad.



Italy

Our Italian case study is specifically focused on the country's recent ban on cultivated meat and the labelling restrictions of plant-based products. Our research found that misinformation online spiked around key moments of the legislative process around Italy's ban on cultivated meat, including what appeared to be a strategic deployment of disinformation around cultivated meat in the weeks prior to the ban itself. Online narratives framed cultivated meat as "fake" or "synthetic" and linked it to the "Great Reset" conspiracy theory, painting it as a threat to Italian tradition and health. The misinformation surrounding Italy's cultivated meat ban was not confined to local actors. Notably, 80% of the top influencers spreading false information were from the US, UK, and Sweden, using English language posts to connect Italy's policy to broader global conspiracies. For instance, posts from influencers like Bev Turner and Peter Sweden promoted the ban as part of a fight against a "global elite," using Italy as a model for other countries to resist modern food technologies and environmental policies.

Conclusion

This report shows the power of Big Meat and Dairy lobby groups, fighting across the world to maintain status quo, blocking climate action, such as dietary shifts and the adoption of alternative proteins. While tactics resemble Big Oil, which have now been widely discredited as harming public interest, Big Meat and Dairy influence still flies under the radar, and they continue to benefit from agricultural exceptionalism. In the US, about 800 times more public funding and 190 times more lobbying money goes to animal-source food products than alternatives.¹⁷ In the EU, about 1,200 times more public funding and 3 times more lobbying money goes to animal-source food products.¹⁸ Alternative proteins are a promising technology, but they received only a fraction of investments deployed in other sectors. This is blocking progress towards climate solutions in the food sector.

A report by the Boston Consulting Group found that per dollar invested, plant-based proteins have the highest CO₂ savings of any sector and have ‘ready consumer interest’. Market trends also show that there is a huge appetite for plant-based foods. In 2022, a survey covering 31 countries found a global average of 44% of consumers who were ‘likely to eat less meat or replace it with alternatives to limit their contribution to climate change’.¹⁹ Millennials are also more likely to try not to eat meat,²⁰ and 22% of the world’s population are vegetarian,²¹ while actions like Veganuary have been increasing year on year, with an estimated 25 million people taking part in January 2024.²²

The climate science is clear: actions that we take in this decade will define temperatures and the world we live in for the decades to come. The livestock sector is both a significant source of GHG emissions and uniquely vulnerable to the impacts of climate change that are already being felt by farmers and ordinary people everywhere. The studies show that as temperatures increase further, climate impacts

will only get worse, with significant financial implications for the sector, as well as with potential catastrophic food security implications across the world, impacting the most vulnerable the most. As the industry fights to resist any reduction to live-stock numbers and the transition to healthier, more plant-based diets, we must take urgent action to regulate the industry, reduce emissions and invest in alternatives. As Big Tobacco and Big Oil are scrutinised, Big Ag should be too.



Introduction

In the second half of the 20th century, global population underwent rapid growth.²³ In the same period, one of the fastest cultural shifts in human history unfolded: the convergence to a ‘Global Standard Diet’.²⁴ While many of us now have access to a more diverse range of foods than ever before, our diets have become more uniform on the global scale, largely modelled on a diet originating in rich nations in the 1960s.²⁵ As many countries underwent an economic transition on the same timescale, consumption of meat and dairy products accelerated globally, with the increase in per capita meat consumption growing much faster than the population rate.²⁶ As a result, global meat production has quadrupled since the 1960s and, as part of this trend, beef production has more than doubled.²⁷

The Global Standard Diet has been promoting a certain type of heavily industrialised farming, focusing on volume over other aspects, such as environmental issues, animal welfare and genetic diversity of crops and animals. As a result, farming methods also converged: the biggest players globalised their businesses and eliminated their smaller competitors.²⁸ In the meat and dairy farming sector, the result is a highly concentrated industry in the hands of a few corporations.

Geographically speaking, while the level of industrial concentration varies from region to region, the industries tend to be especially concentrated in major meat and dairy exporting regions: the United States (US), Canada, the European Union (EU), Brazil, Argentina, Australia and New Zealand.²⁹ In the US, four large conglomerates control 73% of beef processing,³⁰ while in Brazil, a third of the beef sector is in the hands of three companies.³¹ In major dairy-producing countries, such as Denmark, the Netherlands and New Zealand, individual ‘super co-ops’ control the majority of the dairy market.³²

Animal farming on this industrial scale is associated with a myriad of environmental challenges, affecting both our land and water resources. Animal farming of lamb, mutton and beef requires about 100 times more land than cereals,³³ and the expansion of land associated with animal farming is one of the key drivers of biodiversity loss globally.³⁴ Agriculture is also responsible for three-quarters of worldwide deforestation, with beef production alone responsible for 41% of it.³⁵ The average water footprint per calorie for beef is 20-times that of grain, while at the same time, excess livestock manure is a main driver of soil and water pollution in many parts of the world.³⁶ One of the biggest negative impacts of this sector is how it affects the climate: industrial animal farming is a major producer of greenhouse gases. It is responsible for 57% of emissions linked to agricultural production, which accounts for an estimated 37% of all global emissions.³⁷ One of them, methane, is of particular concern. Methane persists in the atmosphere for around a decade, but despite its relatively short lifespan, it is a potent greenhouse gas – around 80 times more powerful than CO₂ over 20 years³⁸ and responsible for an estimated 25% of warming experienced today.³⁹ These unique properties have led climate scientists to call for rapid cuts in methane this decade, as this would buy us valuable time to avoid dangerous climate tipping points and to give humanity a fighting chance to stay under a 1.5°C temperature increase.

Animal agriculture contributes 32% of the world’s methane emissions, making it the single largest source of human-made methane emissions.⁴⁰ But not all kinds of animal farming contribute equally to livestock methane emissions: cattle farming is responsible for the lion’s share of these emissions, due largely to enteric fermentation from cow digestive systems. At product level, this means that beef and dairy production have a disproportionate methane footprint.

Although there are solutions that can be implemented at farm level to reduce some of these emissions, there is mounting scientific evidence that globally, meat and dairy consumption need to be reduced to tackle the climate crisis. The Intergovernmental Panel on Climate Change (IPPC) stated that a shift to sustainable healthy diets that feature plant-based food ‘*could lead to substantial decreases in GHG [greenhouse gas] emissions*’.⁴¹ This includes methane: a recent study found that 75% of food-related heating was driven by foods that are high sources of methane. It further concluded that temperature rise could be cut by 55% by cutting meat consumption in rich countries to medically recommended levels, reducing emissions from livestock and their manure and using renewable energy in the food system.⁴²

Although these companies’ huge revenues would theoretically allow them to address their environmental impact,⁴³ there is neither an international framework covering their activities nor policies in jurisdictions where they operate that would set specific standards for monitoring, reporting or emission reduction targets. Yet their GHG emissions are so high that they equal some of the fossil fuel companies. These companies are only ‘accountable’ to the voluntary initiatives that they have set for themselves (if any). To this day, only a handful of meat and dairy companies have set science-based targets and a fraction of them have targets that include emissions that occur in their supply chains, so-called Scope 3 emissions.⁴⁴ The blatant lack of accountability is facilitated by a broader lack of scrutiny on these companies: mainstream media fails to report substantially on their level of responsibility to-

wards climate change (see Box 1) and climate negotiations fall short of dealing with agriculture and food systems' emissions in a meaningful way.⁴⁵ Public pressure is also weak: a consumer poll across the US, the UK, Germany, France and Brazil revealed that people in general perceive industrial meat production as one the smallest contributors to climate change.⁴⁶

But as the climate crisis is accelerating, the lack of accountability of the livestock industry is coming under growing scrutiny. Increasingly, Big Meat and Dairy are being compared to Big Oil as they use some of the same tactics that the fossil fuel industry used to distract from their responsibility for the climate crisis, as well as to derail and delay climate policies.⁴⁷ Some of the rhetoric used by both sectors are akin: fossil fuels were portrayed by the industry as essential to fighting poverty while meat is portrayed as key to combating world hunger.⁴⁸ This report aims to explore some of these corporate tactics played by Big Meat and Dairy companies and farm lobbies that represent their interests. In 2020, Changing Markets published a landmark report entitled *Talking Trash*,⁴⁹ which exposed the tactics employed by the plastic industry to delay, distract and derail progressive legislation to control plastic pollution. This report explores similar corporate tactics deployed by the 22 Big Meat and Dairy corporations (some of them already featured in our previous reports *Blindspot*, *Emissions Impossible* and *Feeding us Greenwash*), in key geographies where these giants are concentrated (US, EU, Brazil, UK, Australia and New Zealand) and where regulating their activities could achieve the biggest impact.

Box 1: How the media is failing to tell the full climate story

The climate impact of meat and dairy production remains largely underreported in the media. A 2023 analysis found that industrial meat production's contribution to climate change received only 0.5% of coverage on climate change among mainstream newspapers, newswires and digital media in the UK, US and EU (between 2020 and 2022).⁵⁰ Another study from the same year found that only 7% of over 1,000 climate articles from top US media outlets mentioned animal agriculture at all.⁵¹

The few that do report on the links between animal farming and the climate crisis tend to focus on the fact that the industry is a victim of the climate crisis, rather than an active contributor.⁵² A 2022 academic analysis⁵³ on news coverage of the topic of reduction in meat consumption also found that newspapers often called for individual-level behavioural change (rather than systemic changes). Crucially, it found that coverage of diet change efforts towards less meat portrayed substantial disagreement in the field and engaged in 'both-sideism': Journalists covering new evidence on the need to shift diets with less meat often quoted both the lead researcher and an opponent with ties to the livestock industry. The authors noted that the '*inclusion of "both sideism" was similar to previous media coverage that presented climate change as an open debate for years*'.⁵⁴

This winning strategy of the fossil fuel industry, which clouded climate science with 'uncertainties', was also combined with a second strategy: target conservatives with the message that climate change is a liberal belief and paint its followers as '*out of touch with reality*'.⁵⁵ Pitching it as a partisan issue has been successful for the fossil fuel industry and climate denialism; meat-eating's impact on the environment is proving to be equally polarising.⁵⁶

This glaring gap in news coverage of animal farming (and associated meat and dairy consumption) in relation to the climate is problematic because media narratives help to set the political agenda and are precursors to political action.⁵⁷ To remediate the lack of coverage, experts across civil society organisations, academics and scientists working on these issues need to make it a priority to feed the media with a constant stream of news stories.⁵⁸ Finally, to stop casting doubt and overcome polarisation, journalists ought to treat food and farming as a science (rather than a matter of opinions)⁵⁹ and reframe narratives to place the burden of the transformation of our food systems on food retailers and governments, not consumers.⁶⁰

Methodology

Looking across 22 Big Meat and Dairy corporations and 7 national or regional country contexts, the research for the report involved more than 15 expert researchers and investigative journalists and took place between February 2023 and May 2024. Using a mixed-methods analysis, we conducted a desk-based research of 22 of the largest meat and dairy companies, building on our previous reports *Blindspot*,⁶¹ *Emissions Impossible*⁶² and *Feeding Us Greenwash*.⁶³ We looked at the corporate tactics they are using to distract, delay and derail climate action, drawing on media reporting, academic studies, companies’ annual reports, lobbying transparency databases, information on political donations, and data gathered through Freedom of Information requests in the EU and US.^B We supplemented this desk-based review with a series of semi-structured interviews with experts that work on environmental, animal welfare, food and agriculture issues.

The team assessed climate targets of Big Meat and Dairy companies against a set of standards for Net Zero Targets developed in a report by the UN High Level Expert Group launched at COP27, as well as one of the most common used voluntary initiatives for climate targets, the Science Based Targets Initiative (SBTi). A full breakdown of each companies’ net zero commitments can be seen in Table 1.1 in Chapter 1.

Companies’ investments were also assessed for the report, in particular comparing the budget allocated to emission reduction programmes and projects, and financial investment into PR and advertising. It was sometimes challenging to find a direct comparison between each company, depending on the information they publish, and how they account for their budget spend. Where these are not direct comparisons between companies, this has been clearly stated. We then compared the amount

spent on these two areas, with the public commitments that companies had made toward emission reduction solutions. This included a comprehensive assessment of technological fixes (some of which we have deemed ‘false solutions’), looking to see whether companies are upholding their vocal commitments with action from their pockets. (A full table covering technological fixes can be found in Chapter 2, Table 2.2. ‘Evaluations of measures to reduce methane emissions’).

But publicly available information only scratches the surface of corporate tactics to prevent change, therefore tried to find out, how companies influence decision-makers behind the scenes.

We wanted to understand the lobby activities and influence of the 22 companies covered in the report, including spending on lobbying and political donations, how many meetings they have with policymakers and what is discussed, as well as how these companies engage through membership of trade associations, and other groups. This drew on information gathered from the EU’s Transparency Register, Lobbyfacts.eu, and IntegrityWatch.eu. To understand the lobby activities of companies in the US, OpenSecrets.org provided most of the lobbying information analysed in the report. Aside from these two areas, corporate influence on policymakers was also analysed in some of the case studies, where we worked closely with researchers from relevant countries to map any available information related to lobby activities at a national level. These varied from country to country depending on the focus of the particular case study.

A total of 21 Access to Documents requests were tabled between February and May 2023, to 11 Directorate Generals (DGs) of the European Commission.^C

C Namely, four requests to Agriculture and Rural Development (DG AGRI), four to Climate Action (DG CLIMA), three to Environment (DG ENV), three to the Secretariat General (SEC GEN), and one each to Health and Food Safety (DG SANTE), Internal Market, Industry, Entrepreneurship and SMEs (DG GROW), Energy (DG ENER), Justice and Consumers (DG JUST), Financial Stability, Financial Services and Capital Markets Union (DG FISMA), Budget (DG BUDG), and Structural Reform Support (DG REGIO).

B In Europe these are called Access to Documents requests, so the names may be used interchangeably.

A total of 15 requests returned some or all of the documents we requested. The remaining six responded that they did not hold the information we asked for. Ten of the requests were for minutes of meetings that we had identified as being of potential relevance (based on the actors involved and the subjects discussed) in the online meetings lists published by the respective European Commissioners, their cabinets, and Commission Director Generals. The remaining requests were for correspondence with stakeholders relating to particular policies or topics (a total of seven), such as agricultural emissions in the Industrial Emissions Directive, and the naming, labelling and promotion of plant-based proteins, or for contacts with the US Department of Agriculture, US Department of State or US Dairy Export Council regarding methane, livestock emissions and so on (a total of four). Full details of all FoIs tabled, and the replies and documents received, can be found on asktheeu.org.^D

Other resources used in the research for this report included analysis of the industry submissions to public consultations run by the European Commission; company and trade association websites, reports, press releases, and other published materials; reports and analyses by NGOs, research organisations and civil society groups; media articles; press materials from politicians and political entities; official policy documents, proposals and opinions; amendments, written questions, motions, and so on tabled by politicians; recordings of lobby events; published transparency data about lobby meetings; other publicly available lobbying materials (such as papers, briefings, letters, event agendas/minutes, etc.).

The country case studies, focused on publicly available information and policy analysis working together with researchers familiar with the country context in question. These had a particular focus to show how the tactics of Big Meat and Dairy

played out in the national context, particularly in relation to methane emission reduction and commitments to the Global Methane Pledge. Each study analysed the pledges made by government, policy progress, and whether any of the policies were delayed or derailed by the lobby activities of Big Meat and Dairy. Each case study was reviewed by the national NGO experts from the country researched, who were not involved in the original research.

The only exception to this was the Italy case study, where we focused on social media misinformation surrounding the country's recent ban on cultured meat and labelling restrictions for plant-based products. For this chapter human+AI analysis was employed, covering a time frame between March 2023 and February 2024, to understand a specific legislative process and the online discussions surrounding this ban, building from Changing Markets' *Truth, Lies, and Culture Wars* research and a previous case study on the Netherlands.⁶⁴ After developing a lexicon of key search terms, the research identified posts on X (formerly twitter) and analysed these for misinformation. For this case study Ripple Research utilised a number of analytical methods that picked up the timing of heightened activity, the themes of discussions and identified influential voices and sources of misinformation.

^D See https://www.asktheeu.org/en/user/elaine_girvan Please note that one of the Fols listed on this page is from an earlier piece of research in 2022; so 21 of the total 22 requests on this page pertain to the research conducted for this report.



1. Distract

1.1 Introduction

This chapter explores the various distraction tactics that meat and dairy companies are employing to draw attention away from their lack of climate action. This includes efforts to present a natural, climate-friendly, healthy image of their products alongside misleading advertising campaigns, some aimed at younger consumers, and flawed and misleading net zero targets that do not align with the standards of the United Nations' High Level Expert Group on Net Zero. Distraction tactics encompass any activity designed to make customers and policymakers think real change is happening while allowing industry to continue flooding the world with the idea that meat and dairy products are the best nutritional choice and can be part of the solution to climate change.

A significant proportion of these tactics can also be dubbed 'greenwashing'. This term does not just encompass cheating the consumer, who is increasingly looking for more environmentally friendly products and companies,

(and is often willing to pay a price-premium), but is also an unfair business practice, as it leaves companies that are genuinely investing in sustainability at a disadvantage. With concerns around greenwashing mounting, environmental claims from companies are increasingly under scrutiny and crackdowns from bodies including consumer and advertising regulators, the EU and even the UN.^{65, 66, 67}

1.2 Greenwashing in consumer brands

Greenwashing is when companies make claims to make their products, services or brands appear more environmentally friendly than they are, for example through advertising, or through misleading statements on their products or about their business practices. Often greenwashing takes the form of broad, vague claims, such as ‘green’ or ‘responsible’ without providing any supporting evidence. In the meat and dairy sector, this is often accompanied by more subtle greenwashing, such as the use of natural colours, logos and images of grazing or happy animals (while in reality the products were often produced in industrial farms), or by omitting certain information, such as production method or climate impact, to give the impression that a product is better for the environment or for animal welfare.⁶⁸ Greenwashing - which is practised across different high-carbon sectors - has been highlighted by campaigners and academics as an increasingly important front in the battle against climate misinformation and a common industry delay tactic.^{69, E} By putting up a

green smokescreen through greenwashing, companies are creating a collective placebo effect, misleading us into believing change is happening, when in reality, nothing has changed, or has even deteriorated.

Greenwashing is pervasive in the meat and dairy industry’s marketing of its products and consumer-facing brands. A Changing Markets report into greenwashing in the food sector, *Feeding Us Greenwash*,⁷⁰ revealed bold green claims coming from some of the biggest meat and dairy companies, a key tactic in which they seek to distract from the environmental damage connected to their business activities. From over 50 examples of misleading green claims that Changing Markets has analysed, over 80% were the result of false or vague climate claims. These are often levelled as product claims or adverts saying certain products are ‘carbon neutral’, ‘climate positive’ or ‘low carbon’. Many of these claims were found on the products of meat and dairy companies that are some of the biggest climate and methane polluters and which lack comprehensive climate plans.

For example, we found Nestlé’s carbon neutral claims for its brands, including Nespresso and KitKat, FrieslandCampina’s carbon neutral milk powder, Marfrig’s carbon neutral beef, and Danone’s carbon neutral Actimel. Nestlé and several other companies have since announced a move away from carbon neutral claims, instead focusing on emissions reductions.⁷¹ This is now likely to be followed by even more companies, as such vague claims are now banned by the EU, while some of the major certifiers, like Carbon Trust, have stopped approving them.

Other meat and dairy companies were found to be regularly using a more subtle form of greenwashing by depicting cows grazing in empty, rolling green fields and vague claims about how sustainable their products are, even when, in reality, the products come from industrial agriculture. Both Arla and Saputo were found to utilise this form of subtle greenwashing, with Saputo marketing its ‘Make it better’

E As well as being highlighted by other academics, greenwashing is highlighted in the academic paper *Discourses of Delay* under the headline ‘all talk little action’ where companies or countries argue, for example, ‘we are world leaders in addressing climate change’ and ‘we have approved an ambitious target’. (Source: Lamb, W. F., Mattioli, G., Levi, S., Roberts, T., Capstick, S., Creutzig, F., Minx, J. C., Müller-Hansen, Culhane, T., Steinberger, J. K. (2020). Discourses of climate delay. *Global Sustainability*, 3(e17):1–5. [ONLINE] Available at: <https://www.cambridge.org/core/journals/global-sustainability/article/discourses-of-climate-delay/>)

cheddar, while Arla's cheddar is *'building a sustainable future'*. Dairy products seemed to be particularly greenwashed with vague claims like *'planet-friendly'* and *'sustainable future'* used on the packaging, along with shades of green and images of grazing cows.

We also found numerous climate claims that related to the packaging only, ignoring the emissions-intensive content. The most outrageous example was beef jerky sold under Amazon's climate-friendly pledge on the grounds that it had had some air removed from its packaging – but which was still non-recyclable flexible plastic. Beef jerky is one of the most carbon intensive food products available on supermarket shelves.

We then tested these claims with consumer polling run by YouGov. The polling showed that these claims motivate consumers, who are willing to pay more for products with environmental claims. Almost half of people in Germany and UK told us that they regularly buy products with sustainability labels or certifications, with nearly one in three being willing to pay more for climate labels and over half willing to pay more for animal welfare labels. This shows how Big Meat and Dairy benefits from distracting consumers from the true environmental costs of their products and why it is important to clamp down on greenwashing.

Box 1.2: Greenwashing clampdown

The EU has been revising its consumer legislation to address what claims companies can and cannot make. The Directive on Empowering Consumers for the Green Transition will make the EU the toughest region in the world when it comes to claims companies can make to consumers. It will ban a number of vague green claims, such as 'carbon neutral', 'net zero' or 'environmentally friendly'. Such claims will now need to be substantiated by an official certification scheme, set up by public authorities, while claims that are solely based on offsetting will be banned.⁷² The Green Claims Directive, which puts in place methodologies to substantiate green claims, as well as enforcement and penalties is currently going through the co-decision procedure.⁷³

This legislation is bound to accelerate complaints against companies which have already been growing in number and are resulting in successful lawsuits and regulatory decisions. For example, in March 2024, a court ruled that the Dutch airline KLM had misled consumers and had painted an 'overly rosy picture' of some of its climate efforts.⁷⁴ In the financial sector in 2022, the UK bank HSBC became the first major bank to face action over greenwashing when it was forced to pull an advertising campaign by the UK's advertising regulator for adverts that highlighted sustainability efforts without also giving details of its fossil fuel financing.⁷⁵ The UK is also tightening its greenwashing regulations, as well as enforcement of the Competition and Markets Authority's (CMA) Green Claims Code.

Actions are also beginning to target meat and dairy companies. In June 2023, a US federal advertising body banned the net zero claims of JBS, deeming that its claims to be on a path towards net zero was not backed up by credible plans.⁷⁶ This was followed in March 2024 by a greenwashing lawsuit brought against the company by the New York Attorney General Letitia James against JBS' US subsidiary.⁷⁷ In 2021, Danish meat company, Danish Crown was forced to withdraw a claim about its pork being 'climate controlled' from its products, after campaigners complained. In April 2024, a Danish Court ruled that the claim was indeed 'misleading' and ordered the company to pay €40,000 in legal costs.⁷⁸

1.2.1. Marketing meat to younger audiences as a natural, green and healthy option

Companies are also using more targeted strategies to greenwash their operations – and promote meat as a sustainable, natural and healthy choice. One particularly interesting example of how this plays out is when it comes to the industry advertising to younger generations. The meat and dairy industries seem fearful that these generations are more concerned about the environment, animal welfare and climate issues, and are trying to position their products as aligned to these values. They are also playing on Gen Z's concerns about health to attack alternatives, by using narratives that plant-based foods are processed and full of unnatural chemicals.

Particular efforts are being made to target young generations who are most concerned about climate change, through activity on social media and online collaborations with influencers popular with Gen Z, including those on TikTok and YouTube, gamers, wellness influencers and popular sports figures. While much of the activity happens online, other more longstanding methods are also used to target young people – especially through targeting in schools.

These efforts are sometimes aided by PR firms with experience of working with Big Food, as well as oil and tobacco clients, including the world's most famous PR firm, Edelman.⁷⁹

Gen Z, closely followed by millennials, are the most concerned about the environment out of any generation; for example, polling from Pew Research found that 37% of Gen Z (25 years old or younger) said addressing climate change was their top personal concern.⁸⁰ Gen Z are also particularly concerned about health and more likely to see plant-based foods as a healthy option.

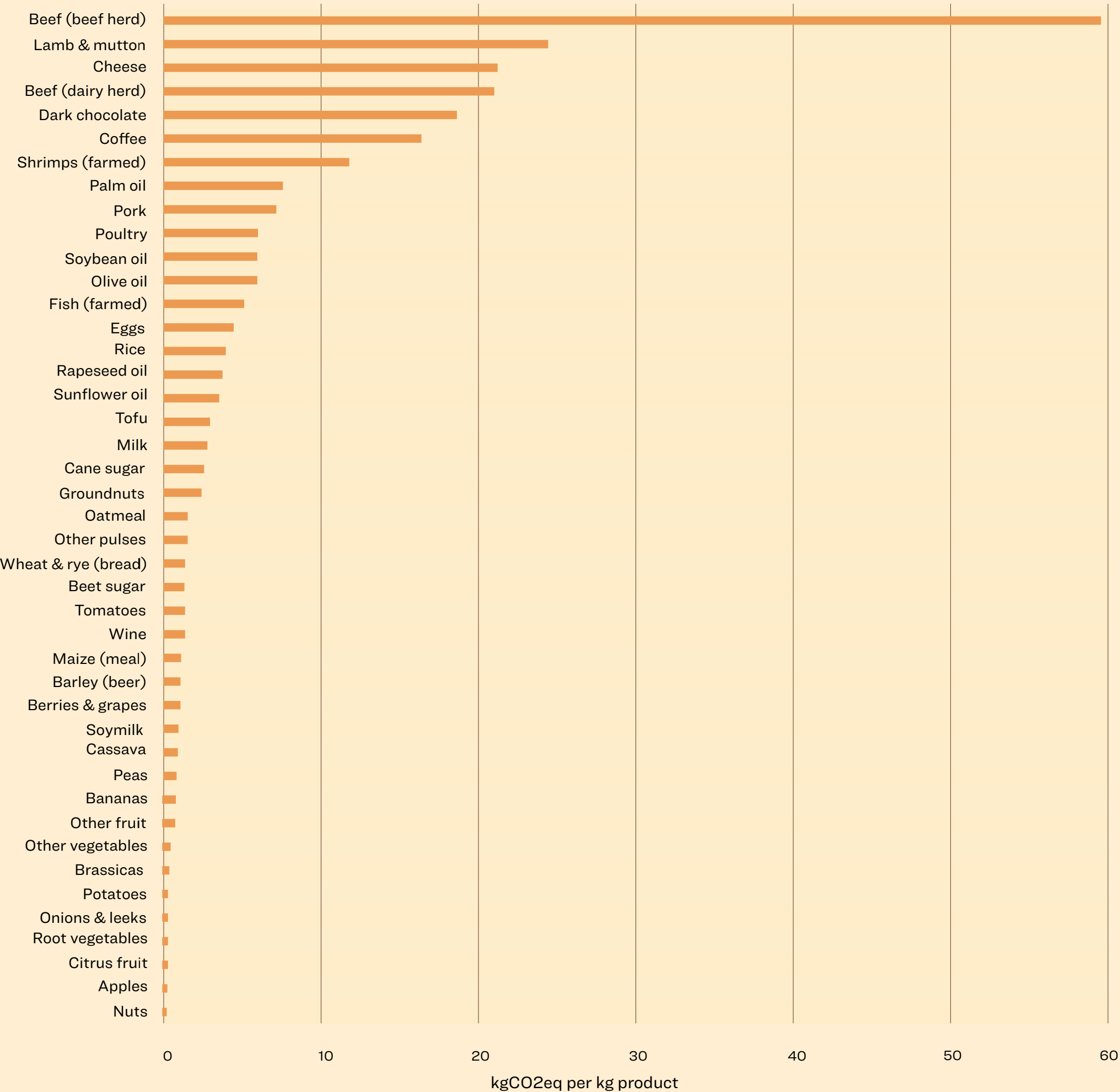
Polling of Gen Z consumers in the UK, France, Poland, Spain and Germany from the EIT Food project found that a total of 72% of Gen Z said they see healthy eating as an integral part of their physical and mental health. Amongst the 'healthiest' options for food, Gen-Zers said they prefer whole, organic and plant-based foods. Gen Z are also more likely to see processed food as unhealthy, to be concerned with convenience when cooking food, and to find out about nutrition and new recipes from social media – notably TikTok.⁸¹

These environmental, health and lifestyle concerns are translating into different buying habits which pose a significant threat to the future of meat and dairy companies' business. For example, according to McKinsey, Gen Z and millennials are the generations that are the most interested in vegetarian, vegan, and conscious eating options, while according to the consumer market research company Circana, in the US in 2022 members of Gen Z bought 20% less milk than the national average.^{82, 83}

In response, many major meat and dairy companies and trade groups are undertaking targeted efforts to win the trust of younger generations, with social media often at the centre of their efforts. This follows the example of the oil and gas industry, which has hired hundreds of content creators since 2017 to boost perceptions of the companies among young people concerned about climate impacts.⁸⁴

In the US and EU, several campaigns have focused on fears about a decrease in dairy consumption overall and particularly among younger audiences. In 2022, Dairy Farmers of America launched a major new social media and digital campaign '*showcasing how dairy is sustainably made and can help protect the planet*.'⁸⁵ In an effort to target younger consumers, the campaign's launch featured a collaboration with YouTuber Sean Evans, host of the 'Hot Ones' – a YouTube show where he interviews guests while eating spicy chicken wings. (First We Feast – the channel which hosts Hot Ones – has 12.8 million subscribers, and the video in question had 691,000 views at the time of writing.)⁸⁶

ANIMAL-BASED FOODS TEND TO HAVE A LARGER CARBON FOOTPRINT



Myth bust: Meat is a sustainable way to get protein

When it comes to water, land, and energy, meat production is highly inefficient and unsustainable. Agricultural production accounts for 80% of all deforestation in the world and half of the world’s habitable land is used for agriculture.⁸⁷ Destroying forests for grazing beef cattle results in the loss of 2.71 million hectares of tropical forest annually, the same size as Sweden.⁸⁸ If we shifted to a plant-based diet, global agricultural land use could be reduced by 75%.⁸⁹ It takes about 100 times more land to produce the same amount of calories or protein from beef or lamb compared to plant-based alternatives like peas or to-fu.⁹⁰ With nearly 10 billion people expected on earth by 2050, we need to see a shift towards efficient farming practices and sustainable diets.⁹¹ Under the current growth scenario, there’s a 56% disparity between the crop calories produced in 2010 and the projected requirements for 2050.⁹²

Figure 2 : Animal-based foods have a larger carbon footprint

Source: Carbon Brief



Source: Hot Ones host Sean Evans, Youtube

The collaboration on the show was also accompanied by a wider series of new ‘digital and streaming adverts’, according to a Dairy Farmers of America press release, showing ‘*[h]ow Milk Cuts the Heat in Spicy Foods, but Can Also Help Keep the Planet from Getting too Hot by Lowering Emissions.*’⁹³ Content from Evans - who currently has 81 million followers on TikTok - has included a sponsored video on National Farmers Day in which he promoted pro-milk facts as he challenged a gamers to compete in a special dairy-farm-themed level of Minecraft for a chance to win a cash prize.

Similarly in the US, Dairy Management Inc has worked with Gen Z influencer and Youtuber Mr Beast (real name Jimmy Donaldson) to promote the National Dairy

Checkoff’s #UndeniablyDairy campaign. According to Dairy Management Inc’s president and CEO, Donaldson was chosen as ‘*Gen Z looks for authenticity, humor, and voices they can relate to, and we know MrBeast will be effective in portraying how dairy remains a health and wellness solution and is produced in a way that is environmentally friendly.*’⁹⁴

Parts of the Undeniably Dairy campaign were delivered by PR company Edelman, the oldest and largest PR company in the world, which has delivered major campaigns for oil and gas companies such as Exxon and Shell, as well as working for the tobacco industry.⁹⁵ On its website, Edelman says that its work on the Undeniably Dairy Campaign secured ‘*more than 271 million impressions and more than 72 million video views*’ and that ‘*among our audience, purchase intent for dairy alternatives (e.g. plant-based milks) decreased 6%*’⁹⁶

In the EU, Arla's UK subsidiary has called on Gen-Z not to 'cancel' dairy over similar concerns about young people's purchasing intent.⁹⁷ While digital campaigns aim to promote the industry's environmental credentials to consumers, they are also working to target Gen Z's concerns about health, and rebrand meat and dairy as a natural food and part of a healthy diet.

For example, a campaign from Beef + Lamb New Zealand is running a campaign named 'Good things start with New Zealand Beef + Lamb campaign' featuring New Zealand women's rugby player, Stacey Waaka, and which is targeting teenage girls and women in the country. According to a spokesperson for Beef + Lamb New Zealand, the campaign *'will be focusing on the nutritional value, and sustainability of beef and lamb - reassuring consumers that grass-fed New Zealand beef and lamb is good for them, good for New Zealand and good for the planet.'*⁹⁸ In the UK, the Agriculture and Horticulture Development Board (AHDB) (a semi-governmental body funded by industry) is running its first campaign targeting Gen Z through social media, collaborating with the online food platform Mob Kitchen, and the TikTokers Cole Anderson and Jack Joseph (who have a combined 5.4 million followers on the platform).⁹⁹ This includes a joint video where Anderson and Joseph promote the new Mob recipes *"showcasing pork in a variety of world cuisines"*, and an article on Mob's website, presenting pork as a great 'post-workout' food.

The AHDB was also recently criticised for a major advertising campaign, 'Let's Eat Balanced', that it ran at the beginning of 2024, timed to coincide with Veganuary. The campaign was estimated to reach 9 out of 10 adults in the UK, and specifically targeted younger consumers through partnerships with influencers on platforms including TikTok. The AHDB declared the campaign a victory, according to comments from a spokesman reported in an article in the Farmers Guardian, but did not provide any data to support this claim.¹⁰⁰ The campaign was delivered by Ogilvy, another PR firm with a history of representing fossil fuel heavyweights.^{101, 102}

In the US the Milk Processor Education Program (MilkPEP) - an organisation funded by milk producers to encourage consumption - promoted the health credentials of milk to young people through a campaign called 'Gonna Need Milk', which has focused on partnerships with sportspeople and gamers to present milk to young people as a 'performance drink'.^{103, 104} The industry is also training and coordinating influencers, to amplify these 'positive messages' - including on health and sustainability - on social media. For young people specifically, the Animal Agriculture Alliance (AAA) - a US industry group which represents Cargill, Smithfield and the American Farm Bureau Federation, among others - runs a yearly course called 'online aggies' where it trains college-age students from colleges across several different states in the US to promote positive messages about the US agriculture industry.^{105, 106}



| Source: AHDB's We Eat Balanced campaign that "champions British beef, lamb and dairy."

Every week on the course students are tasked with posting content on Facebook, Instagram, Twitter and/or TikTok with positive messages on themes such as health, animal welfare and the environment. Content featured in the Impact Report included an ‘infographic challenge’ where a student had created content about the sustainability of the US poultry industry and Instagram posts about – for example – how livestock reduce and recycle waste. According to the AAA’s impact report, in 2022, students’ posts reached over 8.5 million people.¹⁰⁷

1.2.2. Influencing education systems

In another tactic that echoes that of fossil fuel companies – the meat and dairy industry also target young people offline through efforts to gain influence in schools and convince both schoolchildren and teachers that animal products are a necessary part of a healthy diet for young people.¹⁰⁸ Following a long history of (successfully) pushing for milk to form an integral part of school meals, the industry has continued these efforts in the context of rising concern over falling sales.¹⁰⁹ Dairy industry groups have also pushed educational materials and programmes that present milk as a healthy and necessary choice to students.^{110, 111}

The beef industry has taken a similar tack when it comes to creating and sponsoring educational materials. For example, as Wired reported in 2024, over the past eight years, the American Farm Bureau Federation has produced industry-backed lesson plans, learning resources, in-person events and webinars as part of a programme to boost the cattle industry’s reputation in the country and counter ‘misinformation’.¹¹² PR firm Look East – run by so-called Big Food advocate Charlie Arnott – has organised trips for influencers where they can learn and post about the benefits of animal agriculture. Look East has recently taken part in a webinar with the American Farm Bureau Federation to discuss efforts to target Gen Z.^{113, 114, 115}

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The Meat Industry Is Advertising Like Big Oil

But they're using public funds to do it.

By [Cartie Werthman](#) on Apr 18, 2023 @ 12:02 PDT
14 min read



A cow stands in front of a wind turbine. Credit: iStock

Later this month, the [National Cattlemen's Beef Association](#) (NCBA) will head to the 2023 National Agri-Marketing Association's conference to see if its public relations campaign about beef's sustainability can secure the national award for campaigns directed to consumers.

Earlier this year, a campaign NCBA began in 2021 called "[Beefing up Sustainability](#)," and a corresponding [campaign targeted to kids](#), advanced to the final round.

Both were part of NCBA's multi-pronged PR campaign about how beef is actually a climate-conscious food. The group, which is the beef industry's largest trade association, plastered the New York Times (including its popular podcast [The Daily](#)) and the Washington Post with climate-conscious food messaging. It also hired [food and nutrition influencers](#) to talk about [#sustainablebeef](#) on social media. On Earth Day and during the United Nations Climate Week, it published 85 letters to the editor in local newspapers on "behalf" of cattle farmers proclaiming that beef is sustainable.

The NCBA [wrote](#) in its National Agri-Marketing Association's award submission that Beefing up Sustainability aimed to "combat misinformation about beef sustainability and proactively position beef as a sustainable food."

However, climate experts would describe beef not as "a sustainable food," but as a climate problem. For each kilogram of beef produced, nearly [60 kilograms of greenhouse gasses](#) are released. In comparison, wheat releases less than 2 kilograms of greenhouse gasses per kilogram produced.

Myth bust: Consumers are free to choose the food they want to eat

The industry's claim that increased meat consumption is solely due to consumer demand overlooks the significant role played by marketing, availability, subsidies, and pricing strategies, simplifying the complex interplay of factors shaping dietary habits in a market-driven food industry. We often call combination of these food environments.

The Beef Checkoff programme in the United States is a notable example that underscores how industry-driven initiatives influence consumer choices. The Beef Checkoff programme, funded by a mandatory fee on cattle \$1-per-head assessment, invests heavily in marketing campaigns to promote beef consumption. In 2023 the Beef Checkoff brought in \$42,982,585 and spent around \$39 million on programmes for beef promotion, research, consumer information, industry information, foreign marketing and producer communications.¹¹⁶ The programme funds and promotes research that downplays the impact of cattle production on climate change.¹¹⁷ The Programme ran this ad in the New York Times on Sunday, (August 8, 2021) and funded the “Beef Is Tonight’s Sustainable Dinner Option” campaign.¹¹⁸

The programme has even targeted children. AFBFA, a contractor to Beef Checkoff, initiated a campaign aimed at schools to address industry concerns regarding science teachers encountering what they perceive as ‘misinformation’ or ‘propaganda.’¹¹⁹ As part of this effort, AFBFA developed industry-sponsored educational materials like comics, bingo games, and math worksheets, it created lesson plans, learning resources, and in-person events to enhance the cattle industry’s reputation and counteract these perceived challenges.

These campaigns significantly influence consumer perceptions, sway purchasing decisions away from plant-based options, and contribute to the normalisation of high meat consumption. Through strategic marketing, pricing, and the widespread availability of meat products, whilst simultaneously tearing down alternative proteins, the industry effectively guides consumers toward increased meat consumption, shaping dietary habits in a market-driven food industry.¹²⁰



An example of a misleading ad funded by Beef Checkoff programme that ran in New York Times and Wall Street Journal in August 2021

1.2.3. Spreading misinformation online and attacks on alternative protein

Although companies are spending millions on service of various PR firms such as Edelman, they are also working to mobilising citizen allies to further promote meat and dairy, particularly online. The National Cattlemen's Beef Association (NCBA) has taken efforts to influence citizens through its Masters of Beef Advocacy, an online, admissions-only course, which now has more than 21,000 graduates and which the Guardian described as creating an 'army of influencers and citizen activists', to promote industry-friendly narratives relating to beef. According to an NCBA document the advocates and spokespeople trained in the programme, for which the NCBA spent \$572,000 in 2023 alone, '*help educate consumers and influencers about the role of beef in a healthy diet*' and to '*respond when there is misinformation in the public about beef production and other beef-related issues*'.¹²¹

As well as presenting meat as a natural and healthy choice, social media and advertising efforts are also attacking alternative protein sources which pose a threat to meat and dairy companies' core business. These efforts have been linked to the work of PR professionals who have amplified industry's messaging to broader audiences, and which have represented oil and gas and tobacco clients. They have also been boosted by other third parties which amplify industry's messaging and lend it credibility with the public, notably the industry-funded Clarity and Leadership for Environmental Awareness and Research (CLEAR) Center at the University of California Davis.

While lobbying efforts against alternatives have taken the tactic of arguing against the 'misleading' labelling of plant-based products (see the Derail chapter), advertising and social media efforts most often take the approach of attacking the authenticity and health credentials of plant-based products, with the aim of generating

mistrust among consumers. One figure who has been credited with planting the seed for many arguments attacking meat and dairy alternatives in the mainstream is PR executive Richard Berman.¹²² Berman, who has reportedly taken pride in his nickname 'Dr Evil', has a record of working for 'dark-money coalitions' in addition to his PR company, Berman and Company, which has represented clients including Tyson Foods and the International Dairy Federation, and was set up with money from tobacco firm Phillip Morris.^{123, 124}

In 2019, in a major moment for the battle against alternative proteins, a Berman-affiliated and food-industry funded group, the Center for Consumer Freedom (CCF) began to place adverts against these products.¹²⁵ In its most high-profile advertising push, in 2020 the CCF ran a \$5 million Super Bowl advertisement based on a school spelling bee with children asked to spell some of the ingredients of alternative protein products. The core argument of the advert, which focused on methylcellulose, a plant-based compound appearing in a wide variety of supermarket goods, including cakes and bread, was that: '*If you can't spell it or pronounce it, maybe you shouldn't be eating it*'.¹²⁶ Berman has also said industry should target young people specifically. In 2022, for example, he wrote in livestock trade publication *Meating-place*, arguing that the industry needs to target the consumers of tomorrow more aggressively to ensure their loyalty.¹²⁷

Professor Frank Mitloehner, head of the CLEAR Center at UC Davis, is another high-profile actor who joined in attacks on alternative meats in 2019 as alternative meat companies such as Beyond Meat were seeing rising sales. This included tweeting a quiz that asked which ingredients are for Beyond and Impossible burgers and which are for premium dog food. The post was widely shared on social media and the concept was later adapted by the CCF for an advert, though Mitloehner claimed there was no collaboration with the group.¹²⁸

Since these interventions, content attacking alternatives to meat have become widespread across the internet with social media users often employing very similar, if not the same, arguments. Fast Company, for example, has reported how posts echoing Berman and Mitloehner's attacks - often verbatim - across diverse online communities have appeared in recent years, including wellness influencers, keto dieters, the anti-seed oil crowd and vaccine sceptics.¹²⁹

While these social media messages come from many fronts, one organisation that has actively pushed online engagement on beef messaging in recent years - and may have had a hand in boosting the number of online attacks - is the National Cattleman's Beef Association (NCBA). The NCBA has hired numerous agencies since 2018 to assist it with its 'messaging and strategy', including Ketchum, VMLY&R (now VML) and Linhart PR, all of which represent fossil fuel clients. The NCBA on its website advocated using influencers '*to engage with consumers across the country about beef's positive message.*'¹³⁰ As previously mentioned, its 'Masters in Beef Advocacy' programme, has also distributed infographics about meat's impacts, and called on its students to engage proactively with other consumers online - as well as offline - debates.¹³¹

Outside of social media, other high-profile advertising efforts have attacked alternative proteins along similar lines. One recent high-profile example is an advert run by the Checkoff-funded body Milk PEP in the USA in 2023, which featured White Lotus and Parks and Recreation star Aubrey Plaza (who has a big fan base among younger generations). The video is a parody of an advert for a type of milk named 'Wood Milk', and centres around Plaza attacking the authenticity of plant-based milks. The advert ends with Plaza saying: '*Is Wood Milk real? Absolutely not. Only real milk is real.*'¹³²

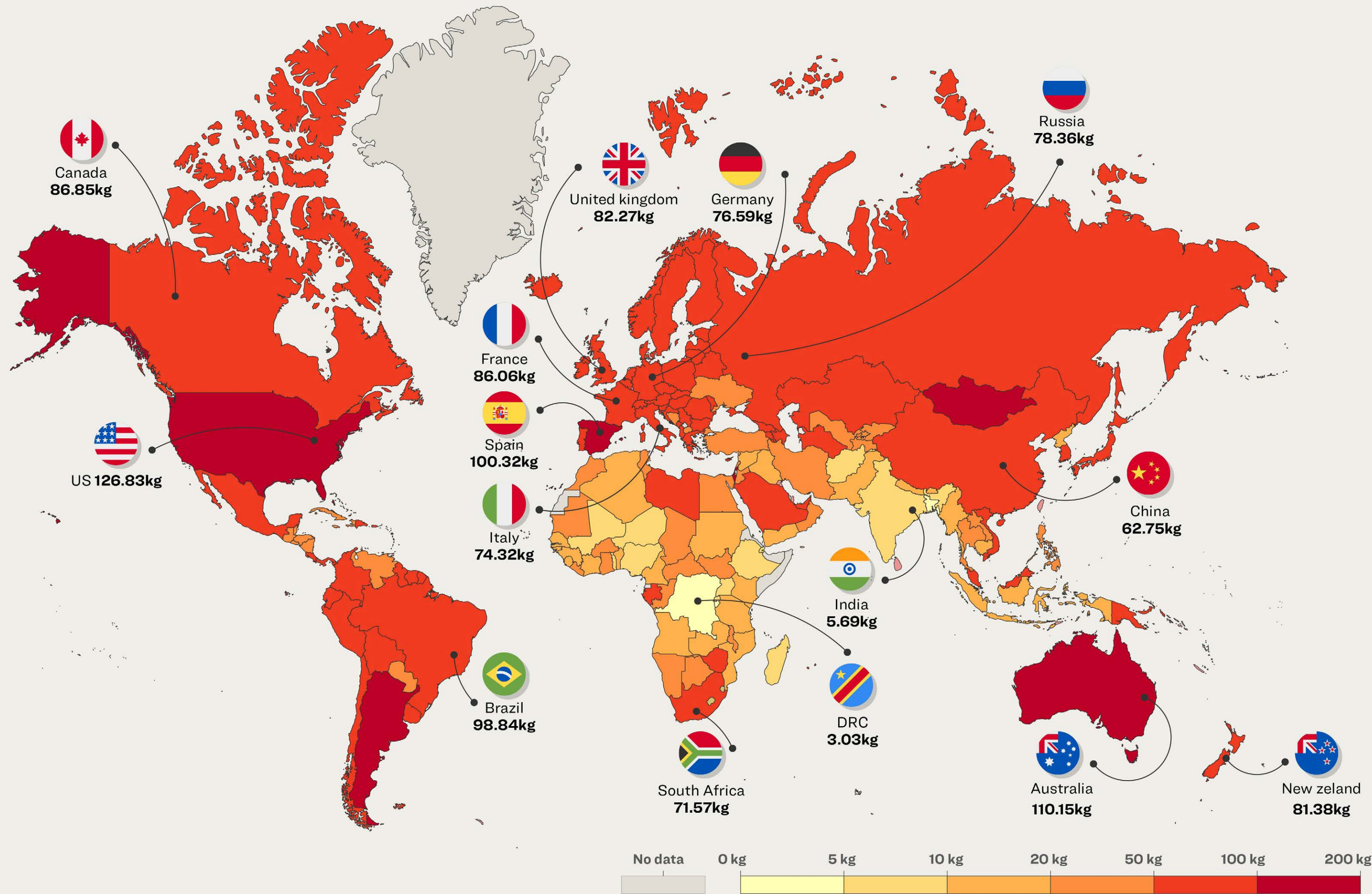
Myth bust: Plant based alternatives are ultra-processed food

Ultra-processed foods (UPFs) are industrially designed to be hyper-palatable, convenient, and shelf-stable, packed with additives like preservatives, flavour enhancers, and sweeteners¹³³. Unlike whole foods, UPFs are made from industrial ingredients with minimal nutritional value, often leading to overconsumption and health issues such as obesity, diabetes, and heart disease.

One tactic used by the meat and dairy industry is to push the narrative that plant-based alternatives are all ultra-processed and unhealthy.¹³⁴ This argument attempts to stop the growing demand for plant-based options and is both oversimplified and misleading. It distracts from the fact that many meat-based products, such as burgers, sausages, and nuggets, are highly processed and aggressively marketed due to their low production costs. Notably, 40% of conventional meat products were classified as 'less healthy' compared to just 14% of plant-based alternatives based on the UK's Nutrient Profiling Model.¹³⁵

It is crucial to evaluate each food's nutritional content individually. Many plant-based products are high in fibre and nutrients and are better for people and the planet than meat options. For instance, swapping a beef burger for a plant-based burger can reduce health risks associated with high levels of red meat intake and are more environmentally friendly, with plant-based burgers associated with up to 98% less greenhouse gas emissions.^{136,137}

While unprocessed plant-based foods are the healthiest options, replacing highly processed meat products with minimally processed plant-based alternatives can support a healthier diet and reduce environmental impact. The meat industry's push to maintain UPF meat consumption, despite links to health issues like cancer and heart disease, prioritises profits over health and overlooks the benefits of minimally processed plant-based products that are nutritious, affordable, and environmentally friendly.



Data source: Food and Agriculture Organization of the United Nations (2023)
Note: Data excludes fish and other seafood sources. Figures do not correct for waste at the household/consumption level so may not directly reflect the quantity of food finally consumed by a given individual.

Meat consumption per person, 2021
Average total meat supply per person measured in kilograms per year.

1.3 Weak voluntary commitments

Companies are investing significant funds and time into distracting us from their lack of climate action. In the public space a narrative is being pushed to ensure the consumer and younger generations are buying their products and feeling positive about the environmental choices they are making based on their green labelling. To back this up, companies are also promoting green targets and sustainability platforms, usually without any transparency, clear measurement system or accountability. Voluntary commitments and weak targets, allows companies PR pushes with positive media headlines without taking any concrete action. Flawed and misleading net-zero targets are under increasing scrutiny, including from the UN High-Level Expert Group on Net Zero.

1.3.1 Corporate net zero strategies: failing on integrity

Corporate climate or net zero targets have been identified as one of the most prominent ways in which companies greenwash. The UN Secretary General António Guterres has identified them as a key tool of climate greenwashing. For example, in speech to the World Economic Forum, earlier this year Guterres argued net zero targets can perpetuate ‘false narratives’ and feed ‘a culture of climate misinformation and confusion’ about the extent of companies’ action on climate change.¹³⁸ As a result of these concerns, in March 2022, Guterres established a High-Level Expert Group on the Net-Zero Emissions Commitments of Non-State Entities (Expert Group) to develop stronger and clearer standards for net-zero emissions pledges by non-State entities - including businesses, investors, cities, and regions - and speed up their implementation.¹³⁹

At COP27 in Sharm El-Sheikh, the Expert Group delivered a report setting out new standards for Net Zero targets, including clear recommendations for companies and financial institutions.¹⁴⁰ The UN Secretary-General also gave a clear message to companies during his remarks at the report’s launch: *‘Abide by this standard and update your guidelines right away - and certainly no later than COP28.’*

We analysed meat and dairy company’s net zero pledges against key recommendations set out by the Expert Group. Only 15 of the 22 companies covered in the report have published or are working on a net zero or other type of climate target. Therefore, we focused our assessment on these 15 companies’ statements, sustainability reports, and other publicly available information with the standard proposed by the Expert Group.^{141, 142, 143, 144} Not all companies described their targets with the same language,^F for example some may use ‘net zero’, or say that they are moving towards ‘climate neutrality’ (Danish Crown and FrieslandCampina), while two Chinese companies (Yili and Mengniu) frame their targets as carbon neutral.¹⁴⁵

It should be said that while there are major risks of companies delaying action through greenwashing, there are also major risks associated with inaction. This analysis found that seven companies (Bigard, Cargill, DMK, Marfrig, NH Group, OSI Group and Saputo) have no net zero - or equivalent - target, therefore they were excluded from more detailed analysis.¹⁴⁶ Cargill, Marfrig, OSI group and DMK have weak near-term climate targets set in 2030s and usually aiming for around 30% intensity reduction in Scope 3. Saputo, NH Foods and Groupe Bigard have no plan at all, therefore they cannot be held accountable. Several of these companies, like Bigard, are private, family-owned businesses, which do not face investor or public scrutiny over their environmental performance.

^F The UK’s National Grid says that while the two terms are sometimes used interchangeably, ‘net-zero’ tends to be greater in scope than ‘carbon neutrality’ (often targeting non CO₂, as well as CO₂, emissions) and have more of an emphasis on emissions reductions, with carbon neutrality often relying more on removals and offsets. (Source: National Grid (n.d.) *Carbon neutral vs net zero – understanding the difference* [ONLINE] Available at: <https://www.nationalgrid.com/stories/energy-explained/carbon-neutral-vs-net-zero-understanding-difference>)

While this research does not provide a comprehensive comparison with the Expert Group standards -- which provides dozens of guidelines across 10 broad recommendations in its detailed report - it does provide an indication of whether companies are measuring up in some of the areas most relevant to emissions-mitigation in line with climate goals. As we see in this chapter, the research suggests companies are widely failing on integrity, and their targets are not driving rapid climate action and investments to reduce their emissions.

In addition to evaluating the strength of companies' commitments, we also analysed the guidelines for climate targets set out by the Science Based Targets Initiative (SBTi), which is often presented as the gold standard for corporate climate action, against the Expert Group standard. Like other recent analyses of the SBTi, we also found that the initiative is failing to accurately assess the credibility of companies' ambition.¹⁴⁷

1.3.2. Companies must align to limit warming to 1.5°C

In its advice, the Expert Group said that companies' net zero pledges must be aligned with 1.5°C of warming. However, current data from the SBTi says that only two of the companies - Nestlé and Danone - are on track for 1.5°C under the SBTi's highest 'net zero' standard (this standard assesses both companies' short and long-term emissions targets to give an overall assessment of their emissions reductions goals). (See Table 1.1)

As Table 1.1 shows, Lactalis and Yilli have committed to be rated under the SBTi's 'net zero' standard, but have not yet had targets approved by the SBTi. Six companies (Arla, Danish Crown, Danone, Nestlé, FrieslandCampina and Vion) have received a 1.5°C rating for their short-term emissions, but have not set targets for longer-term emissions reductions.¹⁴⁸

Seven companies which have set net zero targets did not have any targets approved as 1.5°C compliant with the SBTi at all, either because they were rated as being compliant with a less rigorous standard of 2 or well below 2°C which the SBTi is phasing out (Dairy Farmers of America, Fonterra, Tyson Foods); because they had committed to set targets but not yet done so (Lactalis, Yili), had not engaged with the SBTi process at all (Itoham, Mengniu), or had been removed (JBS).^{G, 149, 150}

While the fact that only two companies (Nestlé and Danone have had its overarching climate plans approved by the SBTi is of concern, there are also significant concerns with the strength of the SBTi's evaluations, and reason to believe that companies that have had targets rated as 1.5°C emission compliant by the SBTi are a long way from this.

For example, while the SBTi gives Nestlé a 1.5°C rating for its climate plans through the organisation's 'net zero standard' (which rates companies' targets for both long-term and short-term emissions), other analyses suggest Nestlé is some way off being 1.5°C aligned and that the company's net zero target lacks integrity. For example, analysis of Nestlé's plans by the New Climate Institute in 2024, found that, far from being 1.5°C compliant, the Nestlé's climate plans had 'low integrity'. The New Climate Institute also rated Nestlé's short-term targets (also rated 1.5°C by the SBTi) as 'poor'.¹⁵¹

The New Climate Institute's (NCI) more negative rating of Nestlé was given for a number of reasons, including the fact that Nestlé's 2030 reduction target is measured against 'business as usual,' an accounting trick that can allow emissions growth overall, as well as company's heavy reliance on regenerative agriculture,

G As of 2019, the SBTi began phasing out '2C' and 'well below 2C' targets and companies - which are expected to review their submissions at least every five years, will be expected to re-apply with 1.5C targets if they wish to continue to be approved by the body. See citation 138 and 139.

TABLE 1.1 NET-ZERO TARGETS*

✖ NO — PARTIAL N/A N/A % PERCENTAGE ✔ YES








	Net zero target ^A		Has set absolute emissions target(s) covering Scopes 1 and 2? ^B		Has set absolute emissions target(s) covering Scope 3? ^C		Reports Scope 3 for latest reporting year?		Estimated % Emissions Scope 3		SBTi short-term target 1.5°C aligned? ¹⁵⁹⁶		SBTi 1.5 °C approved under ‘net zero standard’?		Has SBTi-approved target covering FLAG emissions?	
	Yes ¹⁵⁹⁷	✔	Yes	✔	No – intensity based	✖	Yes ¹⁵⁹⁸	✔	96%	%	Yes	✔	No	✖	No	✖
	Yes ¹⁵⁹⁹	✔	Yes	✔	Yes	✔	No ^{1600, D}	✖	N/A	N/A	No – Well below 2 °C	✖	No	✖	No	✖
	Yes ¹⁶⁰¹	✔	Yes	✔	No ^E	✖	No	✖	97% ^{F, 1602}	%	Yes	✔	No	✖	No	✖
	Yes ¹⁶⁰³	✔	Yes	✔	Yes	✔	Yes ^G	✔	95%	%	Yes	✔	Yes	✔	Yes	✔
	Yes ¹⁶⁰⁴	✔	Yes ^H	✔	No – intensity only ^{I, 1605, 1606, 1607}	✖	Yes ¹⁶⁰⁸	✔	93%	%	No – Well below 2 °C	✖	No	✖	No	✖
	Yes ¹⁶⁰⁹	✔	Yes	✔	Yes	✔	Yes ^{J, 1610}	✔	97%	%	Yes	✔	No	✖	No	✖
	Yes ¹⁶¹¹	✔	Yes ^K	✔	No ^L	✖	Yes ^{M, 1612, 1613}	✔	95% ¹⁶¹⁴	%	No – not committed	✖	No – not committed	✖	No	✖
	Yes ¹⁶¹⁵	✔	No – intensity based ^N	✖	No ^{O, 1616}	✖	No ^{P, 1617, 1618}	✖	N/A	N/A	No – commitment removed	✖	No – commitment removed	✖	No	✖

Table 1.1: Net-Zero Targets

A Companies have set these targets, though they are not always substantiated or robust. ‘Net zero targets’ includes companies that have said they are working to net zero but have not provided a date as well as companies who are working toward ‘carbon neutral’ or ‘climate neutral’ goals.

B The SBTi website has been used as the source for targets where this information was available on the SBTi’s dashboard. Where this was not available, we have used other, company sources.

C The SBTi website has been used as the source for targets where this information was available on the SBTi’s dashboard. Where this was not available, we have used other, company sources.

D Dairy Farmers of America does not appear to disclose its emissions in its latest (2022) Sustainability Report and doesn’t report to the Carbon Disclosure Project.

E Danish Crown says that: ‘Given the high complexity of scope 3 emissions and our reliance on third-party data, scope 3 emissions for 2022/23 will be available in May 2024.’ (Source: Danish Crown Annual Report 2022 - 2023, p10; see endnote 6)

F Percentage based on data declared for 2021/2022 (Source: Danish Crown 2021/2022 Sustainability Report; see endnote 7).

G Danone also reports its percentage decrease in methane emissions (13.3%) between 2020 and 2023, though doesn’t appear to report a total figure. (Source: Integrated Report 2023; see endnote 8, p15)

H Fonterra commits to a 50% absolute reduction in Scope 1 and 2 emissions by 2030. (Source: 2023 Sustainability Report; see endnote 9)

I Fonterra is working towards a 30% intensity reduction in Scope 1 and 3 FLAG emissions from dairy by 2030, a target it announced in November 2023. (See endnotes 11 and 12)

J FrieslandCampina reports figures for ‘Scope 3 member milk’ which is taken to account for most if not all of its Scope 3 emissions (Source: Carbon Disclosure Project 2023; see endnote 15)

K Itoham says, ‘Our Group has formulated targets of halving Group greenhouse gas emissions (Scope 1,2) by 2030 (compared to FY2016) (Source: 2023 Integrated Report; see endnote 16)








L No mention of Scope 3 reduction targets anywhere in its 2023 Integrated report, though there is mention of the Scope 1 and 2 reduction goals above.

M Itoham reports 210,273 tCO2 Scope 1 emissions, 160,605 tCO2 Scope 2 emissions, and 6,952 2 tCO2 *Scope 3* emissions its 2023 submission to the Carbon Disclosure Project and appears to have disclosed its 2021 figures on the its website. (See endnotes 17 and 18)

N JBS will reduce its global scope 1 and 2 emission intensity by at least 30% by 2030 against base year 2019. (Source: 2022 Sustainability Report; see endnote 20).

O Although JBS said its net zero pledge will cover all Scopes (see endnote 20) the company has not set Scope 3 emissions reduction targets.

P JBS reported Scope 3 emissions partially in its 2021 Sustainability Report, though with numerous exceptions and omissions. (Source: Sustainability Report 2021/2022; see endnote 22). Its 2022 sustainability report says: we are currently updating our global scope 3 GHG emission footprint against the newly released FLAG Guidance and draft GHG Protocol Land Sector Removals Guidance. It appears JBS’ 2023 filing with the Carbon Disclosure Project is based on 2021 data. (See endnotes 20 and 23)

	Net zero target ^A		Has set absolute emissions target(s) covering Scopes 1 and 2? ^B		Has set absolute emissions target(s) covering Scope 3? ^C		Reports Scope 3 for latest reporting year?		Estimated % Emissions Scope 3		SBTi short-term target 1.5°C aligned? ¹⁵⁹⁶		SBTi 1.5 °C approved under ‘net zero standard’?		Has SBTi-approved target covering FLAG emissions?	
	Yes ¹⁶¹⁹	✔	Yes ^Q	✔	No ^R ¹⁶²⁰	✘	Yes	✔	94% ¹⁶²¹	%	No - committed	✘	No - committed	✘	No	✘
	Yes ^{S, 1622, 1623}	✔	No ^{T, 1624}	✘	No – intensity based ^U	✘	No ^V	✘	N/A	N/A	No – not committed	✘	No – not committed	✘	No	✘
	Yes ¹⁶²⁵	✔	Yes	✔	Yes	✔	Yes ^W	✔	96%	%	Yes	✔	Yes	✔	Yes	✔
	Yes ^{1626, 1627}	✔	Yes	✔	No – intensity based	✘	No ^{X, 1628}	✘	N/A	N/A	No – 2 °C	✘	No	✘	No	✘
	Yes ¹⁶²⁹	✔	Yes	✔	Yes	✔	No ^Y	✘	N/A	N/A	Yes	✔	No	✘	No ^Z	✘
	Yes ¹⁶³⁰	✔	Yes ^{AA, 1631}	✔	No – intensity based ^{AB}	✘	Partial ^{AC, 1632}	—	85%	%	No – not committed	✘	No – not committed	✘	No	✘
	Yes ^{1633, 1634}	✔	No – intensity based ^{AD}	✘	No – intensity based ^{AE, 1635}	✘	No ^{AF}	✘	N/A	N/A	No - committed	✘	No - committed	✘	No	✘

Q At least 50% less GHG emissions by 2033 (scope 1 & 2) (Source: Lactalis 2022 Sustainability Report; see endnote 24)

R Lactalis has no mention of Scope 3 reduction targets alongside other mentions of its climate goals in either its latesu sustainability report or its ‘Climate Plan, though it does have targets for Scope 1 and 2 emissions. (See endnote 24 and 25)

S Mengniu had said it is working toward ‘carbon neutrality by 2050’, and refers to its environmental strategy overall as efforts to reach ‘carbon net zero. (See, for some examples, footnotes 27, 28 and 29).

T Mengniu pledges to reach ‘peak’ Scope 1 and 2 emissions by 2030. (See footnotes 27 and 29).

U Mengniu said that, by 2030: ‘the GHG emission intensity of a single ton of dairy products should be within 160kgCO2e/t.’ The company has an interim target of intensity of 165kgCO2e/t by 2025, and reported 168kgCO2e/t for the latest reporting year. This appears to be its only targets relating to Scope 3 emissions.’ (Source: 2022 Sustainability Report; see footnote 27)

V Mengniu’s 2022 Sustainability Report disclosed Scope 1 and 2 emissions (p69) - reporting these as 1.43 million tonnes CO2e, but did not disclose Scope 3. It states that in 2021 its Scope 3 emissions amounted to between 10 and 14 million tons CO2e, however did not provide a more detailed breakdown. (Source: 2022 Sustainability Report; See footnote 27)

W In addition to reporting its total Scope 3 emissions in its latest roadmap (see footnote 30, p8), Nestlé also reports the share of its total Scope 3 emissions that were methane, which was 34% in the last reporting year (p13).

X Tyson Foods latest (2022) sustainability report says ‘that the company is re-baselining and calculating a comprehensive Scope 3 emissions footprint, using the latest guidance and protocols.’ The company has reported its Scope 3 emissions previously, however, appears not to include this data in either its 2022 or 2021 sustainability reports. (Source: 2022 and 2021 Sustainability Reports. See footnotes 31 and 32). Its 2023 submission to the Carbon Disclosure Project says: ‘In FY22/FY23, we completed a full Scope 3 emissions inventory using FY19 data. This will be followed by an update for FY22, which will inform our resubmission to the Science Based Targets Initiative (SBTi).’ (See endnote 33)

Y Vion provides figures for Scopes 1 and 2 for 2022 on p44 and p96-97 ESG 2023 Report. It also provides figures for emissions ‘on farms we have measured’ on page 92. In 2022, Vion has pushed back against claims it does not report against Scope 3 emissions, however as of 2023, it still did not appear to report Scope 3 for all of its farms, or Scope 3 emissions from other sources

Z Vion says it has a target covering FLAG emissions, however it appears that this has not been approved by the SBTi as it does not appear on the SBTi dashboard (Source: 2023 ESG report, p84; see endnote 34)

AA According to the World Benchmarking Alliance’ 2023 analysis of company targets, WH Group has a timebound target to reduce Scope 1 and 2 emissions. (See endnote 36)

AB According to the section on its sustainability webpage relating to its climate targets, WH Group aims to ‘ reduce GHG emissions per unit of product by 30% by 2030 compared with a 2017 bassline [sic]’. (See endnote 35)

AC As of the latest reporting year. WH Group reports its emissions for both US and China regions in its 2023 ESG report (p81) (The group previously just reported its US emissions). However it does not appear to report for its European businesses, represents 9% of its business. (See endnotes 35 and 37)

AD Yili says: We strive to decrease the intensity of Scope 1 and 2 carbon emissions by over 50% by 2030, relative to our 2012 levels, and we aim to achieve a year-on-year reduction in our total carbon emissions.’ (See endnote 38, p.50).

AE Yili says: We strive to decrease the intensity of Scope 1 and 2 carbon emissions by over 50% by 2030, relative to our 2012 levels, and we aim to achieve a year-on-year reduction in our total carbon emissions.’ It also states: ‘By 2030, greenhouse gas emissions intensity of our selected low-carbon suppliers* (Scope 3) will be reduced by 50% compared to the 2021 baseline.’ (Source: 2023 ESG report; see endnote 38, p.50). According to the World Benchmarking Alliance, Yili ‘had a prior goal to reduce carbon emissions per ton of dairy products year on year and GHG emissions per ton of dairy products to 183.47 kg CO2e/t by 2025,’ however there is ‘no evidence found that the company has targets to reduce scope 3 emissions beyond this, and the company appears according to its latest reporting to have now met this target. (See endnote 38 and 40)

AF In its latest sustainability report, Yili only reports its scope 1, 2 and emissions intensity figures. The company says it is currently working on more comprehensive life-cycle assessments for its products. (See endnote 38, p53 and p87).

which leads to carbon insetting in their supply chains, accounting absorption by soil and plants, which is less certain and questioned by scientists.

In an analysis casting similar concern over the validity of the SBTi's rating, a 2022 analysis by Planet Tracker found that Nestlé's plan was on track for +2°C and that, if it continues on its current trajectory, Nestlé's emissions in 2030 will be almost double that advised by the SBTi.¹⁵²

In 2023, Planet Tracker found that Nestlé had made some progress, but said there was still room for improvement and that - for example - Nestlé should join Danone in setting a methane reduction target in line with the Global Methane Pledge.¹⁵³ According to NCI's assessment, Danone meets a higher standard of integrity than Nestlé; the company's net zero target was rated as 'moderate' for its transparency and integrity. Planet Tracker found that Danone, which has recently had long-term emissions targets approved under the SBTi, is on track for 1.5°C, subject to emissions being sufficiently reduced.¹⁵⁴

As well as there being issues with the SBTi's 1.5°C rating for its 'net zero' standard, there are also issues with its rating for companies' (less ambitious) short-term targets. For example, the NCI estimates that Nestlé's pledge to reduce emissions by 50% by 2030 - which has been rated 1.5°C by the SBTi, and which Nestlé says will translate to a 50% reduction - actually translates to emission reductions of just 16-24% based on measures presented in its Net Zero Roadmap, which does not include clear plans for the deep decarbonisation of agricultural emissions.¹⁵⁵

The SBTi's standards for short-term emissions contain numerous gaps and loopholes, in addition to them not mandating any action past the mid-2030s. For companies in food and agriculture, for example, they only cover 67% of Scope 3 emissions and,

they can include intensity-based - rather than absolute - targets, and can include controversial claimed 'removals' through insets as emissions reductions.^{156, 157, 158}

1.3.3. Companies should account for all greenhouse gas emissions and all supply chain emissions

The Expert Group says that companies' net zero targets should account for all greenhouse gas emissions and all supply chain emissions. However, three of the companies with net zero targets - Lactalis, JBS and Itoham - do not accompany their net zero pledges with any commitments to reduce their Scope 3 emissions at all, and only five of the companies have absolute targets to reduce Scope 3 emissions absolutely. Scope 3 emissions make up on average 94% of the emissions of the companies, according to available information analysed by Changing Markets (Table 1.1), making it vital that these are covered in companies' net zero and climate plans.^{159, 160}

Seven of the companies analysed do not report their Scope 3 emissions for the latest year. Companies like JBS have only reported Scope 3 emissions partially and do not do so for the latest year. JBS' most recent Scope 3 disclosure, for example, which was in its 2021 Sustainability Report, left out key areas such as land use, and the comprehensiveness of its reporting varies between different geographies).^{161, 162} Even companies which have targets covering Scope 3 emissions do not do so comprehensively. For example, Nestlé's 2050 net-zero pledge covers only 80% of Nestlé's 2018 emissions footprint, and the company also claims uncertain biological carbon removals as counting towards this target.¹⁶³ FrieslandCampina's target covers 77% of Scope 3 emissions.¹⁶⁴ The SBTi says that - for food and agriculture emissions - only 67% of Scope 3 needs to be covered by companies' pledges.^{165, 166, 167}

A 2023 analysis from the New Climate Institute - which looked at the pledges of 22 companies including Nestlé and JBS found that - out of those companies with targets for 2030 - most of which are validated as 1.5°C by SBTi - targets translated to a median absolute emission reduction commitment of just 15% of the full value chain emissions between 2019 and 2030.¹⁶⁸ This falls far short of the need to decrease global GHG and CO₂ emissions by around 43% and 48% respectively between 2019 and 2030, and is far from the Expert Group's requirement that all emissions in the value chain should be covered.

In 2024 - looking at a broader sample of 51 companies including Nestlé, JBS and Danone - the NCI found estimated median reductions of 30%. However, this still fell short of the 43-48% needed, and could be undone by weakened SBTi standards on carbon removals (see section 1.3.8).¹⁶⁹

1.3.4. Net Zero goals should include separate targets for material non-CO2 GHG emissions, such as methane

The Expert Group standards say that targets should include separate targets for material non-CO₂ GHG emissions, such as methane. However, Danone is the only company to have a methane reduction target, aiming for a reduction of 30% in its methane emissions from its fresh milk supply chain by 2030.¹⁷⁰ At COP28, another six dairy companies (Bel Group, Danone, General Mills, Kraft Heinz, Nestlé and a part of Lactalis) established Dairy Methane Action Alliance (DMAA), where they committed to report and reduce their methane emissions, although they stopped short of setting specific reduction targets.¹⁷¹ In April 2024, Starbucks and Clover Sonoma joined this initiative.

While dairy companies are slowly moving towards some timid action on methane, only two companies - Nestlé and Danone - provide reporting on their methane

emissions. In its latest Integrated report, Danone states that it has achieved a 13.3% reduction in methane emissions between 2020 and 2023, although does not appear to give a total figure for methane.¹⁷² In its latest sustainability report, Nestlé reports that methane accounts for 34% of its emissions from ingredient sourcing, though again does not explicitly provide a total.¹⁷³

The lack of reporting by companies overall is despite the fact that some of the giants (JBS, Marfrig) are responsible for more methane than the output of whole countries. JBS' methane output was estimated to exceed that of France, Germany, Canada and New Zealand combined in a recent IATP and Changing Markets analysis, while Tyson's are comparable to the Russian Federation's, and Dairy Farmers of America's rival those of the UK.¹⁷⁴

While the SBTi 'encourages' companies to report methane and other non CO₂ emissions under its FLAG guidance, it does not require companies to do so.¹⁷⁵ The Corporate Climate Responsibility Monitor stated that Danone's methane target is one of the main reasons its net zero plans have more integrity than other companies, alongside its commitment to increase the share of plant-based products.

1.3.5. Targets must focus on absolute emissions reductions

The Expert Group says that companies must focus on absolute emissions reductions and criticises intensity-based targets, which focus on emissions reductions per kilo of a product and can allow emissions growth overall.¹⁷⁶

However, despite promoting their attempts to reduce Scope 3 emissions as part of their net zero targets, numerous companies - namely Arla, Fonterra, Danish Crown, Yili and Mengniu - only have intensity based targets for Scope 3. Arla's target for Scope 3, for example, is an intensity based goal to reduce emissions by 30% per ki-

logram of raw milk by 2030.¹⁷⁷ Danish Crown says it is working to reduce emissions from Scope 3 (which make up 90% of its emissions), but this is also via an intensity target which aims for a decrease in emissions by 20% per kg of output produced by 2030, from a 2020 baseline year.¹⁷⁸

Fonterra, meanwhile, has a 30% emissions intensity target for its ‘on-farm’ emissions by 2030. This covers all of its Scope 3 and some of its Scope 1 emissions, because some of its on-farm emissions are included in Scope 1. This is because it owns some farms as well as using supplier farms for its milk. Its absolute emissions reduction target is only for Scope 2 and part of Scope 1.¹⁷⁹

The intensity-based target of Yili is even weaker.¹⁸⁰ Yili has said that by 2030, GHG emissions intensity of ‘selected low-carbon suppliers will be reduced by 50% compared to the 2021 baseline, but does not say how much of the supply chain these will account for.’^{181, 182} The same issue also exists for prominent industry-wide initiatives such as Global Dairy Platform’s Pathways to Dairy Net Zero, which – while emphasising its work to mitigate emissions – defines mitigation as: ‘Continuing to improve production and process efficiency to further reduce the GHG emissions intensity of milk and dairy products.’¹⁸³

However, intensity reductions can exaggerate actual action on emissions. For example, while Arla has promoted emissions reductions of 6% and 12% a year between 2017-2023 on an intensity basis, its overall emissions decreased by 4% and its scope 3 emissions decreased by only 1.4%.^{184, 185} This difference between intensity and absolute reductions is fundamental in the dairy sector where overall milk production is on the rise, growing by 30% between 2005 and 2015, and the global dairy herd has increased by 11% during the same period.¹⁸⁶

This is reflected on the global level in the emission intensity reduction pledges made by the Global Dairy Platform.¹⁸⁷ In a joint study with the FAO, the Global Dairy Platform reports that the industry reduced emission intensity by 11% between 2005 and 2015. However, its overall emissions increased by 18% over the same period – as despite reduced emissions per litre of milk produced, companies dramatically increased their production and the number of animals in their supply chains.^{188, 189} In the study itself, the Global Dairy Platform acknowledges that ‘increased production efficiency is typically associated with a higher level of absolute emissions (unless animal numbers are decreasing)’.

Despite an intensity-based approach being ruled out by the Expert Group standard, this approach is legitimised under the SBTi’s guidelines which allow companies to set intensity-based targets for their food, land and agriculture emissions as long as they are not accompanied by an increase in emissions overall.¹⁹⁰ Companies whose short-term climate plans are legitimised under this approach – with a 1.5°C rating from the SBTi, include Arla and Danish Crown. (See Table 1.1)

1.3.6. Companies should report publicly on progress and verified information should be available to be compared by peers

There is a lack of transparency on companies’ progress on their net zero goals, as well as a lack of transparency on their engagement provided by the SBTi, making progress on these very difficult to measure and evaluate. Dairy Farmers of America, Danish Crown, JBS, Mengniu, Tyson, Vion and Yili do not disclose their latest Scope 3 emissions, making it impossible to measure their progress on these.

Though it has provided some improvements to its process, the SBTi provides limited information on companies’ engagement and progress toward reducing emissions and net zero, making companies’ performance difficult to measure and compare

with their peers, and opening up the risk that the SBTi is being used by companies to greenwash. In March 2024, JBS’ net zero commitment was finally removed from the SBTi after the company failed to provide any documents to verify its commitment, despite having widely publicised its engagement with the body.^{H, 191} As JBS made its commitment with the SBTi in March 2021, this meant that the company was able to publicise its engagement with the SBTi for nearly three years before its commitment was finally removed.¹⁹² Its removal followed concerted campaigning from organisations including Changing Markets who argued that JBS was still claiming to target net-zero despite having missed the deadline to submit plans.¹⁹³

SBTi guidance, released at the end of 2023, gives companies 24 months to submit plans, after which the original target should ‘expire’. In the case of Net Zero targets, companies had until January 2024 to supply information on how they will achieve their commitments. Other companies that the SBTi has removed have included Smithfield and the Irish dairy company Glanbia, which were removed in 2023. However, questions remain about the speed and efficacy of the SBTi’s removal process.

The New Climate Institute in 2024 found that a ‘*comparison between the ratings of SBTi and other assessors indicates a significant degree of leniency in the current validation practices and points to multiple areas for improvements.*’ However, it noted: ‘*The SBTi might face multiple challenges to implement such timely improvements due to its being a voluntary initiative mostly funded by third parties, which depends on the voluntary participation of companies.*’¹⁹⁴

1.3.7. Companies should focus on carbon reductions over removals

The Expert Group says that ‘non-state actors must prioritise urgent and deep reduction of emissions across their value chain’. However, it is not clear that companies are focusing on carbon reductions: as shown in the table above, only five

of the companies have accompanied their net zero pledges with targets to reduce absolute Scope 3 emissions, and, as we have seen, only Nestlé has set long-term emissions reduction targets that have been independently approved by the SBTi.

Many of the companies – including Nestlé – claim they will engage in projects that remove or avoid carbon emissions, in order to counterbalance the emissions they produce. For example, Mengniu states it will achieve net zero using what it terms as the ‘rational’ application of offsets to achieve its net zero goals, while JBS has stated it will offset all ‘residual emissions’ it cannot reduce.^{195, 196}

Offsetting schemes have been criticised for allowing large emitters to continue business as usual, and for a lack of regulation, integrity and oversight of projects.¹⁹⁷ A damning September 2023 analysis from The Guardian and Corporate Accountability using data from the Allied Offsets database found that not one of the top 50 carbon offset projects can prove they cut greenhouse gas emissions.¹⁹⁸ In April 2024, the SBTi faced widescale criticism over news that it would indeed allow companies to count offsets toward their Scope 3 emissions targets. The decision was made by the Board, which did not follow the usual process, and faced a huge backlash from SBTi staff who said the decision was unscientific and would undermine the credibility of the organisation.¹⁹⁹

Shortly before the decision, an analysis from the NCI found that the potential for companies to count carbon removals as Scope 3 reductions could almost nullify companies’ short-term emissions reduction pledges. In the case of Danone, for example – which was rated one of the highest for its climate plan – the NCI estimated that Scope 3 emissions reductions of 30% by 2030 could translate to much smaller reductions of just above 5%.²⁰⁰

H JBS’ commitment: JBS will reduce its global scope 1 and 2 emission intensity by at least 30% by 2030 against base year 2019.

While offsetting involves companies neutralising their emissions by paying for carbon removal or avoidance projects outside their own supply chains, companies are also arguing for – and beginning to practice – ‘insetting’. Whereas offsetting involves selling removals as ‘credits’ to other companies, insetting involves companies using their own claimed carbon removals (such as from soil carbon sequestration) to claim fewer emissions for their own business.¹

Despite the controversy around ‘insetting’ (the NCI, for instance, has called it ‘offsetting under a different guise’), several meat and dairy firms are already engaging in the practice. This includes Dairy Farmers of America – which announced in May 2024 it was buying credits via a new carbon ‘insetting’ marketplace – as well as Cargill, which is using carbon credits from its ‘Regen Connect’ scheme to claim reductions against its Scope 3 emissions, and Nestlé, which has been a major proponent of the practice, and is counting these removals against its short-term emissions reduction targets.^{201, 202, 203, 204}

The SBTi’s FLAG guidance has attracted criticism for legitimising insetting; the body says that companies are allowed to count biogenic removals – e.g. removals from soils, trees and vegetations – within their emissions reductions targets, which the NCI and others have said is a significant loophole and, when it was announced, was a major departure from the organisations policy not to count removals as reductions.²⁰⁵

Overall, companies are failing across the board against these standards from the UN High Level Group, which is facilitated by weak initiatives with little accountability, such as SBTi. Given increasing scrutiny against net zero targets from law-makers, advertising regulators and environmental lawyers – companies will have to do more

to improve the significant loopholes in their net zero targets and reporting, or risk more intense scrutiny, and even legal action, over misleading the public.

Clearly, the alternative to greenwashing should not be for companies to set no targets at all, or to roll back commitments amid rising scrutiny (a practice known as ‘greenhushing’ which is reportedly on the rise).²⁰⁶ Rather, companies need to set commitments which have integrity, and which are backed up with meaningful action to reduce emissions from across their supply chain. Given the well-evidenced limitations for voluntary corporate action (an April 2024 analysis from Imperial College London, for example, concluded that voluntary targets from the corporate sector are failing to drive ambitious action), governments also need to set binding climate targets, emissions pricing mechanisms and mandatory disclosure requirements.²⁰⁷

¹ This practice is often also linked to ‘regenerative agriculture’ practices that companies are now embracing – for more information on this, see the chapter on *Cows as climate saviours*.

KEY METHANE FACTS

STAYS IN ATMOSPHERE FOR



WILL SEE THE EFFECTS OF CUTS TODAY IN OUR LIFETIME

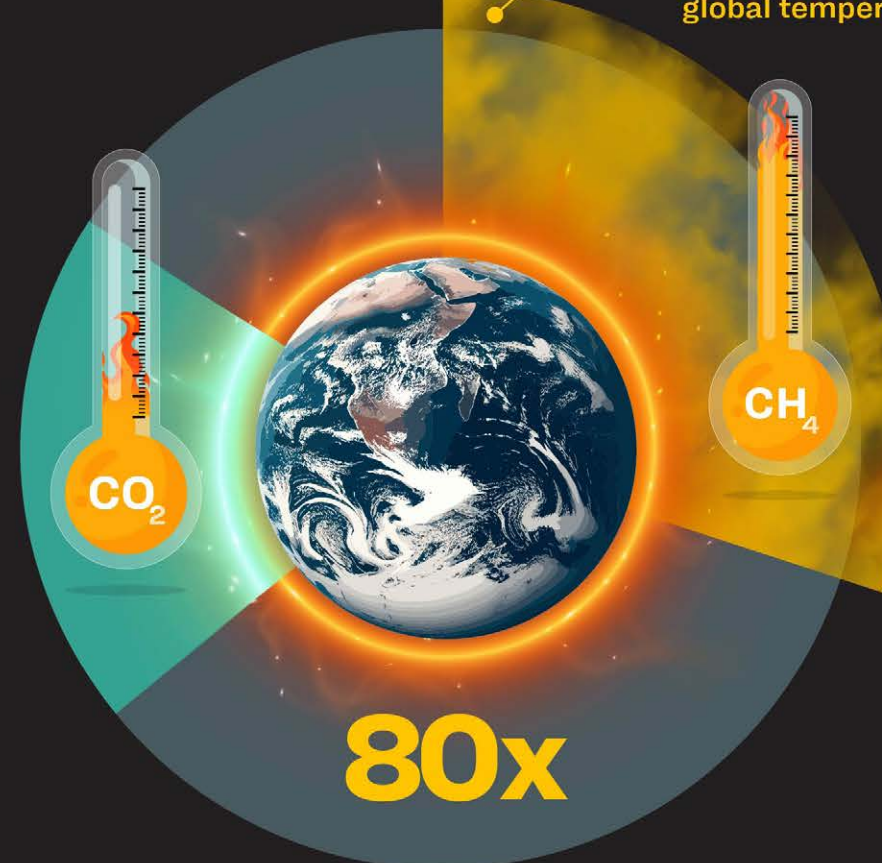
AN ESTIMATED
OF TODAY'S **60%**
METHANE EMISSIONS



ARE THE RESULT OF HUMAN ACTIVITIES.

30%

Methane is responsible
for around
of the current rise in
global temperature.



MORE WARMING POWER THAN CO₂ IN 20 YEAR PERIOD

TO KEEP GLOBAL WARMING
UNDER 1.5°C



WE NEED TO CUT METHANE **BY 45%** BY 2030

Figure 4 : Methane facts

1.4 Co-opting science to downplay (methane) emissions

One of the tactics embraced by the meat and dairy industry is to use their own scientific arguments to downplay animal agriculture's contribution to global heating and divert the attention of regulators away from their impact, for example by arguing that livestock methane emissions are part of the natural biogenic cycle. Scientific institutions, funded by Big Meat and Dairy, like the University of California Davis CLEAR Center - have been central to advancing some of these arguments through a series of talks and papers released under the banner of 'Rethinking Methane'. Another tactic that has also been borrowed from the oil industry is to fund academics to legitimise solutions preferred by industry. These studies and papers are then used to provide legitimacy to industry arguments in policy spaces and to delay climate action or divert it towards industry's preferred solutions.^{208, 209}

1.4.1. Cows as climate saviours

Underpinning many of the distract tactics pushed by Big Meat and Dairy, is misinformation about the role that cows can play in mitigating climate change. In the past two decades in particular, this narrative has grown in strength: that cattle farming and its impact on soil is one of the key solutions to the climate and biodiversity crises.

Based on questionable science, this narrative centres around arguments about soil's potential to sequester carbon - or so-called 'regenerative' agriculture - which have gained ground in the mainstream thinking after being promoted by rancher Allan Savory and many others in recent years. Using contested science around regenerative agriculture, companies and industry groups are making bold claims about their ability to contribute to climate action, as well as jumping on the opportunity to create new revenue streams through opaque and unregulated carbon credit markets that reward these practices.

Claims that cows can contribute positively to addressing climate change have some echoes of the 'fossil fuel solutionism' tactic highlighted in the academic paper *Discourses of climate delay*. In comparison to other arguments which, for example, downplay impacts of fossil fuels or argue that alternatives are not practical, this tactic was used by the oil and gas industry to argue that fossil fuels are actively beneficial and 'part of the solution' to climate change, for example by presenting fossil gas as a 'clean burning' bridge fuel which could be used for decades to come.²¹⁰

1.4.1.1. Biogenic methane: downplaying the role of livestock methane emissions

One prominent argument used in recent years by the industry and some farmers to downplay methane emissions is that livestock methane is not an important GHG to

reduce because it is part of a natural (also called 'biogenic') cycle that continuously recycles carbon between soils, plants, living organisms and the Earth's atmosphere.²¹¹

A major proponent of this cycle has been the CLEAR Center - a research group at the University of California Davis which, according to an investigation from Unerthed and the New York Times last year, was established with a \$2.9m grant from an American animal feed industry group and has coordinated campaigns with companies to promote pro-industry talking points.

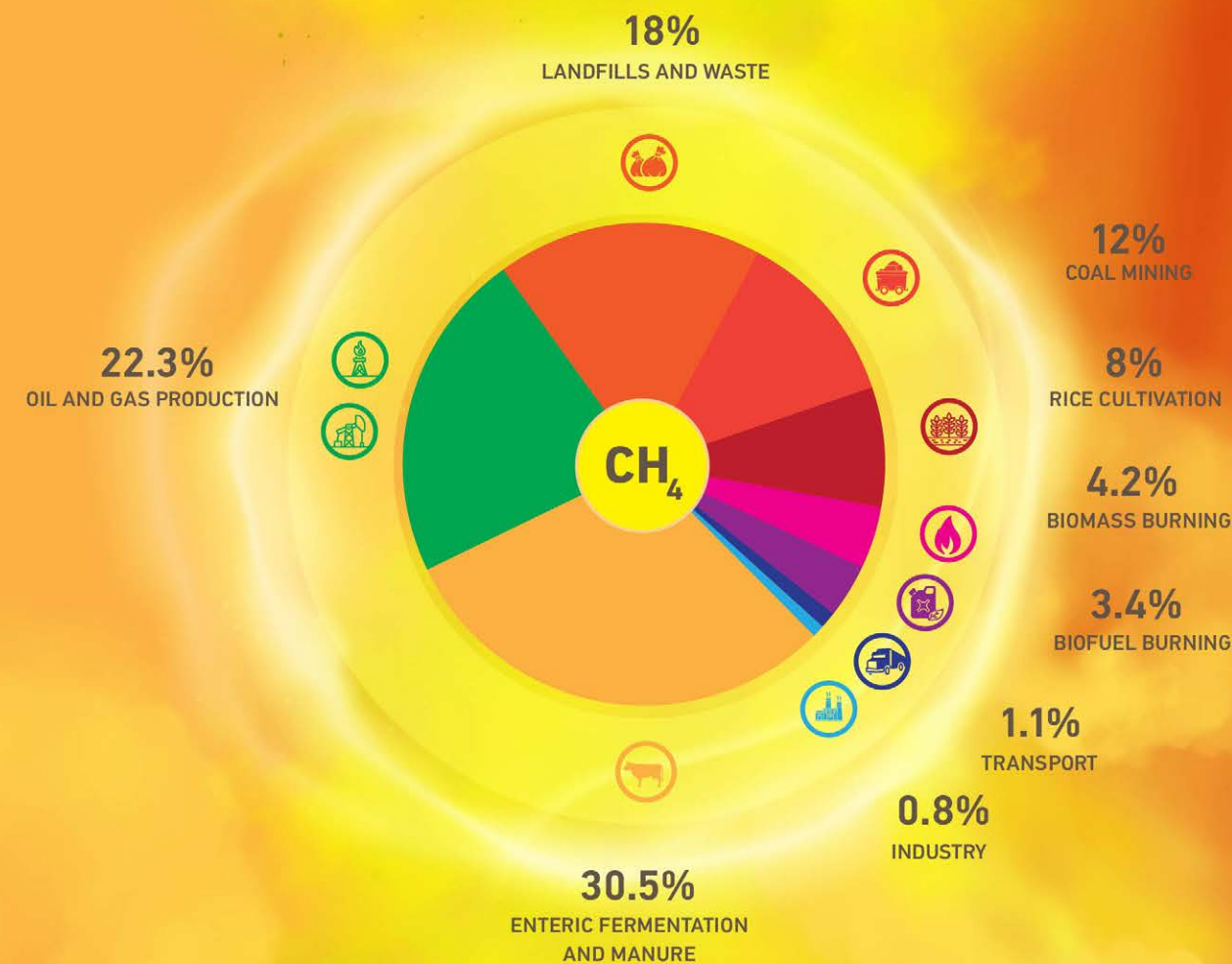
The CLEAR Center has helped establish this narrative with a series of talks and papers bearing the heading 'Rethinking Methane' - which has highlighted arguments about both biogenic methane and GWP* (GWP* is expanded upon in the following section).^{212, 213, 214} As an example of the CLEAR Center promoting an article about biogenic methane, the Center's researcher Samantha Werth argues in a 2020 post:

*'Cattle are often thought to contribute to climate change because they belch methane (CH₄), a greenhouse gas. While this is true, cattle do belch methane, it is actually part of an important natural cycle, known as the "biogenic carbon cycle" [...] In essence the methane belched from cattle is not adding new carbon to the atmosphere. Rather it is part of the natural cycling of carbon through the biogenic carbon cycle.'*²¹⁵

Similarly, Dr Frank Mitloehner, who founded CLEAR, has used the biogenic cycle to emphasise the difference between livestock methane and greenhouse gases released from burning fossil fuels, echoing, and further amplifying, this tactic from industry. For example, in a blog for the industry forum the British Cattle Breeders in 2021, Mitloehner argued:

'It should be noted that methane from fossil fuels doesn't have all the same characteristics as biogenic methane - that is methane from ruminant animals such as cattle,

Biogenic methane



METHANE 80x
WARMS THE PLANET
 MORE THAN CARBON DIOXIDE (CO₂)
OVER 20 YEARS
 AND **HAS CAUSED 0.5 °C OF WARMING**
 SINCE PRE-INDUSTRIAL TIME

Cows and other ruminants belch methane after their digestion through a process called enteric fermentation, where microbes in their stomachs break down food and release methane gas. A smaller share of methane is also emitted from animal manure.



FOSSIL VS. BIOGENIC METHANE

The only difference with fossil sources of methane is that the leftover CO₂ portion comes from ancient stored sources adding to an additional small amount of warming (~3% more over 20 years) where the leftover biogenic sources of CO₂ was from recently drawn down CO₂ (2). Biogenic & fossil methane still warm the atmosphere equally and must be reduced¹.

Troposphere

OH

(Hydroxyl Oxidation)

CH₄

METHANE (CH₄)

262%

N₂O

NITROUS OXIDE (N₂O)

124%

CO₂

CARBON DIOXIDE (C₂O)

149%

Total concentration of GHGs in the atmosphere in 2021²
ABOVE PRE-INDUSTRIAL LEVELS

OH

DETERGENT OF THE ATMOSPHERE:



90%

of methane is removed from the atmosphere through chemical reactions³



Photosynthesis

Some CO₂ is captured by sinks such as forests and oceans⁴ Protecting and enhancing native ecosystems ensures this continues.

CO₂

(Carbon Dioxide)

CO₂

CO₂

1. IPCC AR6 WGI Ch 7 Figure 7.15

2. World Meteorological Organization (2022). Greenhouse Gas Bulletin: Another Year Another Record

3. Saunio et al. 2020, ESSD (Fig. 6)

4. Gruber et al. 2019



Source: Pork and beef, Shutterstock

*or wetlands. Aside from its short life span, fossil methane shares more traits with CO₂ from fossil fuels in how it warms our planet, since it's not derived from atmospheric carbon (it's pulled from the earth) and is new to the atmosphere. It's worth noting that methane emissions from fossil fuel extraction have been severely underestimated.'*²¹⁶

Others in the industry have also used arguments about biogenic methane to downplay methane emissions, showing this argument has been adopted by the broader farm lobby. For example, industrial farming lobby group Copa-Cogeca argued in comments to EU regulators on the EU's methane strategy in 2020 that:

'Methane emissions from agriculture cannot be completely avoided because these greenhouse gases originate from natural processes. Methane decays in ten years to carbon dioxide and water and will return through photosynthesis to biomass (feed) and soil carbon thus being part of the natural carbon cycle in agriculture.'^{217, 218}

Similarly, Dairy Industry Ireland - members of which include Nestlé and Danone - submitted to the EU that:

'Methane emissions from the dairy sector are part of a flow gas "cycle" where emissions are also sequestered in farms and farm features,' and pointed to 'the status of biogenic methane as separate to the emissions from fossil fuels' (a point which is accepted by Irish regulators).'^{219, 220}

In a similar vein, Meat and Livestock Australia - a levy funded group - has argued on a blog on its 'Good Meat' online platform that:

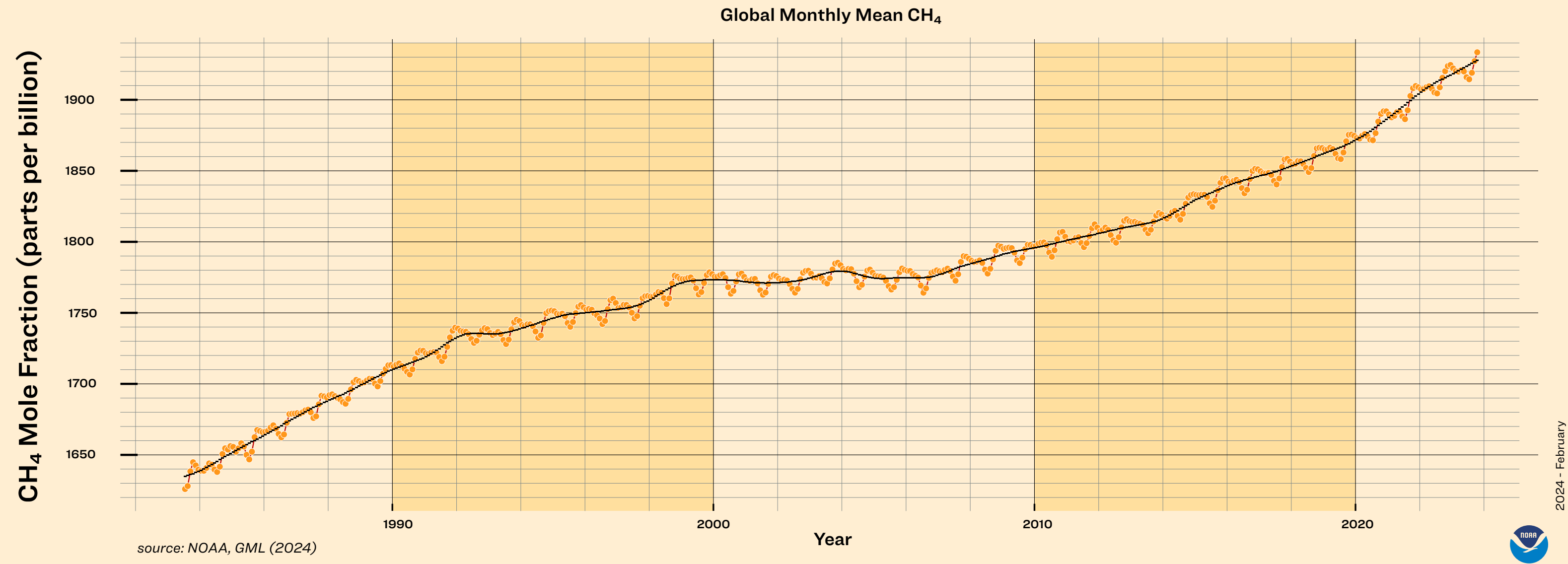
*'Methane emitted by ruminants like cattle, sheep and goats is recycled into carbon in plants and soil, in a process known as the biogenic carbon cycle,' adding: 'It's an important natural cycle that's been happening since the beginning of life.'*²²¹

Myth bust: Biogenic methane is different from fossil methane

These arguments use the biogenic cycle to downplay the role of livestock as an emitter of planet-warming greenhouse gases relative to the fossil fuel industry, and present livestock methane as a natural phenomenon which does not have large impacts on global warming. However, they rely on several important omissions to downplay the impacts of methane. For example, arguments around the biogenic cycle fail to mention that methane levels are dramatically rising [see Figure 6] and that the livestock industry - along with fossil fuels - is the key driver.

According to a 2022 analysis from the World Meteorological Organisation, methane emissions in 2021 were 262% above pre-industrial levels, largely because of the increased number of farmed ruminants.²²² Furthermore, the most recent IPCC report has described how current methane emissions are indeed now acting like a stock gas and - counter to industry arguments - how they are building in the atmosphere, stating ‘... *increasing numbers [of livestock is] directly linked with increasing CH₄ emissions*’.²²³ There is also very little difference in terms of warming impacts between livestock methane and fossil methane, according to the most up-to-date IPCC estimates, which measure the Global Warming Potential of fossil fuel methane over 20 years at 80.5 (compared to 79.7 for non-fossil methane), and over 100 years as 29.8 (versus non-fossil methane’s 27).²²⁴ [See figure 7]

Figure 6 : Methane Emissions: Global Monthly Average



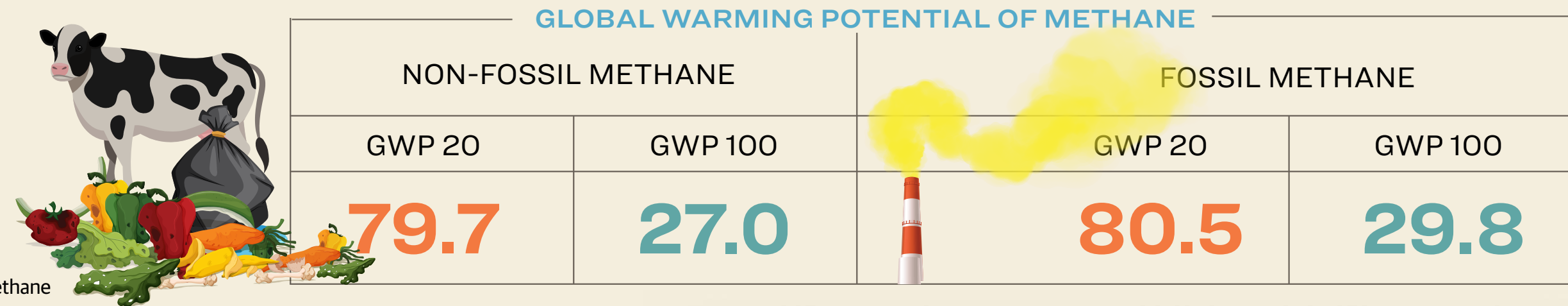


Figure 7: Global Warming Potential of Methane

Box 1.3: Bison, cattle and their climate impact

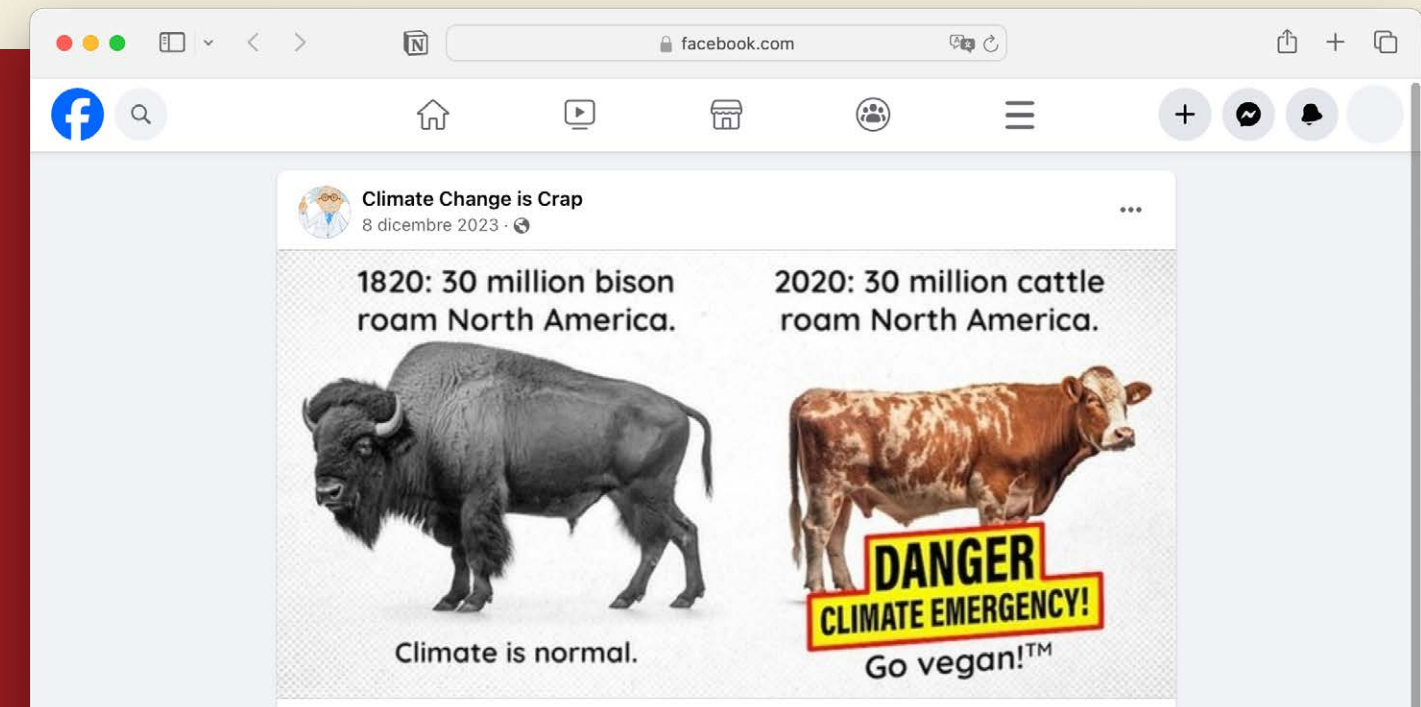
As government leaders gathered at the UN climate conference (COP28) in December 2023, the Associated Foreign Press highlighted a peculiar and concerning misinformation trend: social media users downplaying the climate impacts of present-day cattle in the US by comparing their population today to that of bison in the 19th century.²²⁵

For example, an 8 December, 2023 Facebook post from a page called 'Climate Change is Crap' stated:

'1820: 30 million bison roam North America. Climate is normal; 2020: 30 million cattle roam North America, DANGER, CLIMATE EMERGENCY! Go vegan!'

While these claims appeared to resurface around the time of COP28 – where food was high on the agenda – they had been circulated on social media prior to the summit.

For example, a 2023 Changing Markets report into social media misinformation around meat and dairy found numerous examples of these claims from earlier in the year. This included some content linked to a US fossil fuel and dark-money funded group, Turning Point USA, which has a record of sowing doubt about the causes and severity of climate change.²²⁶ Our anecdotal evidence also suggests that this argument is often used by proponents of Allan Savory's approach to regenerative grazing.



While arguments comparing cows with bison have become a prominent way of casting doubt on the need to reduce livestock, these arguments rely on numerous factual inaccuracies. The first comes down to population numbers. While there is no concrete data on historical bison populations, most estimates put them between 30 and 60 million in North America.²²⁷ In contrast, there are about 90 million cattle in the United States, according to recent data from the Department of Agriculture (USDA).²²⁸

The second reason modern livestock are a significant source of methane compared with bison is due to how much they eat. While experts say both animals generate around the same amount of methane per kilogram of food, their food intake differs significantly. According to figures from the Texas Parks and Wildlife Department, bison eat 1.6% of their body mass per day – or about 24 pounds for a 1,500-pound animal.²²⁹ In comparison, some dairy cows eat as much as 100 pounds of food per day, according to USDA figures, which is around 6.6% of a 1,500-pound animal.^{230, 231}

1.4.2. Regenerative agriculture - context and background

Building on the ‘biogenic cycle’ narrative, regenerative agriculture has been increasingly used by companies to greenwash their climate action. While regenerative agriculture does not have a widely agreed definition, the phrase is commonly used to refer to a range of practices that help climate and nature, and boost water, biodiversity and soil health. As the International Panel of Experts on Food (IPES-Food) has outlined, regenerative agriculture is sometimes used in a similar sense to the word ‘agroecology’ but lacks agro-ecology’s agreed definition and frameworks.²³²

Agro-ecology has been established and debated in academic papers and has been defined by the UN’s Food and Agriculture Organisation (FAO) in an agreed ‘13 principles’ applicable over the world. In contrast, regenerative agriculture tends to only refer to a handful of these principles and, as it has no one definition, its meaning often shifts between usages.²³³ As numerous environmental groups have argued in recent years, the term’s lack of agreed definition opens regenerative agriculture up to potential greenwashing and co-optation by industry, as well as the watering down of its more transformative elements, such as a shift in changes to food system governance away from large, monopolised companies toward local communities, a focus on farmer and community rights and shifts towards more healthy and sustainable diets.²³⁴

Developed within the 1980s organic movement in the US, in recent years regenerative agriculture has been embraced much more widely, including by many of the world’s largest food corporations. A sign of its now very wide embrace by companies, an analysis released this September from the World Benchmarking Alliance, found that more than half of the world’s 350 largest food and farming companies now reference regenerative agriculture practices in their company reports, although only a handful accompanied these with concrete targets or definitions.²³⁵

Other high profile industry initiatives focused on regenerative agriculture include the ‘Regenerative Landscapes’ initiative launched at the COP28 summit in Dubai and backed by major agri-food companies including Danone, Nestlé and Cargill.²³⁶ The Sustainable Agriculture Initiative (SAI) Platform’s ‘Regenerating Together’ framework - an industry-led attempt to provide frameworks for regenerative agriculture - is another notable example. (More information on Regenerating Together, which provides an industry friendly definition of regenerative farming with few concrete targets or limits that would curb harmful practices, can be found in Box 1.4 in this chapter.)²³⁷ Companies like Nestlé - which was part of the efforts to develop the SAI framework - are now referencing the framework in relation to their own environmental efforts.²³⁸

Practices related to regenerative agriculture vary but often include no-till farming and the use of cover crops to enhance soil health. Most relevant to meat and dairy - and promoted widely in recent years - is the argument that the grazing of cattle can also improve soil health and be ‘regenerative’. As George Monbiot charts in his book *Regenesi*s, a key proponent of regenerative grazing, who has been credited with bringing the concept of regenerative agriculture to the mainstream, is Zimbabwe-based rancher Allan Savory.²³⁹ In a viral TED Talk released in 2013, Savory uses the idea of regenerative grazing to argue that not only is animal farming not harmful, it can actively help to restore the living world and reverse climate breakdown.

Savory argues that the ‘planned grazing’ of cattle on drylands can have a range of benefits, including reversing soil erosion, restoring vegetation and wildlife and sequestering carbon. Most notable among Savory’s claims about the potential for grazing cattle was that - by following his methods on a wide scale - it could be possible to ‘take enough carbon out of the atmosphere; to ‘take us back to pre-industrial levels.’²⁴⁰ Upon the TED talk’s release in 2013, Savory’s narrative was widely

embraced. His talk has now been watched more than 11 million times, and his story was taken up by several documentaries, including the popular Netflix film, *Kiss the Ground*, narrated by the US actor Woody Harrelson.

An analysis last year from Changing Markets found thousands of posts from social media users making claims along similar lines to Savory and *Kiss the Ground*. This includes - to name a few examples - the idea that 'regenerative farming with cows is part of the solution' [to climate change] and that cows are 'carbon neutral'.²⁴¹ While the science of regenerative grazing has gained wider prominence (content from *Kiss the Ground*, for example, is shared on Danone's website) and media and public attention, Monbiot and many academics have pointed out the issues with the science underlying regenerative grazing and these arguments.²⁴²



In 2023, an academic paper published in *Nature Communications* showed that carbon sequestration in soil only has a very limited role to play in mitigating climate warming caused by grazing animals.²⁴³ It found that 135 gigatons - or 135 billion metric tonnes - of carbon would need to be returned to soils to balance out the amount of methane emitted annually by grazing animals like cattle, sheep, bison and goats; an amount roughly equal to all the carbon lost due to agriculture over the past 12,000 years. Speaking to investigative climate outlet *DeSmog*, the lead author called the study the 'nail in the coffin' for the idea that soil carbon sequestration can help the livestock sector mitigate its climate impacts to any large degree.²⁴⁴

In another blow to arguments such as Savory's, a recent paper published in the journal *PloS One* found that, in direct contradiction to the claims of Savory's and others, grass-fed beef comes with a substantial additional climate cost when compared to meat sourced from grain-fed cows, as it uses up land which could otherwise be storing carbon in more effective ways.²⁴⁵ Other analyses of the benefits of regenerative grazing have also been found to be flawed. For example, *Sentient*

Media reported that in the US, General Mills - a US food company which has promoted the benefits of regenerative agriculture - funded a 2020 study into the ecosystems impact of livestock grazing in a pasture system that ultimately made a '*skewed and exaggerated interpretation*' of the available evidence about carbon soil sequestration. Issues with the study included the fact that it did not account for the impact on soil of inputs brought in from elsewhere, such as additional manure that was brought into the farm for use as fertiliser.²⁴⁶

In 2023, it was found that an Australian beef farm using regenerative farming techniques, which has been used as a poster child for industry claims, could no longer offset its emissions after its soil stopped storing carbon (soil has a finite capacity to sequester emissions).^{247, 248} In 2020, a comprehensive analysis of the benefits of a range of methods associated with regenerative agriculture - including grazing as well as other associated practices - by the World Resources Institute found that while practices associated with it can be good for the environment, regenerative agriculture has 'limited potential' to mitigate climate change.²⁴⁹

Meanwhile, in early 2024, a first-of-its-kind survey of more than 200 climate and sustainable food experts found that a minority of respondents thought that soil carbon sequestration had a ‘large’ or ‘very large’ part to play in bringing livestock emissions down globally and in line with the goals of the Paris Agreement, compared to the three-quarters who highlighted reducing consumption of animal products as important.²⁵⁰

Key to many of the concerns around regenerative agriculture’s effectiveness is the fact that the soil carbon storage can be easily undone – for example through erosion, changes in land use and the weather – and the fact that soil has a finite capacity to store carbon, meaning it cannot continue to do so indefinitely.²⁵¹

Fact check: Grass-fed beef is a sustainable and environmentally friendly alternative to conventional beef

Grass-fed beef is often presented as a more sustainable option than cattle raised in feedlots and some proponents of regenerative grazing even claim that the impact of enteric fermentation is offset through carbon sequestration in the soil. However, the picture is more nuanced when you look at the science. ‘Pasture-finished beef’ has 20% higher production emissions and a 42% higher carbon footprint than grain-finished systems.²⁵² Grass-fed systems generally require more land, contributing to deforestation and biodiversity loss. In the US, grass-fed beef only accounts for 3% of the beef production. A shift to grass-fed beef would require 30% more land and increase beef’s methane emissions by 43%.^{253, 254} The science also shows that grass-fed cattle emit more greenhouse gases than they sequester through soil carbon storage, making them an ineffective ‘climate solution’.²⁵⁵

1.4.2.1. How regenerative agriculture is used and misused by companies

Despite the scientific flaws in some claims around regenerative agriculture, companies are jumping on the regenerative agriculture bandwagon, and regenerative grazing is being used to make bold claims to the public, investors and regulators. Given the lack of oversight over what companies are defining as ‘regenerative agriculture’ and the absence of concrete targets or metrics to measure any benefits generated by regenerative practices, the industry has come under increased criticism and scrutiny over ‘greenwashing’ with its use of this vague term.

More than half (12) of the 22 companies analysed in this report talk about regenerative agriculture in their most recent annual and sustainability reports, and the term received 269 mentions across these in the latest year for which they were available. Nestlé leads the pack in terms of the prominence it gives to regenerative agriculture in these documents. The company mentions ‘regenerative’ farming practices 124 times in its latest sustainability report, which is titled ‘advancing regenerative agriculture systems at scale’ – as well as a further 17 times in its 27-page net zero roadmap.²⁵⁶

Several companies use regenerative agriculture to relate to a range of environmental outcomes. For example, in its 2021 sustainability report, Arla talks about how ‘regenerative dairy farming practices can help improve soil health, carbon capture, water quality and biodiversity.’²⁵⁷ Danone – which has made the most detailed attempt to define the practice in its regenerative agriculture framework – defines regenerative agriculture as contributing to the three pillars of animal welfare, climate and farmers’ livelihoods.²⁵⁸

However, most companies' references to regenerative agriculture use the phrase to emphasise benefits related to improving soil health and carbon sequestration in soils. This matches the findings of an analysis by the investor network FAIRR of the use of the term regenerative agriculture by major agri-food companies, which found that - despite the term originally having a much broader use - companies' preference was to use the term to refer to soil carbon sequestration.²⁵⁹

For example, in its 2022 annual report, FrieslandCampina's CEO says that through regenerative agriculture it is possible to improve soil health and *'offset the negative climate impact of your milk production at your dairy farm or within the chain'*.²⁶⁰ Cargill - which is involved in a scheme to advance *'regenerative agriculture practices across 10 million acres of North American farmland by 2030'* - has claimed that regenerative agriculture helps it to *'sequester carbon, improve soil health, and increase crop yields'*.²⁶¹ Nestlé, in a paper on regenerative agriculture, says: *'Regenerative agriculture aims to improve soil health and soil fertility, at the same time capturing carbon in soils and plant biomass. It contributes to drawing down carbon dioxide from the atmosphere and reducing emissions of GHGs'*.²⁶² Dairy Farmers of America says it is *'scaling regenerative agricultural practices across our farms'* which can *'store more carbon in the soil'*.²⁶³

Industry groups have also been making similar claims. For example, in its response to the EU's Methane Strategy in August 2020, the European Dairy Association (EDA) argued that *'dairy producers can help reduce the greenhouse gas impact through efficient farm management which promotes soil carbon sequestration. This can compensate for a significant share of dairy livestock GHG emissions.'* The EDA is one of many companies and groups also arguing that companies can generate carbon 'credits' by storing carbon in soils that could then be bought by other polluters to 'offset' (or cancel out) their own emissions.

Another company using soil carbon to generate carbon credits for use in offsetting schemes is the OSI Group, which is partnering with other companies in the US Roundtable for Sustainable Beef on the 'Montana Improved Grazing Project' - a project taking place across 200,000 acres of grasslands across Montana, and co-run by the carbon offset company, NativeEnergy.^{264, 265} Cargill is also using regenerative agriculture to generate carbon offsets through its Regen Connect scheme, and is paying farmers \$25 per ton of sequestered carbon per acre. The company has also indicated it will sell these credits as offsets to 'downstream customers', such as grain and beef buyers.^{266, 267}

As detailed in section 1.3.8 (carbon reductions over removals), in addition to selling some of these as carbon credits for other companies to use to offset their emissions, Cargill is also using these practices to claim reductions of Scope 3 emissions in its own supply chain i.e. 'insetting'. Insetting is also being practised by JBS, although Nestlé appears to be the company most widely using and vocally promoting this concept.²⁶⁸

Analysis by the NCI, which has criticised insetting as having the potential to 'significantly undermine corporate strategies' on climate change found that this practice is one of the reasons why Nestlé's near-term 2030 target is less ambitious than it appears.²⁶⁹ The organisation estimates that Nestlé's pledge to reduce emissions by 50% by 2030 translates to absolute emission reductions of just 16-24% based on measures presented in its Net Zero Roadmap, due to insetting and the company's misleading baseline.^{270, 271}

Nestlé's use of insetting is particularly striking given that it has said it will no longer use offsets due to the increased concerns over their validity and arguments that companies should, as a priority, focus on reducing their emissions rather than trying to cancel them out.²⁷² According to its 2023 sustainability report, carbon removals accounted for 6% of Nestlé's claimed emissions reductions since 2018.²⁷³

Box 1.4: Industry developing its own framework for regenerative agriculture

While it is clear more scrutiny is needed over companies' claims, it appears industry is now taking the lead in attempts to define regenerative agriculture, and in ways that could further legitimise status quo.

In September 2023, the industry released a new framework for regenerative agriculture through the 'Regenerating Together' initiative from the SAI platform.²⁷⁴ The SAI talks about 'Regenerating Together' being a broad and diverse initiative, and says that 'farmers, industry experts, civil societies, non-governmental organisations and academics' have fed into its framework. However, all 33 founding members of the initiative – which guided its development and approach – are large food corporations, including major meat and dairy companies such as Nestlé, Dairy Farmers of America and Cargill. The SAI itself is an industry initiative founded by Nestlé, Danone and Unilever in 2002.²⁷⁵

In addition to its 33 founding members, the SAI lists five 'committed allies and advisors' of Regenerating Together on its website, two of which (Cool Farm and One Planet Business for Biodiversity) are coalitions that also include many of Regenerating Together's founding member companies.

While the structure of the SAI suggests it will be geared to the needs of larger companies, there are also concerns with the content of the framework. First, the framework is outcome-based, which the SAI defends as allowing for a flexible approach that can be applicable to all different contexts and sizes of farm. However, this means that the framework does not come out against any practices that are known to be harmful to soil health, climate and the environment. For example, it does not mention the need to reduce chemical pesticide use – which the UN Special Rapporteur on the Right to Food has called for, among others – and was associated with regenerative agriculture's earlier use.²⁷⁶

When it comes to emissions reductions, it also does not mention any need to reduce livestock numbers or to reduce methane emissions, despite this being a key recommendation of the IPCC and numerous other scientists. Instead, its climate criteria are narrow: they only focus on reducing nitrogen and energy use, while increasing carbon sequestration (insetting) is also mentioned

as an outcome on climate.²⁷⁷ The framework also makes clear that environmental needs must be balanced with the goals of maximised yields and business growth, saying that it: '*Underlines farmer profitability and crop yield as a foundational decision criteria when developing regenerative agriculture transition plans.*'

This signals that SAI will continue to support an industrial model of farming that prioritises productivity, and that it is taking a very different approach to more transformative visions of regenerative agriculture and agro-ecology that emphasise a shift away from focus on yields and profit and towards the production of nutritious foods in the context of a dietary shift towards less meat and dairy. Finally, in order to be approved as 'regenerative' under 'Regenerating Together', a company must demonstrate progress in two out of the four areas identified by the framework as important. Soil and climate are two of the four areas measured (the others being water and biodiversity).

This means that a company can be certified as 'regenerative' without making progress on either soil or climate, despite regenerative agriculture most commonly being used to refer to progress in these areas by companies, as found by analysts at FAIRR.²⁷⁸ Given that the SAI does not rule out the most environmentally harmful types of farming, it is clear that the SAI approach means that environmental outcomes must be balanced with industry needs for increased profit and production. The fact that progress can be logged by the SAI without any improvement on climate or soil health per se, means the framework can be used to greenlight business as usual, rather than fundamentally transforming practices.

Companies like Nestlé – which was part of the efforts to develop the SAI framework – are also now using the framework to guide their work on regenerative agriculture.²⁷⁹ In its recent sustainability report, Nestlé says '*The Regenerating Together initiative, hosted on the Sustainable Agriculture Initiative (SAI) Platform, means we now have an internationally aligned approach to regenerative agriculture for our sector*' and that the SAI's efforts can help to '*aid the global transition toward regenerative agriculture.*'²⁸⁰ However, following scrutiny of the term 'insetting', the company is now predominantly using the term 'removals' to refer to the same practice.^{281, 282}

1.4.3. GWP*: A new climate metric to downplay methane emissions

In recent years the industry has shifted away from downplaying livestock methane because of its biogenic origin, with its arguments focusing on promoting the recently developed Global Warming Potential Star (GWP*) metric. While the biogenic argument downplays methane's warming impact due to the erroneous perception that methane's impact will be absorbed as part of the natural cycle, GWP* highlights the short-lived nature of methane and could be equally applied to fossil methane sources. However, as far as our research shows, only the livestock industry is asking for special treatment when it comes to its methane emissions by calling for the wider adoption of GWP*.

Despite reticence from some quarters, the use of GWP* – and the industry's argument that it is a superior metric for measuring methane's warming impact – is gaining ground and could have profound impacts for policy and for corporate climate action, if adopted. Again, Mitloehner and the CLEAR Center have played a significant role in pushing this argument, which is now becoming more prominent elsewhere.

For example, and as will be expanded below, the concept is being pushed by major trade groups, such as the NCBA (which represents over 175,000 beef producers in the US, as well as major meat producers such as Cargill and Tyson Foods) and is being considered for adoption by decision-makers, including those in the Irish government, which has ear-marked emissions targets based on GWP* as a possible way to meet its climate targets.²⁸³

1.4.3.1. Background to GWP*

GWP* was developed by the climate academic Professor Myles Allen (revisited later in this chapter) and a team of scientists at the Oxford Martin School at Oxford

University. The metric provides a new and different way of capturing the different properties of methane relative to carbon dioxide and other greenhouse gases, particularly related to the short-term nature of methane.

Methane (CH₄) is an 80 times more powerful greenhouse gas than CO₂ when measured over a 20-year period. However, it degrades much more quickly in the atmosphere (it begins to break down in around 12 years, in comparison to CO₂ which can stay in the atmosphere for hundreds of years). These different properties mean that – providing methane is released into the atmosphere at steady levels – it does not build up in the atmosphere in the same way as CO₂ does. This is often explained as the difference between 'stock' gases, such as CO₂, and 'flow' gases, such as methane. However, research indicates that at current concentration levels methane is operating more as a 'stock gas'.²⁸⁴

Some scientists have agreed that GWP* is scientifically sound and a useful metric for capturing these properties, but only when applied at the global level and used alongside other metrics. The metric is mentioned in the latest IPCC assessment, although – contrary to the claims of some from industry – it is not specifically recommended. (In not recommending GWP*, the IPCC has ignored recent calls from groups such as the National Farmers' Union (NFU) and Beef + Lamb New Zealand who have previously lobbied the IPCC to adopt it.)^{285, 286, 287}

While use of GWP* is uncontroversial at a global level and when used alongside other more established methods for measuring methane, controversy enters when GWP* is applied at country or company level and used as the primary way of measuring methane emissions – a key ask made by parts of the industry.



Dr. Frank Mitloehner
Photo by Joe Proudman / UC Davis

1.4.3.2. Academic advocacy for GWP*

As with the argument for biogenic methane, Mitloehner has been one of the leading advocates of GWP*'s application to high-emitting and producing companies and countries and has argued that if GWP* is applied to major meat and dairy polluters, small reductions in their methane emissions could lead to 'climate neutrality'.²⁸⁸ This argument was put forward in a 2020 whitepaper - written by Mitloehner, fellow UC Davis Professor Dr Ermias Kebreab and Michael Boccadoro, an executive director from the California industry group, Dairy Cares - which argues that using GWP* makes climate neutrality achievable in California's 'near future' - even as early as 2027.^{289, J} (This was followed by a 2023 paper from Mitloehner published in the journal CABI, which makes the same headline claim.)²⁹⁰

J The article's researchers model three scenarios to project the progress the California dairy industry can make by 2030: Holding annual emissions constant (business as usual). Reducing methane emissions from manure by 40%. Reducing methane emissions from manure by 40% and reducing enteric methane emissions by 10.6%, with one-third of the dairy cows in the state utilising Bovaer. While the first scenario won't succeed in getting the dairy sector to climate neutrality by 2030, the second and third options will allow it to be climate neutral (and more) by 2027.

Along with his former graduate student Sarah Place - who then spent two years working for animal pharma giant Elanco before moving to the AgNext centre at Colorado State University (expanded upon in chapter 2) - Mitloehner has widened the argument to propose that the whole of the US can reach climate neutrality by 2050.²⁹¹ In a 2021 white paper, Mitloehner and Place argue that the US beef and dairy industries can become 'climate neutral' by the 2040s - through a combination of marginal reductions in methane emissions - up to 2% per year by 2040, achieved through efficiencies, alongside the application of GWP*.²⁹²

Mitloehner has also gone a step further and argued that GWP* can be applied to mean that with reductions to herds, the meat and dairy industry could claim to be 'cooling' the atmosphere. In a 2020 video on 'Rethinking Methane,' for example, Mitloehner argued:

'What gets me most excited [about GWP] is that if we reduce methane from let's say cattle, then we are actively pulling carbon out of the atmosphere. That's almost as if you were to store atmospheric CO₂ in the ground. If you reduce methane from cattle, you pull carbon out of the atmosphere, and that induces global cooling. Can it be done? It can be done, and it has been done.'*²⁹³

A similar claim is made in Mitloehner's studies of California, which claim the industry has the potential to become 'climate negative' by 2027 if it more aggressively adopts measures to curb methane from enteric fermentation and manure management.²⁹⁴ (As we will see further on in this chapter, other actors - including trade group Beef + Lamb New Zealand and research body the CGIAR - have adopted these 'cooling' arguments, with concerning implications.) If GWP* is used as the metric for assessing this with a high baseline utilised, narratives being pushed by industry that only small reductions in herd size would be needed will lead to continually

high methane emissions which continue to warm the planet. If the industry only makes minor reductions to herd sizes, backed up by this metric, it would be akin to getting credit for pouring a little less petrol on a fire. The fire will keep burning anyway, but with less heat compared to before.

Mitloehner's conclusions on the US livestock sector are starkly different to other analyses of the sector's climate impacts and demonstrate the extent to which GWP* can reframe polluters' business models. For example, in contrast to Mitloehner's assessment that the California dairy industry can become 'climate neutral' by 2030, analysis from environmental journalists at Inside Climate News used data from the United States' Environmental Protection Agency (EPA) to establish that the combined methane emissions from dairy and beef cattle in California exceed the methane emissions of any oil and gas basin in North America, except the Permian Basin of West Texas and New Mexico which is the largest oil field on the planet (and likely the largest source of methane emissions in the US). [Figure 8.]

According to analysis of separate EPA data (EPA's 2022 Inventory of US Greenhouse Gas Emissions) conducted by Inside Climate News, at a nationwide-level cows collectively emitted more than twice as much methane from their belching and manure in 2020 as all of the country's onshore and offshore oil and gas wells, both active and abandoned.²⁹⁵

Mitloehner whose lobbying appears to know no bounds (more of Mitloehner and CLEAR's record of industry advocacy can be read on in 'Agrodemia') - has also more recently argued for regulators to adopt GWP* in Europe; in a letter submitted in August 2020 to the EU on its methane strategy, Mitloehner argued:

*'First and foremost, as you pursue your methane strategy, I urge you to carefully reflect on the use of the GWP100 convention for methane, which incorrectly treats it as a stock gas, which accumulates in the atmosphere.'*²⁹⁶

While Mitloehner's advocacy of GWP* has been particularly pronounced, it is important to note that Myles Allen - who was one of a team of researchers at Oxford University to originally develop the concept - has also advocated the controversial use of GWP* by major industry players, in a way that would significantly downplay their emissions. In February 2024 Allen - who had previously suggested the adoption of GWP* by industry to claim reduced climate responsibilities was 'inappropriate' - appeared to ally himself with industry's position, promoting GWP*'s use by the US beef sector to an audience of the Cattle Con conference in the US, which included representatives of groups such as the NCBA, and even calling on groups to lobby regulators to adopt the metric.^{297, K}

In March 2024, the UK House of Lords Environment and Climate Change Committee, launched an inquiry into methane, including a question on measuring methane emissions.²⁹⁸ Allen appeared giving oral evidence in favour of the adoption of GWP*. As part of this evidence, he disclosed that his research group has received funding from meat company Hilton Food Group, as well as Beef + Lamb New Zealand and the NFU but has stressed that his research was nevertheless independent.²⁹⁹

1.4.3.3. Wider use of GWP* by industry

Despite major concerns and warnings from scientific experts over the application of GWP* to major polluting countries and companies - and evidence of Mitloehner using his role as an academic to advocate for his industry funders on a range of topics

K Remarks from Professor Myles Allen at Cattle Con, 4-6 February, 2024.

If California Cattle Were an Oil or Gas Basin

The combined methane emissions from dairy and beef cattle in California exceed the methane emissions of any oil and gas basin in North America except the Permian Basin of West Texas and New Mexico, the largest oil field on the planet and likely the largest source of methane emissions in the nation.

METHANE EMISSIONS

By oil/gas-producing basin, in metric tons
2020 based on satellite observation



*Enteric methane + manure methane, based on EPA estimates



(as explored further in Agrodemia) - arguments using GWP* are beginning to gain ground and be pushed by players across the meat and dairy industry. Concerningly, the metric is also being quietly folded into emission reduction targets, as well as considered and advocated by other bodies, such as the research group the CGIAR.

While GWP* continues to be embraced by many, it is important to note that not all parts of the meat and dairy industry are advocating using GWP* to measure and report methane emissions, and that even some from within the industry have expressed concerns. Notably, in a briefing note on GWP* released in November 2022, the Global Dairy Platform - which represents members including Arla, Saputo, Dairy Farmers of America and other major producers - concluded that: *‘any potential use [of GWP*] as a benchmarking or target-setting instrument at any level less than a global perspective is not appropriate’*, a view it also set out in a joint statement with the International Dairy Federation.³⁰⁰ We also didn’t find GWP* being utilised in the net-zero plans from Danish Crown and FrieslandCampina, although they refer to reaching ‘climate neutrality’, which is a term now often associated with GWP* in the sector. FrieslandCampina did acknowledge it in their Climate Roadmap however.³⁰¹

Despite this inter-industry dissent, GWP* is nonetheless gaining ground among industry groups across the beef and dairy sectors and in different geographies, and parts of the industry are also beginning to call on government regulators to use the metric. For example, earlier this year, the NFU has called for the UK government to adopt GWP* to measure farm emissions in the UK, arguing that the metric could be applied at the farm level as well as at the national level.³⁰² And several trade bodies have recently referenced GWP* in their lobbying of regulators at the EU. Alongside their arguments about biogenic methane in their response to the EU Methane Strategy, Copa³⁰³ and Cogeca³⁰⁴ also argued to EU regulators that *‘due to the nature of methane as a short-lived greenhouse gas it is not accumulating in nor adding additional warming potential to the atmosphere’* and called on the EU to reconsider the use of GWP100.

Dairy Industry Ireland - members of which include Danone and Nestlé - argued:

*‘While we are working hard in reducing all sources of dairy emissions we respectfully submit to this consultation that a thorough assessment of the current science of methane emissions be examined, including the work of IPCC author Myles Allen and his team of the Oxford Martin School and a range of other science developing in the area.’*³⁰⁵

The European Dairy Association argued:

*‘There is a clear movement supported by industry, political groups and scientific experts (amongst others work of the Oxford Martin School with IPCC author Prof Myles Allen) towards the re-assessment of methane - particularly biogenic methane from ruminants. It is important that any EU policy development should take this into account, especially considering the current basis for policies dates back more than 40 years.’*³⁰⁶

As well as calling for regulators and scientists to adopt GWP*, parts of the industry are also starting to quietly embed the metric into their own strategies and targets. In 2021 the NCBA adopted a climate neutral by 2040 target, which is based on the GWP* metric; while the Global Roundtable for Sustainable Beef (GRBS) (a beef industry-led initiative which includes JBS, Marfrig, OSI, Tyson and Cargill as members) also now says it is working toward ‘climate neutrality’.^{L, 307} While industry-led trade groups are engaging more explicitly than companies on the whole, there are also examples of companies directly showing interest in GWP*. For example, Dutch dairy company FrieslandCampina mentions GWP* in its climate plan and suggests it would adopt the metric for its own reporting and life cycle assessments if the UNFCCC were to adopt it.^{M, 308}

L On its website GRBS says its goal is to ‘globally reduce by 30% the net global warming impact of each unit of beef by 2030, on a pathway to climate neutrality.’

M On page 31 of its Climate Plan, FrieslandCampina states: ‘If GWP* would be implemented in the UNFCCC, reaching net-zero emissions, we will re-calibrate this impact. Until then, we will follow the IPCC/UNFCCC GWP100s’.

There is also evidence of governments considering adopting the metric. For example, emails uncovered under Freedom of Information rules by Changing Markets in 2023 found that the Irish government had considered adopting the metric as a means of helping the country reach its climate target of reducing emissions by 51% by 2030, over fears the country's agriculture sector would put this out of reach. Documents also suggested the Irish government had planned to push GWP* in discussions around the Global Methane Pledge around COP27.³⁰⁹

1.4.3.4. *Cooling the planet*

Following Mitloehner's example, diverse actors have also argued that GWP* can help major polluters go beyond simple 'climate neutrality' and actively 'cool' the atmosphere.

Beef + Lamb New Zealand - which has been one of the most vocal advocates of and lobbyists for GWP* - has used GWP* to argue against methane reduction cuts imposed on it by the government of New Zealand. In 2021, Beef + Lamb New Zealand argued that the New Zealand government would be placing an unfair burden on the livestock sector, and methane emitters more broadly, by imposing a requirement on the industry to reduce its methane emissions, as they would be 'cooling' the planet while other non-methane emitting sectors did not.

In an April 2021 statement regarding amendments to New Zealand's Zero Carbon Act - which imposed a national target for New Zealand to reduce biogenic methane emissions by 24-47% by 2050 - Sam McIvor, the Chief Executive of Beef + Lamb New Zealand, argued:

'We support many elements of the Zero Carbon Act, however we remain unhappy with the 24-47% methane target range as this is based on an international report that

*clearly stated it should not be used on an individual country basis. This range will mean that methane will be used to 'cool' the planet while other gases are just being asked to provide no additional warming - that's not fair or equitable.'*³¹⁰

The statement was released two days after the act was amended and followed a comment piece by Michelle Cain - one of the Oxford University researchers who helped to develop GWP* - who also argued that a methane reduction as demanded by policymakers would lead to the industry contributing to cooling.

Cain argued that a 24% decline in livestock methane emissions, as set out by the act, *'would actually generate enough cooling to compensate for the warming generated by all the non-methane greenhouse gases emitted by New Zealand as they approach net zero'*, adding: *'That's a free pass to all the other sectors, courtesy of New Zealand's farmers.'*³¹¹ Another organisation which has appeared to use GWP* to support the idea that the industry can claim to cool the planet is the international research group CGIAR.

Speaking on a US industry-backed panel, Ciniro Costa - a representative of the research body - argued that if applied alongside the intensification of farming in the region, GWP* could allow the whole Latin American beef sector to become climate neutral by 2050. This is a huge claim that would have profound consequences for climate action - especially as Costa's claim that the region could become 'climate-neutral' also factored a 40% increase in production into its calculations. (It is worth emphasising here that GWP* doesn't change the absolute amount of emissions are polluting, or the warming impacts of these - it just allows them to be measured in a way that allows them to claim to be climate neutral).

Beef production accounts for almost 60% of emissions from agriculture and land use change in Latin America, and - at the most recent count - the Latin American region accounts for no less than 24% of cattle production globally.

Costa also highlighted that by using GWP* to calculate emissions, producers could claim to ‘cool’ the planet – and even linked this to the possibility of generating revenues through contentious ‘offsetting’ schemes, saying the application of GWP* in this way could provide a:

“game changing situation when it comes to carbon accounting for say carbon markets or other kinds of financial mechanisms [...] When you add the GWP to the balance sheet [of emissions] the mitigation is way higher, when you actually are able to reduce methane emissions.”^N*

1.4.4. A concerning outlook

The increasing embrace and use of GWP* by these diverse industry actors is highly concerning for a number of reasons. As demonstrated in this chapter, the use of GWP* will undermine climate action because GWP* requires very little or no methane reductions from major polluters – in contrast to net zero targets aligned with the Paris agreement, which prioritise deep cuts in emissions. Indeed, as we have seen, the application of GWP* could allow some of the largest livestock producing regions in the world – California and Latin America among them – to claim they are ‘climate neutral’ or even contributing to climate ‘cooling’.

Furthermore, the use of the GWP* as applied by industry with its ‘climate-neutral targets’ has been criticised from within the scientific community, with academics claiming that industry backers of the metric are applying GWP* selectively.³¹² Succinctly illustrating the issues with the metric, researcher Caspar Donnison, who recently co-wrote a paper on why GWP*’s application by many companies and trade groups is ‘misleading’, gave the following analogy for GWP*:

‘Imagine a house is on fire, and someone is actively pouring gas on the fire. They then pour a little less gas and want credit for doing so, despite still feeding the fire. Perhaps they claim they are now “fire neutral”.’^{313, 314}

There are also significant issues with equity and fairness in the application of GWP*, a fact which has been highlighted by climate scientists Dr Joeri Rogelj and Carl Schleussner. These scientists were the authors of a paper on how the use of GWP* ‘would put most developing countries at a disadvantage compared to developed countries’ because those countries with higher emissions (and which rely less on meat for nutritional purposes) can be rewarded for keeping emissions stable, while much smaller producers would be punished by GWP* for even small increases.

Rogelj told Unearthed that moving to GWP* could have ‘unethical consequences’ such as rewarding historic emitters and putting developing countries at an unfair disadvantage. ‘By picking GWP*, countries or sectors that are emitting a lot of methane could claim credit or rewards while continuing to pollute, albeit a little less,’ he explained. ‘At the same time, countries in the south that are gently increasing their national emissions for development would be severely penalised. Using GWP* as suggested by some industries today can therefore go directly against the idea of climate justice or international fairness.’^{315, 316}

1.5 Agrodemia – funding scientific research to help delay action

Funding academics to support industry interests goes beyond methane emissions only and meat and dairy companies have enlisted numerous allies to lend further legitimacy to their arguments. Notably, this includes funding of and partnerships

^N Comments from Ciriaco Costa at ‘Principles, practices, and proof for animal agriculture driving climate and food security solutions,’ a COP28 Panel event hosted by the Protein PACT on December 8, 2023.

with friendly research and university departments which can add an air of independence to industry talking points. As discussed briefly at the end of this chapter, it also includes collaborations with certain major NGOs, who companies have said can help them to be ‘taken seriously’.³¹⁷

This use of science as a PR tactic follows in the footsteps of the fossil fuel, tobacco and other industries that have sought to evade regulatory action. Researchers have documented for example, how in the wake of growing scrutiny of their business, oil companies demanded ‘more science not less,’ and poured millions into new academic studies that would support delay narratives.³¹⁸

This involved companies channelling money into science that could assist them in casting doubt on the causes and severity of climate change, as well as promoting technological optimism through favoured technologies such as carbon capture and storage (CCS) that support the continued development of fossil fuels.^{319, 320, 321}

While the meat and dairy industry has come under the climate spotlight much more recently, evidence now shows how it is using the same tactics to advance its messaging and the credibility of its arguments to the public and regulators. Indeed, a 2024 paper from researchers at the University of Miami and Yale University found that ‘*the animal agriculture industry is now involved in multiple multi-million-dollar efforts with universities to obstruct unfavourable policies as well as influence climate change policy and discourse*’.^{322, 323} The research found that US university centres are helping to extend the ‘social licence’ of the animal agriculture industry not only by ‘generating industry-supported research’, but also ‘by supporting public relations and policy advocacy’ and playing an active role in advancing campaigns.³²⁴

The most prominent example of this is, as mentioned earlier, CLEAR at the UC Davis University, headed up by the air quality specialist Professor Frank Mitloehner.³²⁵

The centre has positioned itself as an independent academic research institution. However, documents revealed by environmental journalists at *Unearthed* showed how it was formed in concert with a major US industry group and has worked closely with meat lobbyists to advance their agenda.³²⁶ For example, the documents revealed that Mitloehner had worked on a ‘*massive campaign*’ against the 2019 EAT-Lancet report which funders credited as being successful in swaying undecided audiences away from EAT-Lancet conclusions, which called for drastic cuts in consumption of animal products, for climate and health reasons, including in the US.³²⁷ CLEAR has also played a major role in pushing the application of GWP*, downplaying the impacts of companies’ methane emissions in a way that other scientists have said is inequitable and misleading (see previous sections on biogenic methane and GWP*), as well as promoting efficiency and innovation-based measures to reduce methane.

Another example highlighted in the research paper is the AgNext project. Hosted by Colorado State University, the center is headed up by JBS’ former head of sustainability – Kim Stackhouse Lawson – and, like CLEAR, also receives funding and strategic direction from industry representatives.³²⁸ In one example of how AgNext’s work has helped lend legitimacy to companies, the researchers highlight how the university’s analysis was used to support a JBS advertorial in Politico which stated ‘*JBS USA is the first company in its sector to pledge to reach net-zero greenhouse gas emissions by 2040.*’ JBS has since been banned by an US ad regulator for using this claim due to it being a misleading and exaggerated representation of the company’s sustainability efforts,^{329, 330} and is currently being sued by New York State Attorney General for its misleading climate pledges.³³¹ Commenting on the research, experts told the online magazine the *New Republic* that CLEAR and AgNext are “*the tip of the iceberg*” when it comes to animal agriculture’s reach in US universities, and that what is known so far “*barely scratches the surface of the meat industry’s influence in academia.*”³³²

While industry's collaboration with research institutions in the US has been under growing scrutiny, there is also evidence of industry players working with friendly institutions to advance their agenda in Europe. Perhaps the most notable recent example has been the 2023 Dublin Declaration, a statement from more than 1,000 scientists calling for a '*balanced view of the future of animal agriculture*'. The statement succeeded in getting media attention, gaining headlines in outlets such as the UK's Telegraph.³³³ It was also used by meat and dairy companies to lobby regulators at the bloc - including on a proposal to end the use of EU subsidies for advertising of animal products (a proposal that was quietly dropped).

Documents revealed by Unearthed showed that - far from being an independent scientific contribution - the statement was orchestrated by figures with financial ties to the meat industry, including one who had worked for JBS.³³⁴ Further analysis from Food Unfolded found that 60% of its more than 1,000 signatories had links with the livestock sector, and more than 30% were not experts in environment or health - the areas the statement covered. One environmental scientist told *The Guardian* he viewed the declaration as industry "*propaganda*".^{335, 336}

Meat and dairy companies also used academic research in their war against the EU Farm to Fork (F2F) strategy in conjunction with other powerful corporate actors in the bloc who were concerned about the impacts the flagship sustainable farming policy would have on their bottom line.^{337, 338, 339}

As detailed in a report by Corporate Europe Observatory, in October 2021, groups including Copa-Cogeca, farm animal breeders lobby EFFAB, Animal Health Europe, poultry lobby AVEC, feed manufacturers lobby FEFAC and dairy lobby EDA, launched an impact study which they had commissioned from the research institution Wageningen University and Research (WUR) concluding that the policy may lead to a reduction of livestock production of 10-15%.³⁴⁰

The study focused on the proposed policies' economic impacts without examining the many ecological and health benefits which would come from dietary shifts - a move which Corporate Europe Observatory called a 'tried-and-tested lobbying tactic'. (Industry and affiliated groups funded a total of six impact studies against F2F, as part of a wider package of efforts they employed to derail the package, more on this in the Derail chapter).³⁴¹

While WUR is attached to Wageningen University - a major academic institution in the Netherlands, it is itself a private consultancy with close ties with industry and little transparency over its partnerships. Senior leadership figures at the university in recent years have included representatives of major agribusinesses such as Syngenta and BASF, as well as oil giant Shell.³⁴²

WUR also has close ties with FrieslandCampina, which funds many studies and even pays for two endowed professors at the institution. An investigation from Vrij Nederland tracked how FrieslandCampina's funding helps it to advance its agenda in the Netherlands, and crowds out other research.³⁴³ While WUR plays a large role in shaping research debates on agriculture in the EU, and the institution has many known corporate partnerships, the institution is not covered by usual transparency rules, meaning that precise details of its funding and the nature of its partnerships are virtually impossible to cover.

Companies also put science at the top of their lobbying agenda for COP28, where industry groups stressed the need to promote 'our scientific evidence' to regulators, according to strategy documents revealed by *DeSmog*.³⁴⁴

It should also be noted that academics are just one 'ally' that industry is targeting to advance their talking points; industry figures have also used other actors they deem to have legitimacy among a wider audience - including large NGOs - to add

credibility to their arguments against transforming or significantly reducing the sector. For example, speaking after COP28, Eric Mitterthal, the head of US meat lobby group the Meat Institute, highlighted the importance of ‘non-traditional’ partnerships with big NGOs, which he said could help the industry “to be taken seriously” at future summits. Mitterthal pointed to the example of the dairy industry’s collaboration with the Environmental Defense Fund on two initiatives at COP28 (the Enteric Fermentation Accelerator and the Dairy Action Alliance) as examples.³⁴⁵

1.6 Conclusion

Like Big Oil and Big Tobacco before them, Big Meat and Dairy are employing all the weapons in their arsenal to focus the attention of the public and policymakers elsewhere. While greenwashing remains a significant (and often effective) distraction tactic, there is a tightening of regulatory frameworks, as well as a growing number of legal cases against greenwashing companies, which is negatively impacting their corporate reputation.³⁴⁶ Voluntary measures, such as weak climate targets, are another way in which companies are distracting from the transformational change needed to tackle emissions, namely transitioning toward more plant-based products and less and better meat and dairy.

While the tactics are similar to those that Big Tobacco and Big Oil used to undermine action on health and climate, they manifest themselves differently in this sector. One specific tactic uncovered in this section is the claim that cows can be a solution to climate change through regenerative grazing by overstating the potential of soil carbon sequestration. These twin narratives are seized on by the industry interests, which have put in place many initiatives and are even developing their own weak definitions of regenerative agriculture, as well as overstating the potential of carbon sequestration through carbon insetting in their supply chains.

Another distraction tactic that has been explored in this chapter is funding research and scientists who closely align with the industry agenda. We have analysed this across three categories: to downplay the sector’s impact on the climate, such as claiming that the sector’s methane is part of a natural cycle; promoting industry-preferred solutions to delay action (see also the Delay chapter); and finally, to question policies that are not in line with the industry agenda, which can ultimately derail legislation (see Derail chapter).

These narratives are being continuously reinvented, as can be seen by the push for the new GWP* metric, which changes how the warming impact of methane is calculated, posing serious risks for effective climate action in this sector and beyond. While the scientific arguments differ, the tactic remains the same: selectively using science to erroneously present climate impact of livestock as a minor contributor to global heating, and not a sector where action is urgently needed. By directing attention away from livestock methane emissions and toward other sectors and making methane from livestock look less urgent, the industry is delaying action to reduce herd sizes and dietary shift - both essential steps to ensure we don’t pass 1.5 °C threshold.



2. Delay

2.1 Introduction

While Big Meat and Dairy companies distract consumers, policymakers and shareholders with unsubstantiated green claims, weak voluntary commitments and by downplaying their climate impacts, they are also employing a number of other tactics to delay action. Closely linked with distraction tactics, these delay tactics allow companies to ask governments to slow down any regulation as the industry is, it suggests, already taking voluntary action.

This chapter takes a closer look at delay tactics, particularly those being used to weaken action on methane emissions by focusing on hyping technological fixes to reduce methane, which remain unlikely to be developed or widely used in the short-term. Presenting these as silver bullet solutions, while often at the same time refusing to invest in them, the industry is creating the illusion of action. Often this delay tactic is complemented by industry-funded research, given to industry-friendly scientists to develop supporting arguments and present them to policymakers as a supposedly independent view. At the same time, we uncover how the industry is reluctant to invest in emissions reductions, spending significantly more money

on advertising budgets than on climate solutions. Even when specific technical fixes prove promising in the pilot projects, companies refuse to invest in them from their own pocket, instead asking the taxpayers to foot the bill. One of the examples for this is biogas from manure from industrial-scale livestock operations, which is promoted as ‘renewable’ energy by Big Meat and Dairy, while relying on significant public subsidies, all the while entrenching their negative environmental and social impacts.

These tactics are designed to deflect attention from and delay more transformative change, which has higher ability to bring down the sector’s emissions in timeframes most relevant to climate action.

2.2 Promoting voluntary action as a delay tactic





Big meat and dairy companies are some of the biggest climate polluters and methane emissions represents around 25-80% of their emissions footprint.³⁴⁷ Yet, even when a company is seen as taking climate action (our research showed that 15 companies out of 22 analysed in this report have a net-zero, or similar, target), often these companies prefer not to talk about methane in their sustainability documents, PR materials and net zero strategies (e.g. figure on keyword mentions). They are focusing on other issues instead, which are less material for their sustainability or easier to fix.

When methane emissions are mentioned, they often focus on fledgling technologies such as feed additives, methane-reducing vaccines and other innovations. As will be explored below, none of these techno fixes present a guaranteed or proven solution to bringing down methane emissions in the timeframes and at the scale required for climate action, and there are numerous barriers to them being adopted

at scale. One of the main barriers is the fact that these companies often only play lip service to these solutions by publicising pilot projects but - even if these projects are successful - then refuse to actually scale them up across their operations and fund their use. Companies often ask for public money to fund these solutions instead of investing their own resources.

Companies’ promotion of these technologies resonates with oil companies’ promotion of carbon capture and storage and hydrogen (which encourage the continued building of fossil fuel infrastructure) while failing to invest significantly in renewable energies that are more proven and would ultimately displace fossil fuel use.³⁴⁸ For example, while most companies analysed in this report hype technologies as a means of reducing methane emissions, only one company (Danone) has set a methane reduction target.³⁴⁹

Table 2.1: Keyword mentions in net zero strategy materials^o

	Methane	Plastic	Renewables
	13	43	60
	2	0	18
	4	13	9
	18	15	3

^o Keyword mentions in sustainability documents, PR materials and net zero strategies of companies with climate targets. Research conducted April 2024.

	27	6	18
	24	22	40
	3	2	1
	6	22	29
	5	17	14
	5	19	13
	9	86	21
	2	13	9
	8	14	23
	1	11	14
	0	12	10

As will be discussed at the end of this chapter, industry-funded universities are also playing a role in promoting these technologies, as well as other messaging which benefits companies, and adds to their legitimacy among regulators and the public and makes alternatives seem less attractive. Again, this follows well-worn PR tactics used by other industries under pressure from regulators over their health and environmental impacts.

2.2.1. Types of techno-fixes pushed by the meat and dairy industry

2.2.1.1. Feed Additives

Perhaps the most widely promoted technological solution to methane emissions from enteric fermentation (cows’ digestion systems) by companies is feed additives; these are ingredients that are added to livestock feed to reduce the amount of methane produced from cows in the digestive process. As well as being widely promoted, compared with the two other leading alternatives (vaccines and breeding techniques, which are discussed further down), feed additives are also identified as the most viable short-term technical solution to bringing down methane from enteric emissions in a paper from Searchinger and others at Princeton and Cornell Universities.³⁵⁰

While this widely promoted technical solution may come with some methane reduction advantages, it also comes with its own limitations. One important limitation, with a small number of exceptions, is that feed additives are most effective when given to animals who are farmed indoors or in mixed systems (which make up 2.1% and 60.5% of livestock methane emissions respectively, according to the FAO’s GLEAM model), and have more limited applicability to grazing cattle (which make up an estimated 37.4% of livestock methane emissions).^{351, P} Feed additives are also more relevant to the dairy industry, because dairy cows (which require additional nutrition to produce milk) spend more of their lives indoors and rely on grains to provide the additional sustenance required to produce milk over a lifetime.³⁵²

One feed additive solution that was identified by Searchinger and others, as well as elsewhere, as promising for use in grazing systems (as it is applicable in all graz-

P Cattle in mixed systems spend some of their lives grazing, before being ‘finished’ for slaughter in feedlots.

ing systems) – is that of tannins.^{353, 354} However, these are estimated to have more modest reduction (estimated at 5-20%) potential compared with feed additives. Recent trials run by JBS, which is interested in the technology, found a reduction potential of 17%, which is lower than many alternatives.³⁵⁵

While trials such as JBS' are ongoing, research prepared in 2021 for the Global Research Alliance on Agricultural Greenhouse Gases, which assessed the 10 leading classes of compounds being studied for methane mitigation efficacy, including tannins, found that when taking both scientific and commercial concerns into account; *'the grazing livestock in the developing world may not achieve significant mitigation through feed additives in the near future'*, due to both technical and commercial concerns.³⁵⁶

Even for the cattle that spend their lives in feedlots, the effectiveness and scalability of feed additives as a solution could face significant obstacles, depending on the type of feed additive proposed. Only one feed additive has been widely proven (in terms of efficacy and safety) and is widely approved and available. This is Bovaer, which is the trademarked name for the molecule known as 3-NOP(3-nitroxyprompanolol). Bovaer has been proved to have high levels of efficacy (on average between 35-40%) in comparison to other feed additives for cattle that are farmed intensively in feedlots.³⁵⁷ Unlike most alternatives, which still remain in development, Bovaer is also now widely available; the feed additive is authorised and ready for sale in over 55 countries, including the EU/EEA.^{358, 359}

Despite their initial enthusiasm for this feed additive, however, there are signs that major meat and dairy companies such as JBS, Danone and Nestlé are not buying Bovaer. In 2023, the news outlet Bloomberg reported that these companies had backed away from Bovaer after it had become commercially available in the EU, due to cost concerns, and had instead been promoting less market-ready alternatives

such as lemongrass, which is much less studied and – from available evidence – produces more modest reductions.^{360, 361, 362, 363}

Another feed additive which was identified as being promising, and which has been promoted widely by the industry are those from red (asparagopsis) seaweed.³⁶⁴ This additive has been hugely hyped with at least seven companies in the sample – including Nestlé, Fonterra, Danone, Cargill and Arla – promoting their interest or launching pilot projects, based on initial studies that suggested it could reduce methane by as much as 100%.³⁶⁵

An Australian trial on the potential effectiveness of red seaweed (and the longest trial yet on it), however, found that the additive produced 28% less of the greenhouse gas – a much smaller reduction than anticipated.³⁶⁶ It also found that, in contrast to previous studies which had showed it could also increase animals' productivity, cattle fed red seaweed ate less food and put on weight more slowly.^{367, 368, 369} There are also environmental and technical issues with sourcing red seaweed; it produces bromoform which can damage the ozone layer, meaning it would need to be produced in factories equipped with special filtration systems to avoid environmental damage.³⁷⁰

Bromoform is classed as a probable human carcinogen; while most studies so far have not detected it in milk, one study from Muizerlar et al. detected bromoform in several milk samples on some experimental days when cows were fed Asparagopsis. A 2022 scientific review from Glasson et al. found that so far evidence *'demonstrates that animal health and product quality is not compromised'*, at least not at the minimum inclusion levels of the additive in feed. However, studies about its efficacy and impacts on livestock are ongoing.^{371, 372}

Name	Effectiveness	Environment and safety	Applicability in grazing systems	Co-benefits?	Stage of development and availability	Why is it not yet being used at scale?
Bovaer (3-NOP)	30% dairy cows and 45% beef cattle which are fed on total mixed rations in feedlots. Reisinger et al. estimated a lower efficacy for dairy cattle in intensive grazing systems of around 20-30%. ³⁷³	The risks of 3-NOP to animals and humans are low. ³⁷⁴ Bovaer has passed dozens of peer-reviewed studies and is currently approved for use in 55 countries. ³⁷⁵	Researchers say that slow-release formulations could make Bovaer applicable for cattle in intensive grazing systems. It is unlikely to be applicable in extensive grazing systems. ^{376,377} Grazing systems contribute some 35% of emissions, compared with 64% for mixed farming systems, according to FAO figures. ³⁷⁸	No significant co-benefits that have been identified in terms of animal health and productivity. ³⁷⁹	Bovaer is the most well-researched innovation for bringing down enteric methane emissions; it has been the subject of more than 50 peer-reviewed studies published in scientific journals and 48 on-farm trials in 14 countries across 4 continents and is authorised for sale in 55 countries, including in the EU. ^{380,381}	The key constraint to Bovaer's widescale use has been identified as cost, particularly as it does not bring about significant co-benefits to animal health and productivity, or the quality of meat and milk produced. ³⁸² Reporting from <i>Bloomberg</i> in 2023 following the EU's approval found that these cost concerns are now playing out and that despite having promoted Bovaer, companies like JBS and FrieslandCampina are not supporting farmers in paying for it, leading to a lack of uptake, as farmers say they cannot afford it by themselves. ³⁸³
Red seaweed (Asparagopsis sp.)	The longest-ever trial to date into the use of red seaweed as a feed additive to reduce emissions, which reported on its results last year, found methane reductions of on average 29%. ³⁸⁴ This was a decrease on previous smaller studies which had pre-dated it which suggested reductions could reach 60-100%. Research into its efficacy and to explain these discrepancies is currently ongoing. ³⁸⁵	Red seaweed produces bromoform which is classed as a probable human carcinogen. While most studies so far have not detected it in milk, one study from Muizerlar et al. detected bromoform in several milk samples on some experimental days when cows were fed. ³⁸⁶ However, a more recent (2022) review found that <i>‘evidence to date demonstrates that animal health and product quality is not compromised, at least not at the minimum inclusion levels’</i> . ³⁸⁷ When produced in large quantities, bromoform damages the ozone layer so red seaweed can likely not be grown at scale in the open ocean. This means any commercial operation to produce it would have to use specialist factories and techniques to ensure a lack of environmental damage. This will require new research and developing new techniques, and the process could be costly and emissions intensive. ^{388,389}	Potential applicability in intensive grazing systems, but likely not applicable in extensive grazing systems. ³⁹⁰	Studies have shown mixed results regarding co-benefits. A 2019 study into the effects of red seaweed on dairy cattle, for example, found a 5% increase in milk yield with 25% less feed. ^{391,392} However, the longest trial to date on its impacts, conducted by the Australian research group Meat and Livestock Australia (MLA), found that animals on the supplement ate less food and put on weight more slowly. ³⁹³	Trials are still underway to determine its effectiveness, as well as its specific impacts on animals and on meat and dairy production. ^{394,395}	While a few barriers remain to its widescale use, Reisinger et al. concluded that the technical challenge of producing red seaweed at scale, and doing so in a way that is cost-effective is likely the largest barrier to wide-scale commercialisation. ³⁹⁶ A 2022 review found that more research is needed in order to develop the aquaculture techniques and facilities that would be needed to grow red seaweed in commercial volumes. ³⁹⁷

Table 2.2: Evaluations of measures to reduce methane emissions

Name	Effectiveness	Environment and safety	Applicability in grazing systems	Co-benefits?	Stage of development and availability	Why is it not yet being used at scale?
Essential oils such as lemongrass	Searchinger al. 2021 discussion paper estimated that essential oils – which include substances like lemongrass have a likely efficacy of 0 to 25%. This was stated with low to medium confidence due to the lack of widely published animal studies yet available on these supplements. ³⁹⁸ Burger King made claimed reductions of 33% from lemongrass a key pillar of an advertising for campaign for more sustainable burgers in 2020, but was criticised as the claim was based on one, non-peer reviewed study. Other academics said the actual impact of lemongrass could be as low as 3% when measured over a cow’s lifetime. ³⁹⁹	Likely low risk; some essential oils are already approved for use on animals as to improve feed palatability. ⁴⁰⁰	Not applicable to extensive grazing systems.	Some studies have shown a potential to increase animal productivity from some essential oils. ⁴⁰¹	The science into how effective they are is still not as well developed as many other alternatives, with a lack of many peer-reviewed studies into their methane mitigation abilities to date. ⁴⁰²	More research into their effectiveness is needed, and they may be less effective than alternatives.
Tannins	Estimated reductions of 5-20%, with the level of reduction likely to be dependent on the dose and type of tannin used. ⁴⁰³ A recent trial run by JBS, and reported on last year, claimed emissions reductions of 17%, making it less effective than other alternatives. ⁴⁰⁴	No major health and environmental concerns. ⁴⁰⁵	Applicable to all systems. In total mixed ration systems they could be delivered as extracts, while pastoral systems could use forages that contain tannins (of which there are a number). ⁴⁰⁶	Studies have suggested numerous co-benefits for animal health, for example through benefits to animals’ intestinal health, as well as to the quality of milk and meat produced. ⁴⁰⁷	Some tannin forages are market ready, with others expected to arrive on markets soon. ⁴⁰⁸	Although they are less widely applicable and available than most alternatives, and likely come with co-benefits for animals, tannins appear to produce less significant methane reductions than other alternatives. ^{409,410}
Vaccines	Reisinger et al., also in 2021, reported that the efficacy of a vaccine is necessarily speculative, but a reduction of 30% is considered plausible, given the efficacy of CH4 inhibitors. ⁴¹¹ Searchinger et al. estimated a lower efficacy of 10-15%. ⁴¹² The efficacy of a vaccine is subject to uncertainty as research is still ongoing.	Vaccines are seen as low risk, as they rely on that antibodies that already naturally exist in animal tissues. ⁴¹³	Applicable in most systems, giving it a potential significant advantage over other technologies like feed additives. ⁴¹⁴	Likely no co-benefits to animal health or meat and dairy quality. ⁴¹⁵	Methane vaccines have now passed the proof of concept stage (e.g. it has been shown the technology is possible) but have not yet been proven at a commercial scale. ⁴¹⁶ ArkeaBio, a startup working on a vaccine, has estimated it could roll out a vaccine in 2025 or 2026, depending on how the technology develops and on how quickly it can get regulatory approval. ⁴¹⁷ Others have reported that the technology is still at least a decade away. ⁴¹⁸ As a medical technology, vaccines will also have to go through medical approval processes before becoming available on markets. ⁴¹⁹	Vaccines must be demonstrated at a commercial level; and then pass medical approval processes before they can become widely available.

Name	Effectiveness	Environment and safety	Applicability in grazing systems	Co-benefits?	Stage of development and availability	Why is it not yet being used at scale?
Selectively breeding animals to generate less methane	Estimated reduction potential of 1-15% maximum, according to Reisinger et al. ⁴²⁰ One study estimated methane reductions might approach 15% (González-Recio et al. 2020). ⁴²¹	None known.	Applicable in most systems.	Evidence from a US dairy cow herd suggests that low-methane cows might be smaller in stature with different gut bugs, but that their milk production and composition won't be affected. Similarly, Irish cows that emit 15% less methane produce just as much milk for the same amount of feed, according to a study published last year. ⁴²²	Searchinger et al. found that – as a means of reducing methane – selective breeding of animals merits ‘ <i>serious work but will only show results over several decades</i> ’. ⁴²³ Reisinger et al. estimated that selective breeding could start having impacts in sheep farming by 2030 (an impact made with high confidence) and in cattle by 2035 (an estimation made with medium confidence).	As traits will have to come out over generations of animals, this approach will take longer to have impact than others.
Zelp	ZELP's backers claim the technology could reduce methane emissions by as much as 53%. However, ZELP has also been unable to provide peer-reviewed research showing how effective their contraptions are, which means the 53% figure can't be verified. ⁴²⁴	No safety risks known.	Applicable in grazing systems.	No known co-benefits.	Lack of peer-reviewed studies. Cargill said it could be rolled out in the EU by 2024, but this appears not yet to have materialised. ⁴²⁵	Lack of known peer-reviewed studies currently.
Kowbucha	Early calf trials have been reported to show a 20% reduction in methane emitted, even when they had reached 12 months of age – suggesting that it could have long-lasting impacts on cows' rumen. Effectiveness continues to be investigated in trials. ^{426, 427, 428}	Impact on animals continues to be investigated in trials. ^{429, 430, 431}	Like feed additives, Kowbucha doesn't work well on farms or ranches where animals graze in fields rather than relying on feed. ⁴³² However, unlike feed additives, scientists believe if the cow's rumen can be programmed early through the probiotic's administration, there could be a lifelong effect on mitigating methane, which could broaden its applicability	Whether there are co-benefits remains the subject of trials.	As of January 2024, Kowbucha remained in the trial phase, with trials still looking into questions of safety, efficacy and impacts on animal health, and cost effectiveness. ^{433, 434, 435}	Kowbucha remains in early development. Methane reductions based on early results may be more modest than other approaches.t

2.2.1.2. Vaccines

An analysis of methane mitigation options from Reisinger et al. in 2021 and, more recently, the New Zealand research group the Pastoral Greenhouse Gas Consortium, have said reductions from 30% from methane vaccines are possible.^{436, 437} These are higher than other estimates – for example from Searchinger et al. – which had suggested possible reductions of 10-15%.⁴³⁸

A benefit of vaccines over feed additives is that they would be applicable in extensive grazing systems, as well as feedlots and intensive grazing systems. The technology could also be more affordable for farmers than some other alternatives, as farmers would probably be reliant on just one or two doses over an animal's lifetime.⁴³⁹

While the technology has now passed the proof of concept stage (e.g. has been proven to be possible), it is still yet to be proven at a commercial scale.⁴⁴⁰ The ongoing research is one reason for uncertainty as to their efficacy. While there are not safety concerns with vaccines, as a medical technology, these will also have to go through medical approval processes, which will add time to their entry to markets even if they can be developed to work at a commercial scale.⁴⁴¹

In terms of the pipeline, in 2021, Searchinger et al. estimated that vaccines will take at least five years to come to market. The startup ArkeaBio, which is working on a methane vaccine, claimed last year that, assuming minimal regulatory delays, the vaccine could be available as early as 2025 or 2026.⁴⁴² Others, however, have reported that the technology is still at least a decade away.⁴⁴³

Initiatives driving investment into the possibility of a methane vaccine include the 'Enteric Fermentation Accelerator,' launched at COP28 in Dubai, which has pledged

\$200 million into research and development for innovations that will bring down methane from enteric fermentation and which is being backed by large philanthropies and Danone.⁴⁴⁴

2.2.1.3. Selectively breeding animals to generate less methane

Another way that has been proposed to bring down emissions from livestock is to selectively breed cattle to produce types of cow that emit less methane. One study into breeding techniques to reduce emissions, estimated methane reduction from these techniques might approach 15%, which, again, is lower than feed additives like Bovaer.⁴⁴⁵

While this could be a cost-effective solution, breeding techniques are not a quick fix; according to Searchinger et al. they are likely to only show results over decades, as it will take time for inherited traits to come through and translate into methane reductions.⁴⁴⁶ Reisinger et al. estimated breeding for low methane livestock could have impacts for sheep in 2030 and cows (the larger source of methane) in 2035, though exact dates were subject to uncertainty. This mode of bringing down emissions is another focus of the Enteric Fermentation Accelerator.^{447, 448}

2.2.1.4. Other tech solutions

Several other tech solutions have received particular attention in recent years. One high-profile example is ZELP – a wearable mask for cows which would capture their methane from cow burps before it enters the atmosphere and has received backing from high-profile figures such as Bill Gates and King Charles.⁴⁴⁹

US company Cargill is another one of Zelp's backers. In 2021, the company had promoted plans to start selling the devices to European dairy farmers in 2022, subject to passing its trials, in press releases and marketing materials. However, as of March 2024 Zelp had not been rolled out and remained in the trial stage while Cargill appeared to have gone quiet on its promotion of the mask.⁴⁵⁰

While a price for the device has yet to be announced, Zelp has suggested it could be used with an annual subscription fee starting at \$80 a cow. For reference, in 2020 there were just over 23 million dairy cows in the EU and UK, meaning an annual bill of \$18.5 billion.^{451, 452}

ZELP's backers claim the technology could reduce methane emissions by as much as 50%.⁴⁵³ However, a report from SentientMedia in March 2024 claimed ZELP has also been unable to provide peer-reviewed research showing how effective their contraptions are, which means the 53% figure can't be verified.⁴⁵⁴

Another solution that has been promoted by companies in recent years is Kowbucha - a probiotic that would be blended into a milk-like drink for animals and is being developed by New Zealand dairy company Fonterra. Like feed additives, Kowbucha doesn't work well on farms or ranches where animals graze in fields, rather than relying on feed.⁴⁵⁵ However, unlike most feed additives, scientists believe if the cow's rumen can be programmed early through the probiotic's administration, there could be a lifelong effect on mitigating methane.

Early calf trials showed a 20% reduction in methane emitted, even when they had reached 12 months of age. As of January 2024, Kowbucha remained in the trial phase, with trials still looking into questions of safety, efficacy and impacts on animal health, and cost effectiveness.^{456, 457, 458}

2.2.2. Technical measures, do they add up?

While the industry has focused much of its marketing on feed additives, presenting these under catchy marketing terms such as 'methane-busters', scientific studies have repeatedly shown that these technologies will not, on their own, be sufficient to significantly cut emissions from the sector.⁴⁵⁹ In March 2024, a first-of-its-kind survey of more than 200 climate science and food systems experts found that use of technological measures was identified as having much less potential to reduce emissions than reducing the number of animals farmed and consumed. Less than half of the experts interviewed said new innovations had a 'large' or 'very large' role to play in reducing livestock methane emissions, compared with a majority who said that reductions in animal herds and animal consumption were important to pursue.⁴⁶⁰

Looking at what this means in terms of numbers, analysts at the Global Methane Assessment, the most detailed analysis of methane mitigation methods to date, found that targeted technical measures (including breeding techniques, feed supplements and efforts to improve animal health) could reduce methane emissions in the ruminal livestock sector by around 30 million tons per year by 2030. However, behavioural and policy measures (to reduce food loss and waste, improve livestock management and foster healthier diets) had more power to reduce emissions overall, bringing about estimated reductions of 65-80 million tons. The Global Methane Assessment recommended that, *'given the limited technical potential to address agricultural sector methane emissions, behavioural change and policy innovation are particularly important for this sector.'*⁴⁶¹

An earlier paper from Ivanovich et al. published in Nature Climate Change found that the uptake of measures to reduce methane from production - including the use of feed supplements like nitrates and lemongrass could reduce forecast increased

warming by ~0.2°C. However, they found that this would need to be accompanied by many other measures – including dietary changes and a significant reverse in current forecasts (which show likely large increases in meat consumption globally) – to keep 1.5°C target and even the 2°C temperature targets in sight.⁴⁶²

Reisinger and others' 2021 analysis of methane mitigation options published in 2021 emphasised the '*significant*' potential of these technologies to bring down methane emissions on the supply side in future, but argued that that '*potential future contributions should not be used as a reason to delay mitigation in the near term using existing practices*'. The paper found that technological fixes would need to be accompanied by other approaches, including dietary change and reductions in food waste, which would also have benefits, by freeing up agricultural land to be used as a means of carbon storage for example.⁴⁶³

So, while technical measures could play an important role in reducing methane emissions from the sector, the emphasis on this and the overlooking of dietary shift by companies is limiting more urgent and transformational action. Although there is significant potential coming from dietary shifts, moving to less and better meat and dairy is still a taboo subject, despite the scientific evidence being clear that this will be essential to limit warming to 1.5°C. While the impact of technical measures is uncertain, the reduction in consumption of meat and dairy products, and a shift to more plant-based options, is a non-regret solution which is also not getting enough traction with policymakers globally.

Box 2.1: Technical measures getting a boost at COP28

Despite this summit being billed as a 'Food COP', the raft of new declarations and pledges made at COP28 was disappointing when it came to meaningful action to reduce food system emissions. Major declarations made at the summit did little to push ahead with the transformation of food systems, instead emphasising the role of voluntary action, efficiency-based measures and new technologies that are likely to entrench – rather than transform – industrial agriculture.

For example, the highly anticipated COP28 'Leaders Declaration on Food Systems Transformation', signed by more than 130 governments on the summit's second day, was hailed as a major step forward in putting food higher on countries' climate agendas. However, the declaration was criticised by groups such as IPES Food for using '*vague*' language and for failing to include any concrete commitments or targets including any on reducing meat and dairy consumption.^{464, 465}

While lacking any concrete targets, the declaration did however nod to the role of science and 'scientific innovation' in helping to ensure 'sustainable productivity' of agriculture.⁴⁶⁶

Another highly anticipated moment for food at COP28 was the FAO's net zero roadmap for food. While the roadmap included a target to reduce livestock methane by 25% by 2030, it focused exclusively on techno-fixes.⁴⁶⁷ It said reductions could be met with as yet unproven innovations such as seaweed-based feed additives, as well as efficiency-based measures and the intensification of farming in some parts of the world.

Ahead of COP28, Bloomberg got a scoop on the content of the roadmap, which said that the rich countries that overconsume animal products will have to cut down to bring the sector into line with the Paris climate agreement.⁴⁶⁸ This was supposed to send a clear message to the governments but this message appears to have got lost in

the final version of the roadmap, which no longer talks about reducing meat consumption. In fact, the opposite message got through in the Financial Times interview with the FAO's chief economist Massimo Torrero on the day of the launch of the roadmap. He suggested that the world needs to produce more meat and further intensify production in places, such as The Netherlands and New Zealand, where it is most efficient.⁴⁶⁹ This apparent U-turn in the main conclusions of the roadmap left many wondering what happened inside the organisation in this short time (See the FAO case study for more details).

Representatives of industry groups such as the Animal Feed Industry Association and US Pork Board – who have long pushed for these measures in their lobbying – said the FAO's recommendations were a *"welcome message for a lot of us"* and *"music to our ears"* in an interview after the COP.^{470, 471}

On the positive side, COP28 unlocked some new finance for agriculture, with most of it going towards innovations in high-capital technical measures. For example, on 2 December, COP28 saw the launch of the Enteric Fermentation R&D Accelerator, billed by its sponsors as the *'the largest-ever globally coordinated funding investment in livestock methane mitigation research'*.⁴⁷²

The focus on techno-fixes over dietary shift at COP28 indicates the powerful grip that Big Ag has over the narratives to transform our food system. For example, speaking at COP28, US Secretary of State for Agriculture, Tom Vilsack – a powerful ally for the industry – said he had not heard much about reducing meat consumption as a climate change strategy but that he did recognise *"the important role that strategies for methane reduction can play in making the current livestock industry sustainable"*.⁴⁷³

2.3 Industry's high promotion, but low investment in low-carbon solutions

Technical measures are being touted by the meat and dairy industry as the holy grail of methane reductions, but evidence shows that companies are often failing to invest significantly to develop these. Our research showed that – where data was made available – companies' spending on research and development and low-carbon solutions are just a tiny fraction of company overall revenues and in several cases where data is available, smaller than their marketing and advertising budgets.

2.3.1. A lack of spending by companies

None of the companies disclose exactly how much they invest in methane reducing technologies or into most other measures to reduce GHG emissions. However, where spend is given for research and development and low-carbon spending (the nearest available figures for companies) it is dwarfed by other spending.

Where data was available, we found that companies' annual spending on research and development (across all parts of their business, not just including sustainability) made up on average just 1% of companies' latest revenues. In several cases where data is available, we found that companies are spending less on these efforts than on their marketing and advertising – portions of which prior research has shown is dedicated to greenwashing their brands.⁴⁷⁴

Out of the 22 companies analysed, only five of the companies covered below - Arla, Fonterra, JBS, Nestlé and Tyson Foods - gave a sustainability spend, though it must be noted that these are according to companies' own definitions of what 'sustainable' and 'low-carbon' investments, which are not provided in detail by companies, making independent verification difficult.^Q

For this reason we have also compared with research and development spend - however, for all of the companies apart from JBS, which gives its research and development spend for its net zero efforts specifically - this is a business-wide figure

that is much broader than the company's climate efforts, and includes research and development into a number of topics, including flavour, texture and taste of food.

JBS' promised yearly spend on research and development towards its net zero efforts⁴⁷⁵ - which includes spending on technologies such as feed additives and equates to \$20 million (or €18.99 million) per year, and works out as just 6.2% of its annual advertising and marketing budget (R\$1,7 billion or \$320 million €294 million),⁴⁷⁶ and just 0.03% of its 2022 annual revenue (R\$375 billion, \$69 billion or €63 billion).^R

JBS had said this spend will go to a number of efforts that will support the development of technologies such as feed additives and vaccines, including through the Greener Cattle Initiative, and university funding (a topic covered further in the 'Agrodemia' section at the end of this chapter).⁴⁷⁷

JBS has also given a higher figure for spending toward its net zero efforts overall - \$1 billion over five years. This works out as 0.3% of its revenue, when calculated on an annual basis, and 62% of the annual advertising spend across the group. However, aside from the \$100 million above which will be channelled into research and development efforts - the rest of the spending looks set to be spent on upgrading its facilities, which do not include JBS supply chain or methane emissions.

The US' largest beef producer, Tyson Foods, is channelling its sustainability sending through an investment arm, Tyson Ventures, which it created with a fund of \$150 million in 2016 to invest in companies working in areas such as alternative proteins, food waste and new technologies. This lump-sum investment compares to an advertising spend of \$283 million in 2022, which is nearly double (1.8 times) Tyson Ventures' funding, and 11 times larger when measured on an annual basis.



| Source: Biogas, Shutterstock

Q Based on analysis conducted in August 2023. Unlike selling expenses - which are usually declared in companies' official statements alongside other operational expenses - sustainability pledges, where they were found, are not declared uniformly or with regularity. This can make these pledges more difficult to identify and scrutinise alongside companies' other financial declarations.

R It should also be noted that JBS has a significantly lower marketing cost than other companies as it primarily sells to other businesses.

Similarly, Tyson Foods’ advertising spend dwarfs its research and development spending, which at \$108 million was less than half its annual advertising spend.^{478, 479}

In another example, Fonterra reported spending the equivalent to NZD 667 million, or €372 million, on ‘selling and marketing’ in the last year,⁴⁸⁰ which significantly outweighs the amount it has said it plans to spend on efforts to lower emissions from its business over an entire decade. The company has said it plans to spend 1 billion NZD (equivalent to €569,600,000) on ‘*sustainability*’, although less than half of this (500,000,000 NZD or €283,320,000) will be spent on efforts to decarbonise its business. However, from available documents, the focus of its sustainability spend appears to be on energy efficiency and tackling fossil fuel use in its operations, rather than efforts to reduce methane.^{481, 482, S} Fonterra’s research and development budget in the latest year – which was reported as \$115 million NZD or €63.2 million in the latest year, and which covers all the research and development efforts from across its business – made up just 17% of its latest yearly spend on selling and marketing in the latest year, according to the company’s accounts.⁴⁸³

Data shows that what Nestlé spent on marketing and administration last year was 14 times more than what the company plans to spend on so-called ‘regenerative agriculture’ over 5 years – its landmark sustainability pledge – and is 9.5 times more than its annual research and development spend.

Nestlé reported spending 16.85 billion CHF (€17.1 billion) on ‘marketing and administration’ in the latest year⁴⁸⁴ which compares its landmark sustainability pledge to spend 1.2 billion CHF (1.26 billion euros) on regenerative agriculture until 2025 (over

five years)⁴⁸⁵ and an annual research and development spend (covering all sides of its business, not just low-carbon solutions) of CHF 1.7 billion (€ 1.77 billion).^{486, T}

While Nestlé’s does not provide a detailed cost breakdown of where the spending on its ‘regenerative’ efforts will go, the company says it will look into ‘*cutting edge science and technology to reduce emissions at farm level*’ as part of its regenerative efforts. The company’s pledge also appears to include work on 30 reference dairy farms across the world, where it is trialling a wide range of practices that could reduce emissions.^{487, 488}

Danish dairy company Arla spent €238 million in marketing in 2021 to 2022,⁴⁸⁹ which is nearly three times more than what it spends on research and development across its business.

Arla has said it will spend \$4 billion (\$800 million yearly) on the four areas of: ‘*sustainability, digitalization, new production technologies and product development*’. As Arla does not provide specific figures on spending for each it is not possible to make direct comparisons. However, split four ways, this suggests Arla’s sustainability spending may be higher than its marketing spend – making it an outlier among these four companies which had data for both R&D and low-carbon spend or sustainability spend.⁴⁹⁰ However, the company does not appear to have provided any detailed breakdowns of what its sustainability spend will include.

S In its 2022 financial report, Fonterra reported spending 667,000,000 NZD (€372,000,000) on ‘selling and marketing’. This compares with plans to spend 1 billion NZD (€569,600,000) on ‘sustainability,’ to 2030, of which it has said less than 500,000,000 NZD (€283,320,000) will be spent on lowering emissions, with the rest focused on water. ‘Selling expenses’ include a company’s advertising and marketing, as well as other costs related to a companies’ selling operations, such as distribution.

T Like several other companies, Nestlé does not provide its marketing budget discretely, disclosing this alongside administrative costs. When looking at how fellow European dairy companies Arla and FrieslandCampina declare their own spending, advertising and marketing made up between 33% and 35% of administrative expenses overall. (For Arla, its marketing spend made up 35% of its total budget for marketing and administration. For FrieslandCampina, advertising and promotion made up 33% of its total budget for marketing and administration. If we were to consider similar percentages for the Swiss company, this would make Nestlé’s advertising spending in the past year 5.6 billion CHF or €5.7 billion, which would still be significantly more than both its regenerative agriculture spend (€246 million a year) and research and development pledge (€1.8 billion a year).

These figures give an indication of companies’ spending but overall, there is a lack of clear and transparent information. Only four companies provided precise figures for advertising, or marketing for the year analysed - while five provided figures for ‘selling’ - which includes other activities such as distribution, and others, like Nestlé and Tyson Foods, only provided their advertising spend as part of an overall ‘administrative’ figure.^{U, V}

2.3.2. Asking the taxpayer to foot the bill for corporate emissions reductions

As this research has shown, companies often appear unwilling to invest significantly in research and development of new technologies, as well as in scaling up the application of existing solutions themselves. The reason for this mostly comes down to their bottom line. As a result, major companies and trade groups’ recent EU lobbying activities show that one of the industry tactics is to turn to regulators, asking for taxpayers’ money to foot the bill and pay for farmers to use these technologies. Interestingly, even giant cooperatives, which should in theory be owned by farmers, use the same tactics.⁴⁹¹

In the EU, companies and industry groups that have recently called for more public money for the development of innovations such as feed additives include Danish dairy company Arla, Dairy Industry Ireland, and EU farming trade body Copa-Cogeca. In its response to the recent EU Methane Strategy, for example, Arla told the EU that:

*‘Investments in R&D and farmer incentives are needed to reduce methane emissions from enteric fermentation - be that in the composition of the feed, the genetics of the cow or feed additives that reduce emissions, while ensuring milk quality, yield, cow longevity and animal welfare.’*⁴⁹²

Dairy Industry Ireland (which represents companies including Nestlé and Danone) also called for more public money to fund research and development in feed additives in its response, telling European policymakers:

U Seven companies did not provide any financial data covering their marketing spend. These were Bigard, Cargill, Dairy Farmers of America, DMK, Lactalis, OSI Group, Vion.

V Selling expenses - such as provided by Fonterra - includes advertising and marketing as well as costs of some of the activities related to sales, such as distribution. Operational figures include areas such as staff salaries and the cost of office facilities in addition to marketing.

*‘We hope that the EU will continue to help fund research into technological solutions such as additives that can further help us reduce biogenically produced methane while also protecting European rural jobs and the economic sustainability of the European countryside.’*⁴⁹³

Meanwhile, both sides of the EU farming trade body Copa and Cogeca told the EU they wanted to see no additional costs for farmers incurred, and wanted funding of feed additives and research and development, which they said would help keep EU funding competitive and avoid carbon leakage, arguing:

‘Enteric fermentation can be reduced through diet, breeding and herd health, productivity, management, longevity and welfare. All these measures need a proper policy framework for new technologies and investments. Research and innovation in e.g. new breeding techniques and feed additives must be secured to keep EU agricultural production competitive and to avoid carbon leakage to third countries and higher climate impact on global level. National and EU legislation must ensure access to new technologies for the farming sector.’^{494, 495}

These calls to EU regulators come as reports emerge that, with Bovaer, companies have been unwilling to pay for new innovations themselves.^{W, 496}

In the US – where the industry has significant power and influence, and where policy often works in terms of a ‘carrots’ and not ‘sticks’ approach championed by current Secretary of Agriculture Tom Vilsack – companies are receiving subsidies for feed additive trials through the Biden administration’s Inflation Reduction Act (IRA). The IRA, for example, is funding a new feed additives trial through the US’

W Bloomberg reported that FrieslandCampina is paying for a trial of the feed additive Bovaer (discussed above), but after that has said farmers will have to cover half the costs themselves, which one farmer interviewed by Bloomberg said was much more than he can recoup on sales of his dairy products.

Environmental Quality Incentives Program (EQIP) (a programme which has funded financial incentives for the agriculture industry since its inception in 2014).⁴⁹⁷ The text of the IRA itself also includes reference to the Secretary of Agriculture ‘*prioritizing proposals that utilize diet and feed management to reduce enteric methane emissions from ruminants*’.⁴⁹⁸

Yale Law School’s Viveca Morris has argued against the US’ carrot and sticks approach to agriculture, saying:

*‘The fact that livestock corporations would prefer to gobble up public dollars rather than be regulated for their chart-topping methane pollution is as irrelevant as it is unsurprising. Biden’s climate policy should be dictated by what the planet needs, not by what oil and gas companies want, and not by what meat and dairy companies want.’*⁴⁹⁹

2.3.2.1. Biogas

Another way companies are presenting livestock farming as beneficial for the environment is by arguing that they are contributing to ‘clean’ or ‘renewable’ energy through the conversion of waste manure from large meat and dairy operations into biogas.

For example, Arla Foods, called on the EU to recognise ‘*the environmental, economic and social benefits the dairy sector brings via biogas*’ in its response to the EU’s methane strategy in 2020.⁵⁰⁰ The EDA),⁵⁰¹ in an attachment to its submission, argued that dairy can be a ‘*net contributor to clean energy, via the production of biogas*’.⁵⁰² In the US, the American Biogas Council – an industry group which represents companies including Cargill and Smithfield – has said manure from biogas can help farmers in ‘reducing methane and greenhouse gas emissions’, and be part of the sector’s ‘*sustainability story*’.⁵⁰³

Some companies are taking this even further by saying biogas use can actually reverse companies' contribution to climate change. Notably, US pork giant Smithfield (a subsidiary of WH Group) frequently refers to biogas from manure as a '*carbon-negative renewable natural gas*'.⁵⁰⁴ The company goes as far as to claim that biogas production removes at least 25 times more GHG emissions from the atmosphere than are released from its end use in power plants, homes, vehicles and businesses, and that, thanks to its efforts in biogas, it will be 'carbon negative' by 2030.⁵⁰⁵

Following a huge messaging push presenting biogas as 'clean' and 'natural' energy, the animal agriculture sector is now receiving billions in subsidies for developing the fuel, particularly in the US, where the US Department of Agriculture and states with large amounts of meat and dairy production are actively supporting the practice. Significant new subsidy streams to convert manure to biogas have also been created by the IRA, which has pledged new money to companies looking to convert manure to biogas through pre-existing funds such as the EQIP.^{506, 507}

In California, the state has already spent \$600 million of public money to support the construction of manure digesters - the technology which allows companies to convert manure into biogas. Smithfield is one of many large companies which are benefiting from Californian subsidies for its biogas production, through the state's emissions cap and trade scheme.⁵⁰⁸ Between 2014 and 2022, \$200 million of these subsidies were channelled through the Low-Carbon Fuel Standard (LCFS), which incentivises biogas production, and is intended to produce offset credits.^{509, 510, 511}

The industry's arguments about the environmental positives of biogas boil down to the idea that it is using methane from manure that would instead be emitted into the atmosphere to create fuel, thereby displacing fossil fuel use. Some companies have even gone as far as to claim that biogas is even cleaner than other, non-CO₂

emitting renewable energies. For example, in its 2021 sustainability report, US pork company Smithfield claims biogas is preferable to energy sources such as wind and solar, which it says have many 'unintended environmental consequences'.⁵¹² Such funding for emissions reductions technologies is added on top of already significant agricultural subsidies that go to the sector. Research from academics at Stanford university found that the US and EU paid \$44.3bn of subsidies to meat and dairy farmers between 2014 and 2020, hundreds of times more than for novel protein sources - the funding of which stood at \$42 million.⁵¹³ (Read more about subsidies in Box 3.1 in Derail).

While the industry claims biogas reduces emissions by displacing those from natural gas, campaigners have called on California to remove the subsidy system, claiming that converting manure to biogas does not have the climate benefits claimed, that it comes with pollution and a risk of methane leaks, and that the practice could counterproductively increase overall production by incentivising industrial-scale livestock farming.^{514, 515, 516} There is also a risk that biogas - which provides an incentive to maintain fossil fuel infrastructure and is being backed by oil giants such as Chevron - will facilitate the continued growth of the fossil fuel industry rather than providing an alternative.⁵¹⁷

In reality, biogas is a source of planet-warming CO₂ when burnt, just like fossil gas. This is in addition to the gas being flammable, explosive and highly toxic to breathe. Even when biogas is indeed displacing fossil fuels, what companies calculate as the emissions generated by biogas may be under-estimated due to the evidence of methane leaks from pipelines and operations. For example, University of California researchers found '*fairly persistent*' methane plumes from four San Joaquin Valley dairies using biogas digesters.⁵¹⁸ Another study published in the journal *One Earth* in 2022 found that biogas and biomethane supply chains leak twice as much methane than previously estimated.⁵¹⁹

Another major concern is that because biogas is only economically feasible on large farms, the practice will increase animal agriculture emissions by providing clear financial incentives for farms that scale up and intensify production (the US EPA has admitted that most methane digesters ‘*are not economically viable until farms with more than 10,000 hogs are incorporated*’).^{520, 521} This potential to drive up emissions by increasing the size and scale of farms is a particular concern when considering that biogas from manure only addresses a small fraction of the methane emissions that are produced by livestock production overall. (In the EU, for example, enteric fermentation accounts for around 80% of agricultural methane emissions, while manure counts for 17%.)^{X, 522}

As well as risking increased emissions, encouraging the use of biogas comes with negative environmental justice impacts, encouraging the building of intensive farms, which are already more likely to be close to poor communities and communities of colour in the US, and who will then have to deal with a raft of negative environmental and public health consequences.⁵²³ Critics have also said that rather than displacing fossil fuels, the rise of biogas production and its support from the state may in fact help the fossil fuel industry in numerous ways, for example by facilitating the continued buildout of gas pipelines, and giving them opportunities to ‘rehabilitate’ their image. Campaigners from Food and Water Watch have described the production of biogas as a ‘dangerous union between Big Oil & Gas and Big Agribusiness’ that is likely to entrench the climate-wrecking business models of both.⁵²⁴

Instead of reforming and aligning subsidies with the climate science to encourage better agricultural practices and incentivise farmers to produce less and better meat

and dairy and more plant-based options, the livestock industry is a disproportionate beneficiary of public money, most of which appears to be going to maintain the status quo.⁵²⁵

2.3.3. Yes to healthy diets, as long as it does not harm my core business

Another tactic companies use to push against transformational change is by arguing for diversified diets which still include meat and dairy as well as plant-based options. Many companies and industry associations do not even promote plant-based options, but only focus on the need to consume meat and dairy to be healthy, promoting various nutritional benefits of these products. Most of them are based in countries, where citizens on average already overconsume meat and dairy products.

One recent example is the UK AHDB’s ‘Let’s Eat Balanced’ campaign, also noted in the Distract chapter. This is a £4 million government-backed push to encourage consumers - and particularly young people - to eat more meat as part of a ‘balanced’ diet. Scientists told investigative outlet DeSmog that the campaign - which was anticipated to reach 90% UK adults - ‘*flies in the face of science*’, due to the UK’s already very high levels of meat consumption.⁵²⁶

As discussed below, this has distinct echoes of oil and gas companies which have made misleading efforts to present themselves as diversified ‘energy’ companies embracing the green transition while only making fractional investments in these technologies.

In an example of arguing for a diversified food system, in a recent response to a call to feedback on the EU’s Sustainable Food System initiative, the Danish Agriculture & Food Council - of which Arla and Danish Crown are members - argued that:

X The remaining 3% is accounted for by rice production.

‘All current sectors have a role to play in the upcoming transition. Specifically, we need the framework for a sustainable food system to accommodate the resource efficient and intensive production, the global perspective, and the development of all forms of production, including both a plant-based production and animal husbandry.’⁵²⁷

Similarly, in its own response, Arla argued that the sustainability framework should recognise both meat and dairy and plant-based foods as sustainable, arguing that:

‘It will be important that the framework continues to recognize the critical role of all basic food groups, such as dairy has in providing high quality and affordable nutrition while supporting the sector’s sustainability transition.’⁵²⁸

Another way in which companies have argued for keeping dairy part of the mix comes from Nestlé in its 2022 sustainability report, where its Global Head of Public Affairs, argued that Nestlé will not diversify from dairy as, if they do, the market will be captured by companies that produce milk in a less environmentally friendly way.⁵²⁹

This argument has been used by many other sectors, as well as by national dairy and meat industries. For example, Danish Crown often says that they support shifting to healthy diets in Denmark, but shift their sales to other markets like in China and South East Asian countries.^{530, 531} The argument to keep meat and dairy part of a diversified food mix, allowing companies to grow all segments of their business, has echoes of the tactics of many companies in the oil and gas industry which - after promoting their transition into renewables to regulators and the public - failed to back this up with significant investment or a shift away from their core business in fossil fuels.⁵³² For example, major oil companies such as BP and Total, have been criticised for efforts to rebrand as diversified energy companies through rebrand-

ing to ‘Beyond Petroleum’ and ‘TotalEnergies’ while over 90% of their businesses remained in oil and gas.^{533, 534, 535}

Recent analysis commissioned by Greenpeace Central and Eastern Europe (CEE) analysed the 2022 annual reports of six global fossil fuel majors and six European oil and gas companies and found that - despite net zero pledges and an emphasis on the green transition from the companies - a minuscule 0.3% of their combined 2022 energy production came from renewable power - despite frequent promotion of their involvement in these technologies.⁵³⁶

Finally, in further evidence the industry is not engaging with transformative change, companies appear unwilling to discuss reduction in meat consumption, and treat this as a taboo topic. Any discussion of a reduction in livestock numbers is framed



Source: Mosa Meat cultured meat burger, GFI

in the context of increased productivity, and translated into emissions intensity targets, so that companies can continue growing production (resulting in absolute emissions increases overall). A good example of this is Danish Crown, which talks about reducing meat consumption, but works to keep productivity high because - while European demand is falling - there is high demand in other regions such as East Asia.⁵³⁷ Danish Crown has Scope 3 reduction targets which cover emissions intensity only, and a growth in efficiency could still lead to an increase in its absolute emissions.

Overall, companies' lack of willingness to engage with transformative changes - notably a shift to plant-based diets - to bring down methane, suggests they are promoting technological fixes over more significant change to bring down methane emissions. Out of all the 22 companies analysed, Danone is the only company known to have a target to increase plant-based products as a share of its overall sales, as well as methane reduction target.⁵³⁸

2.4 Conclusion

As demonstrated in this chapter, industry uses a variety of tactics to delay regulations. One of the big delaying tactics is enthusiastic efforts to promote technical fixes. Sometimes they are even at odds with the scientific and commercial state of knowledge around these, with companies often hyping their pilot projects. While research and development of new technologies is important, and these have a role to play in bringing down agricultural emissions, it is important that there is a realistic evaluation of the contribution these can make to emissions reductions and that these techno-fixes are not presented as a silver bullet solution that prevents more transformative change in the sector.

Companies' business models and their limited investments into transition towards plant-based foods and less and better meat and dairy show that this is not part of a well-rounded and holistic plan to reduce their climate and methane footprint. None of the companies reviewed in this research have plans to reduce livestock numbers and where they are expanding into plant-based markets they are doing so as part of a diversified strategy that would see these products complement the growth of their core meat and dairy businesses rather than replace it. The reduction of meat and dairy is also a taboo topic; companies only discuss increased productivity and reduced emissions intensity linked with increased production, which could still result in increased overall emissions.

In a paper published in 2020 in the journal *Global Sustainability*, academic researchers argue that pushing technological fixes is part of a wider trend in delaying tactics, where industries argue that '*disruptive change is not necessary*' and push non-transformative solutions - including '*technological optimism*' where they argue that '*we should focus our efforts on current and future technologies*' over more structural and systemic changes that would harm their business models.⁵³⁹ This certainly has resonance with the tactics of the fossil fuel industry. As even the techno-fixes come with a price tag, companies often prefer to just use them for marketing purposes, instead of realistically evaluating the emission reductions these technologies can bring and advocating for them to be adopted at the policy level. This results in companies often only playing lip service to them to delay real action and to prevent regulation. When asked to scale up these solutions, companies often demand to be funded by tax-payers money, further delaying action.



CASE STUDY

Milking it in Aotearoa (New Zealand): delay and distraction in three acts

Dairy, meat and sheep producers are collectively New Zealand's biggest climate polluters⁵⁴⁰. The single largest is the corporate giant Fonterra – a co-op owned by dairy farmers⁵⁴¹ with a total revenue of NZ\$26,046 million in 2023⁵⁴² and greenhouse gas emissions of 24,058,000, tCO₂e,⁵⁴³ contributing around 31% of the whole of New Zealand's greenhouse gas emissions.⁵⁴⁴ Yet agriculture is the only sector in the country that isn't required to pay for or reduce its climate emissions as part of the country's key emissions reduction tool – the Emissions Trading Scheme⁵⁴⁵ (the ETS).

Agricultural emissions make up close to half of New Zealand's greenhouse gases,⁵⁴⁶ most of them in the form of methane – a short-lived but highly potent gas produced when cattle and sheep burp and produce manure. Because of its large farming sector, most of the global heating contributed by New Zealand to date has been caused by methane and cutting this potent gas also offers the best opportunity to reduce New Zealand's emissions.⁵⁴⁷

It has been more than 20 years since New Zealand's first attempt, in 2003, to put a price on and reduce agricultural greenhouse gas emissions. That attempt failed. Another attempt was made in 2008, again in 2017, and again in 2022. Despite these

efforts, there has been a lack of political courage to regulate agricultural emissions thanks to New Zealand's powerful, organised and well-resourced farming lobby.

The power player of New Zealand's agriculture sector is the dairy industry. Milk, mainly in the form of powder, is the country's top export-earner due to the huge volumes exported,⁵⁴⁸ and the industry holds a privileged position in culture and politics. Lobby groups Dairy NZ and Federated Farmers represent dairy and farming interests.

Between 1990 and 2021, there was a massive 88% increase in dairy cow numbers along with a 644% increase in the application of synthetic nitrogen fertiliser.⁵⁴⁹ This fertiliser produces nitrous oxide, a potent greenhouse gas, and is used to accelerate grass growth to feed the country's growing methane-producing cow population. The dramatic expansion of the national dairy herd to 2021 saw emissions from cows increase by 123%.⁵⁵⁰ Despite this, successive governments allowed the sector to circumvent climate regulation that all other industries are subject to.

Over 20 years, farming leaders' tactics have been remarkably consistent, and remarkably successful. Privileged political access, disinformation, scaremongering and distraction (promises of distant technology-based solutions and the industry's voluntary self-regulation) have formed the cornerstones of a multi-generational strategy of delay which has outlasted four changes of government and all efforts to meaningfully curb agricultural climate emissions.

2003: A campaign of disinformation

Having ratified the Kyoto Protocol in 2002,⁵⁵¹ in 2003 the centre-left Labour-led government proposed a small levy on sheep and cattle that would be used to fund research into reducing agricultural emissions. The Agricultural Research Levy

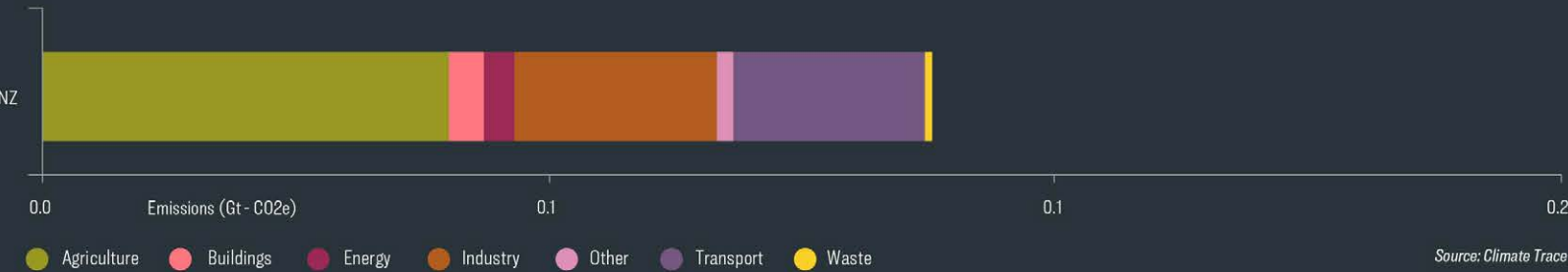


New Zealand



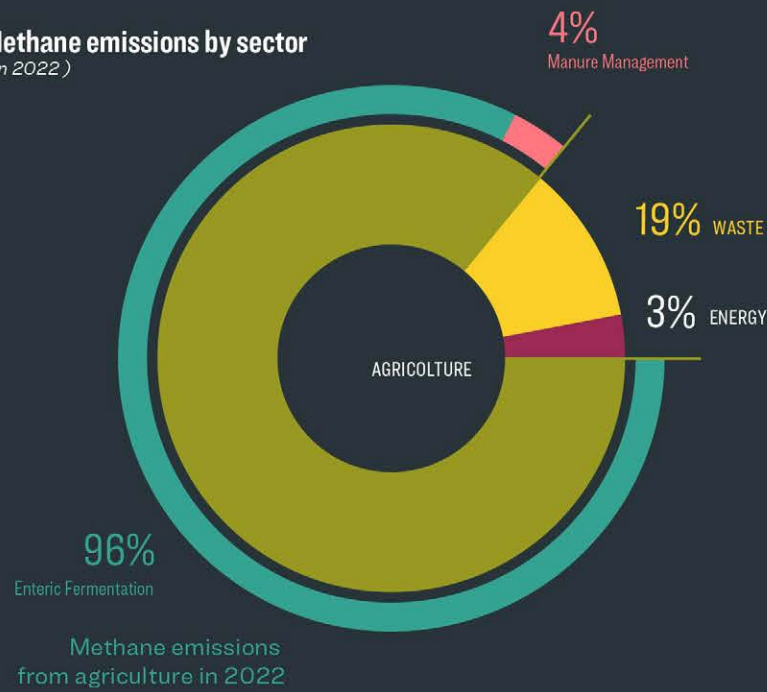
Greenhouse gas emissions

(in 2022)



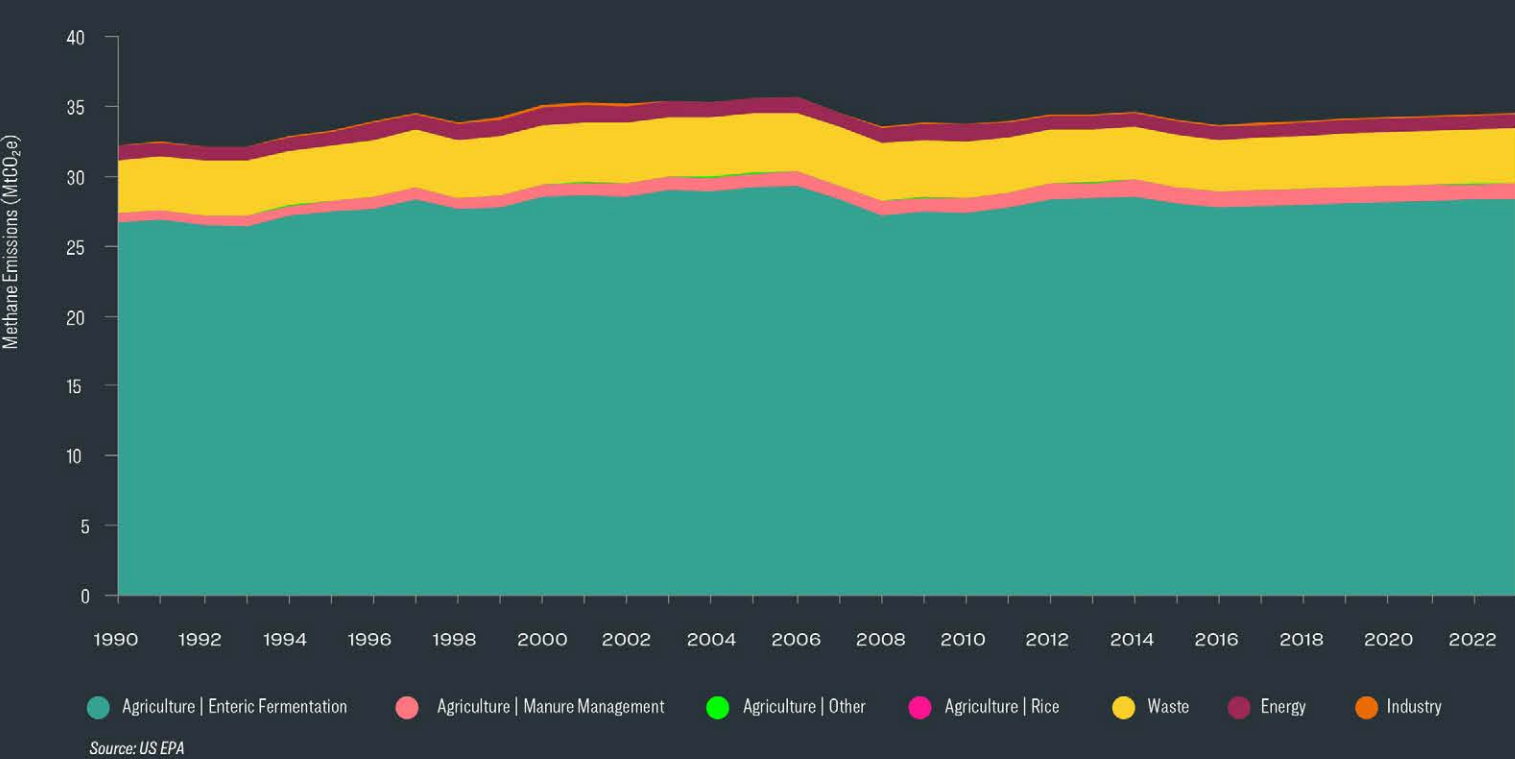
Methane emissions by sector

(in 2022)



Methane emission by sector

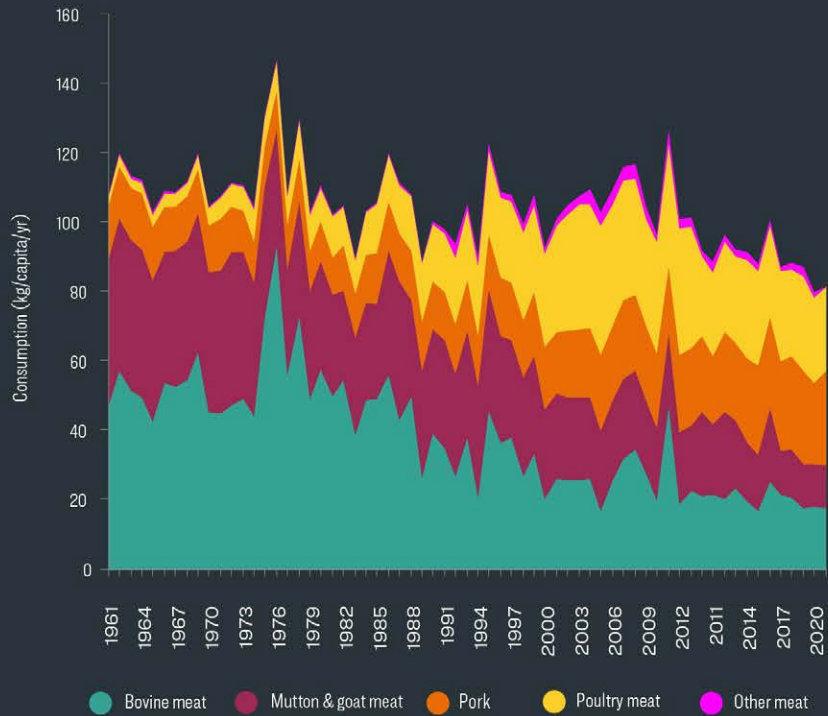
(from 1990 to 2022)



Meat consumption per capita

(since 1961)

Source: FAOstat



In 2020 the average Kiwi citizen consumed:

106



Steaks a year
(170g steak)

171



Lamb chops a year
(70g lamb chop)

900



Bacon rashers
(30g a rasher)

141



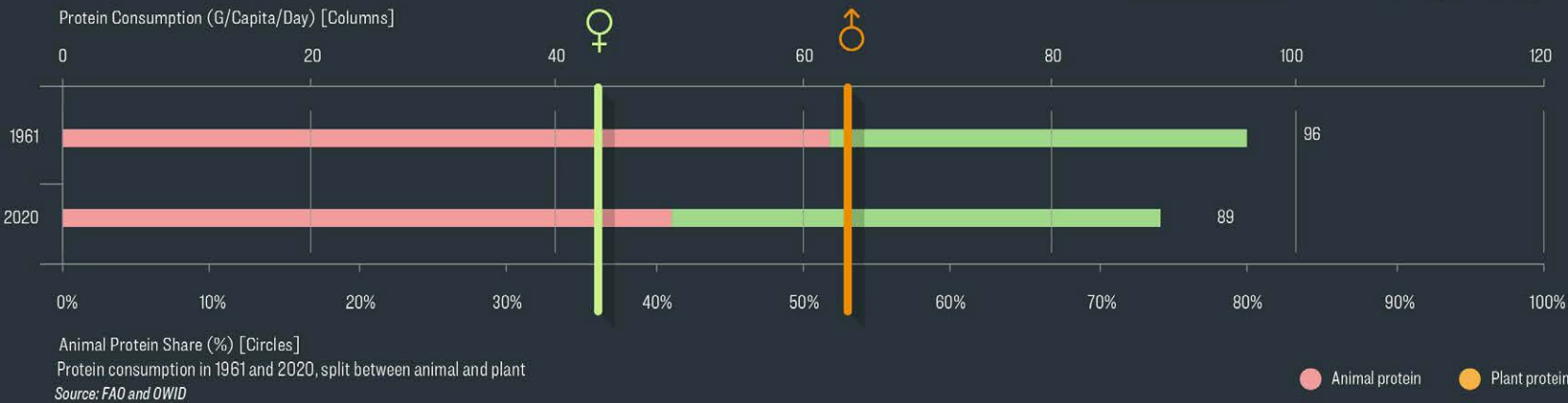
Chicken breast a year
(170g chicken breast)

Source: NZ Nutrition Foundation

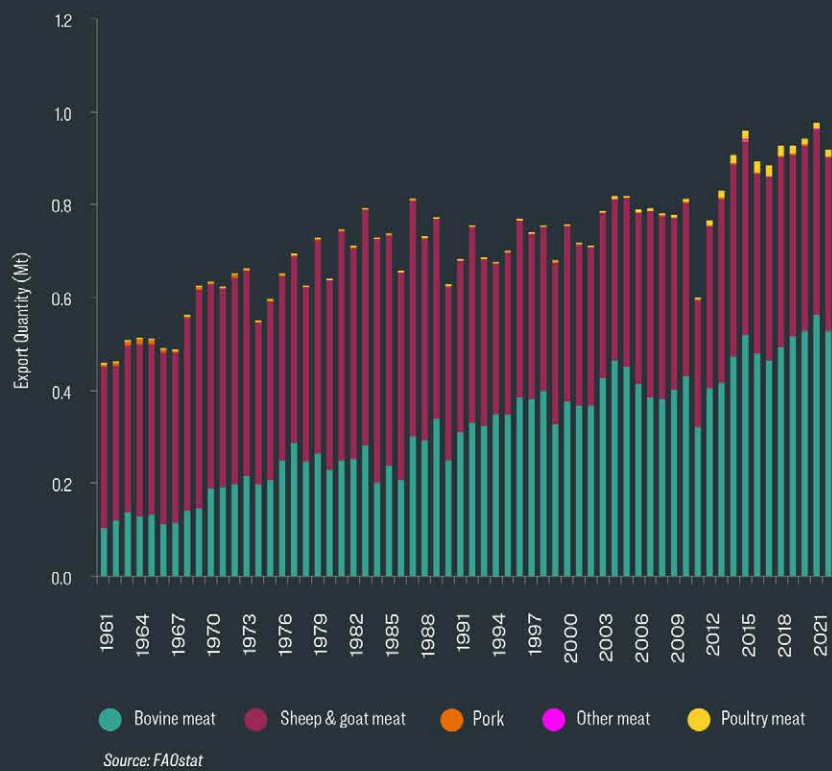
Historical consumption of protein

(Grams per day)

Protein Consumption (G/Capita/Day) [Columns]



Meat exports



Meat imports



would cost about NZ\$0.09 per sheep and NZ\$0.72 per head of cattle.⁵⁵² An average farm would pay a modest \$300 per year.⁵⁵³

The proposal was met with strident and organised resistance⁵⁵⁴ from the farming sector. A public campaign derided the levy as a ‘fart-tax’, supposedly designed by a hostile left-leaning government to *punish* farmers⁵⁵⁵ for circumstances beyond their control. Well-resourced protests saw convoys of tractors block streets in main cities,⁵⁵⁶ culminating in hundreds of farmers from around the country arriving at the grounds of Parliament with dozens of tractors, and a 64,000 signature petition.⁵⁵⁷ The Environment Minister publicly stated, “Federated Farmers is waging a disinformation campaign against this levy.”⁵⁵⁸ With public sentiment against them, the government eventually backed down, while opposition politicians congratulated Federated Farmers on its successful campaign.⁵⁵⁹

A weaker offer was put on the table - still a research partnership, but farmers’ collective contributions would be voluntary rather than a levy per animal.⁵⁶⁰ Not only would the New Zealand public pick up the cost of farmers’ methane emissions, but the agreement conceded what would become a theme for the next 20 years: the technology required for cost-effective methane reduction didn’t yet exist.⁵⁶¹

Denying or misrepresenting current science and evidence has been a key feature of the industry’s strategy to delay. Positioning future technological developments as the only feasible solution to emissions reduction while disregarding currently available farming techniques is a well-worn agribusiness distraction tactic.⁵⁶² The ‘new technology’ tactic has been so successful it is now government policy, despite existing farming techniques known to reduce emissions by up to 10%.⁵⁶³

As recently as October 2023, New Zealand’s independent environmental advisor, the Parliamentary Commissioner for the Environment, publicly criticised Dairy NZ, Beef + Lamb, and Federated Farmers for burying in an “appendix to an appendix”⁵⁶⁴ their own finding that reducing methane represents New Zealand’s greatest opportunity to reduce its contribution to global heating.

2008: The Emissions Trading Scheme perpetually postponed

When New Zealand’s ETS was introduced in September 2008, it was the first emissions trading system in the world designed to cover all sectors of an economy.⁵⁶⁵ The ETS is New Zealand’s primary mechanism to meet its international emissions reduction commitments.⁵⁶⁶

But not all sectors would come into the ETS at once. Agriculture’s entry into the ETS wasn’t scheduled until 2013, five years after the forestry sector and three years after fossil fuels.⁵⁶⁷ This delayed entry for agriculture came after lobbying by the agribusiness industry⁵⁶⁸ again casting farmers as vulnerable underdogs who would be hit hard by the scheme’s costs.⁵⁶⁹ In fact, farming in New Zealand had developed into a science and technology-based industry, supporting increasingly intensive farming operations. While the number of herds was on a downward trajectory, herd size was increasing. In three decades, the average herd size in New Zealand had tripled and also intensified, with more cows per hectare than ever before.⁵⁷⁰ In 2011, Fonterra’s payout to its 10,000 farmers was an all-time record high, with an average of a million dollars⁵⁷¹ each. With record milk prices⁵⁷² and larger herd sizes, dairy farming was big business in New Zealand.

The Labour-led government’s delay on agriculture’s entry to the ETS provided the political window the industry needed. Under the leadership of John Key, the National Party was elected to power in November 2008, and promptly deferred

agriculture's entry to the ETS from 2013 to 2015.⁵⁷³ Three years later in 2012, the 2015 deadline was reviewed and the sector was given yet another deferral, but this time it was excluded indefinitely.⁵⁷⁴

As with the Agricultural Research Levy, the rationale for these ongoing deferrals included the need for a “technological breakthrough”,⁵⁷⁵ along with the threat of local farmers walking away from the industry, resulting in food production being displaced offshore.⁵⁷⁶ Claims of harming rural community and ‘leakage’, where farming in New Zealand is disincentivised to the point of food production being displaced to more polluting countries,⁵⁷⁷ were part of the usual narratives^{578, 579} and scare tactics used by those in opposition, helping to generate fear of change and distrust of science among their farming members. More recently, the Federated Farmers have said that emissions reductions will “rip the guts out of small-town New Zealand” and spell the end for many small rural businesses.^{580, 581}

So far, so good for the polluting dairy sector. It would take five more years and another change of government for agricultural emissions to make it back onto the negotiating table.

2017: An industry counter-offer

In 2017 the Labour Party's Jacinda Arden launched her campaign by famously stating “climate change is my generation's nuclear free moment and I am determined that we will tackle it head on”,⁵⁸² invoking a previous generation's successful campaign in the face of powerful political pressures to permanently reject nuclear-powered US warships from New Zealand waters.



| Source: Jacinda Arden, Shutterstock

Arden's political platform included the promise to introduce agricultural emissions into the country's Emissions Trading Scheme, and in doing so become the first country in the world to put a price on methane emissions.⁵⁸³

The 2017, the Labour-NZ First-Green coalition government proposed to do this while providing a 95% subsidy for farmers on a methane levy. Under this arrangement, milk and meat processors would only pay 5% of the sector's climate emissions costs, and taxpayers would cover the rest.⁵⁸⁴

Following this extremely generous proposal, high-level discussions directly with Prime Minister Arden and her senior ministers⁵⁸⁵ saw a broad-ranging agribusiness alliance pivot from all out resistance to emissions pricing to an offer of cooperation

in 2019. Initially pitched as a ‘voluntary accord’, 11 industry bodies including industry heavyweights Federated Farmers, Beef + Lamb, and Dairy NZ, as well as the beekeepers association, Deer Industry NZ, Irrigation NZ and Māori interests leveraged the PM’s ambition to create the world’s first pricing mechanism for methane by offering industry support - on the condition they help design their own pricing mechanism.⁵⁸⁶

This scheme, they proposed, would be achieved by building consensus despite the diverse and often competing interests of the partner groups. It would also delay agriculture’s entry into the ETS until 2025.⁵⁸⁷

It had taken 16 years to overcome the well-organised delay tactics spearheaded by Federated Farmers, Dairy NZ and Fonterra. After all these years, a governing majority had both the political numbers and public mandate to finally regulate half of the country’s total emissions. It seemed incredible that at this critical moment the government chose to abandon its hard-won policy of bringing agriculture into the ETS on the basis of an assurance from the very farming groups that they would develop a new plan. These were the same organisations who had successfully railed against emissions pricing for nearly two decades. The head of Greenpeace Aotearoa, Dr Russel Norman, labelled the move “a masterstroke of predatory delay”.⁵⁸⁸ Yet this is what was agreed to - the ETS was cast aside and the emissions pricing process for agriculture was handed over to the agribusiness sector to design. Foxes were put in charge of the henhouse.

2022: He Waka Eke Noa: Dead on arrival

The industry collective in charge of developing its own emissions pricing scheme would be called “He Waka Eke Noa” (HWEN), roughly translated from the Māori language as “we are all in this together”. Following consultation with its members,

including a nationwide road show, HWEN eventually released its proposal for pricing methane in mid-2022.⁵⁸⁹

On its release, it was immediately clear that the proposal would not meaningfully reduce emissions. HWEN’s modelling showed emissions reductions as a result of pricing would amount to less than 1% by 2030.⁵⁹⁰ Consistent with its usual position, the industry’s proposal relied on unproven technology to ‘fix’ emissions pollution. HWEN suggested a levy to fund emissions research and development - exactly what the Agricultural Research Levy had been designed to do 19 years earlier.

Conservation organisation Forest & Bird’s Climate Advocate Geoff Keey summed up the mood among environment advocates: “He Waka Eke Noa had one job, to come up with an emissions reduction plan for agriculture that would cut emissions. They have completely failed.”⁵⁹¹

The government responded with its own version of the proposal which was duly rejected by the HWEN partners.⁵⁹² Decades of climate denial, delay and agricultural exceptionalism had created a membership base culturally opposed to meaningful change.⁵⁹³ Against a backdrop of farmer protest,⁵⁹⁴ the government sought to secure farming support for the scheme, while HWEN partners insisted on further weakening what had already been proposed.⁵⁹⁵ Federated Farmers’ President Andrew Hoggard even questioned in national media whether it was really possible to tell if climate change was real.⁵⁹⁶

Russel Norman of Greenpeace Aotearoa concluded that “[a]gribusiness never had any intention of agreeing to the pricing of their emissions”.⁵⁹⁷ The situation continued to unravel. Ardern stood down from office in January 2023. In June that year, the opposition National Party declared “He Waka Eke Noa is dead.”⁵⁹⁸

A general election in October 2023 saw a National-led centre-right coalition elected to power with a climate policy that promised to focus on energy and transport emissions, while “unlocking new technology to reduce agricultural emissions”.⁵⁹⁹ The new government’s 100-day plan⁶⁰⁰ took away the little progress there was on agriculture, with the potential scrapping of agricultural emissions pricing, loosening the rules around intensive winter grazing and weakening freshwater regulations, to name a few.⁶⁰¹ Planning work on the second emissions reduction plan for 2026-2030 is under way,⁶⁰² but recent events suggest the government will water down climate targets by seeking a separate review on methane targets, sidelining the advice of its Climate Change Commission.⁶⁰³

This election also saw an increase in farming representation with close to 20 MPs holding some farming or agricultural background.⁶⁰⁴ They include Andrew Hoggard, previously president of Federated Farmers and now the assistant minister for both agriculture and the environment. This is another clear example of revolving doors, as described elsewhere in this report for countries like the US and the European Union.

Historically, political efforts have failed to reduce emissions from agriculture. However, there may be some light on the horizon. Recently, New Zealand’s Māori leader, Mike Smith, celebrated a win when the Supreme Court ruled in his favour to take fossil fuel and dairy companies, including Fonterra, to trial on the basis that these companies have a legal duty to him and others in communities who are being impacted by climate change.⁶⁰⁵

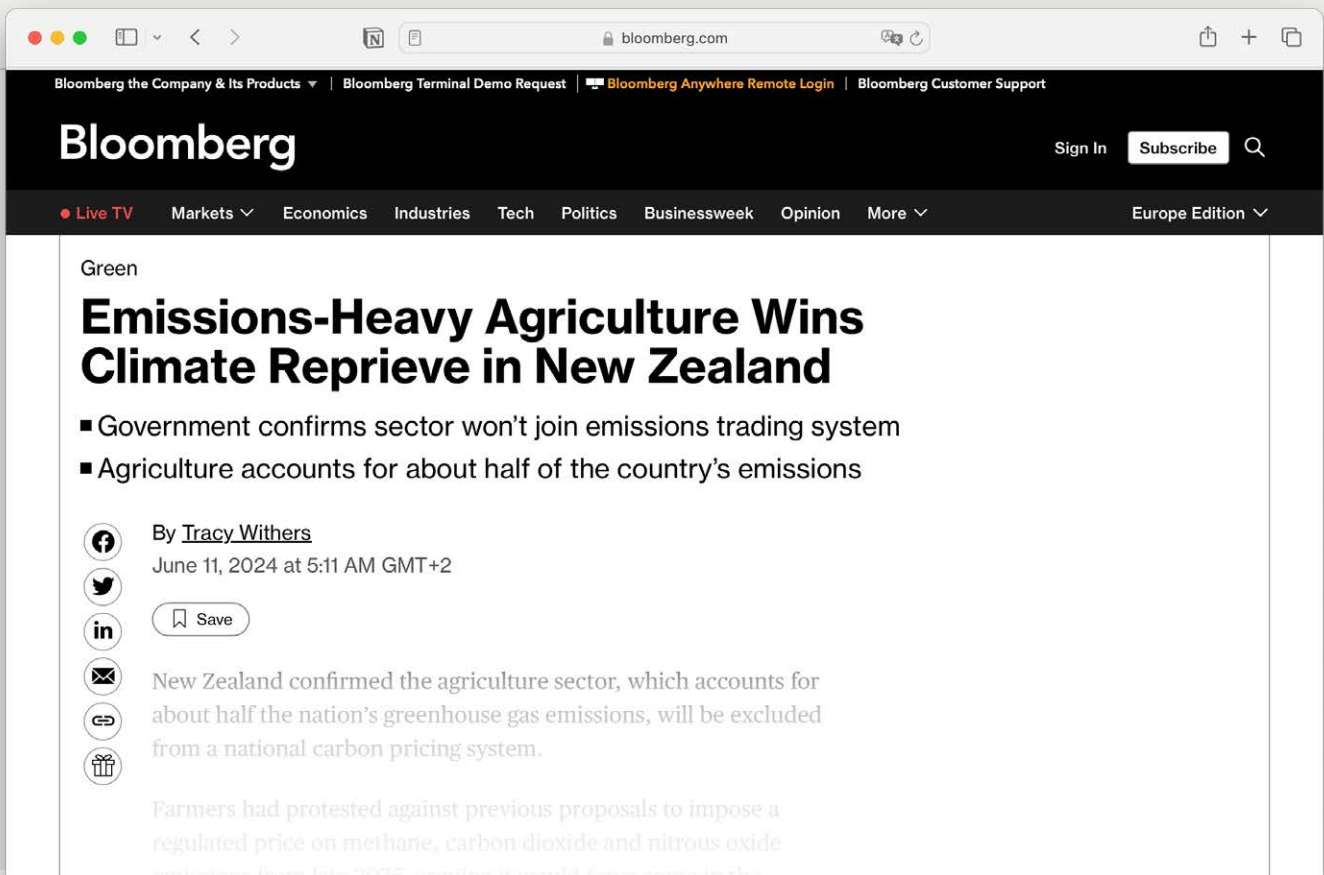
International pressure may also help achieve progress. In response to the carbon targets of multinational customers such as Nestlé and Danone, in November 2023 Fonterra announced that its milk will be “30% greener” per litre in seven years. On examination, only 7% of these gains are achieved by addressing methane emissions from enteric fermentation through feed additives and improving herd performance. The rest will supposedly come through new technology, already scheduled changes in land-use accounting, and offsetting through revegetation.⁶⁰⁶

Nonetheless, news media noted that “The announcement is the first time the co-op, the country’s biggest emitter, has asked its farmers to take steps to reduce emissions.”⁶⁰⁷

2.5 Twenty years of delay, and counting

In late 2023, the agriculture sector continues to produce nearly half of New Zealand’s total climate emissions, but remains the only industry that is completely off the hook for emissions reductions, at the expense of New Zealand’s taxpayers.

Reducing methane is recognised as the best opportunity for New Zealand to reduce its contribution to the climate crisis. Yet rather than focusing on improving farming practices, agriculture’s leaders have stuck to their tactics of denying the science,





distracting with empty promises, promising unproven future technological fixes and mobilising farmer protests to hold policymakers hostage to their demands.

Despite the increasingly severe consequences of climate change - including economically devastating floods and droughts and deadly storms - New Zealand's powerful agribusiness leadership remains firmly positioned against climate action with the latest government. This is in a country that has significant concern over climate change (four out of five New Zealanders are concerned about the impacts of climate change being seen at home and in other countries)⁶⁰⁸ and pollution from the sector, but a minority of vested interests has overridden these concerns over decades. It appears that international markets and domestic legal actions are the most effective, and perhaps only, avenue for influence over New Zealand's dairy farmers to finally cut their climate emissions.



3. Derail

3.1 Introduction

As well as avoiding regulation and legislation through means of distraction and delays, Big Meat and Dairy and their representatives also directly derail much needed policy that would require a change to their business model. This is perhaps the endgame for meat and dairy industry and the way it actively undermines regulation and progress to mitigate climate change and cut pollution is hugely damaging for the future of humanity.

In this chapter, we investigate more aggressive derail tactics, and we show how these have been weaponised to undermine climate policy in the EU and the US. Farming sectors are huge recipients of public money in these two regions in the form of agricultural subsidies, which disproportionately go to fund animal agriculture and big farms. Big Ag interests also have their foot in the door with policymakers, placing industry insiders into key political positions of power. All this is enabled by the existing

narratives, such as agricultural exceptionalism, which grant the sector great political access and significant exemptions from regulations.

Derail tactics include spending billions on direct and indirect lobbying through industry groups or on political donations across different parties to ensure the industry influence and high level of access. We reveal examples of conflicts of interest, where elected politicians benefit from the agricultural subsidies they are supposed to reform, and examples of revolving doors, where key policy experts come from the industry and return there after the end of their public office. Direct threats and intimidation of policymakers were also discovered in the research, as well as violent farmers protests, which were used to derail almost all the elements of the Green Deal proposed by the European Commission's President Ursula von der Leyen at the start of her mandate.

3.1.1. Agricultural exceptionalism

The agricultural sector is different from other sectors due to high level of public support in the form of agricultural subsidies. This gives representatives of farmers significant influence over any decision-making processes that revolve around the distribution of such subsidies or their potential reforms, including which types of farming are eligible for subsidies.

A study published in One Earth in 2023, which conducted a comparative analysis of US and EU trajectories of food system transition, found that both governments *'mostly preserved the status quo of animal-based production and consumption'*.⁶⁰⁹ By examining policies in the period 2014-2020, they found that the *'incumbent system of animal farming still received most of the financial support allocated to food producers, preferential endorsement in dietary recommendations, and dominant-technology advantages in marketing standards'*.⁶¹⁰

This ongoing support, in the face of scientific consensus on the need to reduce emissions from production and consumption of animal products, not to mention the levels of water and air pollution and other environmental issues related to industrial animal farming, stems from what many critics call *'agricultural exceptionalism'*.⁶¹¹ Agricultural exceptionalism describes the ways in which the sector is allowed to *'operate under a different set of rules than other parts of the economy, leading to widespread abuse in the food system'*.⁶¹² This system is based on romanticised notions of farming that are perpetuated in everyday life, from children's books through to images on milk bottles, but masks the sinister reality behind this industry, which has become one of the key drivers of climate change and mass pollution.⁶¹³ In the US, agricultural exceptionalism also includes the idea that the US must *'feed a hungry world'*.⁶¹⁴ The romanticised notion of idyllic farming that is in harmony with nature is used by Big Ag as a shield to hide the realities of industrial farming and as a weapon to wield when fighting environmental regulation that could dent its profits, or upset (agri)business-as-usual, as many of the examples below illustrate.

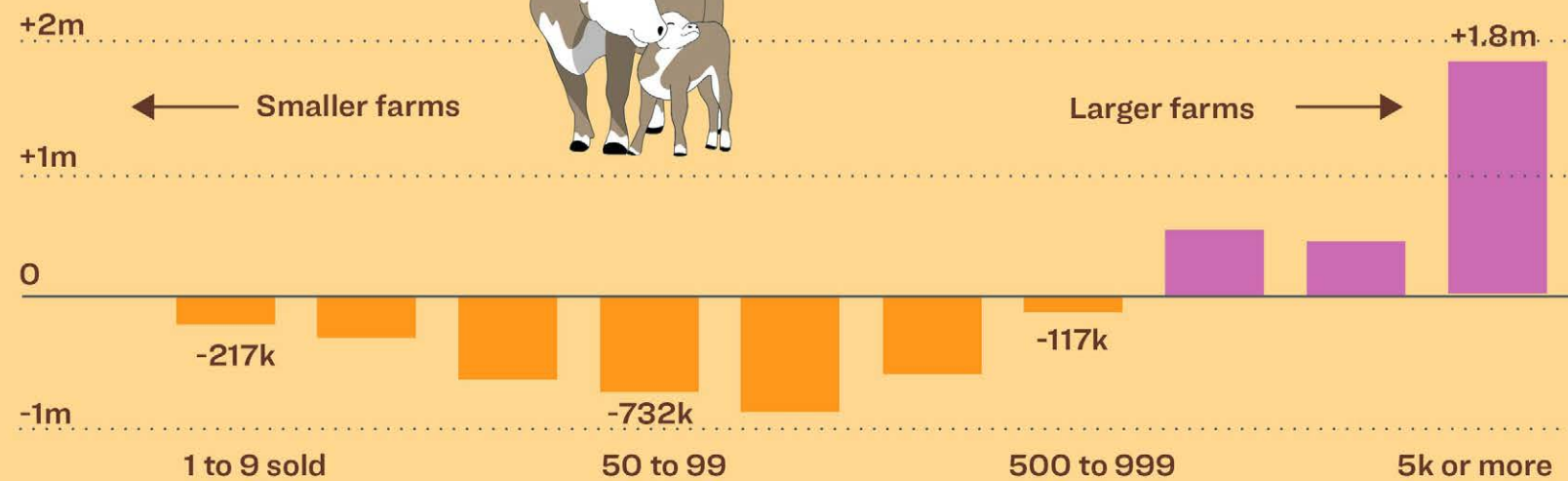
Agricultural exceptionalism plays a vital role in enabling big meat and dairy companies to derail policies that seek to mitigate the industry's impact on climate change and the environment, allowing the industry to operate outside of existing legally binding agreement on climate, human and environmental health. The position and positive perception of the industry not only grants them access to the corridors of power but permanent seats within those buildings. An intricate web of public funding ties the industry ever closer to government, meaning it also relies on government to sustain the system and profits for companies, making that engagement all the more important to maintain.

America's industrial agriculture complex is raising more animals on factory farms than ever

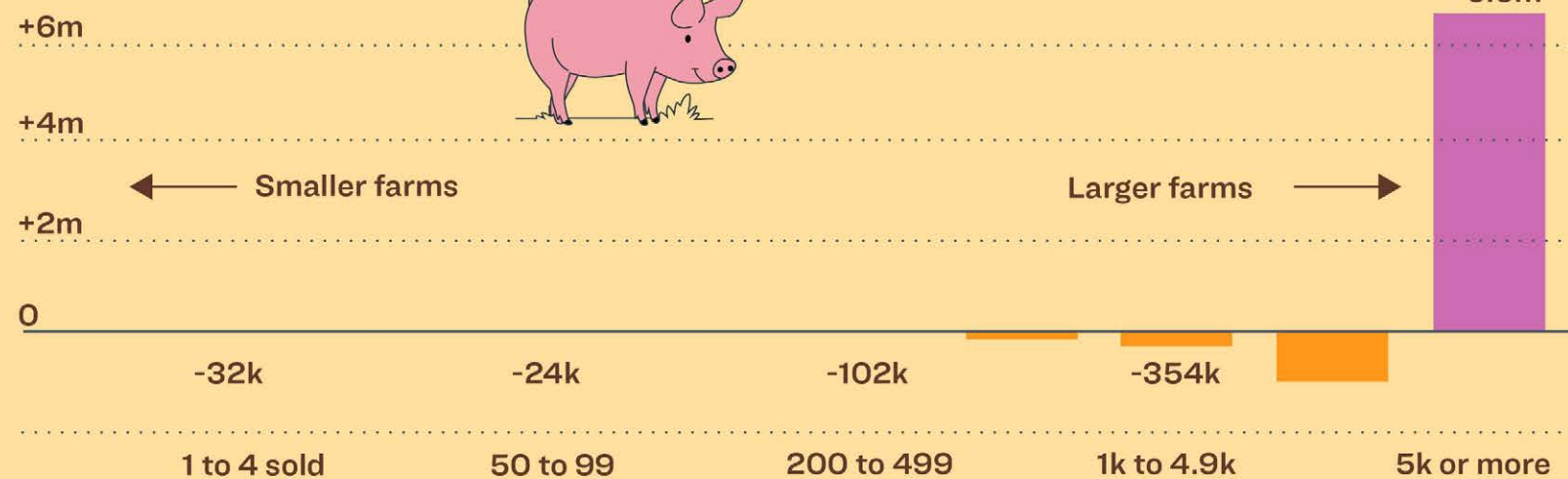


Change in the number of animals sold from 2017 to 2022 by farm size

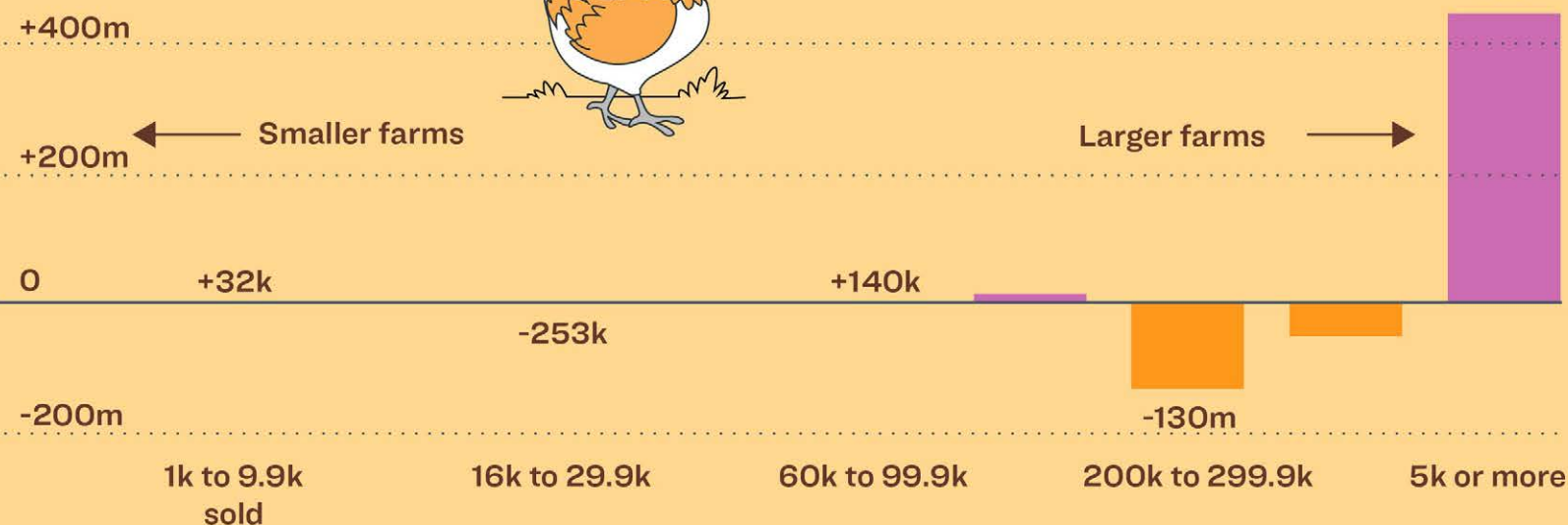
CATTLE AND CALVES



HOGS AND PIGS



BROILER CHICKENS



Myth bust: Meat and dairy come from small scale, family farms

Contrary to the idyllic portrayal often promoted by big agriculture, the majority of meat consumed globally is sourced from large-scale industrial or factory farms. While there is no definition of factory farms and there is a significant uncertainty around these numbers, The Sentience Institute estimated that globally nearly three-quarters, 74%, of land livestock (or 23 billion animals) are factory-farmed. Combine land animals and fish, and the final estimate comes to 94% of livestock living on or in factory farms.⁶¹⁵ In the US the estimates are even higher with 99% of livestock factory farmed, which is lowest for cows (70%).⁶¹⁶ These factory farms prioritise cost efficiency and high-volume output, often at the expense of animal welfare and environmental sustainability. While small-scale, free-range farms exist, they contribute a comparatively small proportion to the overall meat and dairy supply and many of them have fallen victim to the large scale consolidation and concentration of the industry.

3.1.2. Derailing policy in the EU and USA

This chapter outlines how the maintenance of the status quo and derailing of efforts of reform in the face of the climate and pollution emergency play out in the US and the EU. We examined the 22 companies covered in this report and the industry and farmers' associations that they are members of, to explore the lobbying efforts and tactics they use. The analysis focused on the EU and the US as these are the two instigators of the Global Methane Pledge,

Figure 10: The Rise of Factory Farming

as well as regions with some of the highest levels of meat and dairy consumption per capita, high production levels and high agricultural subsidies to support these industries.

We found that many of these companies are engaged in direct lobbying, employing various tactics and narratives to convince legislators to water down or abandon policies. Many are also engaged via indirect lobbying through industry bodies.

The research also found that these big meat and dairy companies and their partners, perhaps to a greater level than most other polluting industries, enjoy privileged access to, and key positions in, decision-making bodies, which often curtails what is deemed possible in terms of regulation. Our investigation revealed several high-profile cases of ‘revolving doors’, where representatives of the meat and dairy industry take critical political or policy positions in bodies that are supposed to be responsible for regulating the industry. As with other industry groups, conflicts of interest also arise in the form of political donations, particularly in the US, where politicians’ re-election often depends on fundraising - including from polluting industries.

The details of lobbying spend and political donations are outlined further below but to put the scale in perspective it is interesting to compare the amount of lobbying and research funding of alternative proteins against the incumbent meat and dairy companies. In the US, about 800 times more public funding and 190 times more lobbying money goes to animal-source food products than alternatives.⁶¹⁷ In the EU, about 1,200 times more public funding and 3 times more lobbying money goes to animal-source food products.⁶¹⁸

This chapter will first look at lobbying in the EU, setting the scene with the sheer number of ‘Green Deal’ policies that Big Ag has managed to derail. This section will

examine the main 22 companies, their lobbying activities and that of the groups they’re members of, followed by an overview of the main tactics deployed to derail so many critical pieces of EU legislation. This will be followed by an examination of the US context, the lobbying activities of the companies there and how this has influenced the policy landscape around methane and climate regulation of the livestock sector.

What emerges, is a clear picture of the outsized influence the meat and dairy industry have in these jurisdictions and how they time and again avoid controls over or even monitoring of their pollution and dodging the polluter pays principle that is increasingly applied to major industries in the face of the climate emergency.



| Source: Farmer protest, Shutterstock

Box 3.1: **How Agricultural Subsidies skew the playing-field: 'Give us your money, with no strings attached'**

A 2021 UN report showed that almost 90% of agricultural subsidies globally harmed people's health and the climate and drove inequality.⁶¹⁹

In the US, most farm subsidies go to the largest and wealthiest farms.⁶²⁰ Historically, subsidies have been concentrated geographically, on relatively few crops, and on relatively few producers.⁶²¹ Only around 30% of US farms receive farm subsidies – many farms are too small, do not grow the right crops to collect subsidy payments or have a mix of crops and livestock.⁶²² Paid out based on acreage or production levels, just 10% of farms received 79% of commodity subsidies between 1995 and 2021. Estimates suggest that black farmers in America own less than 1% of farmland, and USDA's historical discrimination against rural communities of colour has benefited those with privilege.^{623, 624} Not only do most subsidies go to the biggest and richest (and predominantly white) farmers, but they also mostly go to farms growing just four major commodity crops: corn, soybeans, wheat and cotton, with very little going to farmers growing fruits, vegetables or nuts. Some estimates even suggest that the majority of farm subsidies go toward producing feed for animal agriculture, such as corn and soybeans, with animal agriculture receiving twice what plants for human consumption receive in subsidies.⁶²⁵

As Friends of the Earth have summarised, US federal agricultural policy directs '*significant tax-payer subsidies towards large, pesticide-intensive industrial farms at the expense of family farmers, rural communities, public health, animal welfare, and the environment*'.⁶²⁶ What's more, these skewed subsidies are only increasing: total farm subsidies a decade ago were around \$10 billion a year, but they've since skyrocketed (including from the Trump-era Market Facilitation Program). US taxpayers sent almost \$123.2 billion to farmers between 2018 and 2022, with another \$39.2 billion in crop insurance premium subsidies bringing the total to \$162.4 billion, or more than \$30 billion a year.⁶²⁷ Moreover, the commodity crop prices for US crops are often below the cost of production, something significantly impacted by the 1996 Farm Bill, which removed commodity floors, enabled commodity traders to pay less (as they no longer had to meet the floor set by the government) and led to direct farm payments from the government to make up the loss.⁶²⁸

The EU, however, spends three times more than the US on farming subsidies,⁶²⁹ in the form of the Common Agricultural Policy (CAP). The CAP represents around a third of the EU's total annual budget – between 2021 and 2027, that means €386.7 billion of EU taxpayer money is going to farmers.⁶³⁰ And even though smaller farms tend to do better on biodiversity and environment, the CAP disproportionately benefits larger farms, with just 20% of farms taking 80% of the CAP budget.⁶³¹ A third of CAP funds go to the top 1.5% of farms⁶³² – the biggest, richest and most environmentally destructive. By disproportionately rewarding larger farms, the CAP has not served small and micro farms well over the years, with a quarter of those disappearing between 2005 and 2013, and the remaining continuing to increase in size.⁶³³ If we look at a longer timescale, the picture gets even worse: between 2005 and 2020, the number of farms in the EU decreased by almost 40%, forcing around 5.3 million farmers out of business, the vast majority of which were small farms that covered less than five hectares of land.⁶³⁴ A 2024 study from Kortleve et al. published in Nature Food found that in the EU, 80% of the subsidies given under the bloc's Common Agricultural Policy (CAP) went to animal agriculture.⁶³⁵ This makes up a significant amount of EU spending in total, as the CAP makes up 31% of the EU's spending overall.⁶³⁶

Efforts to reform the CAP, which have become more and more timid, so that it incentivises more environmentally friendly farming practices and stops supporting concentration in the sector, have repeatedly fallen at the hurdle of incumbent interests. From powerful pro-industrial farming lobby groups like Copa-Cogeca (see Box 3.2) to the fact that many of the biggest farmers, landowners and agribusinesses have a foot in the door of European politics to ensure the CAP stays the way it is. During negotiations on the CAP in 2018, Greenpeace found that 25 of 46 members of the European Parliament's Agriculture committee (see 3.2.2), responsible for negotiating this, had strong links to the agriculture industry, with some being farmers themselves and even receiving income from the CAP.⁶³⁷ No industry should be allowed to regulate itself, yet in agriculture, such conflicts of interest seem to be normalised at the highest levels: take then-Czech prime minister Andrej Babis, who the New York Times reported received \$42 million in CAP subsidies to his companies in the Czech Republic in 2018.⁶³⁸ An amendment designed to

prohibit politicians who hand out EU farm subsidies from receiving the funds themselves – inspired by Babis – was, unsurprisingly, rejected without debate by the European Parliament’s Agriculture Committee.⁶³⁹ Meanwhile, Prime Minister of Hungary, EU-sceptic Viktor Orban, sold thousands of acres of land to his friends and family, who in turn, benefit from significant EU agricultural subsidies.⁶⁴⁰ What’s more, a 2021 investigation into the distribution of CAP funds in central and eastern Europe found that where big agricultural businesses have close connections with political elites, this can further advantage them within the CAP system.⁶⁴¹

In both the US and the EU, subsidies for meat and dairy dwarf spending on plant-based alternatives: a Stanford University-authored study found that between 2014-2020 the US and EU provided a combined \$44.3 billion (around €40.7billion) in subsidies to meat and dairy farmers, versus only \$42 million (around €38.6million) going towards plant-based alternatives.⁶⁴² In other words, subsidies were 1,200 times higher for meat and dairy in the EU and 800 times higher in the US.⁶⁴³ Funding was also far higher in both markets for R&D relating to animal proteins than to new technologies in alternative proteins: 97% went to animal farming and the majority went towards projects seeking to expand production and/or make production more efficient.⁶⁴⁴

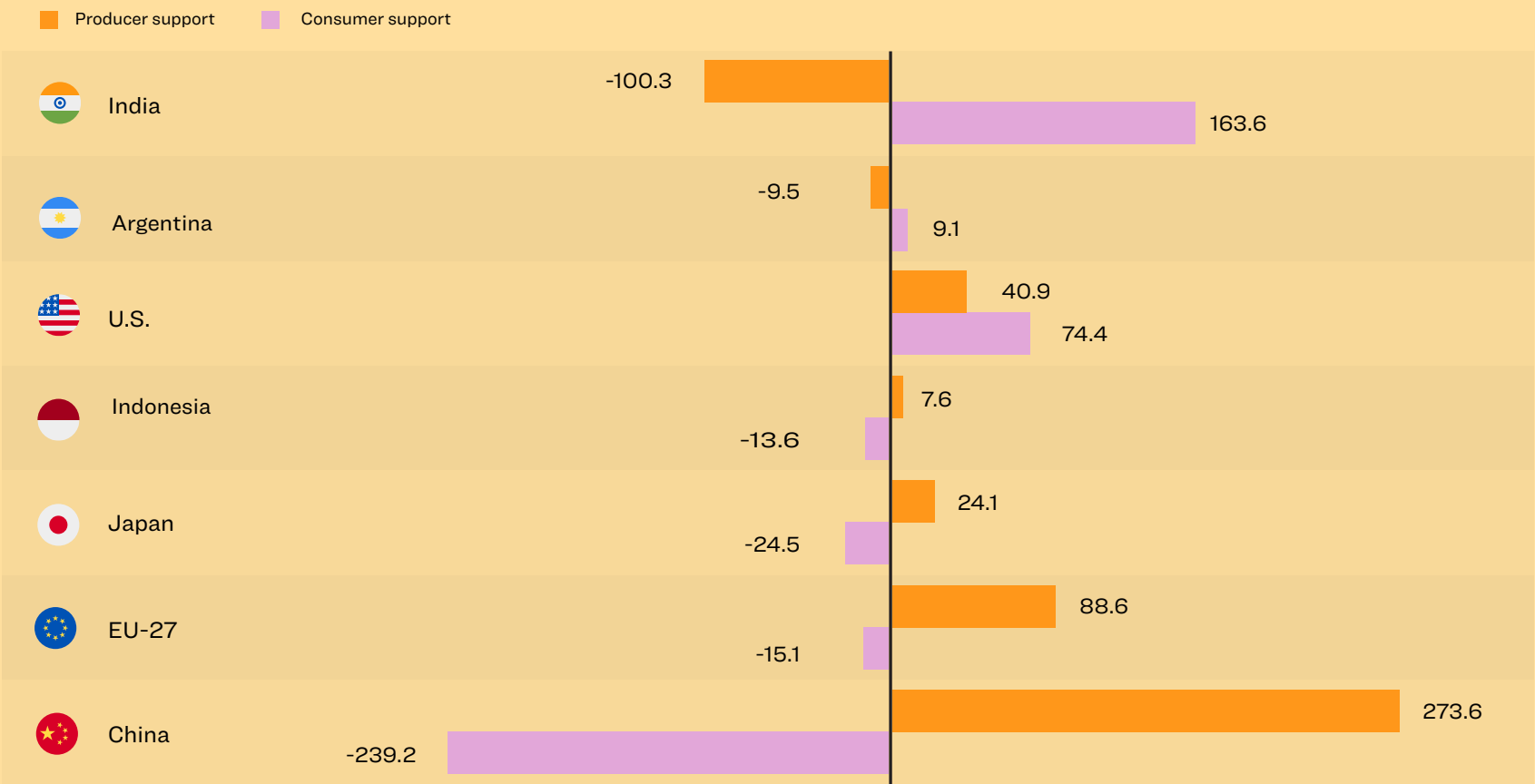
Myth bust: Farmer subsidies support consumers

Despite farm subsidies coming from all taxpayers, these subsidies do not support the consumers. Instead, farm subsidies typically support agricultural producers by providing financial assistance, stabilising farm incomes and promoting certain farming practices. Essentially, all US taxpayers indirectly support animal agriculture. In 2019, the federal government allocated approximately \$17 billion out of \$3.46 trillion collected to commodity purchases (0.49% of every tax payers \$1).^{645, 646} A recent survey revealed that 78% of Americans want federal farm funding to prioritise food for people over feed for livestock, but currently most farm subsidies go into animal feed production.^{647, 648}

Figure 11 : Producer vs Consumer: who do agriculture subsidies support?

Producers vs. Consumers : Who Do Ag Subsidies Support?

Support of agricultural producers and consumers of agriculture products in selected countries (in billion U.S. dollars)*



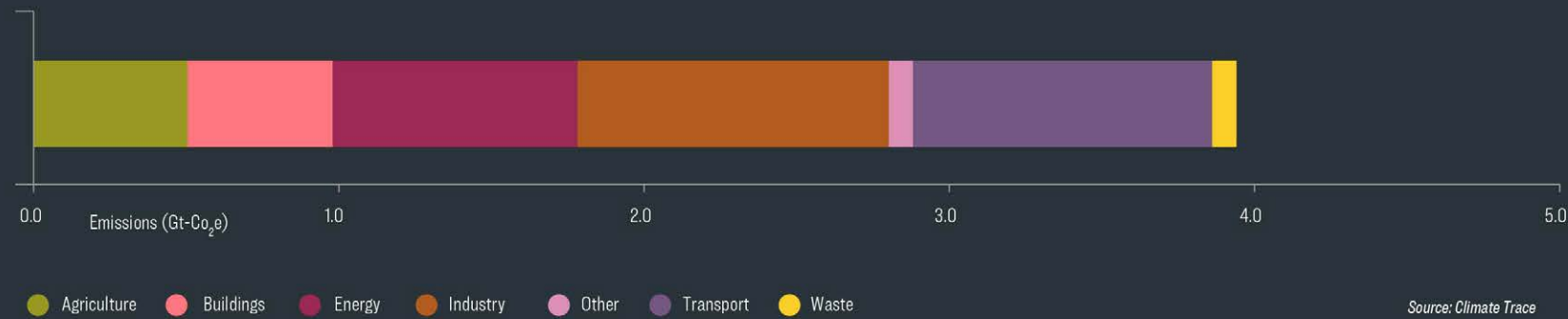
* 2022 figures. Transfers and price moderation
Source: OECD



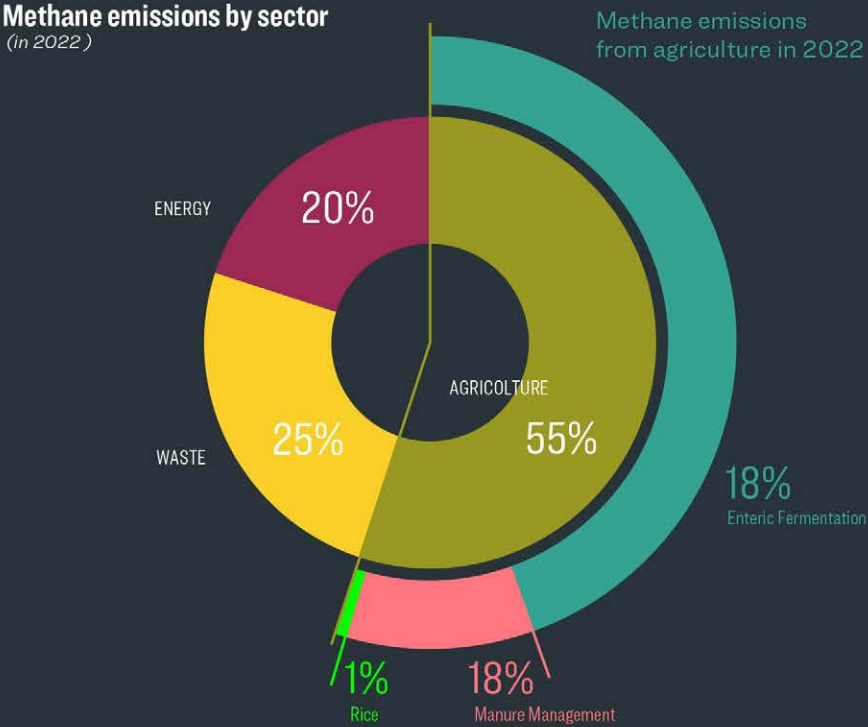
EU 27



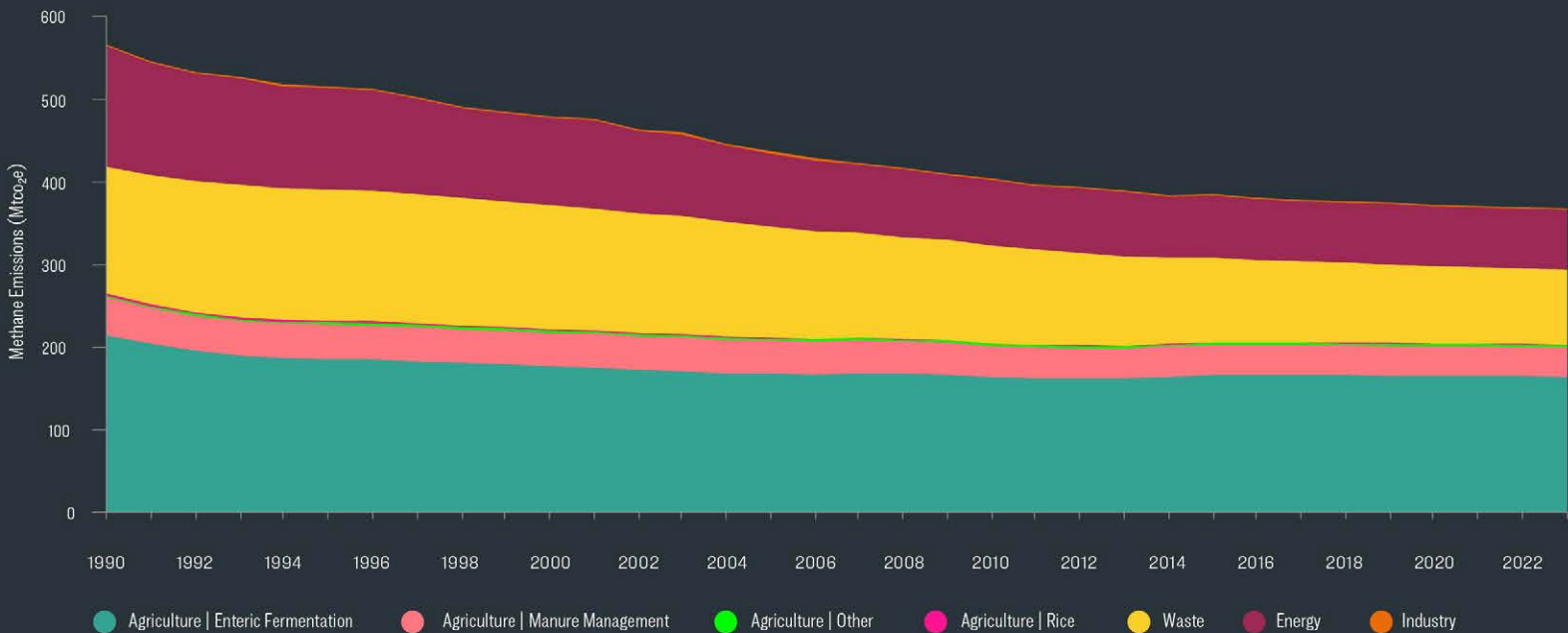
Emissions by sector



Methane emissions by sector (in 2022)



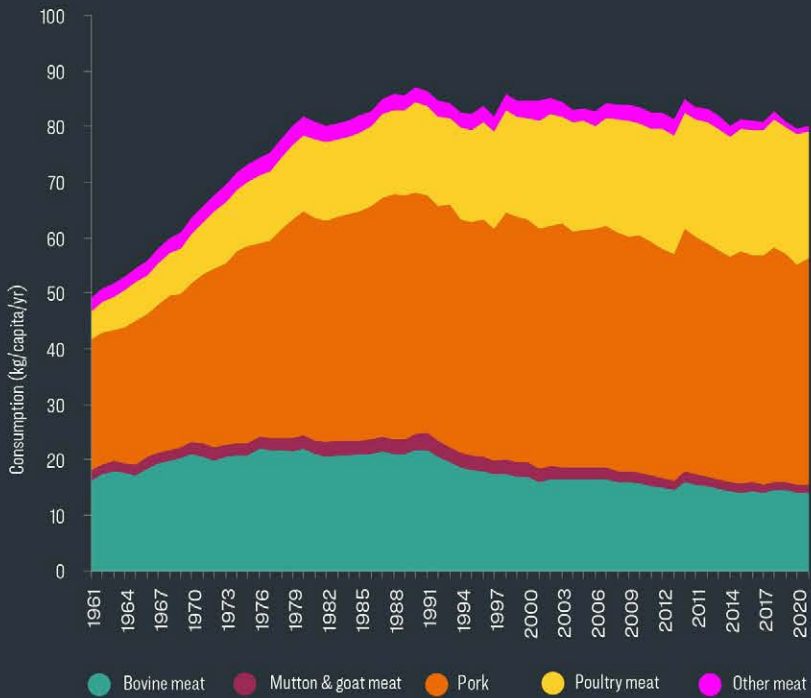
Methane emission by sector (from 1990 to 2022)



If the EU was a country it would be the...



Meat consumption per capita (since 1961)



In 2020 the average European citizen consumed:



82

Steaks a year (170g steak)



14

Lamb chops a year (70g lamb chop)



833

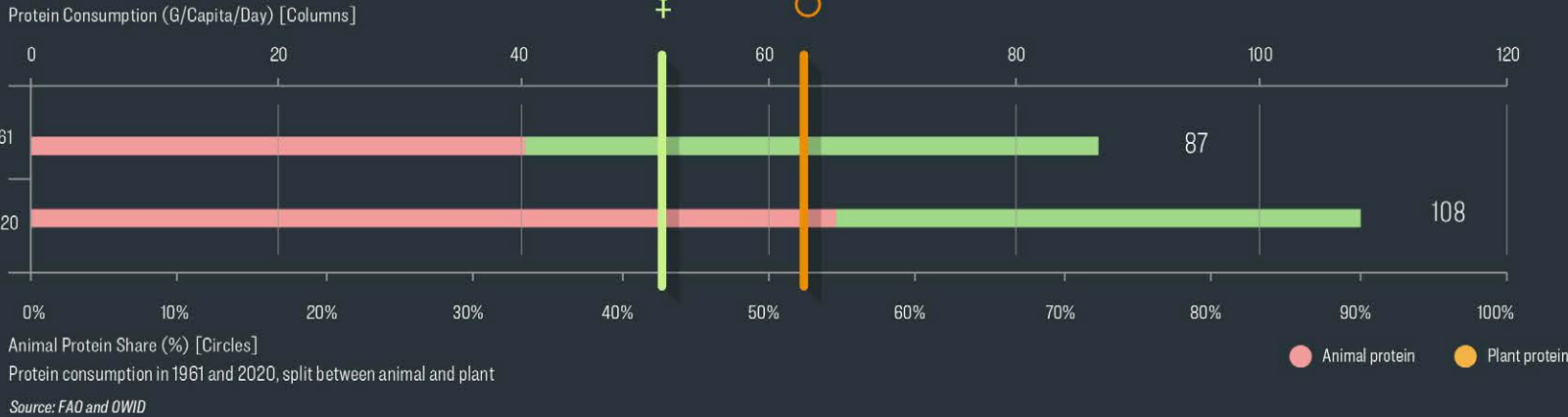
Bacon rashers (30g a rasher)



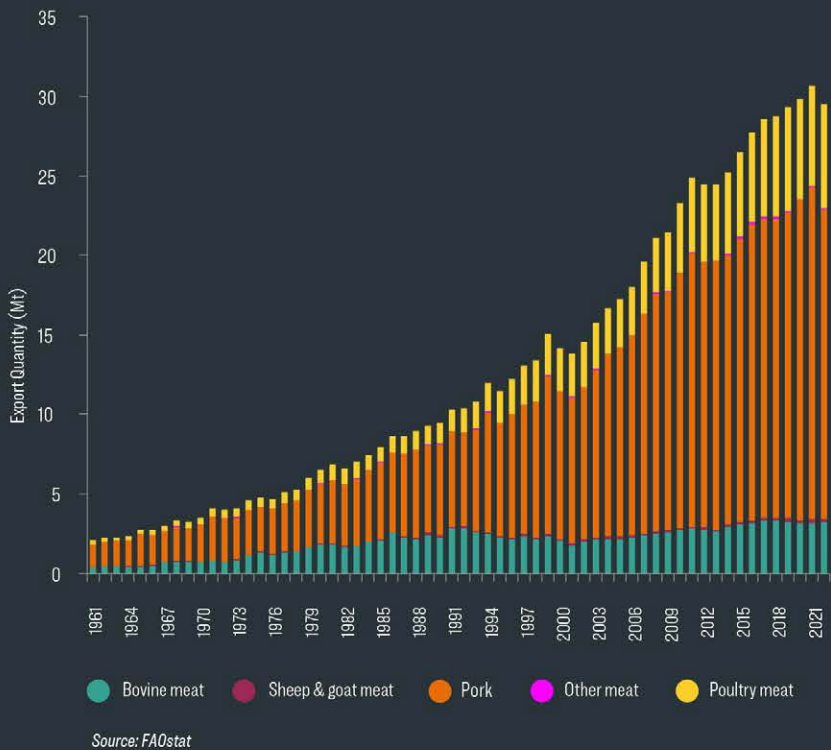
241

Chicken breast a year (170g chicken breast)

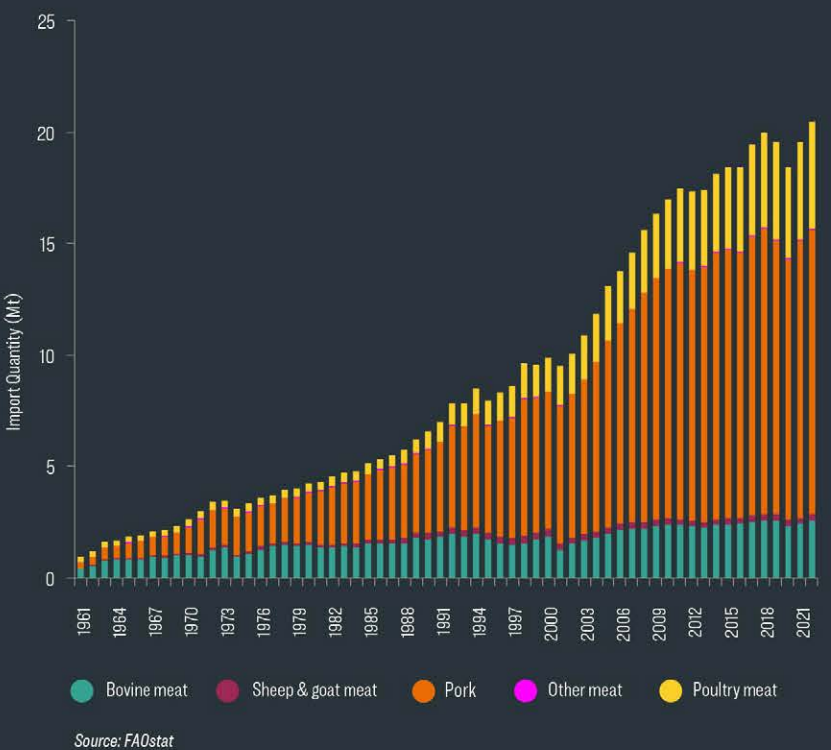
Historical consumption of protein (Grams per day)



Meat exports



Meat imports



3.2 The EU, where Big Ag decimated the Green Deal

When Ursula von der Leyen's European Commission took office at the end of 2019, the ambitious European Green Deal was announced and heralded by Commission President von der Leyen as '*Europe's man on the moon moment*'.⁶⁴⁹ The Green Deal set out to transform Europe's economy to produce net-zero emissions and pollution-free by 2050. A major part of the Green Deal was the Farm to Fork strategy, which promised to create a *green and healthier agriculture* system, including a significant reduction of chemical pesticides and fertilisers.⁶⁵⁰ It recognised that moving to a '*more plant-based diet with less red and processed meat*' would reduce the environmental impact of the food system.⁶⁵¹ Numerous policies - both new laws and revisions of existing ones - designed to achieve the Farm to Fork (and other Green Deal) goals were promised. Yet, as we come to the end of the von der Leyen Commission's term, it is clear from our lobbying analysis that the Big Ag lobby has attacked, weakened and, ultimately, derailed a staggering - and environmentally devastating - number of these planned initiatives. Table 3.1 sets some of these out and the following sections look at the players involved and the tactics that were used to derail so many of them.

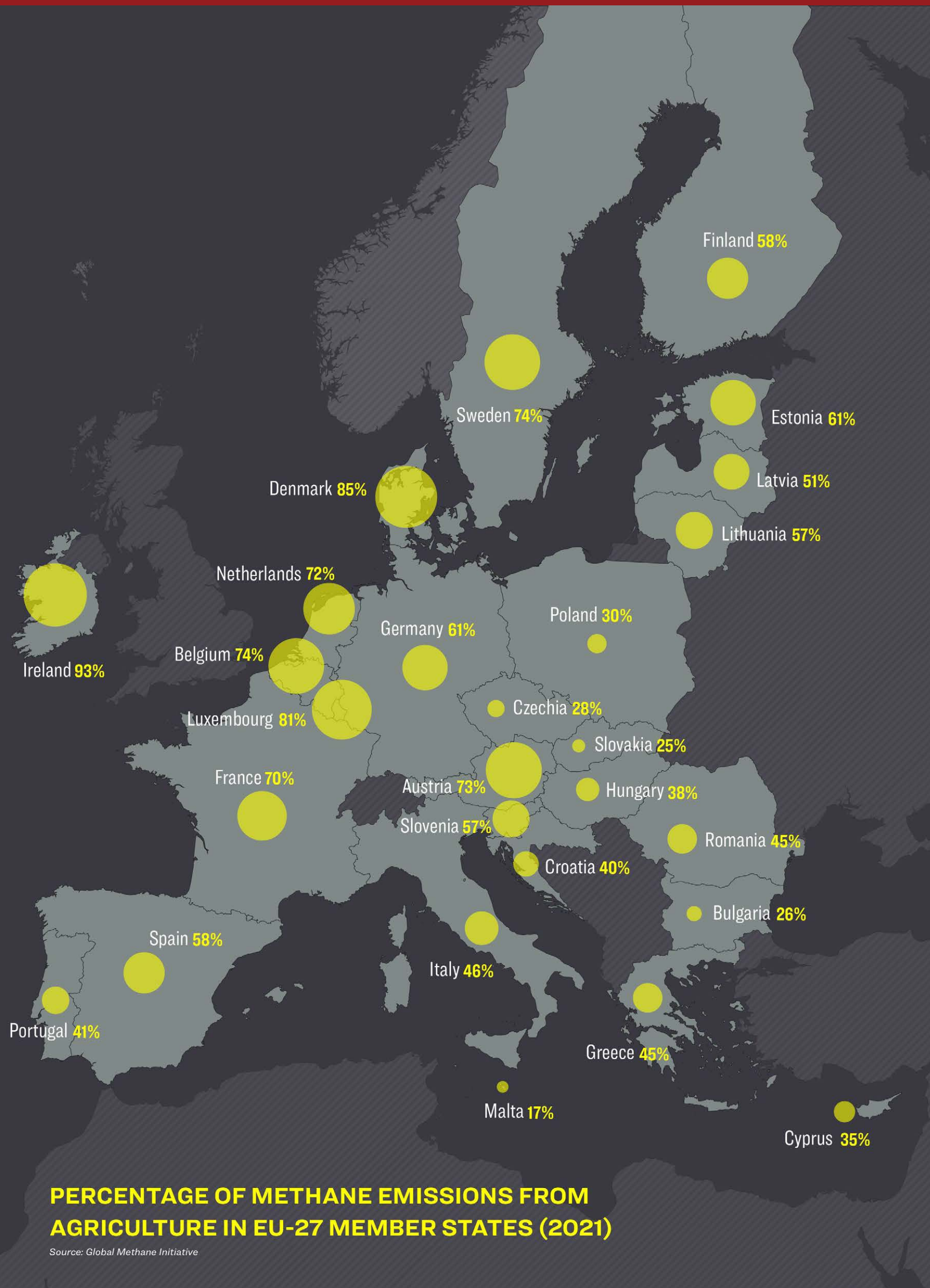


Figure 13 : Percentage of methane emissions from agriculture in EU-27

Table 3.1: Green Deal policies derailed by Big Meat and Dairy and agri-industry lobbying.

Policy	Original goal	Disappointing outcome	How was it derailed?
Farm to Fork Strategy	At the centre of the European Green Deal, ⁶⁵² the Farm to Fork Strategy (F2F) aimed to ensure a ‘ <i>sustainable food system</i> ’ in Europe, including policy on biodiversity, soil health, public health, and climate and environmental impact.	Although the F2F strategy was a landmark step toward more sustainable farming in Europe, the strategy had some key elements revised before publication, including removing reference to reducing meat consumption, to focus on red and processed meat only. ⁶⁵³	Significant lobbying toward Frans Timmermans, previous Executive Vice President of the European Commission for the European Green Deal and Commissioner for Climate Action (2019-2023). Groups like Copa-Cogeca launched a ‘ <i>coordinated communications campaign</i> ’ toward MEPs to try and weaken the language in the plan. ⁶⁵⁴
Industrial Emissions Directive (IED)	Revision of the IED to be consistent with climate, energy, and circular economy policies, including by covering a wider category intensive animal farming, including of cattle (as part of the Green Deal’s Zero Pollution Action Plan).	Weakened repeatedly throughout EU institutional negotiations, until the IED would only apply to very large industrial farms – i.e. the number of Livestock Units (LSU) that the IED would apply to was repeatedly raised from the Commission’s original draft of 100 LSU (before an official proposal of 150 LSUs) to the final 350 for pigs, 300 for (adult) poultry (i.e. egg-laying hens), and 280 for broilers (i.e. chickens for meat). Cattle was ultimately excluded from the scope of the IED, in November 2023. ⁶⁵⁵	Co-ordinated and unrelenting lobbying by agri and meat groups, towards the Commission, Parliament, and Council (i.e. Member States), using misleading rhetoric about ‘ <i>small family farms</i> ’ (of a size that were never covered by the IED), scaremongering, misrepresentation of numbers, and insisting that farms shouldn’t be regulated under ‘ <i>industrial</i> ’ regulation (see 3.1.4 C). Big allies (often with conflicts of interest) in the Parliament’s Agri committee (see 3.1.3), and the industry-friendly Agriculture Commissioner (who admitted that he ‘ <i>successfully lobbied to increase the LSU</i> ’ proposed by the Commission’s directorate responsible for the IED, DG Environment ⁶⁵⁶) also aided the derailment.
EU Methane Strategy	A Methane Strategy covering energy, waste, and agriculture (to meet Green Deal goals).	The Commission’s October 2020 Strategy failed to include any mandatory actions for the agriculture sector. Only the energy sector was marked for further legislation on methane. For agriculture, measures were focused on the need to keep counting emissions so as to postpone action, pushing feeding strategies, mainly based on additives, and biogas plants, which risk incentivising more intensive livestock farming. ⁶⁵⁷	The meat and dairy industry sent a barrage of input to the Commission’s July to August 2020 public consultation, arguing that the Methane Strategy should focus on incentives (including for biogas) and recognise how good the EU livestock sector was already, as well as questioning the science behind livestock methane being bad for the climate. These demands were largely taken on board in the Commission’s subsequent text. Meanwhile, in the European Parliament, the Agri Committee rapporteur for the Methane Strategy was a dairy farmer on Arla Foods board, whose opinion mimicked industry’s wish list – and much of which made it into the Parliament’s final resolution (see 3.2.2 – Conflicts of Interest).
Agri-food Promotion Policy	Review of the CAP promotion programme for agricultural products, to enhance its contribution to sustainable production and consumption, in line with evolving diets, and to support the most sustainable methods of livestock production (as set out in the Green Deal’s Farm to Fork strategy, and Europe’s Beating Cancer Plan).	The proposal promised for 2022 to enhance the role of the Promotion Policy in sustainable production and consumption has yet to be published. ⁶⁵⁸ Year-on-year Promotion Policy work plans have continued, and a sub-criterion in the 2022 Promotion Policy annual work plan referred to ‘ <i>alignment with the objectives of Europe’s Beating Cancer Plan, in particular, encouraging the shift to a more plant-based diet, with less red and processed meat</i> ’. ⁶⁵⁹ Despite the Commission’s assurance that this sub-criterion was one of five, and that ‘ <i>failing to address one would not lead to the exclusion of a project</i> ’, ⁶⁶⁰ its reintroduction in the 2023 plan was contested and removed, and the sub-criterion was not included at all in the 2024 work plan (see 3.2.3.4 – Exploiting Crises).	A barrage of Big Ag, meat and dairy industry lobbying against any criteria that ‘ <i>stigmatises</i> ’ or ‘ <i>discriminates</i> ’ against red/processed meat – including invoking the Ukraine and Covid-19 crises (see 3.2.3.4 – Exploiting Crises) – as well as disrupting the scientific link between cancer and red and processed meat ^y – successfully led the Commission to backtrack on the inclusion of the new sub-criteria in annual work plans.

Y See e.g. doc 4.3, 5, 15.1, [ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2

Policy	Original goal	Disappointing outcome	How was it derailed?
EU School fruit, vegetables, and milk Scheme	Review of the EU School Scheme legislation to refocus the scheme on healthy and sustainable food (as set out in the Green Deal's Farm to Fork strategy).	An own-initiative report by the European Parliament's AGRI Committee was adopted by MEPs in May 2023, ⁶⁶¹ but all amendments calling for plant-based milk alternatives to be included in the scope were rejected, ⁶⁶² and the report instead calls for the Commission to include only ‘ <i>unprocessed</i> ’ products in the scheme’s revision, thereby ruling out the inclusion of fortified plant-based drinks. ⁶⁶³	Agri lobbies including Copa-Cogeca and the EDA warned MEPs against including plant-based milks, using fearmongering and accusations of ideology, and even threatening the rapporteur with ‘ <i>unpleasantness</i> ’ (see 3.2.3.3 – Fearmongering and Initimidation). Commission adoption of the scheme was planned for Q1 of 2024 but has yet to be announced after significant delays. The review began in 2021. ⁶⁶⁴
Sustainable Use of pesticides Regulation (SUR)	50% reduction in use and risk of pesticides by 2030 (implementing the target set in the Green Deal's Farm to Fork strategy).	After being repeatedly weakened in the EU inter-institutional negotiating process, the SUR was rejected by MEPs in November 2023, and finally withdrawn by Commission President von der Leyen in February 2023. ⁶⁶⁵	Co-ordinated and relentless lobby attack from the pesticides industry, agri-lobby Copa-Cogeca, et al, including numerous industry-sponsored studies warning of dire impacts, calls for the Commission to do a ‘ <i>cumulative</i> ’ impact assessment of Farm to Fork targets, pushing industry techno-fixes instead, and targeting EU Member States and MEPs with extensive lobbying. ⁶⁶⁶ Farmer protests around Europe in early 2024 finally led von der Leyen to capitulate and withdraw the SUR proposal in its entirety. ⁶⁶⁷
Framework on Sustainable Food Systems (FSFS)	To accelerate and make the transition to sustainable food systems easier, by promoting policy coherence at EU and national level, mainstreaming sustainability in all food-related policies, strengthening the resilience of food systems, and creating a sustainability labelling framework (as a flagship initiative of the Green Deal's Farm to Fork strategy).	Promised for the third quarter of 2023, the FSFS has not only not been tabled, but will not be presented in 2024. Instead, the Commission promised ‘ <i>a strategic dialogue on the future of agriculture in the EU</i> ’ to ‘ <i>engage with farmers, stakeholders in the food chain and citizens</i> ’. ⁶⁶⁸	The Commission has come under a barrage of ‘ <i>misguided and short-sighted calls for a regulatory pause in the Commission’s green agenda</i> ’, according to more than 160 civil society groups and academics . ⁶⁶⁹ The relentless pushback against sustainable food policies from lobbies with ‘a vested interest in maintaining the status quo’ has been most evident in ‘widespread scare-mongering campaigns leveraging unfounded claims that increasing sustainability standards will undermine Europe's food security’, as described by Slow Food. ⁶⁷⁰ Likewise, FoodWatch calls out the ‘deliberate attempt by major corporations in the food, chemical, and agriculture industries to prioritize their profits above all else’. ⁶⁷¹ (See 3.2.3.1 – The Pro Meat and Dairy Stance).
2040 Climate proposal	90% net GHG reductions by 2040. Sub-targets for different sectors, including 30% reduction of agricultural emission by 2040. (In pursuit of the Green Deal’s core goal of climate neutrality.)	The 30% agricultural emissions reduction target was removed from the 2040 target proposal, as was a recognition of the role dietary shift plays in reducing GHG emissions, such as eating less meat, in February 2024. ⁶⁷² Instead, the Commission proposal said it would look at ‘ <i>enabling policy conditions</i> ’ for GHG reductions in farming. ⁶⁷³	Weeks of farmer protests around Europe – and in the streets of Brussels – in early 2024, that cited discontent over the EU's green policies amongst other things, led the Commission to capitulate. The Commission also came under internal pressure from agri-industry ally Agriculture Commissioner Wojciechowski, who pushed for references to ‘ <i>diversified protein intake</i> ’ and plant-based meat alternatives to be removed; internal emails further show that Wojciechowski demanded that the agriculture sector be entirely exempted from the climate plan. ⁶⁷⁴ Copa-Cogeca celebrated the Commission’s ‘ <i>pragmatic approach</i> ’ of ‘ <i>enabling policy conditions</i> ’. ⁶⁷⁵

Policy	Original goal	Disappointing outcome	How was it derailed?
Legislative package on animal welfare	Revision of animal welfare legislation, including at farm level, during transport and slaughter, plus establishing a European label for animal welfare (as set out in the Green Deal’s Farm to Fork strategy). This included the Commission’s promise to propose regulation to ban animals in cages, following European Citizens’ Initiative that received just under 1.4 million validated signatures. ^{676, 677}	In December 2023, the Commission tabled a proposal for revised rules on transport of live animals (which were criticised as being full of loopholes such as the lack of inclusion of live animal exports from outside of the EU), ⁶⁷⁸ but dropped plans to present any proposals on animal welfare at farm level or during slaughter – nor does the Commission have any plans to table these other aspects of the promised overhaul before the end of its term in 2024, according to its work plan. ⁶⁷⁹	An investigation by Lighthouse Reports based on FoI releases showed how despite the 2020 European Citizens Initiative to ban the use of cages in animal farming and the Commission’s commitment in 2021 to present a proposal to do so, intense pressure from European Livestock Voice (EVL) and its partner associations, including Copa-Cogeca, derailed it, by urging EU officials to ‘ <i>resist the pressure from NGOs’ which ‘do not reflect the views of the broad public’</i> (even though the latest Eurobarometer shows that 84% of Europeans want the welfare of farm animals to be better protected), ⁶⁸⁰ attacking scientific opinions that didn’t align with their goals, and utilising an environmental journalist in the pay of the meat industry to deploy US-style campaigning tactics. ^{681, 682}
Nature Restoration Law	To bring healthy ecosystems back to Europe (proposed as part of the Green Deal’s Biodiversity strategy) and to comply with the EU’s international biodiversity and climate commitments.	Very narrowly passed in European Parliament in July 2023, but was seriously weakened, including scrapping the proposed article on the restoration of agricultural lands, adopting an amendment to delay implementation of the law until an assessment of the law on Europe’s food security has been conducted, and removing the article guaranteeing access to justice. ⁶⁸³ Additionally, amendments to increase targets to restore at least 30% of degraded ecosystems by the end of the decade, instead of 20%, failed to pass. ⁶⁸⁴	A major disinformation campaign aiming to destroy the nature restoration regulation was ‘ <i>led by conservative and right-wing politicians and agriculture and fisheries lobbies</i> ’, including scare-mongering about food security. ⁶⁸⁵ Copa-Cogeca called on MEPs to reject the ‘ <i>unrealistic</i> ’ legislation that would endanger farmers livelihoods and food production. ⁶⁸⁶ It was only thanks to huge public mobilisation in support of the law – including over a million citizens, 6,000 scientists, 100+ businesses, and civil society – that the bill avoided being axed completely, albeit in a weakened form. The law was eventually adopted by the EU Environmental Council in June 2024 after Austria’s Environment Minister shifted position in support of the law. ⁶⁸⁷
Directive on Soil Monitoring and Resilience	The protection, restoration, and sustainable use of soil, by giving soil a protected status similar to that of air or water and making all EU soils healthy by 2050 (as per the Green Deal’s Biodiversity strategy, and subsequent Soil Strategy). ⁶⁸⁸	The Commission’s July 2023 proposal – which came after significant delays ⁶⁸⁹ – fell far behind the original ambition of a Soil Health Law to a Soil Monitoring Law and contains no obligations for farmers or member states to take action beyond monitoring. ⁶⁹⁰ Healthy soils in Europe by 2050 is presented only as a possibility, not a binding goal.	Intense lobbying against environmental measures in agriculture by the right-wing European People’s Party (EPP) – established ally of the Big Ag lobby – is suspected to have led to the ‘ <i>toothless</i> ’ Soil Monitoring Directive. ⁶⁹¹ Copa-Cogeca, in turn, had demanded that ‘ <i>soil management principles proposed do not restrict and ban certain practices, and do not remove land from production</i> ’ and argued for a ‘ <i>much longer deadline (at least 15 years) for the revision of the directive</i> ’. ⁶⁹²

And it’s not just since the Green Deal was announced that Big Ag has been derailing environmental policies, as the failure to include National Emissions Ceilings Directive shows (see 3.2.2.1), alongside successive failures to effectively ‘green’ the EU’s Common Agriculture Policy (CAP) – see Box 3.1.^Z The EU’s 2022 Methane Action Plan highlighted the importance of reducing methane in the agriculture sector, referencing many policies that will be needed for this which have now been delayed or derailed.⁶⁹⁸ Although the plan notes that methane emissions from agriculture have reduced by 21% since 1990, this has stagnated, with the Effort Sharing Regulation showing only a 1% reduction in emissions under the regulation between 2005 and 2018.⁶⁹⁹

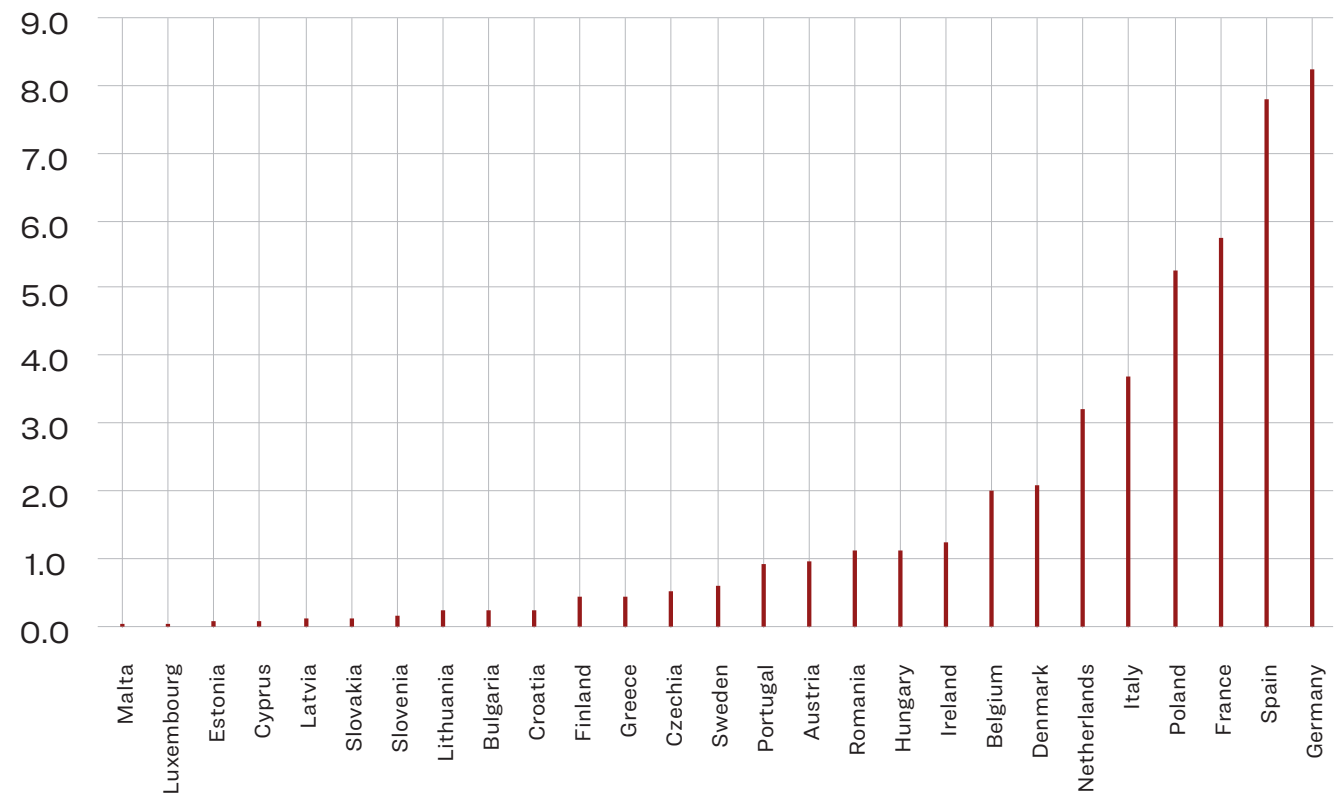
3.2.1. Main players: the Meat & Dairy lobby in Europe

Of the 22 companies covered in this report, seven are currently in the European Union’s Transparency Register,^{AA} a database that lists organisations that try to influence the law-making and policy implementation process of the EU institutions (though signing up to the ‘lobby register’, as it is often called, remains voluntary).⁷⁰⁰ These are Nestlé, Danone, Arla Foods, Lactalis, Cargill, Fonterra and FrieslandCampina. Together, they are spending €1.8-€2.4 million a year lobbying the EU. They have a total of 16 lobbyists with access passes to the European Parliament and have had more than 100 meetings with the very highest level of the European Commission – namely, commissioners and their cabinets, and commission director-generals –

Z See, for example, Corporate Europe Observatory, CAP vs Farm to Fork: Will we pay billions to destroy, or to support biodiversity, climate, and farmers? [ONLINE] Available at: <https://corporateeurope.org/en/2020/10/cap-vs-farm-fork>

AA As of 15 February 2024. NB. The initial mapping of which companies and lobby groups are in the EU Transparency Register was conducted in April 2023, which identified only these seven companies as being currently or previously in the Transparency Register (as shown by the historical database of Transparency Register data, on lobbyfacts.eu). For these seven companies, an update was done on 15 February 2024 for key figures such as total number of top-level Commission meetings, accredited lobbyists to the European Parliament, lobby expenditure etc.

Meat production in EU-27 Member States in 2021 (units of Mt) Source: FAOStat



Milk production in EU-27 Member States in 2021 (units of Mt) Source: FAOStat

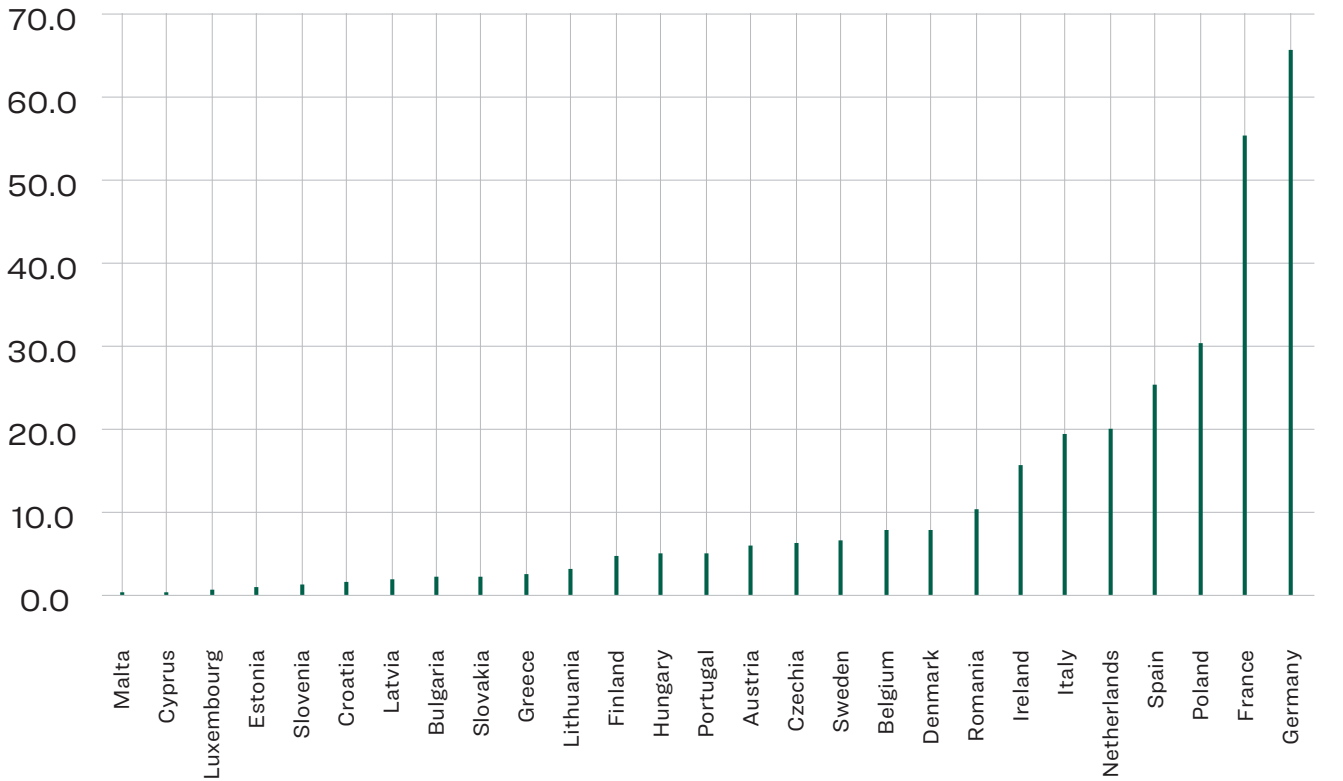


Figure 14: Meat and milk production in EU-27 Member States

since November 2014.^{AB} This is likely just the tip of the iceberg, as companies have been known to downplay their lobbying resources in such transparency registers.

The remaining 15 have never been signed up to the register,^{AC} but several of them are represented through other organisations in what is deemed ‘indirect lobbying’. For example, Dairy Farmers of America is a member of the US Dairy Export Council (USDEC). Tyson is a member of AmCham EU, a group operating in the EU on behalf of American businesses, and of the International Meat Trade Association, as is JBS, which is in turn a member of the European Livestock and Meat Trades Union (UECBV). Danish Crown is a member of the European Meat Network, the Confederation of Danish Industry, Lantbrukarnas Riksförbund (LRF - Federation of Swedish Farmers) and a board member of Landbrug & Fødevarer (Danish Agriculture and Food Council) - with the latter two organisations being members of both Copa and Cogeca, the two big agricultural umbrella organisations which together form Copa-Cogeca.

Only NH foods (Nippon Ham), Marfrig, OSI group, Yili, Itoham and WH Group have no obvious links to EU lobbying. This does not mean to say they aren’t engaged in influencing the European market through other means, for example through their national delegations.

The 22 companies covered in this report are members of a huge number of trade groups and other types of industry representation groups. Their trade groups range from EU and national sector-specific groups such as the European Dairy Association and French meat association Culture Viande, to US-based and international sector-specific groups such as the US Dairy Export Council and International Meat

Trade Association, to broader, cross-sectoral business lobby groups such as the Confederation of Danish Industry and AmCham EU. Other types of industry representation groups - such as those that present themselves as NGOs or foundations - include the likes of Stichting Imagine Foundation’s Food Collective (see Box 3.3) and European Livestock Voice. All these groups provide a huge amount of access and influence.

Twenty-five of the most notable trade groups, whose members directly or indirectly (e.g. via national association members) include Big Meat and Dairy companies, together spend €9.35- €11.54 million per year lobbying the EU, have 72 lobbyists with access passes to the European Parliament, and have had 447 top-level meetings with the European Commission since November 2014.^{AD} See Table 3.2 for more details.

AB 105 meetings, as of 15 February 2024. This includes all top-level European Commission meetings listed for each entity in the Transparency Register - these meetings therefore go back to November 2014, when they started being recorded.

AC Based on the initial mapping of which companies and lobby groups were in the EU Transparency Register, conducted in April 2023.

AD For cross-sectoral business lobby groups this counts only meetings on agriculture, climate and sustainability related topics.

Table 3.2: 25 Key Trade Groups with Big Meat and Dairy Company Members

Trade Group	Acronym	No. of lobbyists accredited to European Parliament	EU lobby spending - MIN €	EU lobby s pending - MAX €	Year ^{AE}	No. of meetings with top Commission Officials? (as of 4 April 2023) ^{AF}	Which Big Meat and Dairy companies are members (directly and indirectly)? ^{AG}
American Chamber of Commerce to the European Union	AmCham EU	6	1,000,000	1,249,999	2022	21 ^{AH}	Tyson, Cargill ⁷⁰¹
Association de la Transformation Latiere (French Milk Processors Association)	ATLA	0	100,000	199,999	2022	0	Lactalis ^{AI, 702}
Association nationale interprofessionnelle du bétail et des viandes (National Interprofessional Livestock and Meat Association – France)	INTERBEV	0	200,000	299,999	2022	10	Groupe Bigard (via Culture Viande) ^{AJ, 703, 704}
Breiz Europe		0	No figure given ^{AK}	No figure given ^{AL}	10/2021 - 09/2022	1	Groupe Bigard ^{AM, 705}
Centre de liaison des industries transformatrices de viande de l’UE (EU Meat Processing Industries Liaison Centre)	CLITRAVI	1	400,000	499,999	2022	20	Groupe Bigard (via Culture Viande) ^{AN, 706, 707}

AE The most recent year for which EU lobby spending was declared, as of April 2023 when the Transparency Register entries were checked.

AF For cross-sectoral business lobby groups, only meetings on relevant topics (ie agriculture/climate/sustainability/consumer-labelling) are counted.

AG Mostly direct members/board members, but in some cases, where the trade group’s membership is comprised of national associations, the companies are members of the national associations. In the latter case, it is written as ‘Company (via National association)’ e.g. Groupe Bigard (via Culture Viande).

AH Cross-sectoral business lobby AmCham EU had a total of 161 meetings, but only the 21 meetings on agriculture/climate/sustainability/consumer-labelling related topics are included.

AI According to Lactalis’ Transparency Register entry, which says ‘The company is member of several associations, of which European Dairy Association-EDA is the most important (via membership to the French Dairy Association – ATLA)’

AJ Members include national associations, including Culture Viande (whose board members include Groupe Bigard)

AK It says ‘Does not represent commercial interest.’

AL It says ‘Does not represent commercial interests.’

AM As listed in Breiz Europe’s Transparency Register entry.

AN Members include national associations, including Culture Viande (whose board members include Groupe Bigard).

Trade Group	Acronym	No. of lobbyists accredited to European Parliament	EU lobby spending - MIN €	EU lobby s pending - MAX €	Year ^{AE}	No. of meetings with top Commission Officials? (as of 4 April 2023) ^{AF}	Which Big Meat and Dairy companies are members (directly and indirectly)? ^{AG}
Confederation of Danish Industry	DI	12	1,500,000	1,749,999	2022	3 ^{AO}	Arla Foods, Danish Crown ^{AP, 708, 709}
Culture Viande (Culture Meat – France)		0	10,000	24,999	2022	0	Groupe Bigard ^{AQ, 710, 711}
Dairy UK		0	0	10000	2021	7	Arla Foods, Saputo, Lactalis ^{AR, 712}
Danish Dairy Board Brussels	DDBB	4	400,000	499,999	2021	1	Arla Foods ^{713, 714}
European agri-cooperatives	COGECA	7	700,000	799,999	2021	151 (130 with COPA, 21 without)	Arla Foods and Danish Crown (both via DAFC and LRF), FrieslandCampina (via NCR), DMK (via DRV), Lactalis (via ATLA/ La Coopération Agricole) ^{AS, 715, 716, 717}
European Biogas Association	EBA	5	600,000	699,999	2021	18	Cargill ^{718, 719}

AO

Cross-sectoral business lobby DI had a total of 39 meetings, but only the 3 meetings on agriculture/climate/sustainability/consumer-labelling related topics are included.

AP

Members include Arla Foods amba and multiple Danish Crown companies (including Danish Crown A/S, Danish Crown A/S DC Beef, Dc Pork Rønne ApS, Friland A/S).

AQ

One of the Vice-Chairmen of Culture Viande is from Groupe Bigard, and the board of directors includes two board members from Groupe Bigard.

AR

As listed in Dairy UK’s Transparency Register entry, its members include Arla Foods, Saputo Dairy UK, and Lactalis.

AS

Its members include national associations, including Denmark’s Landbrug & Fødevarer/ DAFC (of which Arla Foods and Danish Crown sit on the board), Germany’s Deutscher Raiffeisenverband - DRV (of which DMK is a board member and member of the dairy industry committee), the Netherlands’ Nationale Coöperatieve Raad – N.C.R. (of which FrieslandCampina is a member), Sweden’s Lantbrukarnas Riksförbund (LRF) (of which Arla Foods and Danish Crown are listed as 2023 members of LRF Milka), and France’s La Coopération Agricole (of which ATLA is a member; and Lactalis is a member of ATLA). Although not included in the table, it is also notable that as of April 2023, Copa’s ‘Partner Organisations’ include National Farmers’ Union of England and Wales (NFU), whose board included a Special Advisor to Saputo.

Trade Group	Acronym	No. of lobbyists accredited to European Parliament	EU lobby spending - MIN €	EU lobby s pending - MAX €	Year ^{AE}	No. of meetings with top Commission Officials? (as of 4 April 2023) ^{AF}	Which Big Meat and Dairy companies are members (directly and indirectly)? ^{AG}
European Dairy Association	EDA	6	100,000	199,999	2021	30	Arla Foods, DMK, Lactalis, Danone, Nestlé, FrieslandCampina ^{AT, 720, 721}
European Dairy Trade Association	Eucolait	1	300,000	399,999	2021	2	Lactalis, Nestlé, Fonterra ^{AU, 722, 723}
European farmers	COPA	17	800,000	899,999	2020	174 (130 with COGECA, 44 without)	Arla Foods and Danish Crown (both via DAFC and LRF) ^{AV, 724, 725}
FoodDrinkEurope		5	200,000	299,999	2021	53	Danone, Nestlé ^{AW, 726, 727}
International Meat Trade Association	IMTA	0	10,000	24,999	2021		JBS, Tyson ^{AX, 728, 729}
Landbrug & Fødevarer - Danish Agriculture and Food Council	DAFC	3	500,000	599,999	2021	28	Arla Foods, Danish Crown ^{AY, 730, 731, 732}
Lantbrukarnas Riksförbund (Federation of Swedish Farmers)	LRF	4	200,000	299,999	2021	17	Arla Foods, Danish Crown ^{AZ, 733, 734}

AT EDA's board members include ARLA FOODS amba, DMK Deutsches Milchkontor GmbH, Lactalis and Danone. In addition, in their own Transparency Register entries, Nestle and FrieslandCampina declare being members of the EDA.

AU Eucolait direct members include Lactalis Ingredients. In addition, in their Transparency Register entries, Nestle and Fonterra declare being members of Eucolait.

AV Members include national associations, including Denmark’s Landbrug & Fødevarer/ DAFC (of which Arla Foods and Danish Crown sit on the board), and Sweden’s Lantbrukarnas Riksförbund (LRF) (of which Arla Foods and Danish Crown are listed as 2023 members of LRF Milka).

AW Notably, FoodDrinkEurope’s president is Marco Settembri, Nestle’s CEO Zone Europe.

AX Its members include JBS Global (UK) Ltd, Tyson International, Inc. Europe, Tyson Foods,

AY According to DAFC’s website (as of April 2023), its main board includes a Vice-chairman who is a board member of Arla Foods, plus three more reps from Arla Foods and four from Danish Crown.

AZ According to LRF’s website, which lists both Arla Foods and Danish Crown as 2023.members of LRF Milk (and Arla Foods also declares in its Transparency Register entry that it is a member of LRF Mjöllk).

Trade Group	Acronym	No. of lobbyists accredited to European Parliament	EU lobby spending - MIN €	EU lobby s pending - MAX €	Year ^{AE}	No. of meetings with top Commission Officials? (as of 4 April 2023) ^{AF}	Which Big Meat and Dairy companies are members (directly and indirectly)? ^{AG}
Medical Nutrition International Industry	MII	1	800,000	899,999	2021	0	Fonterra, FrieslandCampina, Nestlé ^{BA, 735}
Milchindustrie-Verband (Dairy Industry Association - Germany)	MIV	0	200,000	299,999	2022	0	Arla Foods, Danone, DMK, FrieslandCampina, Lactalis, Nestlé ^{BB, 736, 737}
National Farmers’ Union	NFU	0	600,000	699,999	11/2021 - 10/2022	9	Saputo ^{BC, 738, 739}
Nederlandse Zuivel Organisatie (Dutch Dairy Organisation)	NZO	0	0	10000	2021	0	Arla Foods, FrieslandCampina ^{BD, 740, 741}
New Zealand International Business Forum	NZIBF	0	10,000	24,999	07/2020 - 06/2021	0	Fonterra ^{BE, 742}
Union Européenne du Commerce du Bétail et des Métiers de la Viande (European Livestock Trade and Meat Trades Union)	UECBV	0	700,000	799,999	2021	37	Arla Foods and Danish Crown (both via DAFC), Groupe Bigard (via Culture Viande), JBS and Tyson (both via IMTA) ^{BF, 743}

BA Its members include Fonterra, FrieslandCampina Ingredients, Nestlé Health Science.

BB Its members include Arla Foods Deutschland GmbH, Arla Foods Deutschland GmbH Molkerei Karstadt GmbH, Arla Foods Deutschland GmbH Pronsfeld branch, Arla Foods Deutschland GmbH Upahl branch, Danone Deutschlad GmbH, DMK Deutsches Milchkontor GmbH (and subsidiaries – e.g. DMK Baby – and various regional addresses), FrieslandCampina Germany GmbH (various regional addresses), Lactalis Deutschland GmbH, Lactalis Group Ltd, Lactalis Dutch Cheese GmbH, Lactalis Nestle Frischeprodukte Deutschland GmnH, Nestle Germany Ltd (and Nestle Germany Ltd Biessenhofen plant) et al.

BC According to NFU Mutual’s website as of April 2023, one of its board members is a Special Adviser to Saputo UK.

BD Its members include include Arla Foods B.V., Royal FrieslandCampina N.V.

BE According to NZIBF’s Transparency Register entry, which lists Fonterra Co-operative Group as a member.

BF Organisational members listed in UECBV’s Transparency Register entry include Lanbrug&Fødevarer/DAFC (of which Arla and Danish Crown are board members), Culture Viande (of which Group Bigard a board member), and International Meat Trade Association (of which JBS and Tyson are members).

Trade Group	Acronym	No. of lobbyists accredited to European Parliament	EU lobby spending - MIN €	EU lobby s pending - MAX €	Year ^{AE}	No. of meetings with top Commission Officials? (as of 4 April 2023) ^{AF}	Which Big Meat and Dairy companies are members (directly and indirectly)? ^{AG}
US Dairy Export Council	USDEC	0	25,000	49,999	2021	4	Dairy Farmers of America, Lactalis, Saputo ^{BG, 744, 745}
Total		72	9,355,000	11,544,987		457*	
*The 130 meetings that both COPA and COGECA were present at have not been double counted.							

BG Its members include Dairy Farmers of America, Inc., Lactalis Ingredients (US), Saputo Cheese USA Inc.

One of the most important actors when it comes to the derailing of EU legislation to tackle livestock methane emissions is Copa-Cogeca, comprised of European farmers (Copa) and European agri-cooperatives (Cogeca). As the leading agri-lobby group in the EU, Copa-Cogeca not only has a reputation for pushing the interests of the biggest farms and for an industrial agricultural model (see Box 3.2), but it also has multiple links with Big Meat and Dairy companies through its national members, such as:

- Landbrug & Fødevarer - Danish Agriculture and Food Council (DAFC), of which Arla Foods and Danish Crown sit on the board, is a member of both Copa and Cogeca;

- Lantbrukarnas Riksförbund - the Federation of Swedish Farmers (LRF), of which Arla Foods and Danish Crown are both members, is also a member of both Copa and Cogeca;
- Cogeca’s Dutch member Nationale Coöperatieve Raad (NCR) has Friesland-Campina as a member;
- Cogeca’s German member Deutscher Raiffeisenverband (DRV) has DMK as a board member; and,
- Cogeca’s French member, La Coopération Agricole, has a member association called Association de la Transformation Laitière Française (ATLA, the French Dairy Association), of which Lactalis Group is a member.

Box 3.2: **Copa-Cogeca and who they really represent**

Copa-Cogeca is the EU's most powerful farming lobby group – but as we've seen, it also represents many Big Meat and Dairy companies through its national members. Copa-Cogeca dominates the debate on agricultural policies and repeatedly derails environmental and climate regulation and blocks environmental reform of the lucrative CAP that sees a third of the EU budget paid to farmers (80% of which goes to the biggest and richest 20% of farmers⁷⁴⁶ – see Box 3.1). A recent report by Lighthouse, Politico and other partners, revealed that although Copa-Cogeca claims to represent the interests of all EU farmers, many farmers – particularly younger generations – say instead it is massively geared towards big, industrial farms and does not represent their vision for the future.⁷⁴⁷ Copa-Cogeca's former Secretary General, Pekka Pesonen, has even admitted that he doesn't think it's realistic for small scale farmers to survive⁷⁴⁸ – an admission that sits at odds with the lobby group's frequent claims to be fighting environmental rules in the name of small scale or family farms (when what they really mean is that they'd be bad for big industrial farms' profits).

Copa-Cogeca and its history is intricately tied to the establishment of the EU's CAP which emerged in post-war Europe with the aim of supporting farms to ensure Europe didn't face hunger again. The CAP has to date incentivised the industrialisation of farming, *'an endeavour that Copa-Cogeca has steadfastly supported, to the detriment of small or environmentally conscious farmers'*.⁷⁴⁹

As is explored further in this chapter, Copa-Cogeca's allegiance to industrial farming – including frequently teaming up with pesticide lobby groups and other Big Ag players in joint lobby strategies^{750, 751, 752, 753} – doesn't stop them or their members from playing the 'small family farmers' card or using romanticised depictions of livestock farming when their interests are threatened, as in the case of their opposition to the Industrial Emissions Directive (IED) in particular. During its fight against the expansion of the IED, Copa-Cogeca leapt upon updated EU statistics that showed that, based on 2020 data rather than 2016 data, the IED proposal would cover a greater *proportion* of livestock farms than originally estimated (20% rather than 13%),⁷⁵⁴ deriding the *'miscalculation'* as evidence that *'these approaches by targets and thresholds of Farm to Fork strategy are above*

all political, punitive, and disconnected from field realities'.⁷⁵⁵ What they ignored, however, was that the higher *proportion* of farms covered was nonetheless a much smaller *number* of farms, due to the rapid concentration of the sector into bigger farms. The increased industrialisation of livestock has seen Europe lose many of its smaller livestock farms in recent years, a process of consolidation that the CAP itself has fuelled, by rewarding larger, more industrial farms – with Copa-Cogeca consistently opposing efforts to limit CAP agricultural subsidies for large farms.⁷⁵⁶

The lobby giant epitomises the idea of 'agricultural exceptionalism', having an influence over EU farming and fisheries policies that other industry lobby groups can only dream of.⁷⁵⁷ This close relationship is aided by a 'mutual understanding' with DG Agri (the Director General department responsible for policy on agriculture and rural development) about what issues the farming community faces, as well as an opportunity to dominate discussions through sheer presence in numbers with the Commission during consultations.⁷⁵⁸ Privileged access and undue influence for the agri-lobby is ensured by a dominance of DG Agri's Civil Dialogue Groups and of meetings with the Agriculture Commissioner – who has celebrated his role in derailing key environmental legislation – not to mention a revolving door with Copa-Cogeca and other major Big Ag lobby groups (for more details, see Box 3.4). As a result, in the term of the von der Leyen European Commission that is currently ending, the EU farm lobby managed to derail at least 10 environmental policies that were promised in the European Green Deal (see Table 3.1), as well as terminating any environmental measures for receiving agricultural subsidies under the CAP.

Between them, the 22 big meat and dairy firms, and the 25 key trade groups they’re members of, have had close to 600 top-level meetings with the European Commission (commissioners, their cabinets, and director generals) since November 2014.^{BH} They have also hired lobby consultancies to support their position in the EU as well.^{759, BI} For example, Arla Foods hired lobby consultancy Hill and Knowlton for up to €199,000 in 2022, and Danone hired public affairs agency Landmark for up to €99,999 in 2022.^{BJ}

To understand the content of some of these meetings with these companies and trade groups, and to get insight into some of the other lobby materials being sent to the Commission, we submitted over 20 Access to Information requests, mainly covering the period between 2020 and early 2023.^{BK} We wanted to understand the agenda being pushed by this industry and how the outsized influence of these lobby groups stand in the way of the transformation of our food system. These form the basis for the findings of much of this chapter.

Unlike the European Commissioners, their cabinets, and Commission Director-Generals, Members of the European Parliament (MEPs) have not (until recently) been required to declare their lobby meetings (unless they were rapporteurs, shadow rapporteurs or committee chairs).⁷⁶⁰ In the period that the research for this report considered, some MEPs did, nonetheless, voluntarily declare their lobby meetings, but this list of MEP meetings is non-exhaustive and likely to be a significant underestimate (though the rules have subsequently changed, becoming mandatory in autumn 2023).^{761, 762} With this caveat in mind, Big Meat and Dairy companies

covered in this report, trade groups, and other types of industry lobby groups that the companies are members of, have had a minimum of 256 meetings with MEPs between July 2019 and April 2023, in the ninth Parliamentary session. This equates to at least five meetings a month, or one or more meetings every week, throughout the Parliamentary session.

BH For lobby groups that aren’t agriculture-specific but cross-sectoral, this figure only includes meetings on relevant topics (e.g. agriculture, climate, sustainability, consumer-labelling) as opposed to all of their meetings.

BI As of April 2023 for the trade groups, and as of February 2024 for the companies. Most recently declared year (at these respective points in time) varies from company to company/group to group, depending on when they last updated their Transparency Register entry, but for most of the companies and groups in question, the year declared for is 2022 (with a minority declaring for 2021, or mid-2022 to mid-2023). See citation 708.

BJ According to Arla Foods’ and Danone’s Transparency Register entries, respectively, as of February 2024.

BK The Freedom of Information requests we tabled, and the Commission’s responses, are all available at: https://www.asktheeu.org/en/user/elaine_girvan

Box 3.3: **Regenerative agriculture pushed to policymakers**

Traditional trade groups aren't the only type of organisation involved in lobbying the EU on behalf of Big Meat and Dairy companies. Sometimes groups that on the surface appear to be think tanks, foundations or even NGOs are in fact representing big corporations' interests. A meeting listed by Climate Commissioner Frans Timmermans and 'Stichting IMAGINE Foundation' on 7 February 2023 is a good example of this. Listed in the Transparency Register as an NGO that *'does not represent commercial interests'*, Stichting IMAGINE Foundation *'houses the Food Collective, a group of 20 CEOs from across the food-ag value chain to work together in a pre-competitive space to drive towards a nature positive food system'*.^{763, BL} Its members include the bosses of Danone, Nestlé, FrieslandCampina and Cargill, alongside the likes of pesticide giants Syngenta and Bayer.

Minutes obtained under FoI law reveal that at its February 2023 'dialogue session' with Timmermans (one of 28 top-level meetings with the Commission the group has had between June 2020 and October 2023),⁷⁶⁴ it was argued that Europe needs to scale up *'regenerative agriculture'*, a vaguely defined *'outcomes-based'* system *without 'prescribed practices'* – in other words, a system that doesn't either stipulate or ban any specific agricultural practices (such as intensive animal agriculture, pesticide use, etc).⁷⁶⁵ The presentation given at the meeting shows a focus on technology (including methane-reducing feed additives), calls for more public money and regulatory support for *'regen ag'*, and includes a timeline of *'suggested engagements with company experts'* that matched up with key Commission milestones such as CAP strategic plans, the Soil Health Law proposal and legislative Framework for Sustainable Food Systems proposal (see Table 3.1).

A presentation from FrieslandCampina (which makes no specific mention of methane) promotes its 'Focus planet' initiative to create a *'regenerative milk stream'*. How? By rewarding farmers who meet FrieslandCampina's biodiversity, climate, and animal welfare criteria (including through *'on farm innovations'*). As for just how ambitious this 'regenerative milk' project is, FrieslandCampi-

na clarifies that the *'combination of all criteria means that approximately 10% of dairy farmers can obtain the certificate'*. This is hardly a game changer for livestock emissions. The industry's push for *'regen ag'* is a classic strategy rooted in distract and delay tactics, of presenting an industry-preferred 'solution' that avoids stricter regulation but paints a picture of an industry that is already taking action to address environmental problems – regardless of how effective or meaningful that industry action is.

By contrast, a Commission presentation on the future Framework for Sustainable Food Systems, at a December 2022 workshop on regenerative agriculture with Arla Foods, Cargill, Nestlé and Danone (also co-organised by Stichting Imagine's Food Collective, and with the latter two companies presenting their own *'regen ag'* projects, neither of which mentioned methane),⁷⁶⁶ states the Commission's intention to *'Phase out least sustainable food systems operations'*, including *'Mandatory minimum requirements'*.⁷⁶⁷ That is categorically different to the industry's goal of a *'regen ag'* system that has no *'prescribed practices'*. Big meat and dairy companies don't want any of their unsustainable operations to be phased out or regulated through the introduction of mandatory requirements – that's why they're trying to shift the narrative towards a vague *'outcomes-based'* regenerative agriculture.

Yet the concept of *'regen ag'* has been criticised for the lack of evidence for the claims being made about it, for perpetuating Big Ag's damaging and chemical-dependent business model, and for being so poorly defined that it enables *'companies to greenwash their images while avoiding regulation'*, as described by DeSmog.⁷⁶⁸ A full overview this is included in the Distract section of the report.

Despite this, the Commission has been very receptive to industry's push for *'regen ag'*. The concluding slides of the December 2022 workshop (which took place at the Commission's request,

BL NB. As of February 2024, Sticting IMAGINE Foundation has changed its name in the Transparency Register to Stichting Food Collective.

as it wished *'to engage the private sector on what is needed to scale regenerative agriculture'*)⁷⁶⁹ discuss what *'we need to do to move this forward'*, *'best next steps in 2023'*, and, crucially, *'[w]ho are the other people/ organisations to invite in this exchange?'* This shows an astonishing level of agenda-setting power given to big meat, dairy and pesticide companies, including over who should be getting a seat at the table. The breakout groups discussing these questions featured FrieslandCampina, Nestlé, Arla and Danone... but no civil society groups at all.⁷⁷⁰

FoI documents have also revealed Nestlé⁷⁷¹ and Danone⁷⁷² individually met with the European Commission to make their case for *'regen ag'*. In January 2021, for example, Nestlé told the Commission that it would source 20% of *'key ingredients'* through *'regen ag'* methods by 2025, and 50% by 2030 ... but without specifying what *'key ingredients'* are or defining what *regen ag* is. Nestlé also presented numerous *'regen ag'* case studies, including a UK project in which Nestlé supports *'dairy farmers in embedding regenerative agriculture practices'* by offering *'long-term guaranties for farmers (sold quantity)'* ... regardless of the implications this might have for maintaining the current unsustainable levels of consumption of dairy.⁷⁷³

3.2.2. Conflicts of interest

The agricultural exceptionalism that enables Big Meat and Dairy's derailing efforts is perhaps best illustrated in the EU through the conflicts of interest that are not only visible but seemingly accepted. Numerous MEPs, with key roles in policymaking on agriculture, have financial ties to meat and dairy production and speak mainly to the industry, avoiding balance by engaging with stakeholders like NGOs or civil society groups, as the case studies below illustrate. In October 2023, Transparency International reported that at least 11 members of the Parliament's Agriculture (AGRI) committee declared farming as an outside activity - and the number is higher when accounting for MEPs whose family members have agricultural interests.⁷⁷⁴ Past reports have also shown AGRI committee members receiving large sums in CAP funds.^{775, 776} In any other sector, the conflict of interest of having decision-makers with a direct financial interest in the area they're making decisions on would be called out - but agriculture once again is seen through the lens of exceptionalism.

3.2.2.1. NEC directive and conflicts of interest

Although prior to the current Commission's tenure, the National Emissions Ceiling Directive (NEC Directive) is a critical piece of legislation. Coming into law in the EU in 2016, the NEC Directive sets national emission reduction commitments for Member States for five major air pollutants - nitrogen oxides, non-methane volatile organic compounds, fine particulate matter, sulphur dioxide and ammonia. Originally, there was to be a sixth, methane,⁷⁷⁷ proposed by the European Commission but which the agri-industry lobbying successfully derailed. As we have seen, methane is not only a potent GHG, but a precursor to ground-level ozone, a dan-

gerous air pollutant, which is harmful to human health and damaging to vegetation and crops. Acute exposure to ozone was responsible for 24,000 premature deaths in the EU in 2020, and economic losses from reduced crop yields.⁷⁷⁸ The NEC Directive prompted fierce lobbying from industry, including the false argument that including methane would lead to double-regulation (more on this below).

In the European Parliament, amendments to the NEC Directive which pushed positions friendly to the agriculture industry were tabled by a number of MEPs with conflicts of interest on the subject. The Declarations of Interest (DoIs) of the MEPs that tabled these amendments (alongside other sources) reveal the following conflicts of interest:^{BM}

- Jan Huitema (Renew, Netherlands): currently, and in the three years previous to the current mandate in European Parliament, Huitema is a partner in a dairy farm, earning up to €500 a month.^{779, BN} Not only is Huitema a dairy farmer, but he was the rapporteur for the AGRI Committee opinion on the NEC directive, which called for methane removal in words almost identical to Copa-Cogeca’s, further details on which are covered below;
- Ulrike Müller (Germany, Renew): currently, and in the three years previous to the current Parliamentary mandate, Müller is a farmer earning €500-1000 a month;^{780, BO}
- Andrzej Grzyb (Poland EPP): no longer an MEP, but in the last Parliamentary mandate Grzyb earned €500-1000 a month from a farm;^{781, BP}

- Peter Jahr (Germany EPP): currently, and in the three years previous to the current Parliamentary mandate, Jahr earns income from Jahr farms (currently €500-1000 a month, previously under 500);^{782, 783, BQ}
- Elisabeth Köstinger (Austria, EPP): no longer an MEP (now Austrian Minister for Agriculture), but in the last Parliamentary mandate Köstinger was simultaneously an MEP and Vice President of the Austrian Farmers’ Union;^{BR}
- Herbert Dorfmann (Italy EPP): previously a freelance agronomist, earning €500-1000 a month, and a director of the South Tyrolean farmers’ association for nearly 10 years;^{784, 785, BS}
- Annie Schrijer-Pierik – a 2016 investigative report noted that at the European Parliament plenary vote on the Envi Committee report’s on the NEC directive (which still included methane) Schrijer-Pierik - member of the Christian Democrats (CDA) and a pig farmer - said the targets *would mean the end of family farming*.^{786, 787, BT}

BM Declaration of Interests (Dols) as accessed during research in Spring/Summer 2023.

BN Jan Huitema’s 9th Parliamentary term Declaration of Interest (DoI) shows that under ‘participation in companies or partnerships when this may have consequences for government policy or when participation gives me significant influence over the business interests of the organization concerned’, he declares ‘1. Maatschap W. en J.F. en J. Huitema-Aalberts (melkveebedrijf)’ i.e. ‘1. Partnership W. and J.F. and J. Huitema Aalberts (dairy farm) (under 500 euros a month)’ – a position that he also declares for the 3 years preceding this MEP term.

BO Ulrike Müller’s 9th Parliamentary term DoI shows she is currently, and was in the 3 years previous to the current EP mandate, earning income from Landwirtin ie ‘farmer’ (€500-1000/month)

BP Andrzej Grzyb 8th parliamentary term DoI shows he earned income (€500 to1000) from ‘Gospodarstwo rolne’ i.e. ‘farm”

BQ Peter Jahr’s 9th Parliamentary term DoI shows he is currently, and was in the 3 years previous to the current EP mandate, earning income from ‘Landwirtschaftsbetriebe Jahr’ i.e. Jahr farms (currently €500-1000 per month, previously under €500) (see citation 731). Additionally, his bio on the EPP site says ‘Since 1995 part-time farmer’ (see citation 732). NB. Jahr also made amendments on IED.

BR Elisabeth Köstinger’s 8th parliamentary term DoI (2014-2017, when she left) shows that she was simultaneously Vice President of the Austrian Farmers Union (Vizepräsidentin des Österreichischen Bauernbundes), https://www.europarl.europa.eu/meps/en/96882/ELISABETH_KOSTINGER/history/8

BS Herbert Dorfmann’s 9th Parliamentary term DoI shows he was previously a Freelance agronomist (€500-1000 a month) (see citation 733). Additionally, his EPP bio notes that he was a director of the South Tyrolean farmers’ association for nearly ten years (see citation 734).

BT Additionally, Annie Schrijer-Pierik’s CV listed on the European Parliament site says: ‘Professional career 10/06/1968-31/12/2013: Farmer on a pig farm in Hengevelde’. (see citation 735)

Box 3.4: The agri-industry’s undue influence in the European Commission

The European Parliament isn’t the only EU institution where conflicts of interest and undue influence of the Big Ag lobby over agriculture policymaking is a problem: the European Commission’s Directorate General for Agriculture and Rural Development (DG AGRI) has a long history of close ties and shared interests with agribusiness and farmers’ lobbies. This has been embodied most recently by Agriculture Commissioner Janusz Wojciechowski writing to Polish farmers offering his support, and celebrating the fact that he was personally responsible for scrapping crucial legislation that would help fight the biodiversity and climate crises, such as the pesticide reduction law, as well as the suspension of the requirement for farmers to leave 4% of land fallow and the exemption of agriculture from mandatory emissions reductions by 2040 (see Table 3.1).⁷⁸⁸ Wojciechowski told the protesting Polish farmers that he will continue to lobby the EU to delay or derail even more environmental rules, such as the requirement for farmers to provide evidence that they are following CAP eco-schemes.⁷⁸⁹ In April 2024, the last environmental measures in the CAP were completely scrapped, without any impact assessment or public consultation in a period of one month, which some have described ‘exploits ongoing farmer protests’.⁷⁹⁰ Media reports have also shown that it was at Wojciechowski’s request that reference to more ‘*diversified protein intake*’, were removed from the Commission’s 2040 climate targets (see Table 3.1).⁷⁹¹

DG Agri’s Civil Dialogue Groups (CDGs) – a type of expert group intended to provide DG Agriculture with advice on CAP-related matters – have a well-documented history of being dominated by Copa-Cogeca, and provide frequent and regular lobbying access to DG AGRI and the Commissioner.⁷⁹² This has included previous requests from the European Ombudsman in 2015 for DG AGRI to explain how the representation in these groups could be improved.⁷⁹³ In 2019 Copa-Cogeca chaired no less than 8 out of 13 CDGs, and the current membership lists (dated November 2019) of the Animal products and Milk CDGs show that Copa and Cogeca together have at least twice as many seats as any other single group.⁷⁹⁴

The dominance of DG AGRI’s CDGs is mirrored by a dominance of agri-industry lobby meetings – between April 2020 and April 2022, for example, Commissioner Wojciechowski met with Copa-Cogeca and/or its member groups twice as often as it met with NGOs and civil society groups.^{BU}

The revolving door also contributes to the blurring of interests between regulator and regulated: amongst Copa-Cogeca’s lobbyists who have access passes to the European Parliament, there are multiple revolving door cases, including one who has taken a double spin through, from DG AGRI to Copa-Cogeca to DG AGRI again in a policy role⁷⁹⁵ (and as of April 2023, after moving back to DG AGRI, he was still listed as having a Parliamentary pass as part of Copa).^{796, BV} The Secretary General of the EDA, meanwhile, was previously a policy officer at the European Commission.^{797, 798, BW} There is no shortage of revolving door cases amongst MEP staff either: an EDA parliamentary-accredited lobbyist was previously a policy and communications officer at the European Parliament for nearly five years, while Nestlé’s European Affairs Manager (who had a Parliamentary pass as of April 2023) was previously a parliamentary assistant in the European Parliament for eight years – and is now working as a policy officer at the European Commission.^{799, 800, BX} And there are many more such cases.^{BY}

The effect of this privileged access, undue influence, and potential conflicts of interest from the revolving door, is the creation of a working culture in DG AGRI – as in the case of the European Parliament’s AGRI committee – that sees their role as protecting the narrow financial interests of the agribusiness and farming lobby, rather than regulating those industries in the broader public interest – namely, one that considers mitigation of the environmental, climate and health impacts of agribusiness, now and in the future.

BU Between 5 April 2020 and 5 April 2022, Commissioner Wojciechowski had 20 meetings with Copa and/or Cogeca, and/or their member groups, compared to just 11 meetings with NGOs and civil society groups.

BV As of April 2023, Daniel Jorge FLORINDO DE AZEVEDO was listed as being accredited for access to European Parliament premises as part of COPA, from 09/28/22 to 09/27/23 – though his Linked-in profile (see above) shows he moved to DG Agri as a Policy Officer in November 2022 (after more than a decade at Copa-Cogeca, before which he was at DG Agri for more than 2 years).

BW As of February 2024, the EU transparency register shows Alexander ANTON being accredited to the European Parliament.

BX As of April 2023, Johannes WEBER was listed as being accredited for access to European Parliament premises as part of Nestlé.

BY As of April 2023, we found at least 29 revolving door cases among the 70+ lobbyists accredited to the European Parliament, who work for the Meat and Dairy companies or their lobby groups. Some of these involved only traineeships in the European Parliament or European Commission, while others were more significant and involved more senior positions.

3.2.2.2. *EU Methane Strategy and AGRI committee
rapporteur with vested interests*

The EU Methane Strategy, published in October 2020, set out the plan of what the Commission would be proposing regarding methane pollution. Although not a legislative proposal, it is often the case that European Parliament provides an opinion on such strategic documents. Three European Parliament committees were involved in assessing the Methane Strategy (see Table 3.1): the lead Environment (ENVI) committee, and two opinion giving committees, Industry, Research and Energy (ITRE) and the influential AGRI committee. Although the AGRI committee was not the lead committee on this file, its participation is important to note as the committee has a lot of sway in the European Parliament and sees itself as the defender of the interests of Big Ag. The AGRI committee rapporteur for the Methane Strategy, Danish Renew MEP Asger Christensen, has described a reduction in livestock numbers as an unacceptable outcome of the EU Methane Strategy - at an April 2022 event on the EU's Methane Strategy where he spoke alongside Arla Foods. This view is unsurprising in light of his Declaration of Financial Interests, which shows not only that he's a dairy farmer earning €20,000 a month from this, but that he sits on Arla Food's board of representatives, earning up to €500 a month.⁸⁰¹ His own website says that *'For many years I have thus been an active representative in Arla and Danish Crown.'*⁸⁰² Notably, in its response to the Commission's summer 2020 public consultation on the Methane Strategy, Arla Foods said it wanted the strategy to focus on biogas (providing financial and regulatory support for biogas and biogas incentives for farmers).⁸⁰³

According to the EDA - whose members include Arla Foods, DMK, Lactalis, Danone, Nestlé, and FrieslandCampina - Asger Christensen discussed the future of EU dairy at a meeting in the European Parliament with Arla Foods CEO Peder Tuborgh in February 2020.⁸⁰⁴ EDA's views on the Methane Strategy were likewise set out in its

response to the Commission's consultation, which emphasised how much the dairy industry has already done to reduce its *emissions intensity*', including through voluntary industry commitments, and dairy's contribution to sustainability through biogas production. EDA also implied that no further action was needed, as European dairy is already amongst the best in the world in terms of carbon footprint, and questioned the science around agricultural methane's impact on climate.⁸⁰⁵ EDA additionally submitted its 2019 paper *The Dairy sector and the Green Deal* to the consultation. Notably, a longer, internal background version of this paper effectively admits that biogas production from anaerobic digestion is relevant only in the case of large-scale dairy operations⁸⁰⁶ - meaning that incentives for biogas are, in turn, incentives for more large-scale dairy operations.^{BZ}

Christensen's lobby meetings during his time as Opinion's rapporteur on the Methane Strategy Resolution also reveal his closeness with the dairy and meat industries: in the period between the Commission publishing its proposal on 14 October 2020 and the publication of Asger Christensen's AGRI committee opinion on the EU Methane Strategy on 14 July 2021, Christensen met twice with Landbrug & Fødevarer - the Danish Agriculture and Food Council (DAFC), whose members include Arla Foods and Danish Crown.^{CA, 807} And we know from its Methane Strategy consultation response that DAFC argues that intensive production can actually reduce emissions,^{CB} that emissions reductions must happen alongside growth in the sector, which shouldn't face *'disproportionally large burdens'*, and that more incentives are needed, including for *'climate-friendly feed'* and biogas production.⁸⁰⁸

BZ The EDA internal document states: "In large-scale dairy operations, anaerobic digestions can produce enough energy to cover internal requirements and even feed back into the public energy grid." Despite the paper itself containing the caveat 'It is meant to be used e.g. for reactive statements in case of additional questions from the media...Please do not publicly share this document as such.' It was publicly available to view as of May 2023. See citation 755.

CA Once on the Farm to Fork Strategy and once on 'Ecology'.

CB "A sustainable intensive production with high feed efficiency and high production rate, will give low emissions per kg of product, and thereby secure food production with less methane emissions"

As well as these meetings with DAFC, Christensen also met with Danish Crown,^{CC} twice with the Danish Dairy Board,^{CD} whose members include Arla Foods, once with AmCham EU, whose members include Tyson and Cargill,^{CE} and numerous other groups from across the animal-farming supply chain. Yet during the whole eight-month period, Christensen records no meetings with NGOs, civil society or environmental organisations.

Seemingly, the result of this is that Asger Christensen’s opinion for the AGRI committee closely mirrors much of the meat and dairy industry’s wish list, as expressed in the consultation responses, including citing industry-linked science.⁸⁰⁹ The AGRI committee view reads like a list of the top industry lines used across distract, delay and derail tactics – echoing many of their specific demands in response to the Commission’s Methane Strategy consultation – namely that:

- biogas is the solution to reducing livestock methane emissions, and should be supported with public money;
- the positive action industry has already taken should be recognised;
- voluntary industry initiatives should be the basis of regulation;
- support is needed for feed additives and other technological solutions, so that livestock production doesn’t decrease;
- GHG leakage will occur if EU livestock decreases (see more on this stance in the fear-mongering tactic section);
- the EU has already reduced agricultural methane emissions, so isn’t contributing to climate change – in other words, questioning the science that agri-

cultural methane is a problem, as well making reference to the controversial GWP* (see more on this in section 1.4.3 – GWP*);

- agricultural methane should be treated differently to fossil methane, echoing UC Davis Clear Center arguments and citing them twice;
- models should be based on emissions intensity; and
- the Commission should create an inventory of best practices, use low-bureaucracy, voluntary certification schemes for farms and recognise the role of carbon farming and carbon removal.

Three months after the AGRI committee adopted Christensen’s meat and dairy industry friendly opinion, the European Parliament adopted a resolution on the EU Methane Strategy on 21 October 2021. The AGRI committee saw a number of key industry wishes make it through from their opinion. These included the recognition of voluntary industry initiatives as being of great importance and that regulatory initiatives should be built on best practices from already existing voluntary actions; and that the Commission should swiftly implement effective and cost-efficient innovations that limit methane emissions, integrate these in EU agriculture policies, and support research and development on feed additives.⁸¹⁰

3.2.2.3. *Industrial Emissions Directive and conflicts of interest*

The European Commission’s proposal for a revised Industrial Emissions Directive (IED) had the goal of covering a wider definition of intensive animal farming, including cattle, as industrial farming installations. Yet Big Ag went after this proposal tooth and claw and had succeeded in watering down the Commission’s original draft before it even reached the European Parliament (increasing the size of livestock farms it would apply to from 100 to 150 livestock units (LSU) – see Table 3.1). The lead committee in the Parliament was once again the ENVI committee, with the

CC On agriculture policy.
CD Once listed as Danish Dairy Board Brussels s.a., on 'Methane emission', and once listed in Danish as Mejeriforeningen, on the Farm to Fork Strategy
CE On the Farm to Fork Strategy.

AGRI committee in an opinion-giving role - but it is clear from the report by ENVI committee rapporteur Benoît Lutgen (EPP, Belgium) that *‘the very strong’* arguments against extending the IED’s scope that were expressed by the industry and in the AGRI committee’s opinion, led to the decision to increase the size of livestock farms the IED would cover even further (from 150 to 300 LSU). In other words, the AGRI committee’s industry-friendly opinion (which wanted cattle removed from scope of the IED, and no increase to poultry and pork LSUs) had a very concrete effect on the outcome of the ENVI committee’s final report. And the declarations of interest and declared meetings of the AGRI Committee MEPs that proposed these meat and dairy industry-friendly amendments to the IED, tell a very clear story of conflicts of interest and industry capture. As we will see later in this chapter, the key argument that the industry deployed in both AGRI and ENVI committee was that such regulation would overburden *‘family farms’*.

The AGRI Committee shadow rapporteurs for its IED opinion included French Renew MEP Jérémy Decerle, whose Declaration of Interest shows that he earns €500 to €1000 a month as a farmer,⁸¹¹ with press reports clarifying that he is a cattle farmer.⁸¹² Analysis of the meetings Decerle declared since the Commission published its IED proposal on 5 April 2022 (until February 2023), shows Decerle met with Groupe Lactalis, Danone, Copa-Cogeca, Interbev and ELV, as well as numerous other agricultural and agribusiness representatives.^{CF} Perhaps unsurprisingly, in the same period, Decerle declared no meetings with environmental organisations, NGOs or civil society groups.

As part of the AGRI committee’s opinion-giving role, its members were able to table amendments to the draft report on the Commission’s IED proposal that was

produced by the ENVI committee’s rapporteur. Decerle tabled 28 amendments to Lutgen’s draft report in November 2022, many straight from the industry wish list - deleting cattle from its scope, adding caveats that agriculture cannot be considered industrial, dramatically increasing the size of poultry and pig farms it would apply to (i.e. increasing the LSU to 750), and so on. A significant number of these made it into the AGRI committee’s final opinion, adopted in April 2023. Several of Decerle’s amendments were co-tabled with other Renew MEPs who also have conflicts of interest or have had big meat and dairy meetings, including:

- Asger Christensen (Denmark), as previously mentioned, is also a cattle farmer, sits on Arla Foods’ board of representatives, and was rapporteur on the EU Methane Strategy (see 3.1.3);⁸¹³
- Elsi Katainen (Finland), who met with Arla Foods and Danish Crown, both in May 2022;^{CG, 814}
- Irène Tolleret (France), whose Declaration of Interest shows she is President of the European Food Forum, an MEP-industry forum (a type of unofficial cross-party group of MEPs and businesses)^{CH} whose members include Cargill.^{CI, 815, 816} Her meetings show she’s met with Cargill, USDA, Copa-Cogeca, and Danone, on various topics.^{CJ}

CG The former re. “dairy industry innovations” on 23 May 2022, and the latter on 24 May 2022 re. tutustumiskäynti ie “familiarization visit”. Elsi Katainen also met Representatives of Dairy cooperative Satamaito on 11 Nov 2022 re Ajankohtaiset EU-asiat ie “Current EU affairs”.

CH For more information on the history of and problems with MEP-industry forums, see Corporate Europe Observatory (2015) – citation 810.

CI Tolleret is herself a winemaker.

CJ Tolleret met Cargill on Farm to Fork in July 2022, US Department of Agriculture in September 2022 (on ‘Assurance récolte’ ie Crop insurance), ASSICA (Industrial Association of Meats and Cured Meats, Italy) re Politique de promotion/promotion policy, in October 2022, Confederazione Nazionale Coldiretti and Copa Cogeca in Nov 2022 (re. Agriculture and honey, respectively), La Coopération Agricole (which Lactalis is a member of, through ATLA) re CAP in Jan 2023, French pork lobby INAPORC in Feb 2023, Interbev re CAP in March 2023, Danone re. Packaging waste in March 2023, etc.

CF These include cheesemaker BEL, the French poultry lobby, French dairy lobby, French agricultural chambers, French animal feed association, Meat & Livestock Australia, and various other agribusiness companies and trade associations e.g. Avril, COCERAL, etc.

3.2.3. Tactics in the EU

3.2.3.1. The pro meat and dairy stance

Much of the lobbying undertaken by or on behalf of Big Meat and Dairy doesn’t employ any elaborate tactics beyond taking a very pro meat and dairy stance in relation to any suggestions of a need to curtail production or consumption. This approach may highlight the centrality of meat and dairy to diets, health, the economy or even the supposed positive environmental benefits of the production systems. And it goes hand in hand with the lobbying by farmers’ groups like Copa-Cogeca, which is aimed at the general derailing of climate and environmental policies and opposing any meaningful greening of the subsidies structure (see Boxes 3.1 and 3.2).

Industry targets Sustainable Food System Framework

In response to the European Commission’s call for feedback on the future framework law for the Sustainable Food Systems (FSFS) initiative, the farming lobby and meat and dairy industry urged the Commission to ensure that even intensive livestock wouldn’t be discounted as being ‘sustainable’, that foods wouldn’t be ‘prejudged’, that no single product (such as dairy) should be considered unsustainable, and that economic sustainability should be given equal weight to environmental sustainability. The lobbying took the simple approach of touting the necessity and importance of meat and dairy and the livestock industry, or seemingly denying there are any environmental problems associated with the current system of meat and dairy production in Europe. Table 3.3 shows more details of the arguments made by the various lobby groups in their responses to the Commission’s call for feedback.

Table 3.3: Meat, dairy and Big Ag views on the Framework for Sustainable Food Systems

Who?	What did they tell the Commission about the future FSFS?
Arla Foods	<i>‘The framework should not prejudice which foods are sustainable or not ... it will be important that the framework continues to recognize the critical role of all basic food groups, such as dairy has in providing high quality and affordable nutrition while supporting the sector’s sustainability transition.’⁸¹⁷</i>
Copa-Cogeca	<i>Called for an ‘Inclusive approach: When it comes to methods and types of primary production, all of them should be included and should have the chance to contribute to improving the sustainability of food systems, whether we are talking about crops or livestock, intensive or extensive production.’⁸¹⁸</i> <i>Fol releases also reveal that in an August 2022 meeting with Commissioner Wojciechowski’s cabinet, Copa-Cogeca urged that the future FSFS include ‘the three pillars of sustainability (environmental, social and economic) ... in an equal way’ – to which the cabinet of the Agriculture Commissioner (and longtime ally of Copa-Cogeca) confirmed its intention to push for this,⁸¹⁹ i.e. for economic considerations to be given equal weight to environmental ones in the FSFS, as per Copa-Cogeca’s wishes. The pressure to include economic sustainability is a clear example of lobbying to alter a progressive policy in a way that favours livestock production, no matter the scale or environmental harm.</i>
European Dairy Association	<i>‘Sustainable food system(s) is/are much wider than single products, for which sustainability cannot be evaluated, as not being consumed by itself.’ Trade-offs will need to be made ‘e.g. between land use, water quality and greenhouse gases, or aspects of nutrition “negatives” that may have an effect on (public or individual) health’ – in other words advocating for essential nutritional role of dairy. A ‘broad approach based on all three pillars (economic, environmental and social incl. health) seems the best’ and it ‘will be crucial to strike the right balance between introducing higher sustainability standards on the one hand, and remain competitive on the other hand, without provoking an externalisation of sustainable practices. The sustainable food system(s) could best be achieved through sustainable business models / incentives / creation of consumer demand/market forces, not through overregulation.’⁸²⁰ In essence, the EDA is arguing that regulation via a sustainable food system framework would create an ‘unsustainable’ financial cost on the dairy industry.</i>

DAFC (Danish Agriculture & Food Council)	‘All current sectors have a role to play in the upcoming transition’ and that the FSFS needs to ‘ <i>accommodate the resource efficient and intensive production, the global perspective, and the development of all forms of production, including both a plant-based production and animal husbandry</i> ’.
UECBV (European Livestock and Meat Trading Union)	Talks about balancing the three pillars of sustainability and complains that the ‘ <i>economic pillar looks to be almost forgotten for the time being</i> ’.
CLITRAVI (Liaison Centre for the Meat Processing Industry in the EU)	The FSFS should follow the ‘overarching principle that there are no sustainable and unsustainable sectors per se, but more and less sustainable business practices’” and that ‘ <i>the aim of minimum standards and sustainability analysis should be to provide food business operators with relevant input and incentives to develop more sustainable production of food, rather than to sideline individual products or ingredients.</i> ’ ⁸²¹
Eucolait (European Dairy Trade Association)	‘Dairy is one of the most important agricultural sectors in Europe’; incentives should be prioritised over regulation, ‘ carrot over stick ’, and again, that ‘A truly sustainable food system in the EU should encompass all three pillars of sustainability: people, planet, and profit ’. ⁸²²
INTERBEV (National Interprofessional Association of Livestock and Meat – France)	Assessing the sustainability of a sector, like cattle, must include ‘ <i>all the goods and services rendered by a sector: protection of the environment and the climate, but also benefits for the biodiversity, animal welfare, the standard of living of farmers and the economic viability of farms, consumer health and food safety and security.</i> ’ ⁸²³

3.2.3.2. ‘Don’t double regulate’

Another common line taken by Big Meat and Dairy to avoid regulation on methane, especially within the EU, is the argument that a policy proposal would lead to double regulation as methane is covered elsewhere. This tactic was used in response to the National Emissions Ceiling directive, Effort Sharing Regulation and Industrial Emissions Directive. In the end, not a single one of these tackles methane from agriculture, so all the fearmongering of double regulation was designed to kill any regulation.

National Emissions Ceilings (NEC) directive, Industrial Emissions Directive (IED) and Effort Sharing Regulation (ESR)

In its lobbying against methane’s inclusion in the NEC directive, Copa-Cogeca used the argument that methane reduction should be dealt with under different legislation. This marked the beginning of a trend whereby, year after year, policy after policy, the farm lobby says it’s unacceptable to regulate methane specifically and that other policy areas are better suited.

Despite the fact that methane reduction targets were not ultimately included in the NEC directive (see Table 3.1), the AGRI Committee’s April 2023 opinion on the IED, uses the NEC directive as a reason to derail the IED:

‘The ‘NEC’ Directive will come into effect from 2023 and will allow us to reduce emissions more quickly than could be accomplished with the proposed revision of the Industrial Emissions Directive’⁸²⁴

The AGRI committee mirrors lots of agri-industry arguments, including this fabricated insinuation that the NEC directive will have any impact on methane emissions

from agriculture. A view that echoes the (erroneous) argument that Copa-Cogeca presented to the Commission consultation on the IED back in 2021, that *‘there is already national and EU level legislation that can be used to reduce harmful environmental impacts of cattle. Efforts should be made to avoid multiple regulations’*.⁸²⁵

Similar arguments were also made in relation to the Effort Sharing Regulation (ESR), which establishes binding national GHG emission reduction targets for EU Member States in sectors that are not subject to the EU Emissions Trading System (ETS), including agriculture. When being revised to bring it into line with the Green Deal, both Copa-Cogeca and the Danish Agriculture and Food Council (DAFC - also known as Landbrug & Fødevarer) responded to the Commission’s consultation,⁸²⁶ revealing that as with other policies that threaten to specifically regulate agricultural methane, such as the NEC Directive and IED, the farming lobby invoked the risk of ‘double regulation’.

Copa-Cogeca urged the Commission *‘to avoid double coverage in order to maintain or strengthen the companies’ competitiveness and to keep administrative burdens at a minimum’*.

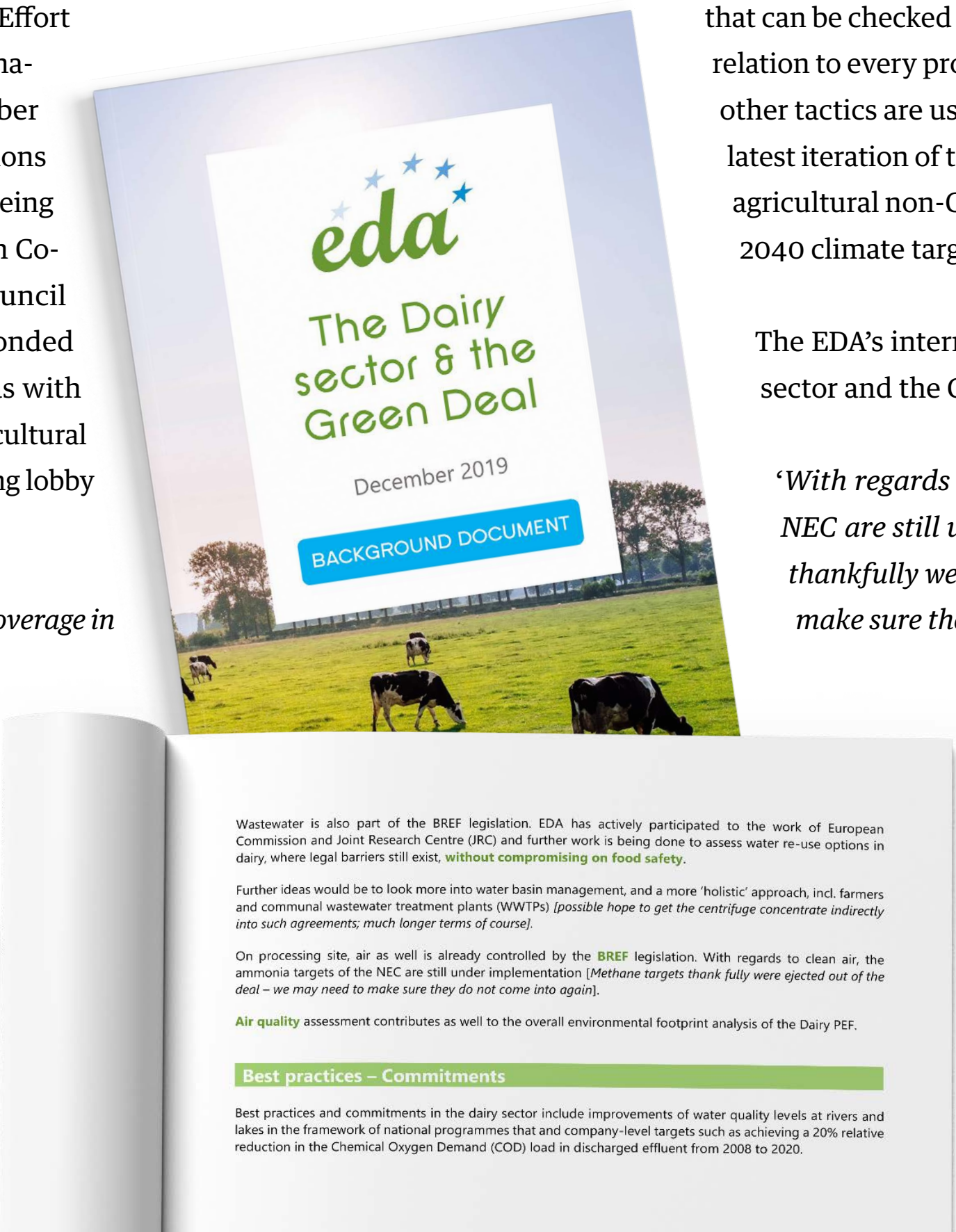
Asked how the ESR should contribute to the design of the architecture of EU climate policy when it comes to agriculture, DAFC said: *‘Exclude emissions from agriculture from the ESR and regulate them elsewhere.’*

The overall result of all these demands to avoid double regulation is that Europe has ended up with no regulation of agricultural methane emissions at all. Industry fights each attempt to do so with the same argument that gives the impression that they don’t oppose regulation of the industry’s emissions per se, merely that the right mechanism has to be found, despite this being something that can be checked up on - as we have done in this report. In relation to every proposed mechanism, similar arguments or other tactics are used to derail the policy. We have seen the latest iteration of that in February 2024, when the target for agricultural non-CO₂ emissions was dropped from the EU’s 2040 climate targets.

The EDA’s internal background document on the ‘Dairy sector and the Green Deal’ even stated that:

*‘With regards to clean air, the ammonia targets of the NEC are still under implementation [Methane targets thankfully were ejected out of the deal - we may need to make sure they do not come in again].’*⁸²⁷

This reveals not only their delight at methane being ‘ejected’ from the NEC Directive, but explicitly states their intention to make sure methane targets do not come into the NEC directive again.



3.2.3.3. *Fearmongering and intimidation*

One of the most common tactics taken by big meat and dairy industry and the farm lobby to derail methane and broader climate and environmental regulation, is lobbying that exaggerates negative consequences of any policy. This approach could be categorised as either fearmongering, or the ‘doomsday stance’, given the extreme negative situations the lobbyists depict. In addition to this, a more sinister approach occasionally arises that sees all-out intimidation tactics used to back up the fearmongering.

Policies would put family farms out of business

A strong line of argument taken by industry in the EU, is that (any) proposed environmental policy would hit ‘family farms’ and put them out of business, painting an image of production that most farms are small and unassuming.

Push-back on the revision of the Industrial Emissions Directive (IED) often took the line that it would threaten family farms, despite the IED proposals being purposefully focused on larger industrial farms. The Commission’s original draft proposal of the IED revision was for the directive to apply to farms that had more than 100 Livestock Units (LSU) – including cattle – but after pressure from industry and its allies in DG Agri and the European Parliament, this was raised to 150 LSU in DG ENV’s final proposal in April 2022. As explained by the Commission at the time, 150 LSU would have covered only the biggest 13% of EU livestock farms, based on 2016 data – and even after updated 2020 data showed this proportion would be higher at 20% (though the total number of farms covered would be lower, due to concentration of the sector – see Box 3.1 and 3.2), the majority of this percentage increase was in pig and poultry farms, with the percentage increase of cattle farms only up by 3%.⁸²⁸

What’s more, it is important to note though that although one LSU is formally equivalent to one adult dairy cow, 3.3 pigs or 33 chickens, since farmers keep both young and adult animals at the same time, a farm with 150 LSU could in reality have 207 dairy cows, 650 pigs or 7,200 chicken, in total.⁸²⁹ Yet it was on the basis of these LSUs that representatives of farmers and Big Meat and Dairy interests misleadingly argued that the IED was targeting small family farms, and the ferocity of industry lobbying towards the European Parliament and Council only increased after the Commission’s proposal was released. The result was that they eventually agreed to increase the LSU to 350 for pigs and 300 for laying hens and 280 for broilers, removing cattle from the proposal altogether (see Table 3.1). What this means in practice is that only pig farms with over 1,200 animals, and farms with over 40,000 chickens for meat or 21,500 egg laying hens will be covered – while the unambitious proposals that had been on the negotiating table for cattle, which would have covered just the biggest 1% of all cattle farms in Europe, according to Greenpeace, were scrapped completely.⁸³⁰

The ‘save family farms’ argument was, nonetheless, first deployed towards the Commission. A letter from Copa-Cogeca dated 4 April 2022 to the Agriculture Commissioner for instance states that ‘*By no means can these small units, or rather micro-enterprises, be called “industrial” in line with the Directive scope.*’ The envisaged LSU threshold at that point, according to a leaked draft, was 100 LSUs, a level which Copa-Cogeca said would be an ‘*unbearable*’ economic and administrative burden, that would ‘*result in European family farms bearing disproportionately high economic burdens*’.⁸³¹

When the threshold was raised to 150 LSU in the final DG ENVI proposal, despite the fact that the Commission’s impact assessment recommended the lower 100 LSU, the Agriculture Commissioner publicly took credit, saying he ‘*successfully lobbied [DG ENV] to increase the LSU figure from 100 to 150*’⁸³² Nor was Copa-Cogeca’s the

only letter that Commissioner Wojciechowski received asking him to step in for the sake of small and family farms: on the same day as Copa-Cogeca's letter (which was sent before the Commission's final proposal was released, but after the leak showing the proposed 100 LSU), Wojciechowski received a letter from French EPP MEP (and AGRI committee member) Anne Sander.

An FoI request revealed that Sander similarly warned the Agriculture Commissioner that the proposed threshold *'will lead to very significant administrative and financial costs ... and will impact all farms, including the smallest ones'*.⁸³³ Anne Sander - who has been vehemently against the Farm to Fork strategy,⁸³⁴ and spoke at a European Livestock Voice event presenting industry-funded studies on the strategy's negative impacts⁸³⁵ - is the sister of a vice-president of the Fédération Nationale des Syndicats d'Exploitants Agricoles (FNSEA).⁸³⁶ FNSEA, a federation of agricultural unions in France, has likewise been staunchly opposed to Farm to Fork⁸³⁷ (and the many policy changes it led to, such as the IED revision - see Table 3.1), and is not only a member of Copa, but FNSEA's president is also Copa's president.^{838, 839} As of October 2023, Sander had 12 meetings with FNSEA since the launch of the Farm to Fork strategy.⁸⁴⁰

Following pressure from Copa-Cogeca and its allies, the Commission did indeed increase the LSU to 150 - but Copa-Cogeca immediately attacked even this weaker proposal, stating in a press release that the policy was *'shocking'* and would *'severely hit the European model of family farming'*.⁸⁴¹ Copa-Cogeca conveniently ignored the fact that due to the existing model of subsidies the number of family farms in Europe has already dropped by nearly 40% between 2005 and 2020,⁸⁴² but uses this language when it suits them to undermine environmental legislation. The responsible Envi Committee (under pressure from the industry-influenced AGRI Committee), increased the proposed LSU from 150 to 300, as well as adding an exemption for *'extensive, organic and family farming under certain scope, defined by national*

authorities, based on specific national and regional circumstances' as detailed in the rapporteur's Explanatory Statement accompanying the Envi Committee report.⁸⁴³ (Notably, the European Council, which was also targeted by Copa-Cogeca and its national members,^{844, 845, 846, 847} proposed an even higher LSU of 350, which was ultimately agreed to by Parliament, along with the eventual exclusion of cattle - see Table 3.1).

The AGRI Committee, which was instrumental in getting the Envi Committee to increase the proposed LSU threshold (see 3.1.3), was led by Belgian MEP Benoît Lutgen of the European People's Party (EPP), who made a major focus of the unfair burden on 'small' and 'family' farms in his work on the IED.⁸⁴⁸ Lutgen has credited his attendance of a European Livestock Voice (ELV) farm visit - to a *'family'* pig farm and a *'family'* beef farm, which emphasised why livestock farms must not be considered industrial - as his impetus to apply to be the AGRI committee IED rapporteur.⁸⁴⁹ ELV, as previously highlighted, has a very distinct and clear agenda linked to big meat and dairy companies and is not part of the EU Transparency Register. Lutgen stated in his IED opinion that *'Lumping farmers in with industrialists adds to a negative perception of family-run farms'* and recommended removing cattle entirely from the revised Directive.⁸⁵⁰ Considering the size of most farms now in Europe, talking about farmers is usually in relation to large landowners, and the protection of their incomes, often at the expense of the local environment. It is not a discussion about farm labourers' income, or jobs overall linked to this, working environment or otherwise. The feudal nature of the system of the EU appears to be hidden by the 'family farmer' and the romantic notions that are strongly embedded in European culture and history. Cattle, unlike pigs and poultry, had not previously been part of the IED - something its revision was intended to fix, especially as this is the highest source of methane emissions in the EU, but which the industry push-back eventually derailed (see Table 3.1). The intensity of lobbying against its inclusion was likely also a reflection of the fact that preventing cattle from being

included in the IED was an easier target than removing pigs and poultry, which were already covered by the Directive.

Taking a similar line to Lutgen, one of the AGRI Committee shadow rapporteurs for the IED revision, French Renew MEP Jérémy Decerle, whose conflicts of interest have been covered above, stated that the IED revision would “*risk jeopardising farms that are already taking an environmental approach and are already doing more for the environment than they [those who draft the proposal] are*”. He went on to ask: “*How can you explain to a farmer in the Massif Central [a highland region of France] who has 50 animals on 100 hectares that he is running an industrial farm?*”⁸⁵¹ – even though at no point did the IED revision suggest 50 animals would count as an industrial farm.

Decerle’s above comments were published in a September 2022 press release about it being ‘*totally unreasonable to include the agricultural sector*’ in the IED by ELV), the lobbying supergroup whose ‘partners and supporters’ include Copa-Cogeca, European Dairy Association, and meat lobby groups CLITRAVI and UECBV,⁸⁵² and which is currently being investigated over lack of lobby transparency.^{853, CK} An earlier ELV press release about its Parliamentary launch event back in September 2019 – co-hosted by Decerle – warned of the ‘severe consequences of a ‘Livestock Exit’, i.e. ‘removing livestock farming from Europe’. This is a ‘straw man argument’ about the supposed threat faced by the industry – in other words, a false representation of the consequences of environmental policy-making that is easier to discredit than the more nuanced realities.⁸⁵⁴

CK Due to ELV’s extensive lobbying activities whilst not being signed up to the EU Transparency Register. See citation 784.

Box 3.5: ‘Emissions leakage’ – another type of fearmongering

Putting family farms out of business isn’t the only fearmongering tactic being used to fight environmental policies. The threat of ‘emissions leakage’ is also widely used. For example, Copa-Cogeca argued that methane’s inclusion in the National Emissions Ceiling (NEC) Directive would lead to production loss and ‘emissions leakage’ outside of Europe, whereby imports from regions with less-environmentally-friendly livestock farming would replace EU production. Copa-Cogeca used this fearmongering argument to push for the removal of methane from the NEC Directive, stating that some of the targets were ‘*unacceptable*’ and threatening that agricultural production would move outside the EU if the Envi committee’s position, which not only referenced methane but explicitly included enteric methane in the proposal, became law.⁸⁵⁵

The basis for this argument was that ‘*world food demand [is] set to rise by 60% by 2050*’,⁸⁵⁶ an argument that ignores both that most food demand growth will be outside of Europe and the vital role of reducing food waste and shifting to plant-based diets that could address this issue. Demand for meat and dairy is considered as a growing constant and consumption is assumed to increase even in places that have already reached ‘peak meat’, such as the EU.

Since Big Ag succeeded in getting methane removed from the NEC Directive, the threat of ‘emissions leakage’ has emerged as an argument against numerous Farm to Fork policies.

Fact check: Livestock production is necessary to meet the world's growing demand for food

The efficiency of resource use in plant-based agriculture far surpasses that of animal agriculture. It takes several kilograms of plant protein to produce just one kilogram of animal protein.⁸⁵⁷ Switching the global population's diet to plant-based foods can help feed the growing global population more sustainably and would free up 75% of the world's arable land for other uses.⁸⁵⁸

Intimidation and the EU's school milk scheme

The EU School Scheme, which supports the supply of fruit, vegetables, milk, and certain milk products to children, is another area where the farming lobby, and in this case especially the dairy lobby, put its anti-plant-based rhetoric into full force, and which swung a key vote in the European Parliament against a proactive shift in diets (see Table 3.1). The debate saw industry utilise both fear-mongering and full intimidation to make their case.

Faced with the proposals for plant-based milk alternatives to be included in the scheme,⁸⁵⁹ Copa-Cogeca and the European Dairy Association had reportedly “issued warnings” about the scheme “falling into ideology”, arguing that plant-based products are ‘not comparable in any way to dairy products’ in terms of nutritional value.^{860, 861} And despite over 30 NGOs and plant-based companies

writing to MEPs before the EP vote in May 2023, calling for the explicit inclusion of fortified plant-based milk alternatives for children who cannot or do not want to drink cow milk for medical, ethical, taste, or environmental reasons,⁸⁶² the power of the farming lobby prevailed and the European Parliament voted to reject this.⁸⁶³ This was a significant win for the farming and dairy lobby – not only financially, with the school scheme providing **€105 million for the distribution of milk and dairy products to schoolchildren** in 2020/21,⁸⁶⁴ but with respect to the socialisation of young children in terms of normalising high levels of dairy consumption (in light of the school scheme’s aim being to ensure ‘*healthy eating habits and lifestyles are established*’⁸⁶⁵) and de-normalising dietary alternatives to it.

A Politico exposé on Copa-Cogeca also revealed that in March 2023, a Copa Cogeca policy adviser sent an email to the rapporteur on the school scheme, Romanian Renew MEP Alin Mituță, which ‘revealed the farm lobby had access to confidential negotiating documents but also laid out a set of demands and threatened Mituță with “unpleasantness” if they were not met’.⁸⁶⁶ Mituță lodged a formal complaint with the European Parliament over the veiled threat – though Copa-Cogeca Secretary General Pekka Pesonen merely told Politico it was ‘an unfortunate choice of words’.

Similar intimidation tactics were also used to derail the pesticides reduction law, where Politico reported that the Rapporteur for the Directive, Austrian Green MEP Sarah Wiener, was subject to personal attacks and misinformation campaign fuelled by

16 June 2022

2

Meeting notes

Participants	<u>Visitors' delegation:</u> <ul style="list-style-type: none">[REDACTED] <u>COM:</u> <ul style="list-style-type: none">EVP TimmermansLukas Visek
Issues raised & follow-up	<u>Transition to sustainable food systems</u> <ul style="list-style-type: none">[REDACTED] informed EVP about the recent positions, statements and activities of COPA-COGECA in relation to food security as well as to Green Deal initiatives. [REDACTED] also informed about forestry issues.EVP reiterated his openness and readiness to discuss with farmers, however, there should be no tolerance for personal attacks (in reference to recent statements of [REDACTED]).EVP and [REDACTED] agreed that there is a need to better explain to COPA-COGECA members and to farmers the urgency and the details of the transition to sustainable food systems. In terms of closer cooperation, EVP suggested focusing on opportunities for farmers which are i.a. brought by RePowerEu (biomethane). Finally, EVP pointed out that current needs always need to be framed within the long term Strategy. [REDACTED] and EVP's team will work further on these three points.
[REDACTED]	[REDACTED]

the agricultural industry and right-wing political factions in the European Parliament.⁸⁶⁷

Documents released under FoI law, however, reveal that this is not the only time the Copa-Cogeca has faced criticism for unethical behaviour in the pursuit of its lobbying agenda. At a meeting with Climate Commissioner Timmermans in June 2022, Timmermans told Copa-Cogeca that while he was open and ready to discuss the scheme with farmers, *‘there should be no tolerance for personal attacks (in references to recent statements of [REDACTED])’*.⁸⁶⁸ From threatening MEPs to *‘personal attacks’* that were serious enough to be condemned by a Commissioner, the agri-lobby doesn’t hold back when it comes to getting what it wants.

3.2.3.4. Exploiting crises

How meat and dairy lobbies have utilised Covid-19 and the Ukraine war

It is a well-established industry lobbying technique that any ‘crisis’ can be co-opted to try to derail or at least delay policy changes – just as the plastics industry did with Covid-19 in capitalising on the public health crisis and public fear to roll back regulatory action on single-use plastics.⁸⁶⁹ Similarly, the farm lobby has a history of using crises to delay or even



successfully reverse policies already adopted, such as the exemption from CAP rules on leaving a certain amount of land lying fallow in response to the Ukraine war.^{870, 871} Indeed, recent years have provided extreme crises in the form of both the Covid-19 pandemic and Russia's invasion of Ukraine, crises that have devastated lives and disrupted supply chains.

However, the use of these crises by agri-industry and Big Meat and Dairy lobbyists to derail or water down long-term policy solutions designed to restructure the EU's food system in light of the climate crisis, is an exploitation of these genuine disruptions. Ukrainian wheat exports have become a central component of some of the recent farmer protests in Europe, particularly in countries close to the border like Poland, but also in France. Politicians are forced to balance their support for Ukraine with appeasing the farm lobby and the broader push against regulation of the sector.⁸⁷² Meanwhile, the ongoing and ever escalating crisis of climate change, which is already impacting farmers and food systems, is not highlighted in the same way. Instead, the climate crisis is brought up only in the context of asking for more subsidies and relief measures for droughts, storms, or floods - but never from the longer-term perspective that so clearly requires putting in place policies that transform the way we produce and consume food. It appears that for the farm lobby a crisis is not worth co-opting if it bolsters the case for reform rather than business-as-usual.

Using Covid-19 and Ukraine to derail changes to EU's Promotion Policy

The EU's agri-food 'promotion policy' funds promotion campaigns for EU farm products, including the controversial €3.6 million EU-funded 'Become a Beefatarian' campaign in 2020.⁸⁷³ A review intended to bring it more into line with sustainable production and consumption, including more plant-based diets,⁸⁷⁴ met fierce push-

back from Big Ag and meat and dairy lobbies (see Table 3.1). Copa-Cogeca, the EDA, CLITRAVI, EFFAB and other agrifood industry lobby groups, sent a joint letter to Agriculture Commissioner Wojciechowski in May 2022, which demanded that the Commission ensure 'that no specific sector or products should be discriminated against' in the new Promotion Policy - namely '*red and processed meat*' - and invoked both the Ukraine and Covid-19 crisis as a justification:

'In the current context with COVID-19 and the economic tensions due to the war in Ukraine, the need for the EU agri-food sector to benefit from some certainty and to have access to a promotion policy creating market opportunities is especially important.'

Similarly in June 2023, the French livestock and meat lobby Interbev (whose members include Culture Viande, of which Groupe Bigard is a board member) sent a letter to Commissioner Wojciechowski on behalf of several national European livestock lobbies, which argued that the promotion policy must '*avoid any stigmatization of the meat sector*', invoked the effects of Covid on the veal sector to justify its continued importance. The letter states that the promotion policy is an '*essential tool*' to:

'Ensure an appropriate education of our consumers on the quality and specific features of the European livestock model and of the high quality of European meat productions. The promotional policy is particularly important for the veal sector, which has been particularly impacted by the COVID crisis and the closure of restaurants.'

These tactics paid off: by December 2023, it was reported that there were 'no discriminatory criteria' against red/processed meat put forward in the 2024 promotion policy, as were initially included in the 2023 promotion policy proposal⁸⁷⁵ but ultimately removed following opposition from Member States⁸⁷⁶ - and a barrage of industry lobbying, as revealed by FoI releases.^{CL}

CL See for example, documents 4.1, 4.3, 5, 15.1, 16.1, 17 Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2

Using the Ukraine war to derail agricultural methane reduction in the IED

During the revision of the Industrial Emissions Directive (IED), industry lobbyists also used the war in Ukraine to weaken proposed agricultural methane reductions, as is evident in a letter sent by Copa-Cogeca to Commissioner Wojciechoski and Vice President Timmermans on 4 April 2022, just before the Commission published its proposal (see 3.2.3.3). The letter requested that the ‘unbearable’ amendments to the LSU thresholds ‘envisaged’ by the Commission be reconsidered, on the grounds of the war in Ukraine:

‘Given that the unprovoked Russian invasion of Ukraine has further destabilised already fragile agricultural markets, affecting prices in all commodities (including agro-food products), a sustainable approach to any and every revision of EU legislation must be ensured. In the case of the Industrial Emissions Directive, this means striking a balance between the pursuit of the envisaged environmental goals (protecting human health and the environment), access to the necessary technologies, and the economic and social consequences arising from the administrative and economic costs associated with the amendments above.

...Changing the scope of the IED would hit our European animal production hard along with its family farming model that already follows the highest animal health and welfare as well as environmental standards in the world.’⁸⁷⁷

Likewise, the letter to Commissioner Wojciechowski from farming-lobby ally French EPP MEP Anne Sander (sent on the same day as Copa-Cogeca’s letter), asking that the scope of the IED not be extended and also cited the Ukraine war as a reason not to burden livestock farmers:

‘Our producers are today even confronted with a new crisis, linked to the invasion of Ukraine by Russia. They bear the full brunt of soaring prices on agricultural markets for fodder and fertilisers... introducing additional constraints today linked to the revision of the IED directive, in the light of an agricultural crisis, risks penalising our agricultural production system if not putting it in danger by restricting it ever more heavily. Our breeders will not be able to face disproportionate charges.’⁸⁷⁸

These statements must be considered in the context that, at its most ambitious stage, the IED was only going to impact a fraction of livestock farms (13-20% at 150 LSU, depending on the year of reference, and so proportionally higher had the LSU of 100 been proposed – see 3.1.4 C), and those being the larger end of the scale. In addition, the IED would only enter into force years from adoption (around 2029), with concrete emissions reduction measures still to be agreed, so it is very likely that the implications of the war in Ukraine would no longer be relevant. This false-victimhood is widely used by the farm lobby and its allies to prevent the application of the most basic legal principle of the polluters pay on the farming sector.

Dairy lobby used Covid-19 to reposition itself and inflate its importance

Documents released under FoI law suggest that the EDA saw Covid-19 as an opportunity to increase dairy’s standing and position dairy as being as essential as food and medicine.

In a March 2020 update on ‘COVID19 and milk & dairy supply’ sent to Commissioner Wojciechowski’s cabinet, DG AGRI, the European Parliament’s AGRI Committee and EU Member State’s Agricultural Counsellors, EDA described the ‘three essential sectors’ as ‘human health, medical supply and food & dairy’.⁸⁷⁹ Evidently, food is a vital industry but the listing of dairy as an essential sector can only be seen as an attempt to exploit the pandemic to advance the dairy industry’s business interests.

Similarly, EDA's April 2020 a 'Dairy Flash' sent to DG AGRI said Covid-19 had demonstrated dairy was an essential sector and part of the solution to the crisis:

*'The current Covid-19 crisis is shaking the foundations of international agri-food markets while placing EDA in an important coordinating role. ... The recognition of dairy as an essential sector as well as the EU Commission guidelines on the green lane border crossings and free movement of workers (transborder) are clear signs that the lactosphere is part of the solution in providing healthy nutritious food in times of crisis.'*⁸⁸⁰

The same document also shows the EDA's gratitude to the European Parliament's AGRI committee, particularly German EPP MEP Norbert Lins, for helping to delay the publication of the Farm to Fork strategy in response to the Covid crisis. Lins is chair of the AGRI committee, and according to DeSmog, held 169 meetings on food and farming with industry-linked groups between January 2020 and July 2023 (including 18 with German Copa member Deutscher Bauernverband)⁸⁸¹, compared to just 19 with NGOs.⁸⁸² The dairy lobby EDA wrote that:

*'We are grateful to the members of the Agricultural Committee of the European Parliament for the support of MEP Norbert Lins' initiative (EPP, DE) to allow more time for the finalisation of this strategy due to the current circumstances and to allow the integration of the lessons to be learnt from this crisis into the Farm to Fork strategy: the critical importance of a well-functioning Single Market is showcased. Any calls for gastrochauvinism in today's global crisis are inadequate and irresponsible. Also, milk and dairy shelves have been considered by the citizens as vital for their families. We have a hard time keeping milk and dairy shelves stocked when people rush into supermarkets to buy the true essentials for their families. Milk and dairy: nutritious by nature and essential for your life.'*⁸⁸³

3.2.4. Misinformation, protests, and the rise of the far-right

Farmer protests across Europe playing into the hands of the Big Meat and Dairy agenda

From the Netherlands to Germany, Italy to Belgium, a wave of farmers' protests in early 2024 became the political justification to drop a spate of long promised and urgently needed environmental policies. It was a final death knell for many of the Green Deal's Farm to Fork promises, as well as stripping the CAP of the few green obligations it had left - without any public consultation or impact assessment. The Commission consulted only with farming lobby groups, who are the beneficiaries of the CAP. Billions of euros of agricultural subsidies, which as we have seen are mostly going to the biggest farmers in the EU, will now be freely distributed with no strings attached in what has been dubbed as *'welfare for the rich'*.⁸⁸⁴

From derailing the pesticides reduction law to exempting agriculture from 2040 climate targets (see Table 3.1), the huge impact of recent farmers protests around Europe is amplified in part by the current political context. As the European elections taking place in June 2024 edged closer, parties on the right wing, like the EPP who have presented themselves as the 'farmers party', representing rural interests and opposed the EU Green Deal,⁸⁸⁵ have appeared further aligned with the Big Ag lobby, and look set to gain in the upcoming elections.⁸⁸⁶ Capitalising on the protests could be perceived as a chance to boost their electoral chances with rural voters.⁸⁸⁷ The farming lobby in Europe is well integrated with the centre-right EPP, which has been working to derail climate policy throughout the ninth Parliamentary term, including being accused *'of using blackmail and spreading fake news'* to kill the Nature Restoration Directive (see Table 3.1).⁸⁸⁸ An investigation by DeSmog found that six EPP MEPs met with the farming industry twice a week - particularly Copa-Cogeca and its members - far eclipsing meetings with NGOs.⁸⁸⁹ Meanwhile, some far-right

MEPs have been praising the violence of protests, even citing the protests in the Netherlands in 2022 as successfully ‘*overthrowing*’ the Dutch government.⁸⁹⁰ Commission President Ursula von der Leyen is also a member of the EPP and has been selected as the EPP candidate for the next Commission’s President.⁸⁹¹ Although Green Deal has been a key political feature of her Presidency, following the shift in the EPP towards the right and against green policies, von der Leyen has made a U-turn and dropped a number of Green Deal policies in the run-up to the elections (as noted above).

The farmers protests across Europe have served as an opportunity for Big Ag to further boost their lobby efforts and, alongside right wing parties, are keen to be seen as the voice of the people ahead of the upcoming elections. However, despite their privileged access and enormous influence, lobby groups like Copa-Cogeca – which claim to speak on behalf of the farming community – do not speak up for all their members, let alone all farmers. As noted in Box 3.2, an investigation by Lighthouse Reports found that smaller farms and younger farmers do not feel represented by the group, which aims to maintain the status-quo that primarily benefits large industrial farming.⁸⁹² Lighthouse also found that the memberships of the nine Copa-Cogeca national member organisations who responded were all in decline – including in countries where farming protests have been significant in the past few months, France, Poland, and the Netherlands among them.⁸⁹³

It is particularly notable that in some European countries, such as Italy, farmers are protesting not just against EU and national environmental policies, but against the big Italian farming lobby – and Copa member⁸⁹⁴ – Coldiretti.⁸⁹⁵ Small-scale farmers are increasingly disillusioned with the group, accusing Coldiretti ‘*of prioritising its own interests and advocating for policies that primarily benefit large agri-industries*’, as explained by BirdLife.⁸⁹⁶ The national plan put forward by Coldiretti was even



Source: Farmer protest, Shutterstock

rejected by the European Commission for failing to have sufficient resources set aside for small farmers.⁸⁹⁷

Moreover, some farmers are protesting in favour of climate and environmental policies, including groups like European Coordination Via Campesina, which pushes for policies to support agroecology and fair prices for farmers.⁸⁹⁸ Many farmers say they are struggling and therefore cannot afford to implement the environmental changes being asked of them (such as reducing pesticide use).⁸⁹⁹ Farmers, however, are not one unified group and as we have seen with the CAP subsidies (favouring larger farms disproportionately) there is a vast variation in income and support provided to farmers across the bloc. Lobby groups like Copa-Cogeca who have resisted reforms for a long time, have instrumentalised the recent protests as evidence to policymakers that green policies are not what farmers want, nor what they can afford. Yet, in many countries in the EU, farming is still a profitable sector, particularly for those large farm owners. Farming incomes average around €56,000, though this is not equally distributed across the group and hides wide disparity.⁹⁰⁰ For dairy farms, for example, the average incomes in 2022 for France, Finland and Sweden were €52,635, €50,222, and €65,810 respectively. For Belgium, Denmark, Ireland and the Netherlands (where herd sizes might be larger than in Finland and Sweden), incomes range from €91,322 to €148,263.⁹⁰¹ The concentration of large farms is increasing, and the fight to protect higher incomes and large landowners could be seen as a modern feudal system in Europe, with the lobby capitalising on a wide range of farmers' concerns to minimise any action to shift the status quo. Meanwhile, farm labourers, who are most at risk from derailed action on environmental policies like cutting pesticide use, remain at high risk from these continued practices.⁹⁰²

Farmers are not, and never have been, one homogeneous group (whatever Copa-Cogeca says about representing them all). Big agribusiness is benefiting from

the CAP and from the limited implementation of environmental laws designed to curb their worst excesses, whilst smaller farmers are continuing to struggle, even as climate impacts get worse.⁹⁰³ Between 2005 and 2020, 5.3 million farmers in the EU went out of business – a reduction of 40% – driven in large part by a Copa-Cogeca-supported CAP system that rewards the biggest, most-destructive and highest-income-generating farms the most.⁹⁰⁴ Likewise, although the environmental debate has taken centre stage in the protests, a myriad of other issues have also been on the farmers' placards, including competition from cheaper imports, rising costs of energy and agricultural inputs, and supermarkets' below-cost-pricing systems. Companies like Nestlé spend millions on advertising and paying supermarkets to stock their brands at eye-level, where consumers are most likely to pick them up on their weekly shop, while small farmers do not have the financial investment to boost their sales in the same way.⁹⁰⁵

Yet, just as science can be cherry-picked to further lobbying goals, so too can public movements and protests be picked up and put down as it suits the industry and policymakers. Multi-faceted farmers protests have been used as the justification to derail multiple Green Deal policies – even as other public movements, such as the 1.4 million EU citizens who demanded legislation to put an end to caged animals, are ignored. Promises to introduce animal welfare regulation were broken, thanks to effective agri-industry lobbying to derail it (see Table 3.1).⁹⁰⁶ At the time of writing, European elections are looming, and the far right are gaining support across many contexts in Europe, aligning themselves with farmers and aiming to appear as protectors of 'rural life'. Some have suggested that policymakers '*fearful of a rightward lurch*' are providing even more concessions to the sector.⁹⁰⁷ In a political context where over half of voters in Europe think action on climate change is a priority,⁹⁰⁸ if the scenes in Brussels⁹⁰⁹ had been undertaken by oil and gas executives instead of agriculture, the response from the public and politicians might have been very different.

The far right capitalises on farmers' grievances

Some of the farmer protests across Europe were directly organised by the far right, including protests at the end of January 2024 at the EU Parliament, organised by a think-tank connected to Hungarian Prime Minister Viktor Orbán.⁹¹⁰ A recent DeSmog investigation has even uncovered a commitment from *'hardline farming groups'* to *'sweep away'* EU decision-makers at a *'lunch and discussion'* event in Brussels, hosted by the Orbán linked think-tank MCC.⁹¹¹ MCC have been linked to violent farmer protests and various far-right farming groups across the EU.⁹¹²

The event also hosted speakers from the Farmers' Defence Force (FDF) in the Netherlands, a far-right group, who have been utilising similar conspiracy language to what we found in our 2022 analysis of Dutch farmer protests: that elites are *'killing farmers and food production... through land grabbing'*.⁹¹³ The FDF were formed in 2019, the same year as the High Court ruling to reduce nitrogen pollution (see more on this in the Misinformation and conspiracy section), and were involved in the protests against it. Groups like the FDF have used intimidation tactics in the past, targeting environmental experts in the Netherlands.⁹¹⁴

Farmers have been protesting in the EU on a number of issues, including prices, the struggle to adapt to climate change, imports and rising costs.⁹¹⁵ The far-right movement have capitalised on this using a number of tactics and approaches, including misinformation and through funding the coordination and organisation of far-right events and protests linking with the *'farmers' cause'*. Orbán has been a vocal critique of the EU and similar to Prime minister Meloni in Italy (see case study), seems keen to shape its future direction, pushing for support through a narrative linked to defending tradition and culture.⁹¹⁶ Capitalising on the farmer protests around election time appears to be a central tactic of Orbán, ensuring the far right appear to be defenders of rural tradition and combating the *'power of the*

elite'.⁹¹⁷ In the UK, Prime Minister Rishi Sunak was also pictured with the conspiracy driven group No Farmers No Food protesters in Wales.⁹¹⁸

Misinformation and conspiracy

Misinformation has also found its way into policy making, increasingly linked with farmer protests and pushing for legislation that might limit Big Meat and Dairy competitors. Unlike the misinformation noted in distract, which focuses primarily on healthwashing and greenwashing, a previous Changing Markets report found that 78% of misinformation online focused primarily on narratives that disparaged alternative proteins and shifting diets, including linking this with conspiracy theories, such as The Great Reset.⁹¹⁹ These were primarily pushed forward by *'mis-influencers'*, ranging from far-right commentators and conspiracy theorists, to people promoting their own health and wellbeing businesses, including diet books and animal-based protein supplements.

Our research showed clear spikes in misinformation around key political and media moments like the Bonn Climate Conference and the World Economic Forum, and climate change impacts, such as the death of 10,000 cattle in Kansas - the result of a heatwave. These key moments have been used by mis-influencers to push conspiracy theories, and other misinformation narratives, linked with science-denial. The majority of posts we analysed as misinformation (37% of the total) centred around conspiracy theories, and in particular, the Great Reset. The Great Reset, originally an idea put forward at the World Economic Forum (WEF) in June 2020, including as a book and a podcast, outlines some key areas for the future to re-set the current capitalist system.⁹²⁰ It's seen as an opportunity to shift the way we live, tackle climate change, and impose wealth taxes, amongst other areas.⁹²¹ Partly due to the ongoing and unpredictable crisis engulfing the world at the time, Covid-19, some people promoted the idea that the Great Reset was a conspiracy of the global

elite, who had created a pandemic to keep everyone home and control the masses. This is not a new phenomenon, and over the centuries human beings have been prone to focus on an easier target than the big issues, a ‘straw man’.⁹²² Many psychologists note that climate change is not a threat we can easily adapt or react to in the same way as we do for direct threats from other people or from objects (a car when crossing the road, for example).^{923, 924} For the Great Reset, Bill Gates is often filling this role, as a representative of the global elite and someone who has significant investments in vaccines, and other technologies, including alternative proteins.⁹²⁵ As such, he also became the main villain in the way this conspiracy theory manifests itself when it comes to food and farming.

Misinformation and disinformation are also influencing policymaking. A good example of where misinformation, disinformation and policy overlap happened in 2022 when the government in the Netherlands attempted to implement urgently needed policies to curb nitrogen pollution. After a significant increase in dairy farming, further polluting the environment in the Netherlands, the Dutch High Court ruled that no further nitrogen polluting projects could be approved without first drastically reducing the existing pollution, reducing it by half by 2030. In response, the Netherlands government proposed to buy out those identified as ‘peak polluters’, including farmers, with a €25 billion scheme.

The proposal was met with significant backlash from farmers, street protests and, at the same time, misinformation online spiked about land grabbing, much of it linked to conspiracy theories about an elite take-over, where ‘the Great Reset’ popped up in conversations. Misinformation about agricultural pollution was revealed to be driven by a transnational far-right movement that was connecting local issues to a global conspiracy, with nearly half of the voices online coming from outside of the country.⁹²⁶ Domestic voices were far-right and populist politicians such as Geert Wilders who was campaigning against environmental policies and claimed that

farmers were being dispossessed to make way for asylum seekers. Wilders went on to win the election in the Netherlands,⁹²⁷ while the farmers’ backlash meant that the move to reduce nitrogen pollution was not successful.⁹²⁸

Industry misinformation has also found itself in the employ of mis-influencers, as well as right wing political and media personalities; a reinforcing loop of misinformation in the online echo chamber. Narratives put forward by industry funded academics, like Frank Mitloehner, have appeared on the YouTube pages of far-right commentators in the US like Brett Cooper who, according to The Fast Company, has an audience of over 1.7 billion.⁹²⁹ Misinformation from climate denial groups spiked around the farmers’ protest. Within two weeks, the ‘No Farmers No Food’ X account, set up in support of the farmers’ protests in Europe in January 2024, had 50,000 followers, had been referenced by a number of right-wing commentators, and was sharing conspiracy theory content linked to the Great Reset.⁹³⁰ The group was set up by James Melville, an anti-lockdown campaigner, and although it claims to be politically non-partisan, it has been accused by other farmers of being just that.⁹³¹ In its recently published manifesto, the group claims to exist to save farmers, including to ‘push back against unrealistic net-zero policies where they prevent farmers from producing food sustainably’⁹³² – a contradictory sentence in many ways, but one that is emblematic of the growing polarisation on the topic in Europe.

There is a clear overlap between right-wing political narratives and farmers’ protests turning violent by blocking the streets and motorways, throwing manure at buildings, destroying statues and setting fires in the street.⁹³³ Many would argue that the response has been much less severe than that faced by climate protesters; instead of jail time and police intimidation, farmer protesters get meetings with politicians at the highest level, who fulfil all their demands at the expense of climate action that would protect the majority of EU citizens and future generations.^{934, 935}



2

MAIN CATEGORIES OF MISINFORMATION

78% DISPARAGE
plant-based products, diets and science

22% ENHANCE
animal products

7

CATEGORIES IN TOTAL

24%
MALIGNING:
Competing products are unhealthy

7%
VILIFYING:
Climate-focused misinformation

9%
POLARISING:
Culture Wars

1%
UNDERMINING:
Science and Research

37%
CONSPIRING:
The elite are planning "A Great Reset"

18%
HEALTH-WASHING:
Animal-based food products are essential for good health

4%
GREENWASHING:
Animal-based food products are environmentally friendly



MISINFORMATION DATASET

USING **10,881** TERMS
TO BUILD THE DATASET

ANALYSING
285M
TOTAL
POSTS

948,000
CLASSIFIED AS
MISINFORMATION
3.6M
ENGAGEMENTS

FROM
425K
ACCOUNTS

50
ACCOUNTS
CAPTURE



50%
OF ENGAGEMENT

However, these ‘solutions’ to appease farmers and agri-lobby-groups do nothing to solve the underlying problems and long-term trends.⁹³⁶ In fact, throwing out urgently needed Green Deal policies will only make the escalating climate, biodiversity, and soil crises worse, to the detriment of all farmers and us all.

3.2.4.1. Lobbying to stop alternative protein

Meat and dairy lobbies not only push to derail climate policy, but frequently attack the validity of narratives about plant-based alternatives to meat. Meat and dairy lobby group ELV, a key player in derailing animal welfare policy that uses ‘activist-style’ tactics and attacks on scientific opinions⁹³⁷ (see Table 3.1), has said that the ‘marketing of plant-based foods as alternative meat products is, in fact, essentially fraud’.⁹³⁸ ELV also suggested that the rise in consumption of plant-based drinks ‘may be down to a desire to reduce consumption of animal products and live a more vegan lifestyle, based on a somewhat unfounded belief that it is more sustainable’.⁹³⁹

The derailment of the inclusion of plant-based milks in the EU School Scheme is not the only time that dairy (and meat) alternatives have faced industry’s ire. Before a key CAP vote in 2020, the EU’s AGRI Committee proposed two amendments⁹⁴⁰ that would first limit the terms and packaging that could be used for alternative milks, including banning ‘indirect use’ or ‘evocation’ of dairy products,^{941, 942} and then prevent plant-based meat alternatives from using names currently used for meat products, like sausage or burger.⁹⁴³ Widely reported as the dairy and meat lobbies’ amendments respectively, lobby groups like Copa-Cogeca were vocally supportive, claiming they would address a case of ‘cultural hijacking’ that was designed to ‘deliberately confuse consumers’.⁹⁴⁴ Surveys, however, have shown that consumers are not confused by a veggie burger, so long as it is clearly labelled as vegetarian or vegan.⁹⁴⁵ Copa-Cogeca also portrayed meat as natural and plant-based alternatives as ultra-processed⁹⁴⁶ – when in reality, as consumer organisation BEUC pointed

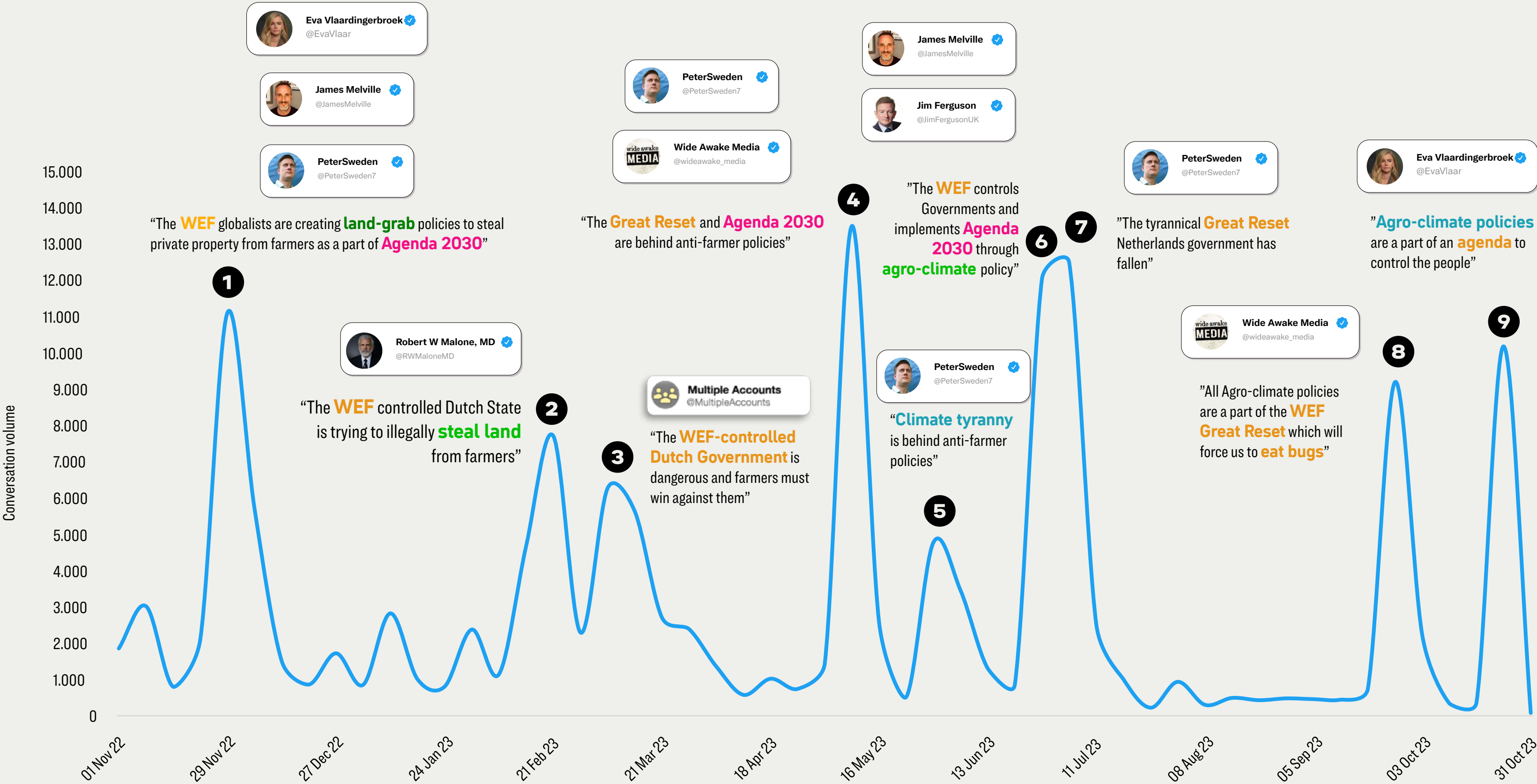
out, both types of food can vary in quality and levels of processing, yet ‘a chicken burger being highly processed does not prevent it from being called a burger’.⁹⁴⁷

It is notable, however, that not all big players in the dairy industry were in favour of the marketing restrictions for plant-based drinks, because some of them also have significant business interests in the plant-based sector. Nestlé, for example, was not supportive of the dairy industry amendment, and called the claims of consumer confusion ‘ridiculous’, arguing that ‘a ban would also contradict the EU’s drive to help consumers choose more sustainable food’.⁹⁴⁸ FOI documents further reveal that both Nestlé and Danone (which also has a large share of the plant-based market) told the European Commission that they didn’t support the amendment.^{949, 950}

The threat from cultivated meat is also overplayed by the meat industry and its allies – and often lumped in with plant-based proteins, to better serve their agenda of preserving the status quo of unsustainable methods and levels of meat production and consumption. Agriculture Commissioner Wojciechowski, for example, appears to have inflated the significance of cultivated meat in the European Commission’s 2040 climate target negotiations, claiming there would be ‘discontent’ if ‘traditionally prepared food is replaced by synthetic alternatives’, successfully getting rid of not just references to cultivated meat, but to ‘diversified protein intake’ more generally⁹⁵¹ (see Table 3.1).

In the UK, the trade lobby group Dairy UK, whose members include Arla and Saputo, has been engaged in a campaign for years, as revealed by Unearthed, to persuade policymakers that allusions to dairy in plant-based products were ‘marketing malpractice’ by misleading consumers as to plant-based products’ nutritional profile.⁹⁵² Meanwhile, Italy’s right-wing government has put in place a national ban on lab-grown meat, on the grounds that it would threaten Italy’s cultural heritage, along with restrictions on labelling of vegan and vegetarian products like sausages and

CONSPIRACY POSTS DOMINATED SOCIAL MEDIA LANDSCAPE AROUND REFORMING THE DUTCH NITROGEN POLICY



burgers⁹⁵³ – despite the fact that cultivated meat has not yet been approved for use in the EU.⁹⁵⁴ (See Italy case study for more detail on misinformation surrounding this legislation.)

Misinformation that disparages alternative protein is having an impact, with some of the largest plant-based meat alternative companies reported reduced revenue projections in 2023 and falling sales. Media outlets reported sales falling partly due to the ‘*uncertainty around the health benefits of plant-based meat*’.⁹⁵⁵ The chief executive of Beyond Meat highlighted how misinformation has ‘held back sales’.⁹⁵⁶ Counter narratives from the plant-based meat industry have also been employed, in the form of public ads and online debates, though price differences are also contributing to a challenging sales environment.^{957, 958} In some countries, the price of meat is much less than a plant-based burger for example, and alternative protein sources like tofu and chickpeas are usually cheaper.^{959, 960, 961} Many of the posts disparaging alternative proteins and shifting from meat and dairy consumption, appear to be mixed in with damaging gender politics, using language like ‘*meat is manly*’ and criticising what mis-influencers call ‘soy boys’ – often depicted as weak and unhealthy.

Box 3.6: **Big Ag allies make moves to block transparency and access to justice**

The derailing of progressive policy can often come in the form of parliamentary amendments, put forward by pro-industry MEPs (often as a direct result of lobbying, and sometimes even verbatim from industry suggestions) and designed to weaken the performance of a policy. In the case of the IED lobbying, industry-friendly amendments sought to limit the ability of the public or public representatives, such as NGOs, in pursuing access to justice and compensation for pollution.

Dutch MEP Bert-Jan Ruissen, part of the European Conservatives and Reformists (ECR) group, who met with Copa-Cogeca on the IED on 27 September 2023, and went on the EVL farm visit on 7 September 2023, tabled amendments deleting reference to health and environment NGOs being classed as having an interest in permit-granting procedures, and therefore NGOs’ ability to bring collective actions for compensation.⁹⁶² These made it into the final AGRI opinion.⁹⁶³

Similarly, EPP MEPs Peter Jahr, Norbert Lins, Christine Schneider, Marlene Mortler and Lena Düpont, tabled two amendments on shifting the burden of proof from the polluter to the victim of pollution.⁹⁶⁴ These formed the basis of Amendment 75 in the final AGRI opinion,⁹⁶⁵ which reverses the onus on the polluter to prove that a violation of the law did not cause damage, to the onus being on the person who makes the allegation to prove that the violation of the law caused damage. In other words, this makes it much easier for factory farms to get away with harmful pollution that breaches the IED (such as unlawful levels of methane), and much harder for victims of that pollution (such as people who live near the factory farm) to get compensation.



CASE STUDY

Italy: The transnational far right ban on cultivated meat

In November 2023, Italy imposed a ban on plant-based protein products having meat-related labelling - e.g. 'vegan sausages' - and became the first (and only) country in Europe to ban cultivated meat.⁹⁶⁶ Building on Changing Markets' previous research, *Truth, Lies and Culture Wars*, which uncovered significant social media misinformation surrounding meat and dairy, we undertook an analysis of online conversations between March 2023 and February 2024 - a timeline covering the first discussions on the ban, the ban itself, and the farmers' protests that took place in early 2024. We uncovered 240,000 misinformation posts during this time-frame, with 1.27 million engagements and 125,000 unique accounts contributing to the discussion.

Some of the key messages put forward before and after the bill was passed mentioned 'protection of our culture, our tradition'.⁹⁶⁷ To understand how these narratives were being shared, by whom and when misinformation was spiking, we worked with Ripple Research, who extracted the data using opinion mining technology, leveraging Natural Language Processing (NLP) algorithms and machine learning techniques. This was combined with analysis and background research from a team of data specialists. The research focused on X (formerly Twitter), as other social media channels have privacy restrictions which make similar analysis more challenging.

This latest case study built on our previous research, which analysed misinformation surrounding the Netherlands' attempt to reduce agricultural pollution. In this study, we uncovered what looked to be a transnational far-right movement, connecting local issues to a global conspiracy (see section 'Misinformation online').⁹⁶⁸ Although both studies covered a 12-month time period, following the progress of a specific policy,⁹⁶⁹ engagement with misinformation posts was 2.5 times higher in our Italy study than in the Netherlands. As well as the cultivated meat ban, legislation in Italy also included new rules on plant-based protein labelling, however, misinformation surrounding this topic was not a significant finding in the data set. This may be because cultivated meat is a more novel technology and was an easier 'villain' in the light of knowledge gaps, both with the public and with policymakers.

The transnational far right

In our Italian study, we identified what appeared to be strategically deployed misinformation spikes, timed with the confirmation of the ban on cultivated meat. Although industry lobby groups like Coldiretti, Italy's largest farmers union,⁹⁷⁰ called MPs opposing the ban "criminals" at a public rally,⁹⁷¹ 80% of the top misinfluencers^{CM} on X were not based in Italy. Instead they hailed from the US, the UK and Sweden - all predominantly posting in English.

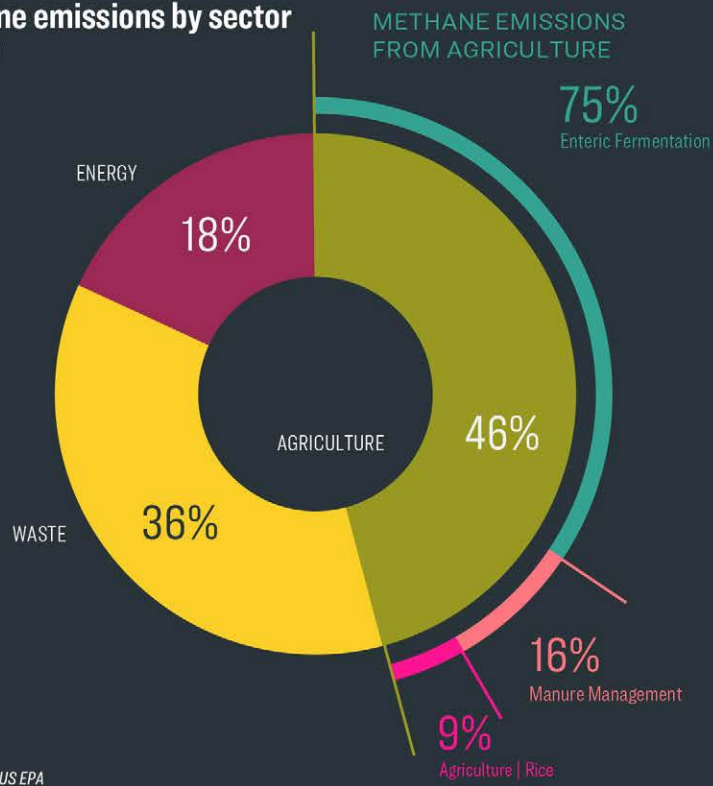
English language posts circulated around conspiracy theories like the Great Reset, anti-health claims against cultivated meat and encouraged other countries, particularly other European countries, the US, UK, and Australia to follow Italy's example in the 'fight against the global elite'. Conversely, when we examined the top 50 Italian posts by engagement, the narrative shifted noticeably: the emphasis on pro-tradition stands out, anti-health arguments and narratives of Fear,

CM A misinfluencer is defined as any person, group, organisation, or entity that spreads misleading information, thereby influencing the beliefs and discussions of digital communities significantly.

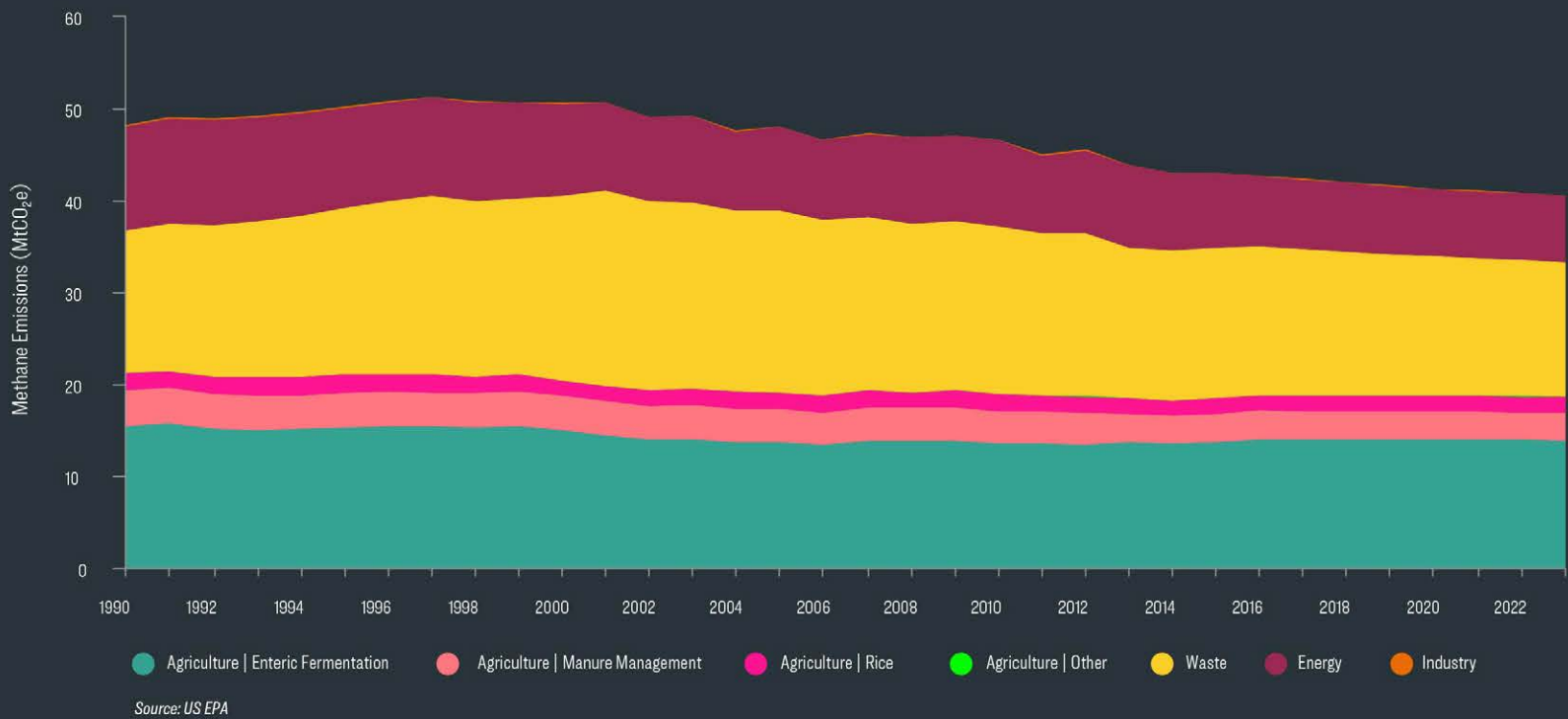
Greenhouse gas emissions
(in 2022)



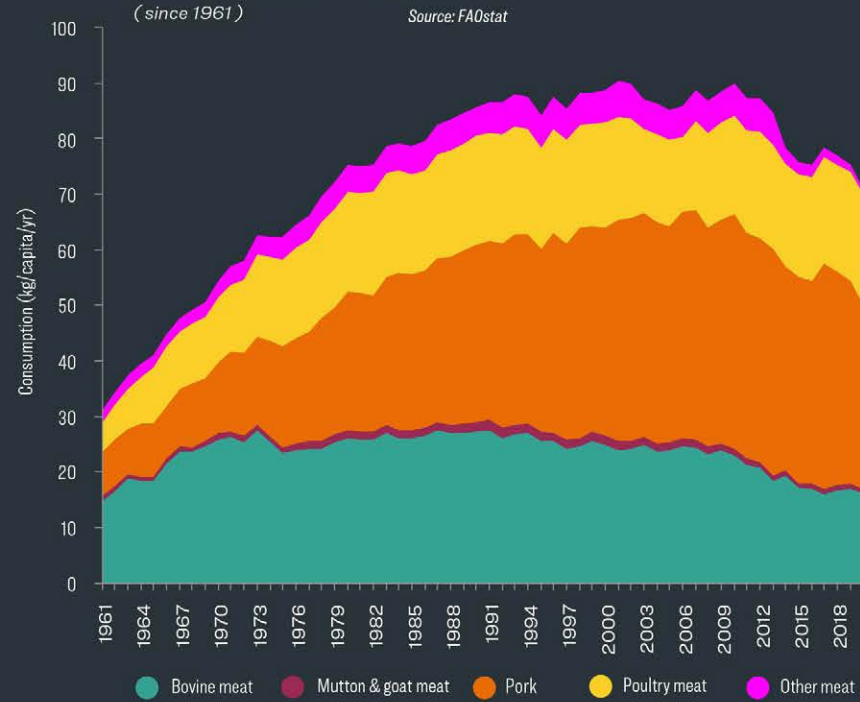
Methane emissions by sector
(in 2022)



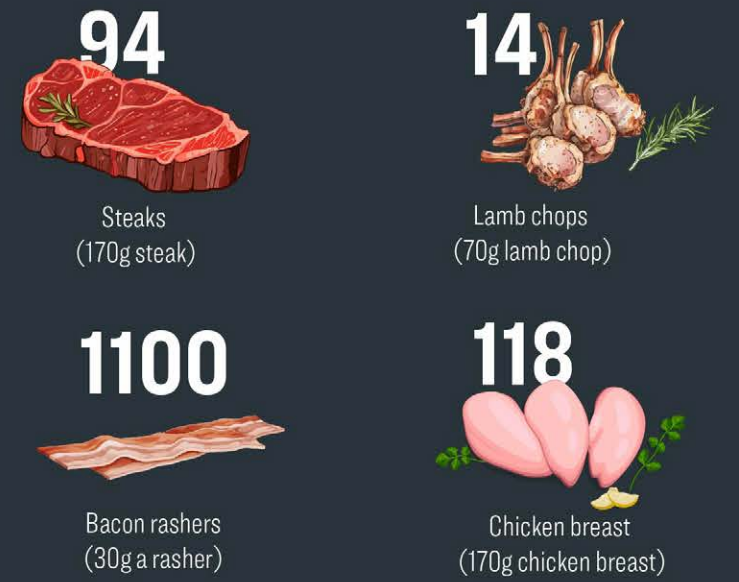
Methane emission by sector
(from 1990 to 2022)



Meat consumption per capita
(since 1961)



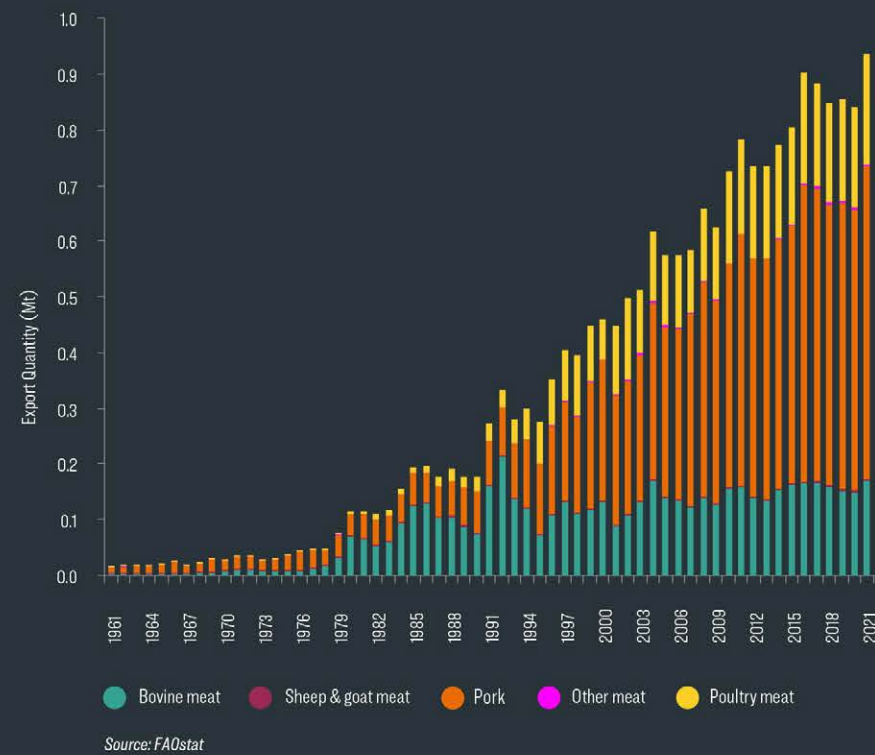
In 2020 the average Italian citizen consumed:



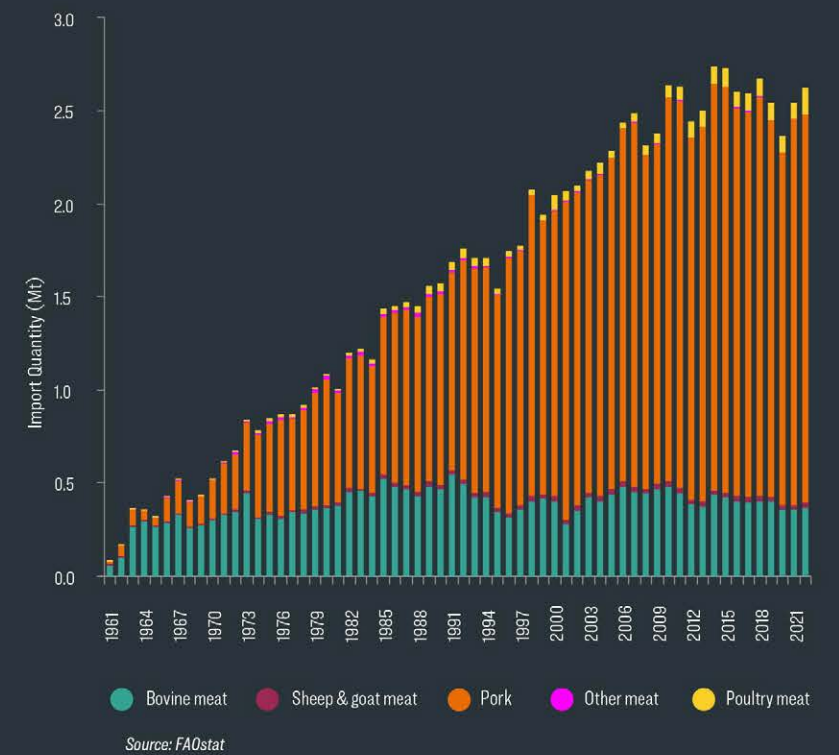
Historical consumption of protein
(Grams per day)



Rise in meat exports



Rise in meat imports



Surges in misinformation activity appear to be triggered by key policy milestones, suggesting targeted campaigns.

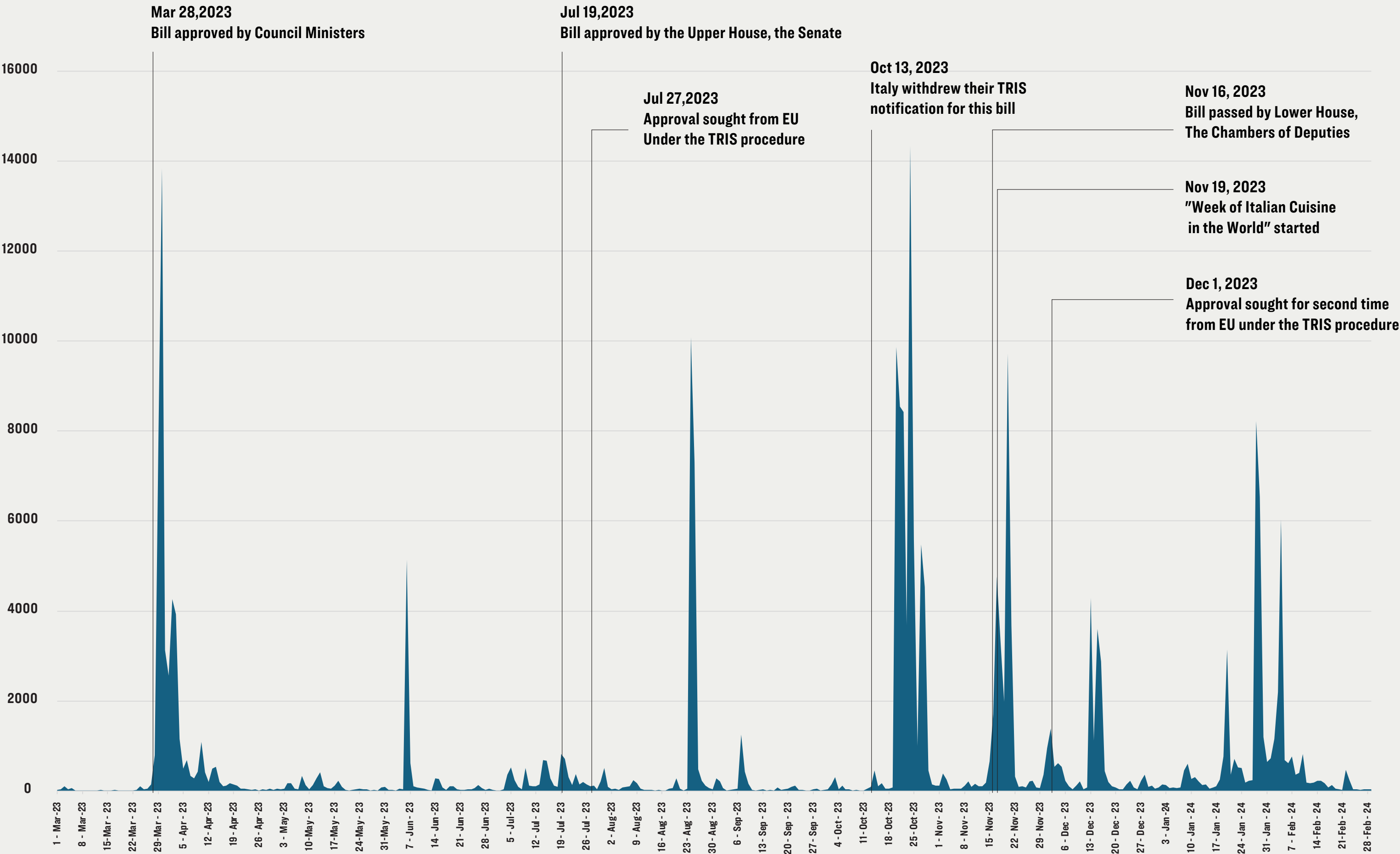


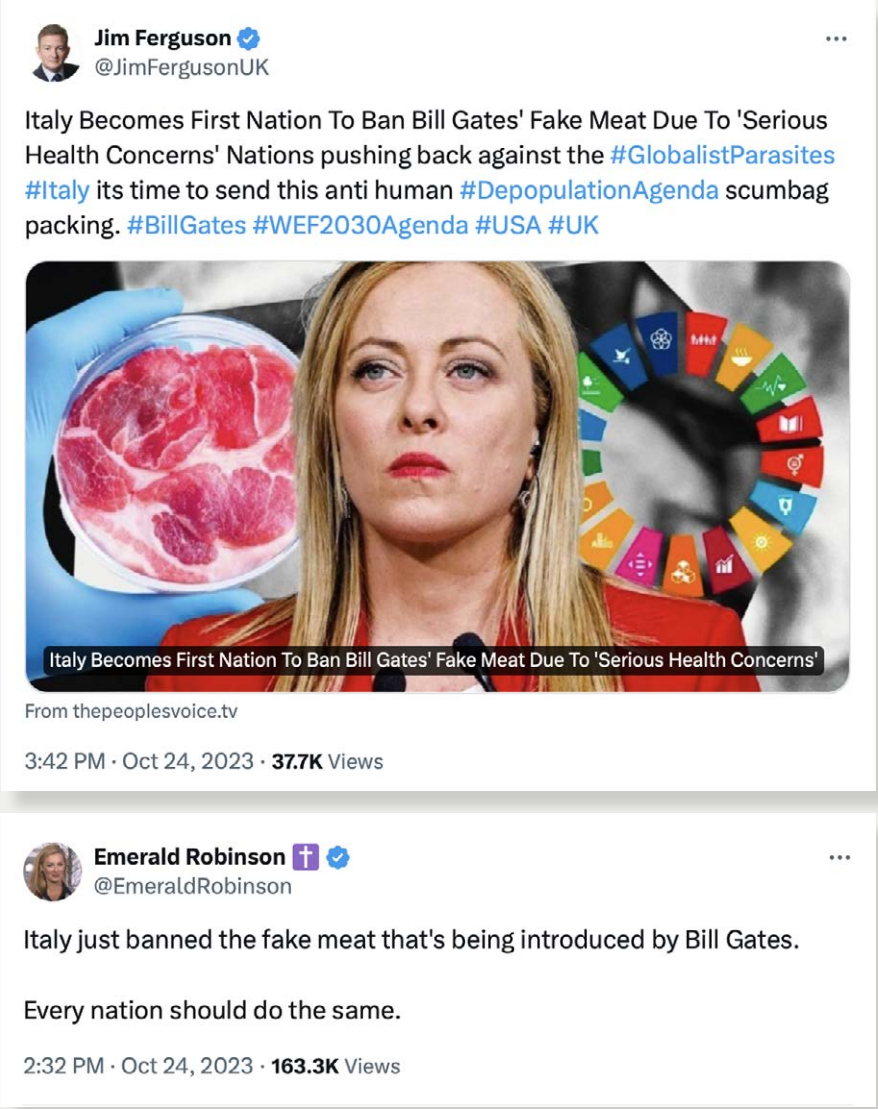
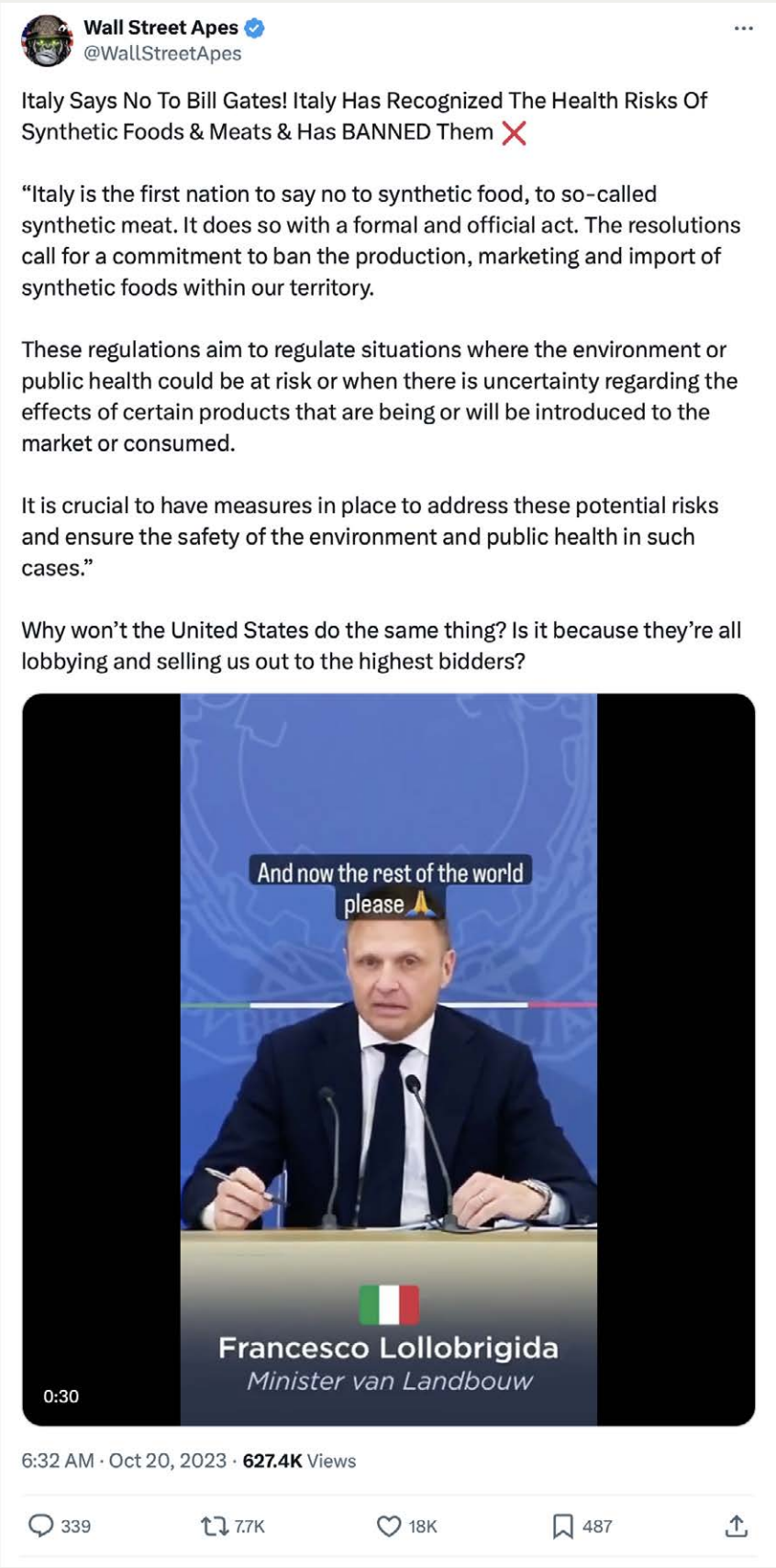
Figure 18 : Surge in misinformation activity appear to be triggers by key policy milestones, suggesting targeted campaigns

Uncertainty, and Doubt (FUD). This propaganda technique, aiming to spread fear, uncertainty, and doubt, appears frequently in Italian posts, linking lab-grown meat to various entities and suggesting dire consequences like disease and food insecurity, painting a dystopian future contingent on the acceptance of cultivated meat. Anti-farmer narratives were also present in the dataset, along with climate and science denial.

A third of misinfluencers predominantly posting in English, were publicly aligned with far-right ideologies. They included:

- **Bev Turner**, a presenter from GB News, a UK channel widely recognized for its right-wing orientation.
- **Emerald Robinson**, a former correspondent for OANN (One America News Network), an American channel known for its far-right stance and strong support of Donald Trump.
- **Peter Immanuel**, also known as **Peter Sweden**, a self-proclaimed journalist renowned for his right-wing content and controversial social media statements concerning anti-Semitic themes and Holocaust denial.
- **Dr Anastasia Loupis**, a medical practitioner from Denmark infamous for disseminating disinformation and conspiracy theories alongside promoting right-wing narratives.

Emerald Robinson, Peter Sweden and Anastasia Loupis appeared in our previous datasets on misinformation on meat and dairy online. This is worth noting as we have previously found that 50% of engagement with meat and dairy misinformation online was captured by as few as 50 accounts, confirming that a



small number of people/accounts can have significant influence in spreading misinformation and disinformation.⁹⁷²

The remaining English language accounts primarily driving misinformation around cultivated meat are outlined below, though it is unclear how many of these accounts might be bots:

- **Illuminatibot**, a conspiracy-focused account with a following of 1.7 million, previously identified for disseminating health misinformation and conspiracies related to the ‘Great Reset’.

- **Healthbot**, an account with 400,000 followers, notorious for spreading health misinformation.
- **Wall Street Apes** and **Wall Street Silver**, two related entertainment accounts with followings of 300,000 and 1.2 million respectively, Both have been implicated in propagating misinformation and right-wing narratives.
- **Disclose.tv**, a Germany-based disinformation outlet masquerading as a news aggregator, notorious for promoting conspiracy theories and fake news, including misinformation on COVID-19 and anti-vaccine rhetoric.
- **The Spectator Index**, managed by an individual in Australia, criticized for its contentious lists and misleading reporting.
- **Ian Jaeger** and **Pelham**, with follower counts of 140,000 and 200,000 respectively, which appear to be unaffiliated with any notable organizations.

Misinformation from Italian accounts focused more on ‘health’ protection of ‘tradition’ and FUD narratives, feeding into culture war and polarising discussions by presenting the ban as a way of protecting Italian culture. The accounts driving this included:

The official party account of the **Fratelli d’Italia (Brothers of Italy)**, a political party characterised by its national-conservative and right-wing populist ideology, led by PM Giorgia Meloni.

Bonifacio Castellane (a pseudonym), a writer and columnist for La Verità, a newspaper with a right-wing populist stance.

Ortigia-PR, an account with 20,000 followers, which does not seem to be publicly associated with any specific organization.

Conversations in the misinformation dataset overwhelmingly approved of the ban and applauded it as reinforcing traditional values. As we found in our previous research, misinformation appears to be driven by actors both within and outside the country passing legislation and is linked to a global conspiracy agenda in its spread online.

Targeting mis/disinformation around key policy moments

Over a 12-month research period, we identified seven misinformation peaks, with a clear correlation with key legislative events. Conversations around cultivated meat, often referred to as ‘lab grown’, ‘synthetic’ or ‘fake’ meat, drove the majority of misinformation and disinformation spikes across these 12 months.

Two of the largest peaks in misinformation surrounded the announcement of the ban on cultivated meat in March 2023, and the enactment of the law on 17 November 2023 - events that served as catalysts for the propagation of misinformation within the discourse on cultivated meat. However, the biggest misinformation peak was before the legislation was passed, between 20 October and 27 October. Not only was this the largest peak in terms of volume of misinformation online, but it was also the longest peak, spanning an entire week. Finally, the data shows a ripple effect following the enactment of the ban, where misinfluencers celebrated the ban and started to use it as a precedent for similar bans in other countries.

Peak 1: 30 March 2023

Italy introduces a ban on labelling and cultivated meat

To undermine the validity of cultivated meat, narratives online focused on terms like ‘fake’ or ‘synthetic’ and the proposal to ban this novel food was celebrated as a preservation of Italian tradition and as an act of resistance to the Great Reset. In the latter case, this was linked with the previous pledge to ban insect-based foods,

which later became a labelling obligation,⁹⁷³ linking these actions with the opposition to the agendas of Bill Gates, the ‘Big Pharma’ industry and environmentalists.

Peak 2: 6 June 2023

The ban is conflated with right wing values

During this peak, misinformation spread following a post from one of the top mis-influencers in the dataset (and previously identified in other reports), Dr Loupis. This tweet alleged that Prime Minister Meloni had introduced a ‘family pride month’ to counter LGBTQ Pride celebrations. Although this was fake news, misinformation online spiked, with conversations attempting to link the ban on cultivated meat with a broader far right agenda. Posts in this peak urged similar actions from other countries and praised Meloni’s leadership across these different policy areas.

Peak 3: 24 August 2023

Trust is eroded in lab-grown meat

After right-wing media outlet La Verità published an article suggesting that the ‘lab-grown meat lobby’ – supported by BlackRock and financially assisted by Bill Gates – was diverting funds from genuine farmers at the G20, misinformation online spiked around this topic. At the same time, misinformation peaked around a video praising Meloni’s protection of cultural heritage and further developed with posts expressing opposition to ‘globalist’ forces trying to control them. As narratives focused

around the apparent secrecy of cultivated meat processes, these multiplied: ‘I’m not eating crickets I’m not giving up my car’, ‘Leave me alone, you WEF psychos’. Narratives during this time focused on concerns around the safety of consuming cultivated meat, identifying it as ‘fake’ and something that must be rejected, as well as tapping into narratives about Bill Gates’ alleged nefarious intentions. Like peak 2, this peak was driven primarily by one account, Wall Street Silver (see above).

Peak 4: 24 October 2023

A pre-emptive strike to stem opposition to the ban

Misinformation spiked at a time when it looked like the Italian government might be wavering in its decision and pulling back from the proposed legislation. The narratives focused on how positive the ban would be, and many misinfluencers posted similar posts at the same time. This took place in larger numbers than anywhere else in our dataset and suggests that misinformation may have been strategically deployed to limit any backlash before parliament voted on the bill the following month.

The appearance of ‘wavering’ appeared to be driven by the government’s withdrawal from the EU’s Technical Regulations Information System (TRIS), which all laws which might impact the EU single market must go through.⁹⁷⁴ Although many viewed the withdrawal from TRIS as a strategic move to avoid outright rejection of the ban by the EU, and the Agriculture Minister posted a video to confirm withdrawing from the TRIS process was not a step back, misinfluencers posted and shared



an older video instead, presenting the ban as a newer development and in which the minister showed a strong commitment.⁹⁷⁵

During this spike, other meat and dairy misinformation narratives also emerged, including broader anti-GMO sentiment and discussions about glyphosates, the Great Reset and health misinformation - saying cultivated meat causes ‘turbo cancer’, and calling for other countries to follow suit and to ‘win’ against ‘fake foods’, GMOs and pesticides.

Peak 5: 20 November 2023
The ban on cultivated meat is approved and celebrated as a win over the ‘global elite’

Misinformation narratives highlighted the cultivated meat ban as a victory against ‘artificial life certainly not worth living’, pushed by the global elite agenda. This peak included narratives around the rich getting to eat real food and the poor being forced to eat engineered food, despite the high cost of cultivated meat in the two countries that have approved it for consumption (Singapore and the US). Health misinformation was also high at this time, presenting the ban as a win to protect people from being used as test subjects or ‘guinea pigs’ and protecting people from uncertified health risks like ‘turbo cancer’. As with other examples in the seven peaks of misinformation, the narrative was pushed to encourage other states to also ban cultivated meat and linking the ban with defying the ‘elite’ agenda and the Great Reset.



Peak 6: 13 December 2023
Health misinformation and conspiracy links to the cultivated meat ban

After a People’s Voice^{CN} article praised the ban in Italy and claimed customers had to sign waivers before eating cultivated meat, the ban was again used as a symbol of resistance against the global elite’s push for synthetic food. Italy is presented in this peak as a champion of tradition and culture, while we also start to see the cultivated meat ban being clearly linked with narratives around standing up to elites’ attempts to ‘control farmers’.

Peak 7: 20 January - 28 February 2024
Cultivated meat becomes connected to farmer protests, portraying its proponents as anti-farmer

Although the dataset showed a clear distinction between non-Italian conspiracy-based posts and Italian posts focused on protecting tradition and culture, in the final peak conspiracy theories find their way into both. Bill Gates appears in both Italian and non-Italian language posts, and in the former Mark Zuckerberg also makes an appearance as another rich, influential actor pulling the strings of a global conspiracy. At the time of this misinformation spike, farmer protests were ongoing across Italy and other countries in Europe, and cul-

tivated meat misinformation is presented here as a ploy to bankrupt farmers and

CN The People’s Voice, is the rebranded ‘NewsPunch’, previously Your News Wire – an American fake news website, who has appeared in Changing Markets previous analysis on meat and dairy misinformation online.

put them out of business. Within this period, conversations saw animosity towards the EU, especially the Green Deal, criticised as detrimental to Italian farmers. This sentiment fuelled discussions around national autonomy, with the EU's stance on synthetic foods and agricultural innovations becoming a focal point of contention.

Far-right narratives and Italy's influence on the EU

Italy's ban has not happened in isolation. During Prime Minister Meloni's time in government, Italy has put pressure on the EU to scale back its green policies and has regularly abstained or voted against them,^{976, 977} despite Italian farmers facing severe weather including heatwaves and floods due to climate change.⁹⁷⁸ Most recently, Italy was one of eight countries that pulled their support from the Nature Restoration Law.⁹⁷⁹ Hungary, another EU member state with political links to farmer protests (see Intimidation section) had originally supported the proposal, but recently backtracked - probably due to Prime Minister Viktor Orban sensing political opportunity in siding with the farm lobbies that oppose this piece of legislation.⁹⁸⁰

Meloni herself has also appeared in many of the misinformation posts we found in our research. Her name came up in our dataset and she was positioned as a hero of protecting traditions and opposing globalist agendas - she was the role model used to encourage other states to follow Italy's footsteps. In the upcoming European elections, Meloni has decided standing as the lead candidate for her Brothers of Italy party to 'send the left into the opposition'⁹⁸¹ through a right-wing coalition between the European Conservatives and Reformists (ECR) (the group she is part of) and the EPP (Commissioner von der Leyen's party). The EPP, which had the largest number of seats in the last period of the European Parliament, has shifted towards the far right and is looking to build alliances with the ECR and far right Identity and Democracy parties. As the elections loom, the EPP has also positioned itself as the 'farmers' party', pushing back against the Green Deal and contributing to the normalisation of the far right's anti-green agenda.^{982, 983}

Italy's influence in EU politics on agriculture is not something new. MEPs like Paolo de Castro,⁹⁸⁴ have recently been featured in the documentary Food for Profit, an investigation into industrial farming, CAP subsidies and the institutions that uphold the status quo to continue their growth.⁹⁸⁵ De Castro was featured in undercover footage pushing the interests of the Big Ag lobby in his role within the Parliament and the Agri Committee.

Our research on meat and dairy related misinformation uncovered clear links with far-right narratives, while industry-funded misinformation has also found its way into the online discourse of far-right commentators and conspiracy theorists. Organisations like European Livestock Voice (ELV), a lobby group set up to defend livestock industry interests against animal welfare and environmental policies, has been very vocal against cultivated meat, stating that dietary shift away from 'real meat' as a way to tackle climate change is 'inaccurate' and 'could prove catastrophic for our nutrition, our territories, our environment, diversity and our culture'.⁹⁸⁶ Carni Sostenibili, the Italian arm of ELV, has published several articles attacking cultivated meat, including pushing misinformation about its impact on the climate, and using fearmongering language about its 'artificial' nature and the health impacts of cell-based growth.^{987, 988} Carni Sostenibili also references data pulled from a report commissioned by the Dutch Ministry of Agriculture, Nature and Food Quality, written by Wageningen University & Research,⁹⁸⁹ a key player in agroemia (see more in this section of the report).

One article also references a UC Davis study, now debunked by various scientists,⁹⁹⁰ but which has found its way into the conspiracy rhetoric online. The UC Davis study on cultivated meat, claiming that it is 25% worse for the environment than beef, was published pre-peer review and retweeted by Frank Mitloehner, the head of an industry-funded research centre at UC Davis. Since criticised by a number of other academics for its methodology and misleading comparisons,⁹⁹¹ the study was quickly adopted by conspiracy theorists and included into narratives around Bill Gates giving people 'turbo cancer' and a Chinese biowarfare conspiracy.⁹⁹² It-

aly, along with Austria and France have referenced this debunked study in a document put forward to the European Council, on ‘the CAP’s role on safeguarding high-quality and primary farm-based food production’, citing this as evidence to limit investment into cultivated meat.⁹⁹³

UC Davis has been flagged as one of the universities that has received significant industry funding to promote its narratives, particularly through its Clarity and Leadership for Environmental Awareness and Research (CLEAR) Center, headed by Frank Mitloehner.⁹⁹⁴ Not only is the CLEAR Center funded by the meat and dairy industry but Mitloehner himself has become a key media and social media influencer. He can be found on X under the account ‘GHG Guru’, promoting the positions and the solutions preferred by the livestock industry. Since the CLEAR Center was formed, Mitloehner’s following has grown from 983 followers to over 30,000.⁹⁹⁵

What does this mean for climate legislation in the EU and further afield?

The rise of populist parties across Europe and their huge role in spreading fake news around environmental and health issues is a cause for concern. As this case study shows, misinformation around climate policy, and meat and dairy in particular, is spiking online around the time of legislative and policy discussions and is already making its way into the EU legislative space. Whether to limit the growth of competing markets to meat and dairy or linking conspiracy theories with farmer protests to derail climate legislation more broadly, the transnational far-right movement is pushing these narratives online, and more urgent action must be taken to counter this threat.

Discussions on implemented bans on cultivated meat have not only appeared in European discussions, but also in the United States. In March 2024, Florida became the first state approving a bill that would ban the sale of cultivated meat, with

Governor DeSantis citing conspiracy narratives including “fighting back against the global elite’s plan to force the world to eat meat grown in a petri dish or bugs to achieve their authoritarian goals”, and health concerns cited by other supporters.⁹⁹⁶ Alabama swiftly followed suit,⁹⁹⁷ and discussions are ongoing in Arizona and Tennessee.⁹⁹⁸ These bans have been welcomed by big meat associations like the US Cattlemen’s Association and narratives are linked in the US to protecting farmers also,⁹⁹⁹ posing further risks to polarising narratives on dietary shift and climate action in the food system.

The fight between science and populism is ongoing among various political and media forces. Strategically deployed spikes in misinformation surrounding Italy’s ban on cultivated meat echo disinformation campaigns around the Brexit vote in the UK. Although it remains to be seen if the ban in Italy will remain unchallenged by the EU, the narratives it has provided for industry-friendly websites, misinfluencers and agrodemia are damaging for the uptake of alternatives to meat and dairy products. If this shift to populism and a post-truth agenda persists, the EU risks losing credibility as an environmental actor on the global stage, as well as risking its competitiveness as other countries will win the race to develop alternative proteins.

3.2.5. How numerous Green Deal policies have been derailed in the EU

This chapter has outlined how the meat and dairy industry, particularly through Big Ag lobby groups such as Copa-Cogeca, effectively derailed multiple European Green Deal initiatives - mostly part of the Farm to Fork strategy - to prevent legislation in the EU from effectively regulating livestock emissions. Big Meat and Dairy paint a dramatic picture of the impact a policy would have on the industry, shoring up their arguments by pushing the centrality of meat and dairy to people's health and the economy as if no alternative future is possible. They then argue that yes, some regulation is needed but these tools are the wrong ones, emissions should be dealt with elsewhere or dropped or delayed due to 'double regulation', but never finding any policy that meets their standards. The end result is that policymakers make concessions to the sector, under so-called agricultural exceptionalism, and often give additional concessions to Big Ag in a time of a crisis, reversing or delaying existing policies.

If everything else fails, the industry rolls out the tractors, as we have seen in mass farmer protests in early 2024. These came in the context of multiple elections and have been seized upon by the far right and Big Ag lobbies. Their main outcome has been the destruction of most environmental rules around farming, as well as restrictions to Ukrainian agricultural sales, leading to a huge revenue loss (€1 billion) for a war-struck country and a major win for Putin.¹⁰⁰⁰

Through privileged access and undue influence in EU policy making, including dominating expert groups and meetings, large sums spent on lobbying and a revolving door that blurs the interests of regulated and regulator, combined with the CAP subsidy regime, and steadfast allies on the political right (often with their own

interests in Big Ag, or even recipients of CAP money), these arguments and tactics are not only heard but heeded. The result is that no legislation in the EU has yet tackled methane emissions from agriculture, and at least ten promised Green Deal initiatives have been derailed (see Table 3.1). These reforms were urgently needed to tackle climate change, biodiversity loss and soil degradation, and transform our food system into one that is sustainable and fair - have been derailed.



| Source: Farmer protest, Shutterstock

3.3 The US: where meat and dairy set the agenda

In the US, we see similar tactics as have been deployed in the EU, which play out to prevent climate-focused regulation of the meat and dairy industry. However, in the US context the actions and results are amplified - the same tactics but on steroids - and meat and dairy companies don't just influence the agenda - the agenda appears to be set by them. The US political lobbying and donations system means that the industry not only influences through vast sums spent on traditional lobbying - both by the companies themselves, and the lobby groups they're members of - but also by making political donations and by having representatives throughout the political system, including in the highest farming-related role (see Box 3.8).

The key policy areas that Big Meat and Dairy industry have influenced in the US include the Global Methane Pledge and the Inflation Reduction Act, as well as taking pre-emptive strikes in the form of the Dairy Pride Act and against an imaginary 'cow tax' that was never actually proposed. The result is a series of policies that focus entirely on voluntary support for the meat and dairy industry to lower their emissions, and a total avoidance of discussions of regulation entirely. Essentially, we see an all-carrot-and-no-stick approach to tackle emissions from this huge industry. In 2023, the US was home to an estimated 29 million beef cows and 9.4 million dairy cow,¹⁰⁰¹ and the US EPA estimates that a 'single cow produces between 154 to 264 pounds of methane gas per year'.¹⁰⁰²

Livestock methane pollution accounts for more than a third of US methane emissions, according to the EPA.¹⁰⁰³ Agriculture as a whole accounts for at least 10% of US GHG emissions and the agricultural emissions increased by 7% since 1990.¹⁰⁰⁴ Methane emissions account for a significant part of that and there is compelling evidence they may be routinely undercounted.¹⁰⁰⁵ (See Box 3.7 for more details).





USA



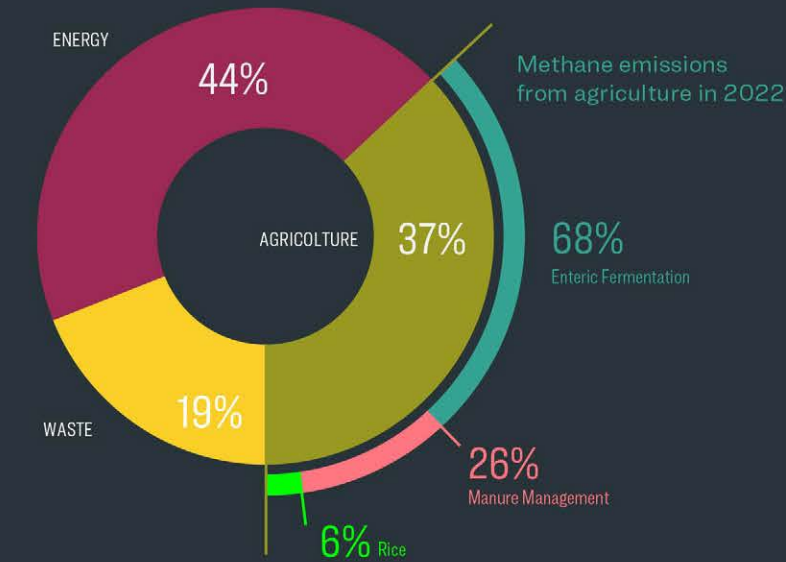
Greenhouse gas emissions

(in 2022)

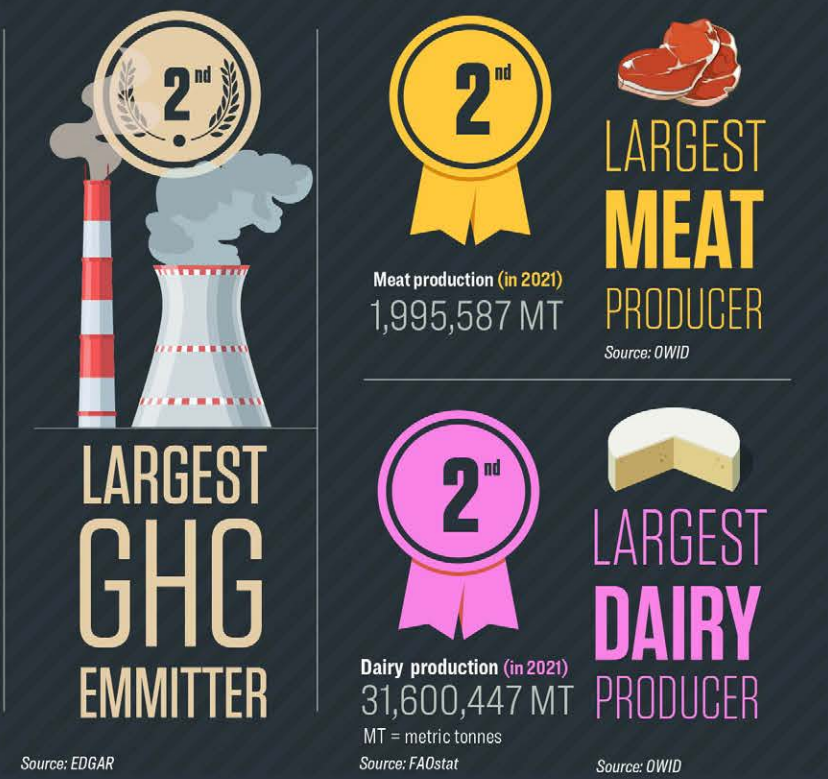


Methane emissions by sector

(in 2022)

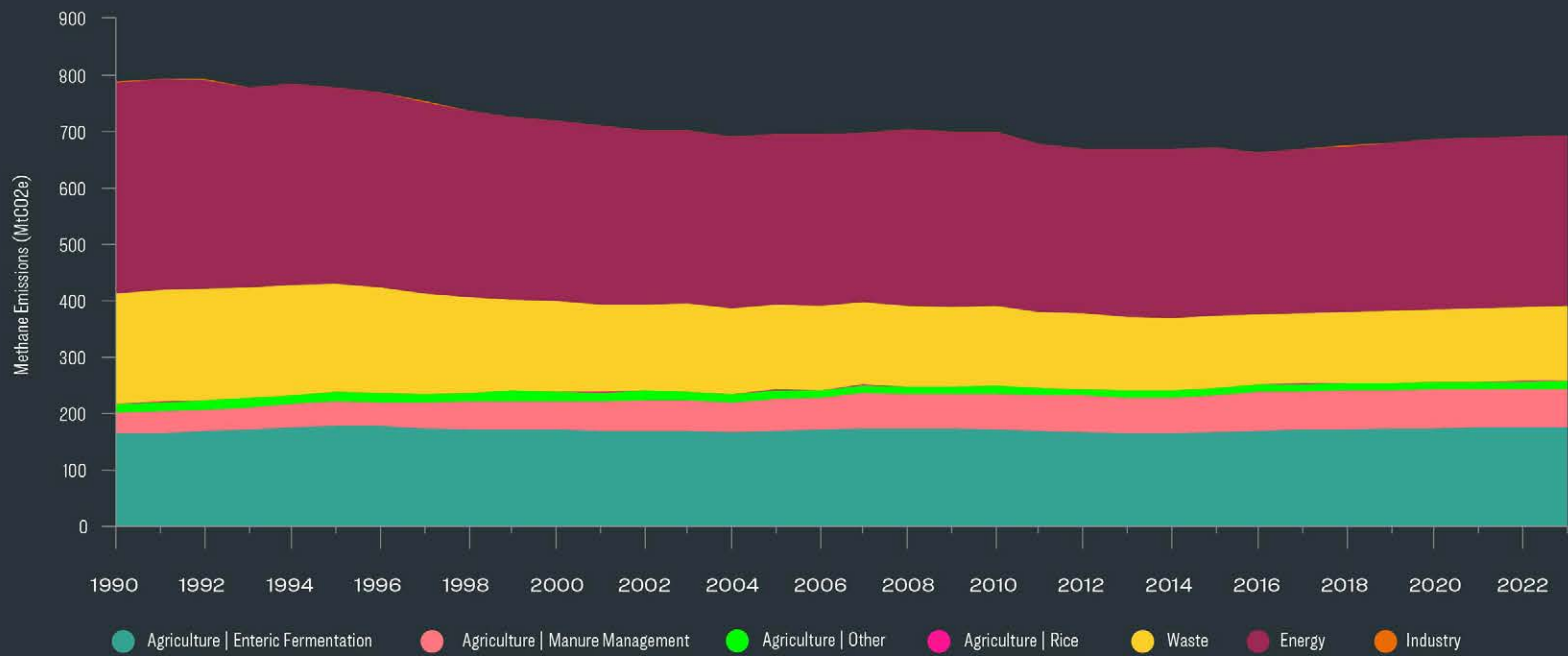


Source: US EPA



Methane emission by sector

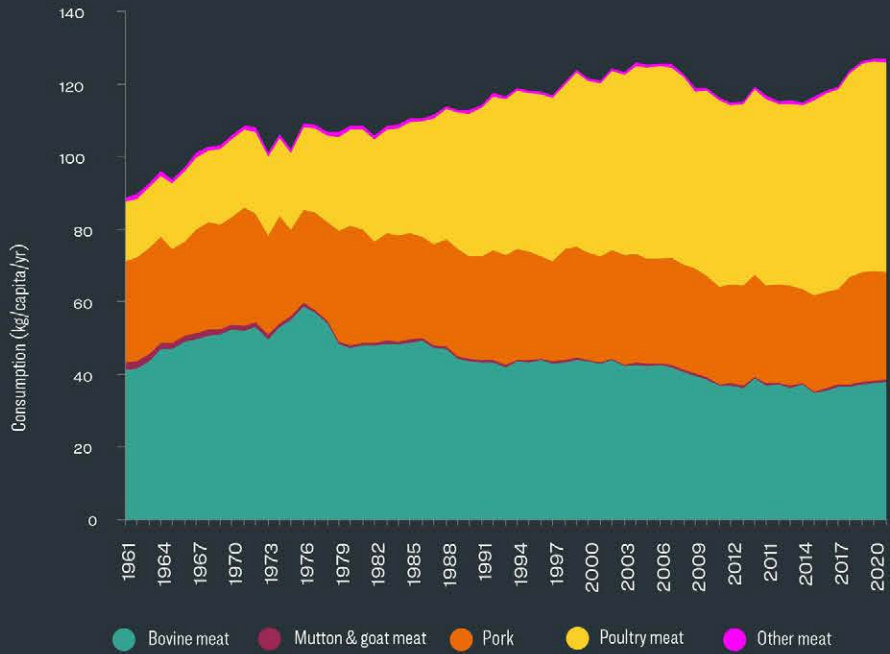
(from 1990 to 2022)



Meat consumption per capita

(since 1961)

Source: FAOstat



In 2020 the average US citizen consumed:

223.5



Steaks a year
(170g steak)

14.2



Lamb chops a year
(70g lamb chop)

1000



Bacon rashers
(30g a rasher)

341

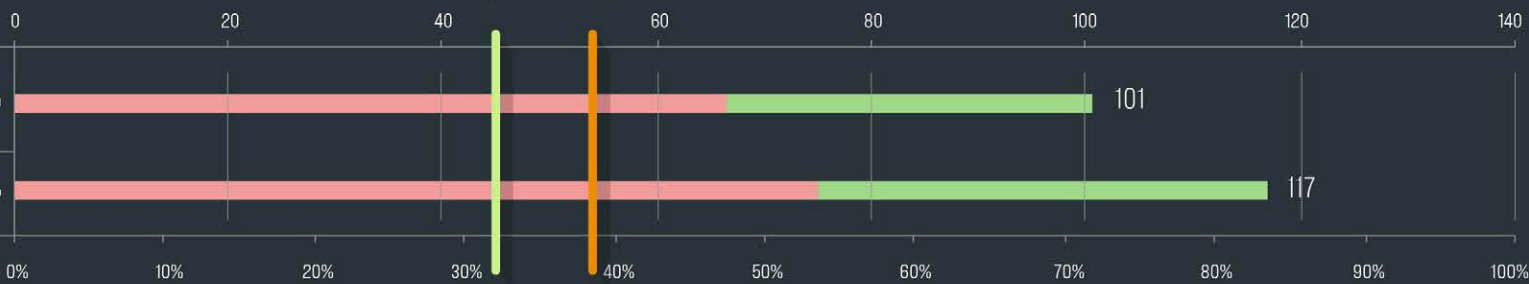


Chicken breast a year
(170g chicken breast)

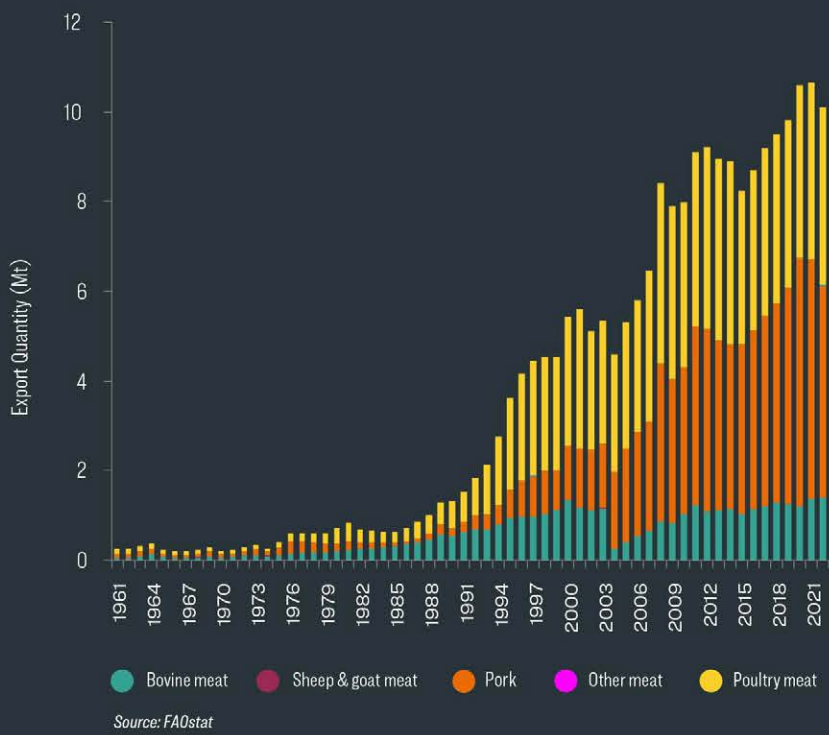
Historical consumption of protein

(Grams per day)

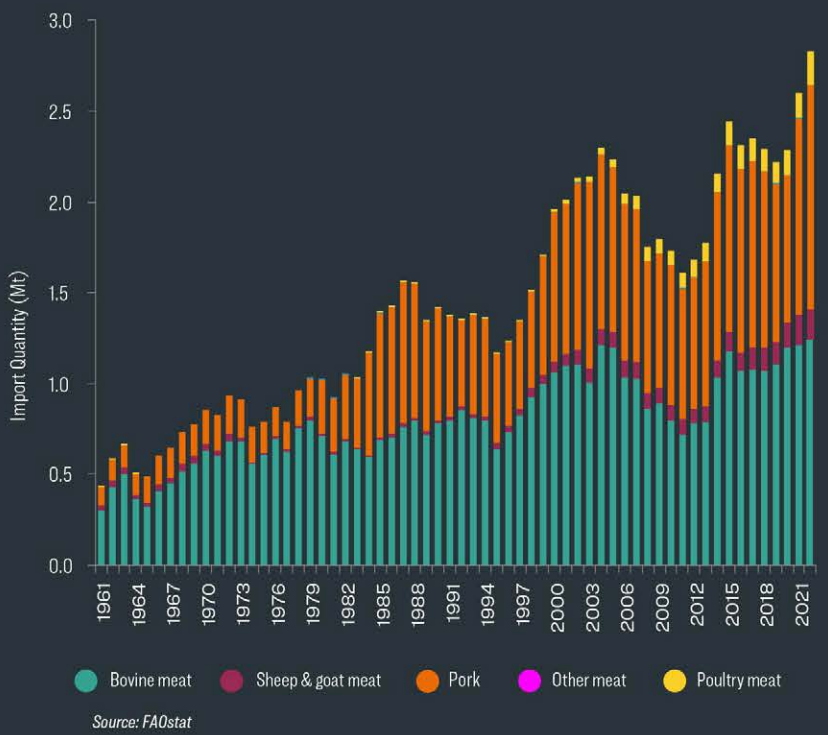
Protein Consumption (G/Capita/Day) [Columns]



Meat exports



Meat imports



Box 3.7: The true emissions of US meat and dairy

Despite the US downplaying the size of its agricultural methane emissions (see 3.3.2.2), more than one-third (35%) of US agricultural methane emissions are from livestock production, 25% from enteric fermentation and 10% from manure.¹⁰⁰⁶ According to the US EPA, methane from US livestock produced 278 million metric tons of CO₂-equivalent in 2021 – similar to the entire GHG emissions of Spain (289 million metric tons) in the same year.¹⁰⁰⁷ And while methane emissions from other US economic sectors are going down, methane from livestock increased by more than 60% between 1990 and 2021.¹⁰⁰⁸ In 2020, US cows emitted more than twice as much methane from their burps and manure as all of the country's oil and gas wells, according to EPA data.¹⁰⁰⁹

Individual dairies and livestock operations are exempt from reporting their methane emissions in the US (thanks in large part to the dairy industry and its allies – see 3.3.2.5), but new analysis based on satellite imagery, public records and AI gives insight to their scale. Just one ranch in California, home to 139,000 beef cattle, is estimated to be the largest single point source of methane emissions in the state, releasing 9,167 metric tons of methane annually – equivalent to the annual GHG output of 165,000 cars.¹⁰¹⁰

It is also important to note that, indirectly, livestock production is responsible for even more GHG emissions – half of US agricultural emissions are from nitrous oxide emitted when fertilisers are applied to crops; corn, the US' largest crop, is especially fertiliser-intensive, and 40% of US corn is grown as feed for livestock.¹⁰¹¹ In other words, the true impact of livestock production in terms of greenhouse emissions (beyond methane) is even higher.

Box 3.8: Tom Vilsack - Revolving doors at the highest level

When it comes to derailing regulation of the meat and dairy industry in the US, a fundamental role has been played by one person: US Agriculture Secretary Tom Vilsack, who was previously a lobbyist for the dairy industry, as president of the US Dairy Export Council, and before that, was US Agriculture Secretary under Obama – in essence, a double trip through the revolving door.

The Obama years

A dairy-industry shoo-in: When Vilsack was first nominated as Agriculture Secretary for Obama in 2009, the National Milk Producers Federation (whose members include Dairy Farmers of America) lobbied the Senate to appoint him, writing a letter to the Senate Agriculture Committee saying that Vilsack's two terms as Governor of Iowa – '*one of the most rural, and most agriculturally-oriented states in America*' – meant Vilsack would '*be a quick study on many of the issues for which USDA [US Department of Agriculture] is responsible*'.¹⁰¹²

Failing small farmers: During his tenure as Obama's Agriculture Secretary, Vilsack failed to introduce promised antitrust reform (to stop the increasing replacement of small farms with large conglomerates and Confined Animal Feeding Operations (CAFOs)) and '*let down independent family farmers when he failed to take on agribusiness domination*'.¹⁰¹³

Promoting false solutions like methane digesters: In the 2014 Farm Bill, Vilsack directed 880 million USD of the budget to '*energy programmes*';¹⁰¹⁴ in what the Centre for Food Safety called a '*greenwashed, industry-backed effort to siphon off public funds and ameliorate public concerns without having to completely usurp business as usual*'.¹⁰¹⁵ Vilsack also unveiled a plan to reduce 25% of US dairy emissions by 2020 by promoting anaerobic digesters^{1016, 1017} – which failed utterly, with dairy emissions instead increasing dramatically (see below and 3.3.2.2).

Failing to reform 'checkoff' system: Furthermore, as Agriculture Secretary, Vilsack's '*duties included overseeing the checkoff programs*',¹⁰¹⁸ which require a mandatory fee to be paid by farmers to go towards marketing programs for their products. Checkoff funds, however, go to groups like USDEC, the NCBA and the National Pork Producers Council that in reality do a lot of lobbying – and represent Big Meat and Dairy companies.^{1019, 1020, 1021} Vilsack was criticised for his handling of, and failure to reform, the checkoff system, which had red flags about transparency and oversight raised about it during his time as Obama's Agriculture Secretary. Beyond this, the Centre for Food Safety notes multiple wrongdoings of Vilsack during his two terms under Obama, including '*industry handouts, misdeeds rooted in racism*' – with Black farmers receiving disproportionately less money from USDA than white farmers,¹⁰²² and USDA six times more likely to foreclose on a Black farmer than a white farmer during Vilsack's tenure¹⁰²³ – and '*approving GMOs and their toxic pesticide counterparts*'.¹⁰²⁴

The USDEC years

Straight to a checkoff-funded dairy lobby: When Obama left office and Vilsack was out of a job as Agriculture Secretary, he immediately took up the job of president of dairy industry lobby group USDEC, where he was paid \$1 million annually.¹⁰²⁵ USDEC's members include Dairy Farmers of America, Saputo Cheese USA, and Lactalis Ingredients (US). USDEC's parent organisation, Dairy Management Inc, is funded by the dairy checkoff, as well as with funding directly from USDA.¹⁰²⁶

Promoting voluntary action and government incentives: USDEC itself represents the largest dairy conglomerates, and has '*drawn the ire of small dairy farmers for opposing country-of-origin labelling, and rigging trade deals to dump dairy products in global markets, which causes price volatility*'.¹⁰²⁷ While at USDEC, Vilsack pushed the line that '*the dairy industry has always been committed to sustainability*' and that the US dairy industry has its own (voluntary) net zero initiative – which, he said, the '*federal government can be a strong partner in ... by providing resources, providing incentives, and providing research dollars*'.¹⁰²⁸

Defending 'big is better': Also during his time at USDEC, Vilsack defended the farm monopolies that have seen thousands of small farms go out of business and that he failed to tackle as Obama's Agriculture Secretary. He said the fervour over agricultural monopolies stems from '*folks in think-tanks in urban centres who have had very little experience, if any, with rural places*', and warned Democrats against talking about or taking on farm monopolies, saying it will put people out of jobs.¹⁰²⁹

One analysis also explains how Vilsack lobbied for the promotion of exports '*as a way to deal with the persistent milk surplus that has collapsed milk prices below the cost of production and pushed small dairy farmers to get big or get out*'.¹⁰³⁰ During his time at USDEC, Vilsack was also a supporter of Trump's US Mexico-Canada Trade Agreement (USMC), pushing hard to dismantle Canadian protections for small and medium sized dairy farms.¹⁰³¹ This is something he has continued in his current tenure as Agriculture Secretary, working with the Office of the United States Trade Representative to bring cases against Canada.¹⁰³² Before the USMC was completed in 2018, the US already exported five times as much dairy to Canada as it imported.¹⁰³³ Shifting milk production to a handful of massive industrial farms may benefit milk processors, who profit off lower milk prices, but just as in consolidated livestock production, these growing factory farms are an environmental disaster.¹⁰³⁴

Pushing methane digesters ... again: Also during Vilsack's tenure at USDEC, the dairy export lobby group promoted anaerobic digesters as an example that shows '*how the US dairy industry lives its values*' – such as sustainability – '*for its global customers*'.¹⁰³⁵ Since Vilsack left to take up the role of Biden's Agriculture Secretary, USDEC has continued to present methane digesters as dairy farmer's '*stepping up their game*' on sustainability.¹⁰³⁶ Vilsack's ties to USDEC are, however, far from gone: Krysta Harden, USDEC's current president was '*Vilsack's top deputy at the Department of Agriculture*' when he was Agriculture Secretary under Obama.^{1037, 1038}

The Biden years

Big Dairy delighted, small farmers dismayed: When Vilsack was appointed as Agriculture Secretary by Biden, the big dairy industry lobbies – understandably – waxed lyrical about it.

But smaller farmers, it was reported, were much more wary:

'...farmers who have spent years lobbying or working with Vilsack are wary of what another four years of similar policies will mean for producers. In recent years, many dairy farmers have pushed for the US to introduce federal supply controls for milk as a way to reduce overproduction and protect domestic producers. But Vilsack didn't implement any such policies during his years at the USDA, and during his time at the USDEC, milk exports rose.'

*"Dairy has been broken for so long," says Joel Greeno, a farmer in Kendall, Wisconsin, and president of Family Farm Defenders. "Do we think Tom is going to do anything about that? Absolutely he is not. We know from his history and knowing him for years and years what his intentions are."*¹⁰³⁹

Promises voluntary action and incentives for Big Ag: And fresh from four years and millions of dollars working for the dairy export lobby, Vilsack made his intentions clear during his confirmation hearing to become Biden's Agriculture Secretary. He told the Senate Committee on Agriculture, Nutrition, and Forestry that his leadership approach would be predicated on *"voluntary and incentive-based programs"*¹⁰⁴⁰ – a promise that not only reflects the dairy (and meat) industry's wishes, but which became the bedrock of the Global Methane Pledge, as well as the US plan to implement it, the Methane Emissions Reductions Action Plan (MERAP), and the subsequent approach of the Inflation Reduction Act towards agricultural methane.

Vilsack defends the Biden administration's 'all-taxpayer-funded-carrots-and-no-sticks' approach by saying that there is *'significant reluctance to regulation'* in the agriculture industry, *'but great acceptance of incentives.'*¹⁰⁴¹ But as Yale Law School's Viveca Morris notes:

*'The fact that livestock corporations would prefer to gobble up public dollars rather than be regulated for their chart-topping methane pollution is as irrelevant as it is unsurprising. Biden's climate policy should be dictated by what the planet needs, not by what oil and gas companies want, and not by what meat and dairy companies want.'*¹⁰⁴²

Methane digesters yet again: Since taking office again as Biden's Agriculture Secretary, Vilsack has focused solely on incentives and subsidies: incentivising digesters for biomethane, pushing feed supplements, and generally supporting industry voluntary action.

Denies reduction in meat production and consumption needed: Whilst at COP26, Vilsack told the Guardian that the US does not *"have to reduce the amount of meat or livestock produced"* to tackle the climate crisis:

*"I do not think we have to reduce the amount of meat or livestock produced in the US. And a significant percentage is exported. It's not a question of eating more or less or producing more or less. The question is making production more sustainable.... If you reduce methane by livestock by 30%, by food additives or different feed, or you capture the methane to biogas – take the manure and use it as biofuel – then you have made livestock production more sustainable. I do not think you need to reduce meat consumption to get that. ...If we are going to feed 9 billion people, you need meat protein. We will need plant, animal and fish protein."*¹⁰⁴³

However, at no point is evidence given for how these measures together will work to reduce emissions by 30%. Indeed, research shows the critical role of shifting to healthier diets, with less meat and dairy, in meeting methane targets in high meat and dairy consuming regions.^{1044, 1045}

Reportedly, Vilsack said *"during a conference call"* while attending COP26 that the Biden administration will be *"aggressive"* in response to *"those who seek to restrict or reduce animal protein production."*¹⁰⁴⁶

Fact check: Do rich countries need to reduce meat consumption?

The wealthiest nations are significantly contributing to the overconsumption of meat, posing a threat to humanity's survival. Without massive reductions in high-income, high-consuming countries we are on a dangerous trajectory. The US leads in needing the most significant reduction at 82%, followed by Australia (80%), Argentina (80%), Israel (78%) and Spain (78%). For dairy, top priorities for reduction include Finland (74%), Montenegro (74%), Albania (71%), Netherlands (69%) and Switzerland (68%).¹⁰⁴⁷

The Partnership for Climate Smart Commodities programme: announced in 2022 by the US Department of Agriculture (USDA), the Partnership for Climate Smart Commodities (PCSC) was developed with an aim to help farmers deal with climate change.¹⁰⁴⁸ While there are what seem like positive projects included in the PSCS, including a few focused on building soil health, and sustainable grazing, the biggest polluters have also been included: JBS, Tyson, Smithfield, Bayer, Corteva, Cargill, John Deere, Mosaic, Nutrien, Perdue and Land-O-Lakes; food companies Danone, Pepsico, Hershey, Nestlé, Kellogg's, General Mills, Frito-Lay, Del Monte, Driscoll's and Campbell's; supermarket giants Costco, Walmart and Target; and restaurants McDonald's and Chipotle.¹⁰⁴⁹ Successful proposals have also included \$140,000,000 to a biofuel and biomass energy company (over three projects), \$115,000,000 to the Farm Bill check-off programme (over two projects), \$10,000,000 to a 'low-carbon beef' certifier and consultancy, one project of \$85,000,000 to a state dairy check-off programme, and in the second round another almost \$5million to a Farm Bill check-off programme.¹⁰⁵⁰ However, many farmers are calling for reform of the check-off programmes.¹⁰⁵¹

The project was spearheaded by Vilsack and has been viewed by some as another way for Big Ag to appear they are taking action, through 'regenerative' projects and other practices. The PCSC includes no specific information on measurement, targets or other standards to see how much GHGs are actually being reduced,¹⁰⁵² and less than a third of all applications included clear measurement proposals in their project proposals (according to available data at the time).¹⁰⁵³

Not even fraud can dampen his loyalty to Big Ag: As Biden's Agriculture Secretary, Vilsack has shown no interest in curbing the power of 'Big Beef', no matter how egregious its behaviour: Vilsack reportedly responded to a request from the US House Committee on Oversight and Reform that the federal government cease awarding contracts to JBS USA due to it being "*embroiled in bribery, price fixing and fraud*" by saying that "*Removing a firm from government-wide procurement would potentially impair competitive choice for the taxpayer in securing affordable food for the range of needs that the government must provide for, from school lunches to meals for our soldiers.*"¹⁰⁵⁴ It is interesting how tax-payers must be protected, when it comes to the marginal impact of excluding one bad actor from public procurement, while on the other hand the same money flows freely with no strings attached, when it comes to subsidies and incentives to Big Ag. However, it seems there is space for more curbing of these powerful lobbies as USDA has published two of expected four rules related to poultry contracts, which the industry has not all been in favour of.¹⁰⁵⁵

Myth bust: Subsidies help poor struggling farmers

Farmers’ lobbies argue that lavish agricultural subsidies are crucial for food security. Many subsidies meant for struggling family farmers support large farm operations, particularly benefiting the meat industry over fruits and vegetables.¹⁰⁵⁶ ‘Meatonomics’ data shows the US spends \$50.17 billion annually on animal agriculture, compared to \$24.69 billion on plants for human consumption.¹⁰⁵⁷ Two-thirds of government farming support goes to animal foods, while less than 2% supports recommended fruits and vegetables.¹⁰⁵⁸

The main beneficiaries of farm subsidies are large factory farm owners, with about two-thirds going to the top 10% of mega-farming corporations instead of smaller family farms.¹⁰⁵⁹ For example, Tyson received over a quarter billion dollars in direct subsidies and over three billion in supply-chain subsidies.^{1060,1061} While USDA data shows that over 80% of US farms are valued at less than \$100,000, indicating a heavily skewed distribution of subsidies.¹⁰⁶² Small farmers, particularly family farms, face challenges competing with large-scale operations. In the US, up to 85% of the meat market is controlled by four major companies.¹⁰⁶³ Unless purchasing from farmers’ markets or local groceries, consumers are likely to be supporting these big businesses with meat purchases.

3.3.1. The Meat & Dairy lobby in the US: main players and avenues of influence

Of the 22 companies covered in this report, eight engaged in US lobbying in 2022, namely Tyson Foods, Cargill Inc., Fonterra Cooperative Group, JBS SA, Groupe Danone, Nestlé, Dairy Farmers of America, and WH Group. Together, they spent \$7.22 million lobbying the US in 2022 and hired a total of 15 lobby firms.^{CO}

There were four main meat and dairy lobby groups, whose members include some of the 22 companies, actively lobbying the US in 2022. These were National Milk Producers Federation, North American Meat Institute, American Feed Industry Association and the NCBA. Together, they spent \$1.7 million lobbying the US in 2022, and hired four lobby firms.^{CP}

In total in 2022, 21 lobby firms were hired by these meat and dairy companies, or their lobby groups, to lobby the US government. They were paid a total of \$3.65 million.

As well as spending millions on lobbying and hiring lobby firms in Washington, Big Meat and Dairy firms - and the lobby groups that promote their interests - have a number of other weapons in their arsenal that help ensure staggering levels of access and influence over the political system: extensive political donations, industry domination of official advisory groups, and a revolving door between public office and the meat and dairy industry - which operates not just at the highest levels, with Agriculture Secretary Tom Vilsack (see Box 3.8), but among the rank and file of industry lobbyists too.

CO According to data from OpenSecrets.org, as of April 2023

CP According to data from OpenSecrets.org, as of April 2023

Myth bust: We don't need to change our diets to cut global warming

US Agriculture Secretary, Thomas Vilsack's assertion that 'Americans can eat meat while cutting global heating' overlooks critical environmental impacts of meat production.¹⁰⁶⁴ Scientists stress that addressing climate change requires significant dietary and farming changes. The livestock industry is a major contributor to greenhouse gas emissions, responsible for about 20% globally.¹⁰⁶⁵ Meat production alone contributes nearly 60% of greenhouse gases from food production, with animal-based foods emitting double the greenhouse gases of plant-based foods.¹⁰⁶⁶ If current livestock practices continue, they will consume 49% of the emissions budget to limit warming to 1.5°C by 2030, indicating a substantial contribution to climate change.¹⁰⁶⁷

3.3.1.1. Political donations

Out of the 22 meat and dairy companies examined in this report, 10 (Tyson Foods, Cargill, Fonterra Cooperative Group, JBS, Danone, Nestlé, Dairy Farmers of America, WH Group, Lactalis and OSI Group) made US Political Contributions in 2022, totalling \$1.79 million.^{CQ} Looking at the political donations data for 2020 and 2022 shows that in almost all cases, they made significantly more Republican donations than Democratic ones.

The four lobby groups noted above also made US political donations totalling \$1.19 million in 2022. The political donations data for 2020 and 2022 shows that the three meat industry groups favoured the industry's traditional allies, the Republicans - with the NCBA donating around 10 times as much as they did to Democrats (reflecting, perhaps, the increased role of red meat in right-wing culture wars¹⁰⁶⁸).

The National Milk Producers Federation, however, donated more to the incumbent Democrats (but, of course, whose Agriculture Secretary Tom Vilsack is a major ally to the dairy industry - see Box 3.8).

The livestock and dairy industries also made political donations to Senators and Members of Congress who played critical roles across key methane-related policy areas. For example,

- Republican Senator John Thune, who has played a key role in preventing livestock methane emissions from being monitored, received \$67,255 from the dairy industry and \$65,191 from the livestock industry in the 2017-2022 election cycle (see 3.3.2.5);
- Republican Representative Markwayne Mullin, who supported the false news of a so-called 'cow tax' in the Inflation Reduction Act (IRA), received \$26,209 from livestock industry in the 2021-22 election cycle (see 3.3.2.4);
- Republican Representative Trent Kelly, who tabled a motion to 'repeal' the (non-existent) cow tax in the IRA, received a total of \$16,000 from the NCBA, the National Pork Producers Council and the National Chicken Council in the 2021-2022 election cycle (see 3.3.2.4);
- The Dairy Pride Act has been repeatedly tabled by Democrats and Republicans with financial links to the industry (see 3.3.2.6).

Further details of the financially intertwined relationship between industry and politicians is outlined below, in relation to how each policy brief developed. More broadly speaking, whilst the US political system means that candidates routinely receive donations from many industries, and meat and dairy may not be among the biggest compare to, say, the energy industry, it is notable that US meat companies are big spenders relative to their bottom line.¹⁰⁶⁹ For example, a 2021 NYU study found that since 2000, oil giant Exxon spent \$17 million on US federal political cam-

paigns compared to \$3.2million spent by meat company Tyson – however, taken as a share of each firm’s revenue over that period, Tyson spent double what Exxon did.^{1070, 1071} Meat and dairy companies bankroll candidates because it pays off – as the study noted, elected representatives they’ve supported have backed pro-agriculture bills and frequently voted against climate legislation.¹⁰⁷² Typically, the study found, big US meat companies support Republican candidates, though they will fund Democrat allies too, such as Tyson’s backing of Bill Clinton (which earned him the nickname, the ‘Chicken Man’)¹⁰⁷³ – and more recently, as we see above, the National Milk Producers Federation higher donations to the Democrats (under the agricultural ‘leadership’ of well-established dairy ally, Tom Vilsack – see Box 3.8).

Box 3.9: What do donations to Senators and Members of Congress cover?

Political donations from companies and lobby groups includes contributions of \$200 or more from their respective Political Action Committees (PACs) and affiliated individuals to federal candidates and to political parties, as reported to the Federal Election Commission,¹⁰⁷⁴ based on Open Secrets data, as of April 2023. It should also be noted that there are strict limits on how much a PAC can donate to a candidate or party, in one election cycle.¹⁰⁷⁵ PACs usually represent businesses and will “solicit money from the group’s employees or members”.¹⁰⁷⁶

For information on political donations from companies and lobby groups to particular Senators and Representatives, we have used Open Secrets lists of top donors to candidates in the 2021-2022 election cycles (for Representatives i.e. Members of Congress), or 2017-2022 election cycles for Senators.

3.3.1.2. Industry influence in US government advisory groups

The US Agricultural Technical Advisory Committee (ATAC) for Trade in Animals and Animal Products – which has a mandate to ‘advise, consult with, and make recommendations’ to the US Secretary of Agriculture and the United States Trade Representative¹⁰⁷⁷ – is heavily populated by the meat and dairy industry, which represents two-thirds of its members (at least 23 of 36 members).¹⁰⁷⁸ These include Tyson, Cargill and Dairy Farmers of America, along with many other meat and dairy industry organisations including the North American Meat Institute (which has Cargill, JBS and Tyson as members), the National Milk Producers Federation (of which Dairy Farmers of America is a member), and the NCBA (of which Cargill and Tyson are members).¹⁰⁷⁹

3.3.1.3. Revolving doors

A large proportion of the US lobbyists representing the 22 companies (either directly, or from one of the lobby firms they hired) previously held government jobs. For JBS lobbyists, 7 out of 12 in 2022 previously held government jobs, likewise 6 out of 7 Groupe Danone lobbyists, 8 out of 11 Nestlé SA lobbyists, and 5 out of 7 WH Group lobbyists.^{CR}

There are also revolving door cases in the lobbyists representing lobby groups which the companies are then members of. A total 13 out of 14 National Milk Producers Federation lobbyists in 2022 have previously held government jobs, all 4 of the American Feed Industry Association lobbyists, and 3 out of 9 National Cattlemen’s Beef Association’s lobbyists.^{CS}

CR According to data from OpenSecrets.org, as of April 2023

CS According to data from OpenSecrets.org, as of April 2023

3.3.2. Bills, Acts and Pledges – how industry has derailed any attempt at regulation in the US

3.3.2.1. Global Methane Pledge: US-led success for Big Meat and Dairy agenda

The Global Methane Pledge, an initiative launched by the US and the EU at the 2021 UN Climate Conference (COP26) in Glasgow, which has the goal of ‘*reducing methane emissions by at least 30% from 2020 levels by 2030*’, marked a major step in recognising the significance of methane in accelerating climate change globally. However, the initiative not only falls short 10-15% of the cuts needed to ensure consistency with the 1.5°C target but also fails to ensure cuts in emissions from the agricultural sector. In fact, the wording of the pledge was seen as a win by the meat and dairy industry who got a much softer approach than energy and waste sectors. This can be traced back, in large part, to the lobbying efforts in both the EU and US, but particularly the latter.

The all-carrot-no-stick approach towards livestock methane of the Global Methane Pledge – which was launched jointly by the US President Biden and EU Commission President von der Leyen at COP26 in November 2021¹⁰⁸⁰ – strongly reflects the context of agricultural-political close ties and meat and dairy influence in both the US and EU. Its shape is the result of ‘*decades of high-impact, high-cost political lobbying*’¹⁰⁸¹ on both sides of the Atlantic, but seems to particularly reflect the long-shared vision of the US Agriculture Secretary Tom Vilsack and the dairy industry he has in turned worked for, and been responsible for, but has been unwilling to regulate. Vilsack has a track record (as Agriculture Secretary for two terms under Obama, and again under Biden) of announcing voluntary initiatives that lack teeth or any firm commitments (see Box 3.8 and below). Vilsack is, in effect, an expert in distract and delay tactics that serve the meat and dairy industry’s interests, and the

Global Methane Pledge is both an example of how industry and its allies are effectively controlling the debate, and of how the same voluntary, ‘incentive-led’ and techno-fix oriented initiatives that were tried (and failed) during Vilsack’s time in the Obama administration are being repackaged in the global context (see 3.2.2 C).

The language in the Global Methane Pledge (GMP) says agricultural methane reductions will be achieved ‘*through technology innovation as well as incentives and partnerships with farmers*’, which, as the Institute for Agriculture and Trade Policy (IATP) noted, closely mirrors former dairy lobbyist Vilsack’s previous public statements.¹⁰⁸²

No surprise then, that the meat and dairy industry was overjoyed with the GMP. Representatives of the NCBA said that ‘*[a]ny way you slice it, that outcome from COP26 was a win for us,*’ and that the ‘*President’s methane pledge could have gone badly for livestock production in the United States, badly for the cattle industry. But this administration seems to recognise the positive value that we bring. Beyond research funding and encouraging technological innovation, there were no additional regulatory proposals.*’¹⁰⁸³ The NCBA furthermore responded to the announcement of the GMP by encouraging the Biden administration to ‘*maintain an open dialogue with producers*’ to ensure ‘*the buy-in of cattle producers*’, adding that the US cattle industry had a ‘*voluntary, industry-led goal of demonstrating climate neutrality by 2040*’. NCBA also said that ‘*[w]e’ve engaged with the Biden administration since day one to ensure the US cattle industry is recognised for our strong record of environmental stewardship and that our voice, and our priorities, are heard loud and clear.*’¹⁰⁸⁴

Notably, NCBA also took the opportunity to advocate for the US to use the ‘*best available science*’ – namely, they say, GWP*¹⁰⁸⁵ – adding that GWP* is the methodology needed ‘*to tell the true story of methane*’, which is ‘*one of the reasons why NCBA spends time on Capitol Hill making sure that our government recognises it*’.¹⁰⁸⁶

The National Milk Producers Federation likewise promoted its own voluntary net zero initiative in its response to the GMP, adding that federal assistance was needed for ‘a modernised FDA approval process’ for feed additives (which Vilsack has also supported as Agriculture Secretary) and tax credits for methane digesters (which the Inflation Reduction Act essentially went on to do).¹⁰⁸⁷ USDA, in turn, confirmed that its approach to meeting the GMP would be through voluntary incentives and research and innovation ‘in collaboration with farmers’.

The Global Dairy Platform – whose board includes Royal FrieslandCampina, Fonterra, Saputo, China Mengniu Dairy Company, Arla Foods and Dairy Farmers of America – announced in February 2022 that it is a ‘supporter’ of the GMP, which it says aligns with its vision: the opportunities the GMP sees for dairy ‘*relate to methane intensity reductions through productivity and efficiency enhancements*’ which ‘*aligns*’ with Global Dairy Platform’s ‘*vision and work programme aimed at positioning dairy as part of the solution*’.¹⁰⁸⁸ Global Dairy Platform was careful to add that being a supporter of the GMP ‘does not commit GDP or its members to any specific goals or actions’ – despite the core element of the pledge being a 30% reduction target.¹⁰⁸⁹

Another supporter of the GMP is Aim for Climate – a US ‘climate smart agriculture’ partnership with the United Arab Emirates that was launched at the UN Food Systems Summit in September 2021 – of which Vilsack is co-chair.¹⁰⁹⁰ Aim for Climate’s partners include JBS, Nestlé USA, Danone, Arla Foods, Tyson Foods, as well as numerous lobby groups with big meat and dairy members, including USDEC, International Dairy Federation, Global Dairy Platform, North American Meat Institute, Canadian Cattle Association, Global Roundtable for Sustainable Beef, and the Danish Agriculture and Food Council.¹⁰⁹¹ Aim for Climate has a Greener Cattle Initiative, a public-private partnership with the Innovation Center for US Dairy (sister organisation to USDEC, also funded by the dairy checkoff system)¹⁰⁹² and other industry partners to invest in research on reducing methane emissions from enteric

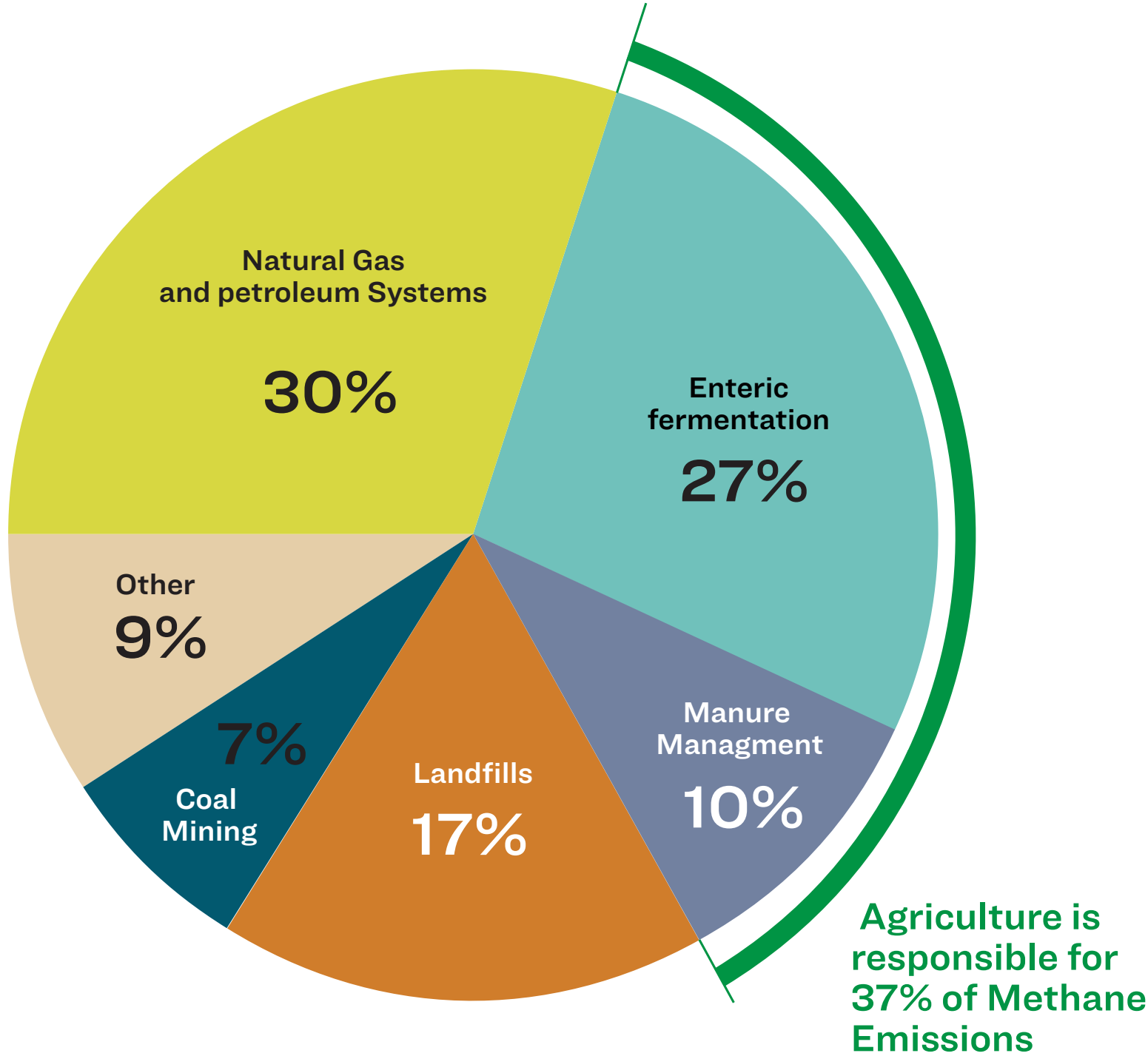
fermentation – but its ‘*paltry budget of \$5 million (half of which was contributed by FFAR) belies the Biden administration’s minimal financial commitment to investing in research and development of mitigation strategies for enteric fermentation*’.¹⁰⁹³

3.3.2.2. US methane plan ‘MERAP’ favours meat and dairy

The Biden administration’s domestic plan to implement the GMP was also announced at COP26. The US Methane Emissions Reductions Action Plan (MERAP) – following the vein of the GMP itself (see 3.3.2.1) – proposes regulatory action for the oil and gas industry but only voluntary action for the agricultural sector,¹⁰⁹⁴ described by Viveca Morris, executive director of the Law, Ethics and Animals Program at Yale Law School, as a ‘cow-shaped hole’ in the plan.¹⁰⁹⁵ MERAP downplays the role of agricultural methane, describing the oil and gas sector as the ‘largest industrial source’ of methane, and includes a pie chart that appears to back this up – but only because it separates agriculture into two separate segments, enteric fermentation and manure management¹⁰⁹⁶ (see figure 20). For livestock methane, MERAP is entirely incentive-based, and relies strongly on the promotion of ‘*anaerobic digesters to capture factory farm gas from the giant manure lagoons at large-scale dairy, beef and hog operations*’ i.e. CAFOs that are themselves responsible for the dramatic rise in methane emissions since 1990.¹⁰⁹⁷ Beyond focusing on biogas, MERAP also includes R&D into feed additives.

This special treatment and allowances for the meat and dairy industry highlights the success of the industry’s efforts to derail climate regulation. Thanks to the revolving door case of US Agriculture Secretary Vilsack and years of extensive lobbying to establish the positive perception and treatment of the industry within policy realms, MERAP, a major piece of climate-focused methane regulation, fails to even broach the idea of limiting pollution from this industry.

US Methane Emissions by Source (2019)



Source: U.S. Methane Reduction Action Plan
U.S. Environmental Protection Agency (2021). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019

Figure 20 : 2019 US Methane Emissions by Source

Reportedly, following the launch of the GMP and the US’ MERAP, Vilsack said he trusted the agriculture industry to do the right thing because “*they have historically responded to financial and market incentives*”.¹⁰⁹⁸ The sentiment at a NCBA trade show, indeed, was that ‘*the beef industry stands to make a lot of money off federal emissions-reduction incentives*’ - with the NCBA adding that the ‘*last thing we need to do is implement regulations*’ which would get in the way of productivity.¹⁰⁹⁹

As IATP note, much of the Biden administration’s methane plan on agriculture is recycled from the Obama administration - which also had Vilsack at the helm.¹¹⁰⁰ In 2009, then Agriculture Secretary Vilsack announced (at COP15 in Copenhagen) a partnership with the dairy industry to reduce dairy industry GHGs 25% by 2020, based on funding, research and promotion of manure digesters and a ‘public private partnership’ with the industry - a very similar focus to that of the GMP and MERAP. And even though it failed utterly to reduce emissions, Vilsack has continued to push the same old things. In 2013, Vilsack set up a similar partnership with the dairy industry, reiterating USDA’s commitment to digesters. IATP describes how this 2013 initiative ‘served as a template’ for MERAP (and subsequently the IRA), by expanding funding for biodigesters available through the Environmental Quality Incentives Program (EQIP) and Rural Energy for America Program (REAP), a strategy that both MERAP and the IRA later followed (see 3.3.2.3).

3.3.2.3. Inflation Reduction Act: Another win for meat and dairy

The Inflation Reduction Act (IRA) is touted by the government as a landmark climate policy in the US - the ‘*largest investment*’ in reducing GHG emissions in US history¹¹⁰¹- but when it comes to mitigating the impact of

the meat and dairy industry, particularly in relation to methane emissions, it is severely lacking. The policies included in the IRA in relation to agriculture exemplify the special role this polluting industry has in the political system.

The main win for the meat and dairy industry in the IRA is the possibility of large swathes of funding for biodigesters to make bio-methane from manure. However, anaerobic digesters are extremely expensive (typically costing between \$4 and \$7 million each)¹¹⁰², and hence only work for the biggest industrial installations. This means that they often encourage further consolidation and intensification of the livestock sector.^{1103, 1104} Their ability to mitigate methane from meat and dairy is also limited to manure, which represents a smaller share of US methane emissions.¹¹⁰⁵

It is also notable that this approach of relying on biodigesters to reduce livestock methane emissions has failed before. A previous deal between the Obama administration and the dairy industry to promote digesters and reduce the industry's methane emissions by 25% by 2020 failed badly. The emissions from the sector actually increased by over 15%, in part driven by growth in herd size (the number of dairy cows in the US has grown by 3.3% since 2009), according to a Reuters review of government data.¹¹⁰⁶ Yet the dairy industry has once again been pushing for bio-methane as the magic solution to livestock methane. Reuters reported in January 2022 that the incentives (including tax credits and grants) for biodigesters in the Build Back Better (BBB) proposal (which morphed into the IRA), *'have been hailed by dairy farmers and investors as a 'game changer' that could pad farm incomes while combating climate change by providing a less-polluting alternative to fossil fuels'*.¹¹⁰⁷

Moreover, big meat and dairy companies - and groups that represent them - were actively lobbying on the IRA (and its previous incarnation, the BBB) in 2022, including Cargill^{1108, 1109} and Nestlé.^{1110, 1111} The NCBA was also lobbying on the IRA,^{1112, 1113} as

was the National Pork Producers Council (which has Tyson Foods on its board of directors and Cargill as an allied company), which has continued lobbying around the implementation of the IRA's *'provisions related to agriculture, farms, and food production'* in 2023.^{1114, 1115, 1116} Last but not least, the National Milk Producers Federation (whose members include Dairy Farmers of America) explicitly - and repeatedly - lobbied for tax credits for biogas digesters in the IRA:

'NMPF has also supported legislation that will create and improve tax credits for investment in technology that turns organic matter into biogas energy and removes nutrient particles from manure, including ... the Inflation Reduction Act (H.R. 5376).'^{1117, 1118, CT}

Far from penalising agricultural methane, the IRA focuses solely on 'incentivising' practices to reduce greenhouse gases in agriculture, and provides USDA with almost \$20 billion to do so, *'leaving the "what" and "how" to the Secretary's discretion'*.¹¹¹⁹ By providing funding for conservation and climate programmes that already have components that support digesters, the IRA is opening the door for the biggest livestock operations to get their hands on large amounts of public money for biomethane production. This could provide them with a potentially lucrative new income stream while in no way challenging their model of industrial, polluting livestock production, and leaving the vast majority of methane emissions (from enteric fermentation) unaddressed (as well as essentially swapping methane emissions for CO₂ emissions when the biomethane is burned).

CT The National Milk Producers Federation also "supported the inclusion of climate smart ag provisions in budget reconciliation, including those included in the Inflation Reduction Act (H.R. 5376)".

Some of the key conservation and rural development funds that the IRA pours money into (and which USDA will be responsible for implementing) include:

- a. \$820.25 million for **Rural Energy for America Program (REAP)**, which specifically appropriates money for REAP grants and loans for ‘*underutilised renewable energy technologies*’.¹¹²⁰ This term has not yet been defined by USDA, but is commonly understood to favour digesters (though some money is also going to wind and solar);
- b. \$3.25 billion for the **Conservation Stewardship Program (CSP)**, which can fund agricultural conservation practices that USDA determines will reduce/ capture/ avoid/ sequester agricultural methane emissions, and which removes payment limits that stop the biggest farms getting outsized shares of the funds;
- c. \$8.45 billion for the **Environmental Quality Incentives Program (EQIP)**, which also covers agricultural methane reducing/ capturing/ avoiding/ sequestering projects, removes payment limits, and in addition includes a subprogramme that favours a feed additive trial. Although the latest EQIP has now removed a previous requirement that 50% of the budget must be spent on livestock,¹¹²¹ the text of the IRA itself includes reference to the Secretary of Agriculture ‘*prioritising proposals that utilize diet and feed management to reduce enteric methane emissions from ruminants*’.¹¹²²

A recent report by the Environmental Working Group, which analysed the EQIP that was added to USDA’s climate-smart conservation list, showed that these proposals are unlikely to do much to help the climate.¹¹²³ These include high worth contracts for digestors, which have been shown to encourage more CAFOs.¹¹²⁴ This addition to the list created the impression that the USDA doubled its climate-smart farming funding between 2017 and 2022. However, many of the new practices will not have any climate benefits and might even increase emissions, according to EWG. USDA

is already distributing the money but will only study the possible climate benefits in 2024.¹¹²⁵

3.3.2.4. *How the farm lobby created a storm around a non-existent livestock methane tax*

As we have seen, the power and influence of the farming lobby is a major reason for the lack of any regulations on agriculture in the US. The American Farm Bureau Federation – akin to a US version of Copa-Cogeca – is incredibly politically powerful, and has long fought climate and environmental regulations, strongly representing corporate interests including CAFOs, which are key to the business model of companies like Tyson and JBS, rather than the interests of smaller farms.

During the Inflation Reduction Act (IRA) negotiations, the Farm Bureau took a pre-emptive strike against the hypothetical notion that the IRA might include a livestock methane tax, which in turn revealed the extent to which the Big Meat and Dairy interests set the agenda and make it politically impossible to propose progressive legislation. Pre-emptive strikes of Big Ag against sometimes non-existent policies and spreading misinformation has been a key tactic utilised across country contexts, often using the same narratives and arguments.

Farm Bureau stated that:

*‘While we oppose any tax on methane, Farm Bureau is grateful to lawmakers for recognising the thin margins in agriculture and that such a tax would undoubtedly put family farms out of business.’*¹¹²⁶

This language highlights how the same fear-mongering narrative – that environmental rules will destroy family farms – that is being used in the EU by groups like

Copa-Cogeca (which routinely lobbies for policies and subsidies that disadvantage small farmers)¹¹²⁷, is also being used by the Farm Bureau in the US, which is likewise criticised for promoting corporate interests over those of family farmers.¹¹²⁸ In the US context, where the whole system is geared towards mega-farms, this argument was used to strike against any possibility of a methane tax on agriculture at a time when a methane tax for energy was being considered (and was eventually adopted).

In summer 2021, the Farm Bureau published a theoretical analysis showing how costly it would be if a methane tax were to be imposed on agriculture - even though this had not even been considered. In September 2021, Republican Congressman Markwayne Mullin wrote a column calling President Biden's Build Back Better bill (which became the IRA) a '*blank check for socialism*' and said (falsely) that in an '*attempt to eliminate fossil fuels*' it would:

*'impose a 'fee' on all methane emissions, including in our agriculture industry. We all know that a fee is just a tax and that consumers are the ones who will pay for it. The tax is estimated to cost \$6,500 per dairy cow, \$2,600 per head of cattle, and \$500 per swine each year. That is more than what the animals are worth, it'll run ranchers out of business.'*¹¹²⁹

These figures are those from the Farm Bureau's (unpublished) study, a fact later confirmed by Mullin's spokeswoman, who added that "*This is what could happen if the methane fee were applied to agriculture. Right now the text of the bill only specifies the oil and gas industry, but it also references EPA's GHG inventory and leaves too much room for the EPA to expand its regulatory reach.*"¹¹³⁰ This important nuance was, however, left out of Mullin's column. Mullin, notably, received contributions of \$26,209 from the livestock industry and \$5,090 from the poultry and egg industry in the 2021-2022 election cycle.¹¹³¹

Following Mullin's column, social media posts about the enormous cost per head of the methane tax on livestock (confusingly referred to as being included in the Infrastructure Package, which is separate to the BBB/IRA), citing the Farm Bureau numbers (and in some cases including a photo of Mullin's 'Blank Check for Socialism' column)¹¹³² went viral.¹¹³³ Seemingly as a result of all this furore, another Republican Representative, Trent Kelly, authored a Republican motion entitled 'Repeal the Cow Tax', which again cited the Farm Bureau's numbers. Notably, Kelly received contributions from the NCBA of \$5,000, National Pork Producers Council \$5,000, and National Chicken Council \$6,000, in the 2021-2022 election cycle.¹¹³⁴

Kelly's motion concerned the IRA's Methane Emissions Reduction Program (or methane tax), which is a charge on methane emitted by oil and gas companies who report emissions under the Clean Air Act - it does not and never did apply to agriculture. Nonetheless, Kelly's 'Repeal the Cow Tax' motion proposed that the Budget Committee make an '*amendment to strike funding for the... \$75 million for the Environmental Protection Agency (EPA) to create a new program under the Clean Air Act, which would assess a fee (tax) on methane emissions.*' Kelly's motion provides the background that:

'The natural gas tax under the Clean Air Act essentially amounts to a cow tax on American farmers and livestock owners by fining them for methane emissions. The EPA's methane tax will have an annual impact on American agriculture operations that directly harms farmers and livestock owners by increasing producer costs and leading to higher prices for consumers.

...According to Farm Bureau estimates, the total impact of the methane tax on American farmers and ranchers would be \$361.5 billion per year.

d. Beef: \$198.75 billion total/ \$2,607 per head

e. Dairy: \$112.8 billion total/\$6,504 per dairy cow

f. Swine: \$39 billion total/ \$503 per head

...Prices are already high under President Biden's inflation crisis, and the EPA's methane tax will only exacerbate it.¹¹³⁵

Despite the fact that the EPA could not impose a tax on their own and would have to be directed by Congress to do so, in this case, through the IRA, claims have suggested the IRA would fund the EPA to develop such an agriculture methane tax as part of the Clean Air Act. The confusion between the funding provisions of the IRA and the provisions of the Clean Air Act that pertain only to oil and gas methane notwithstanding, it must be reiterated that at no point was there a proposal to impose a charge on agricultural methane emissions (in either the IRA, Clean Air Act or Infrastructure Act). Kelly's motion is no longer available online, possibly as a result of reality catching up with the knee-jerk response to protect American livestock from any kind of environmental rules.

In light of the confusion around the proposed methane tax, in October 2021 the American Farm Bureau itself was forced to clarify that *'the current language of the reconciliation bill [the IRA] does not impose a methane tax on agriculture.'* It elaborated that:

'Over the summer, American Farm Bureau economists conducted an analysis, at the request of Congressional committee staff, to determine the potential impact if agriculture were to be included in legislation imposing such a tax. We did so based on the

formula set forth in legislative proposals that impose a methane tax on the oil and gas sectors. We believe this analysis was informative and helpful in demonstrating that such a tax would have been devastating to agriculture.

*While we oppose any tax on methane, Farm Bureau is grateful to lawmakers for recognising the thin margins in agriculture and that such a tax would undoubtedly put family farms out of business. We are especially grateful to the Senate for passing an amendment that specifically exempts agriculture.'*¹¹³⁶

This bizarre story not only shows the spread of disinformation and the influence that this has on political discussions, but it also highlights, if there were any doubts, the Overton window - or 'acceptable range' - for agricultural policymaking in the USA. In other words, the politically acceptable parameters in the US rule out any possibility of more stringent measures on agricultural emissions beyond throwing more money at the sector with a hope that they will reduce their emissions voluntarily. It shows how the industry's needs don't just influence the debate, they set the parameters of what's deemed possible, with Big Ag pre-emptively attacking anything it does not like - even before it is seriously considered.

3.3.2.5. *Pre-emptive strike on transparency and methane reporting, using fear-mongering tactics*

The other battle around the IRA, and beyond, concerns the measuring and reporting of agricultural methane. According to EarthJustice, there were 'a multitude' of proposed amendments to the IRA that sought to prevent the EPA from requiring monitoring or reporting on agricultural methane.¹¹³⁷ Searching through amendments to the IRA reveals that these included an amendment proposed by Republican Senator John Thune, which added a 'Prohibition' regarding methane monitoring

to the effect that money allocated to the EPA *‘may not be used to monitor emissions of methane from livestock’*.¹¹³⁸ According to OpenSecrets, Thune has received substantial donations from the meat and dairy industry - \$67,255 in donations from the dairy industry \$65,191 from livestock, and \$2,775 from poultry and eggs in the most recent election cycle (2017-2022).¹¹³⁹

Similarly, but outside the scope of the IRA, in September 2022 John Thune and Republican Senator Joni Ernst together introduced a very similar bill to prevent the EPA using funds to monitor methane emissions from livestock. Thune promised it would protect livestock producers from *‘government snooping’* and prevent the Democrats *‘weaponising’* the EPA as part of the *‘Left’s radical climate agenda and costly government overreach’*.¹¹⁴⁰ These statements and moves are reflective of the fearmongering and battle against transparency going on in the EU as well, highlighting it as a common tactic deployed by industry advocates.

In the US context, however, the powerful farm lobby and meat and dairy industry, together with their allies in Congress, have successfully thwarted the EPA’s ability to measure agricultural methane emissions for well over a decade: every *‘spending bill Congress has passed in the last 14 years has contained similar disabling language’* designed to prevent the government from funding a law that requires big livestock farms to report how much methane their operations emit.¹¹⁴¹ Since 2009 - up to and including the spending bill passed in November 2023 - an amendment stating that no funds approved by Congress are allowed to pay for provisions that require *‘mandatory reporting of greenhouse gas emission from manure management systems’* has made it into every annual budget bill.¹¹⁴² The industry warns that reporting is the first step to regulating emissions, and the debate has for years been couched in the (confusing and erroneous) language of a *‘cow tax’* - what Patty Lovera from the Campaign for Family Farms and the Environment describes as *‘classic example’* of how *‘commodity groups are incredibly good at narratives’* that serve the *‘anti-regulatory culture war’*.¹¹⁴³

Thune and Ernst have been behind other efforts to hinder the monitoring or regulation of livestock emissions. According to Trent Kelly’s misplaced *‘Repeal the Cow Tax’* motion about the IRA and Clean Air Act, Senator Joni Ernst successfully added *‘an amendment to the Senate Fiscal Year 2022 budget resolution that would bar any new permits or federal methane requirements on livestock. ‘Stop the Cow Tax’ amendment was adopted with a wide bipartisan vote, 66-33’*.¹¹⁴⁴ Confusingly, Ernst’s *‘Stop the Cow Tax’* amendment doesn’t concern taxing methane at all (which Kelly’s *‘Repeal the Cow Tax’* motion did, albeit one that didn’t exist in the IRA). Rather, Ernst’s *‘Stop the Cow Tax’* amendment bans the EPA from regulating on-farm methane emissions in any way. It has been described as *‘a largely symbolic amendment’* that demonstrates *‘the bipartisan consensus that regulating livestock emissions remains a political non-starter.’*¹¹⁴⁵

OpenSecrets reveals that Joni Ernst received a contribution of \$5,800 from Tyson Foods in the most recent election cycle (2017-2022), a period during which her contributions from industry included a total \$205,332 from livestock, and \$62,004 from poultry and eggs.¹¹⁴⁶ A report from August 2021 about the adoption of Ernst’s amendment quotes her Senate floor speech, saying she is making sure that *‘Iowa farmers and ranchers - and American consumers - aren’t left to pay the tab’* for the Democrats’ *‘over-the-top, burdensome regulations - or what amounts to a “Cow Tax”’* in their *‘multi-trillion dollar tax-and-spend spree’*.

Thune has, likewise, been a busy defender of the livestock industry’s interests, repeatedly tabling the *‘Livestock Regulatory Protection Act’*, which would prohibit the EPA from issuing permits related to livestock emissions. In April 2021, Thune introduced the bill with then Democrat Senator Kyrsten Sinema (now Independent), plus co-sponsors Republican Senator John Boozman and Democrat Senator Mark Kelly.¹¹⁴⁷ Notably, in the 2017-2022 election cycle, Boozman received a contribution of \$64,500 from Tyson Foods (which is based in Boozman’s state of Arkansas)¹¹⁴⁸

and \$25,000 from the National Chicken Council (with a total \$72,320 contributions from dairy, \$63,767 from livestock and \$85,050 from poultry and eggs).¹¹⁴⁹ Sinema received total contributions of \$24,207 from the livestock industry, \$15,100 from dairy, and \$8,900 from poultry and eggs,¹¹⁵⁰ while Mark Kelly received \$55,200 from livestock and \$8,976 from dairy.¹¹⁵¹

Thune’s press release at the time noted that supporters of the bill included the NCBA and the American Farm Bureau.¹¹⁵² It also noted that Thune had previously introduced the bill in 2009 (then described as a ‘cow tax’ prevention bill, with a March 2009 letter from the Farm Bureau expressing strong support for the ‘timely’ and ‘critical’ bill)¹¹⁵³ and that ‘*this restriction has been included in annual appropriations legislation since then*’.^{1154, CU} It adds that the Livestock Regulatory Protection Act would ‘*provide long-term certainty for producers that their livestock’s biological emissions will not be subject to costly regulation*’.¹¹⁵⁵

At a September 2022 Senate Committee on Environment and Public Works hearing on the Livestock Regulatory Protection Act, the vice president of the Farm Bureau testified about the importance of Thune’s bill, which would amend ‘*the Clean Air Act to prohibit the EPA from issuing permits for any carbon dioxide, nitrogen oxide, water vapour, or methane emissions resulting from biological processes associated with livestock production*’.¹¹⁵⁶ Thune himself said that:

“Contrary to the story being pushed by opponents of the beef industry, beef production is directly responsible for only a tiny fraction of US emissions....And on top of that, it’s become clear that with certain feed additives, as well as then capturing and utilising

*the energy potential of their waste using biodigesters, it’s possible to significantly reduce cattle emissions – making the demonisation of beef even more wrongheaded.”*¹¹⁵⁷

The Livestock Regulatory Protection Act was reintroduced in March 2023,¹¹⁵⁸ by Thune, Sinema, Boozman and Kelly, with the Farm Bureau and NCBA quoted in Thune’s press release offering their thanks and adding their views as to why it’s needed:

‘America’s cattle producers continuously work to improve our environmental sustainability. Our herd genetics, grazing management, and improved technology mean that beef produced in the United States has the lowest greenhouse gas intensity of any beef producing nation in the world. Creating burdensome permitting requirements that aren’t firmly backed by sound science simply are not effective, and the Livestock Regulatory Protection Act ensures that America’s cattle producers maintain our freedom to innovate.’ (NCBA)¹¹⁵⁹ and:

‘Our livestock producers continue to lower per-unit greenhouse gas emissions through innovation, technology and voluntary conservation programmes. They should not be burdened with onerous regulations and costly permit fees.’ (American Farm Bureau).¹¹⁶⁰

The dis-ingenuousness of NCBA’s claim to have the lowest GHG intensity beef aside,¹¹⁶¹ Open Secrets shows that NCBA has lobbied on the Livestock Regulatory Protection Act in all four quarters of 2022, and in the first quarter of 2023,^{1162, 1163, 1164, 1165} when the bill was reintroduced, and referred to the Committee on Environment and Public Works as the next step in the legislative process.¹¹⁶⁶ What’s more, as an illustration of how the revolving door helps the meat industry navigate the political system – particularly through its allies in the Republican Party – one of the NCBA lobbyists who was lobbying on the bill throughout this period was previously legislative assistant to a Republican Senator.^{1167, CV}

CU It has also been reported by EarthJustice that there is “a longstanding congressional rider that prohibits the use of appropriated funding to support any programme that would require industrial agriculture firms to report their greenhouse gas emissions from livestock.” A rider is an additional provision added to a bill or other measure under the consideration by a legislature – this may therefore refer to the Thune-inspired amendments to restrict the EPA issuing permits re. livestock emissions.

CV Kaitlynn Glover was previously legislative assistant to Republican Senator John Barrasso.

Box 3.10: Close ties between EU and US agriculture chiefs?

USDA and the European Commission's DG Agriculture have formed a close relationship since Tom Vilsack took up the helm as President Biden's Agriculture Secretary (and indeed, in the runup to the EU and US' joint launch of the GMP). In 2021, Wojciechowski and Vilsack announced a new 'Administrative Arrangement' between USDA and DG AGRI called the Collaboration Platform on Agriculture or CPA. The platform exists to support policymakers but also notes on its website that it's 'open to all stakeholders in EU and US agriculture'.¹¹⁶⁸

Interestingly, in October 2022, Agriculture Commissioner Janusz Wojciechowski's cabinet had a meeting with the dairy export lobby group USDEC that Vilsack was boss of in between stints as US Agriculture Secretary under Obama and Biden (see Box 3.8). Documents released under EU FoI law reveal that at the meeting, the Commissioner's Head of Cabinet assured USDEC of *'the very good relationship between Cioer Wojciechowski and Ag Secretary Vilsack'*.¹¹⁶⁹ USDEC, in turn, *'underlined the contribution of Mr Vilsack as President of USDEC to increase the impact and visibility of the organisation and she stressed the growing importance of US dairy exports'*. USDEC also noted the *'growing importance that both the EU and US are paying to sustainability in their policies, despite the differences in approach'* and *'stressed the need to get consumers aware of the work undertaken on sustainability and the need to support ag research and technological innovation....She summarised her position with a message that they intend to convey to the civil society "[a]griculture is good for the people and good for the planet"'*.¹¹⁷⁰

The CPA, announced by Commissioner Wojciechowski and Secretary Vilsack in early November 2021, confirms their close relationship.¹¹⁷¹ According to a Commission document released under FoI law, USDA and DG Agri *'are of the view that reinforcing their current communication channels on global agricultural challenges would be beneficial for both Sides'*.¹¹⁷² Another released document notes that this agreement followed EU-US discussion *'in the last months'* leading up to November 2021 (when the GMP was launched at COP26), which showed *'a mutual strong interest in setting up a structured dialogue on agriculture, including looking into the challenges ahead'*.¹¹⁷³

On climate and agriculture, the CPA's focuses include *'approaches to improving the mitigation of greenhouse gas emissions'*, and its remit includes organising *'joint activities such as seminars, workshops, internal meetings, field visits and stakeholder reach outs'*.¹¹⁷⁴ One such event was an October 2022 workshop on reduction of GHG emissions in livestock production.¹¹⁷⁵ The virtual event included speakers from Dairy Management Inc. (the checkoff-funded parent of dairy export lobby USDEC, that Vilsack used to work for), the American Feed Industry Association (of which Cargill is a member), and Wageningen University (which has industry links (see section 1.5) – but no civil society speakers. The summary of the event refers to EU research and support for *'feeding strategies, genetics, and manure management'*, to US *'voluntary incentives'* and Inflation Reduction Act financial support for *'on-farm energy projects specifically targeting GHG benefits'* i.e. bio-methane production, and to the promise of feed additives (such as 3NOP, seaweed) controlling enteric fermentation - as well as overcoming barriers to their approval and uptake).¹¹⁷⁶ There is not, however, a single mention of demand reduction or changing diets – despite this being a goal of the EU's Farm to Fork strategy, which was being discussed at the time.

FoI has also revealed that at a 30 November 2021 meeting between Commissioner Wojciechowski's head of cabinet and the Agriculture and Food Committee of the American Chamber of Commerce (AmCham) – which was attended by AmCham member Cargill, one of the *'most active members of the committee'*¹¹⁷⁷ – the Commissioner's head of cabinet assured AmCham of the *'positive evolution of EU-US relations in 2021'* and described the new Administrative Arrangement between USDA and DG AGRI, that would focus exchanges on sustainability, climate and agri-food, as *'an important achievement'*.¹¹⁷⁸ Notably, at the meeting, Cargill asked Wojciechowski's cabinet about *'Methane emission reductions plans for agriculture'*. A Commission background document for the meeting notes its expectation that AmCham will be interested in the *'participation of stakeholders'* in the CPA Administrative Arrangement.¹¹⁷⁹ The same Commission document notes that the Biden *'administration seems favourable to the industry position that all environmental actions should be voluntary and work on incentives'* and that animal agriculture *'seems to be spared from having to change much'*, while beef producers *'congratulate themselves that they can now use the word sustainability – not possible before President Biden – but clearly put more emphasis on the economic and social aspects rather than the environmental'*.¹¹⁸⁰

3.3.2.6. *The Dairy Pride Act, an illustration of dairy industry influence*

The ‘Dairy Pride Act’ in the US is a story not only of dairy industry inflating the importance of its products and lobbying against the use of dairy-related terms for plant-based products, but of how political donations from the industry can help to influence the policy debate. The Dairy Pride Act, which would force the US Food and Drug Administration (FDA) to stop plant-based milk alternatives being *‘being marketed or misbranded using terms commonly associated with dairy products’*,¹¹⁸¹ has been (repeatedly) tabled by Senators and Representatives with strong ties to the industry.

The Bill was tabled in the Senate in April 2021,¹¹⁸² and again in February 2023,¹¹⁸³ and would *‘require enforcement against misbranded milk alternatives.’* The bill – whose full title is ‘Defending Against Imitations and Replacements of Yogurt, Milk, and Cheese To Promote Regular Intake of Dairy Everyday Act’ – begins from the dubious premise that most Americans need to consume more dairy, as well as that plant-based milks, cheeses, yoghurts etc., don’t have the same nutritional content, and that ‘plant-based products *‘labelled as milk are misleading to consumers.’*¹¹⁸⁴

The press release about the Act, issued by the Senator who tabled it in February 2023, Democrat Tammy Baldwin, features a quote from the National Milk Producers Federation, which says that the *‘FDA’s unwillingness to enforce dairy standards of identity is harming public health and violates the entire purpose of the standards in the first place, protecting Americans.’*

As we saw in the EU, in relation to the Sustainable Food System Framework, the dairy industry, and their political allies, are inflating the nutritional importance of dairy and using fearmongering to undermine plant-based alternatives to dairy products.

The centrality of the dairy industry to the tabling of Dairy Pride Act, as illustrated by their featuring in Senator Baldwin’s press release about it – and the fact that the National Milk Producers Federation was one of the main and most consistent lobbyists for the Dairy Pride Act throughout 2022¹¹⁸⁵ – is backed up by a series of political donations showing close ties between the industry and the politicians supporting the Act. To begin with, Senator Baldwin, its February 2023 sponsor, received a hefty \$63,927 from the Dairy industry (and \$10,545 from Livestock) in the 2017-2022 election cycle.¹¹⁸⁶ Baldwin’s co-sponsors of the Act included Republican Senator Susan Collins, who received \$20,786 from the dairy industry (and \$47,349 from the livestock industry) in the 2017-2022 election cycle¹¹⁸⁷ (and personally has \$2,000 invested in Nestlé¹¹⁸⁸). Baldwin also had a Democrat co-sponsor, then-Representative (and now Senator)¹¹⁸⁹ Peter Welch, who received \$29,214 from dairy (2021-2022).¹¹⁹⁰

In March 2023, the Dairy Pride Act was reintroduced into Congress by Republican Representative Mike Simpson,¹¹⁹¹ who received \$27,800 from the dairy industry in the 2021-2022 campaign cycle, including \$8,000 from Dairy Farmers of America.¹¹⁹² Simpson’s press release at the time also quotes the dairy industry, stating that *‘National Milk Producers Federation applauds the bipartisan members of the House of Representatives who today reintroduced the DAIRY PRIDE Act, which adds momentum to legislation that saw Senate reintroduction last week’*, and thanking its sponsors *‘for being champions for consumers in this important nutrition and health issue.’*¹¹⁹³

As of early 2024, the Act is still listed as going through the legislative process (having last been referred to the Committee on Health, Education, Labor, and Pensions).¹¹⁹⁴ Whether or not it passes, the Dairy Pride Act gives a clear indication of the levels of cross-party political support for the dairy industry and its efforts to undermine and stymie the market for plant-based alternatives. As in the case of efforts to monitor, let alone regulate, livestock methane – effectively a ‘third rail’ in US politics, whereby the meat and dairy industry is politically untouchable – the tabling of the Dairy Pride Act shows that when the dairy industry wants to shape the political debate, it has no shortage of (dairy-funded) political allies to help it do so.

Fact check: True cost of meat and dairy

A 2015 study found, the U.S. government allocates \$38 billion annually to subsidise meat and dairy industries, while only dedicating 0.04% (\$17 million) to fruits and vegetables. A \$5 Big Mac would cost \$13 if the retail price included hidden expenses that meat producers offload onto society.¹¹⁹⁵

Not only are meat and dairy heavily subsidised, it also produces significant externalities. In 2018, every dollar spent on food incurred approximately \$2 in costs to address health and environmental issues stemming from food production, totalling a significant \$14.0 trillion globally. Transitioning to a diet with reduced meat and dairy consumption could save up to \$7.3 trillion by mitigating these hidden costs and lowering emissions. This dietary shift promises not only improved health and environmental preservation but also substantial financial savings.¹¹⁹⁶

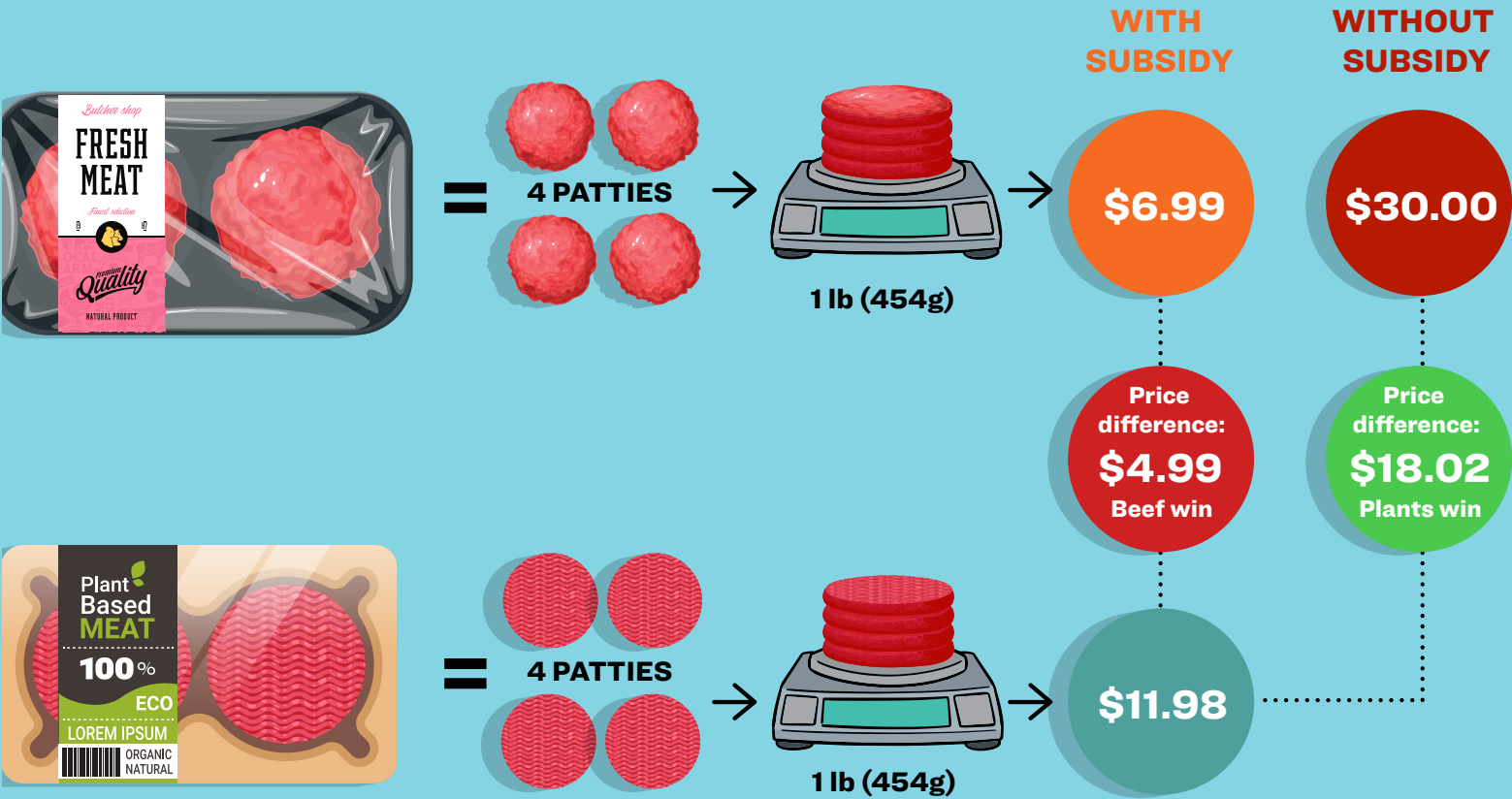


Figure 21: Beef vs plant burger: the true cost
Source: Vegconomist

3.4 Conclusion: A blind eye to climate action in agriculture.

Despite the efforts of the lobby to shift green policies, and distract, delay and derail policymaking in the US and the EU, climate change continues to accelerate regardless. While there has been limited preparation for a food crisis in Europe, a recently undertaken ‘stress-test’ with 60 EU government officials, food experts, industry representatives and journalists, came to the same conclusion that much of the science has come to ensure we mitigate climate change – that a shift to more plant-based diets is necessary to survive climate change.¹¹⁹⁷ This is partly as the reliance on soy for cattle feed will have a significant impact on meat and dairy production in the EU as climate change further accelerates.¹¹⁹⁸

Even the EU’s own research body, the European Environment Agency (EEA), has recently emphasised how unprepared the bloc is for climate change, even with a 1.5°C warming limit. It outlined five key areas for action for adaption, but which are also key mitigation strategies for further warming, ensuring we do not surpass that limit. This includes more research and planning for climate change in different regions, ensuring nature restoration across the bloc. For climate and for human health, farming needs to change, as do diets, and the EEA emphasised dietary shift for water consumption and suggests the CAP funding should be redirected to ‘drought resistant farming techniques’. It concluded sea level rise and salt-water intrusion also need to be addressed. Finally, it addressed the energy supply and disease increase from mosquitoes that we’re likely to see in southern Europe.¹¹⁹⁹

The US is no different, and climate change is catching up on people and industry. According to NASA, US sea level rise is already at 8 inches (about 20 centimetres) since 1880, expected to be another foot (0.3 metres) by 2100 and even up to 6.6 feet (2 metres). Hurricane intensity will increase, and droughts and heatwaves, particularly in the south-west will ‘*become more intense*’. Wildfires have already decimated many people’s lives and destroyed homes,¹²⁰⁰ and in Western States, are projected to increase by two to six times by 2050, and by 30% in more rainy areas in the south-east.¹²⁰¹ The south-west of the US has already been suffering one of the longest droughts in over a millennium,¹²⁰² and livestock have already been killed by extreme heat in the US in their thousands - both from the heat and from slaughter when farmers’ pasture wasn’t suitable to feed them.^{1203, 1204} The multi-year drought has led to the US cattle herd experiencing a dramatic drop in numbers and is now the lowest it has been in 61 years. This led to a small reduction in methane emissions (2%) and a 1.9% reduction in agricultural emissions overall.¹²⁰⁵

Despite the Big Ag lobby’s push against managed action to rapidly reduce emissions and adapt to climate change, farming will continue to struggle with the consequences of climate chaos. Climate adaptation measures to better protect farmers’ livelihoods and mitigation actions to limit further warming show significant overlap and must be promptly prioritised by policymakers.



CASE STUDY

FAO Case Study: How the Big Livestock captured the FAO narratives on food system transformation

The UN Food and Agriculture Organisation (FAO)¹²⁰⁶ is the world's premier research data source for food security, nutrition, and the farm industry's environmental footprint. It is also a policy coordinating platform. It convened the first world food summit¹²⁰⁷ in response to famine in Africa in 1974, and its agricultural statistics and analyses are regularly cited¹²⁰⁸ by the IPCC. Governments of 194 nations plus the European Union fund the FAO's regular budget, which came to just over one billion dollars¹²⁰⁹ for the 2022-23 biennium. However, the FAO's neutrality in assembling data on greenhouse gas emissions from livestock has been contested.¹²¹⁰

This case study examines the evidence for FAO bias in favour of the livestock sector through a review of relevant literature by and about the FAO, as well as through interviews with five former and currently serving FAO officials - some of whom chose to remain anonymous because of the sensitivity of the subject - and three other academic experts. Some of these conversations and exchanges took place over more than one session.

Agriculture is responsible for 23%¹²¹¹ of global greenhouse gas emissions, mostly¹²¹² due to animal farming. Cattle account for around two-thirds¹²¹³ of these emissions. They belch out huge amounts of methane and spur the deforestation of vast tracts of land for grazing and feed crops. Manufacturing the fertilisers for these (and other farm inputs) is a carbon intensive process. Livestock manure also releases methane and nitrous oxide emissions, while animal slaughter, processing and packing releases carbon dioxide all the way along the production line. In 2006, the FAO calculated that livestock accounted for 18% of global emissions but its successive studies have diminished that figure, which it currently estimates to be 12%.¹²¹⁴

The FAO was set up in the aftermath of World War II. Its constitution¹²¹⁵ commits it to the conservation of natural resources but also to ever-improving agricultural production efficiency as a guarantor of food security. In practice, this has been used to¹²¹⁶ *'maximise the positive role [of] livestock'* and advance it as more advantageous¹²¹⁷ than plant-based alternatives for food security and economic growth. This also reflects the priorities of governments that have strong domestic livestock industries, which have tended to see¹²¹⁸ little political upside in taking on powerful agribusiness lobbies that have the power to shake continents, as recently shown in the EU, where all the Green Deal measures on food and farming were derailed.

Thus, UN agri-environmental scientific and policy-making processes have a vulnerability to direct or indirect interventions designed to strategically foreclose challenges to farm business interests. Notably, in March 2023, delegates from Brazil and Argentina over-ruled UN scientists and removed text¹²¹⁹ on negative environmental impacts from meat - and calls for a shift to more plant-based diets - from an IPCC synthesis report.

Within the FAO, lobbying for the livestock sector can be overt, or couched in the language of food security, nutrition and sustainability. FAO member nations all

participate in the organisation's committees on agriculture,¹²²⁰ commodity problems,¹²²¹ food security,¹²²² forestry,¹²²³ fisheries and a commission on plant genetic resources,¹²²⁴ where they handle both technical and discussion documents. The committee on world food security is the only one of these fora with a democratic mechanism that allows both private sector and civil society participation.¹²²⁵ Collaborations such as the FAO's formal alliance with CropLife International, a trade association for the pesticides industry, are arranged through the FAO's partnerships office.^{1226, 1227, 1228}

While FAO technical documents are mostly uncontroversial data-driven reports, new programmes and policy recommendations addressed for countries to implement unavoidably trigger heated debates involving national delegates. Based on countries' positions, drafting committees will then negotiate thorny issues and thrash out a text which will be sent to the plenary of a given committee for adoption. This is one strategic node at which industry demands may be inserted into FAO processes, according to one former FAO official, who said: *"Sometimes private sector lobbies have members who come [to committees] as part of their country delegations. They don't say that they are working for the country, but they are part of the delegation as advisors, and they influence them like that."*¹²²⁹

Additionally, the FAO's Livestock Environmental Assessment and Performance Partnership (LEAP),¹²³⁰ provides a forum for expert debate, in which the livestock industry can *"make their feelings known before policies are proposed or adopted"*, the former official said. Indeed, the LEAP partnership's first chair¹²³¹ - and simultaneously its feed industry steering committee representative - was Frank Mitloehner (see section 1.2.3).¹²³² Mitloehner has said¹²³³ that his work at LEAP set a compass that it continues to follow for treating livestock as *"an essential part of food and nutrition security"*.¹²³⁴

FAO points to livestock as a massive problem

Nonetheless, the notion that the world's livestock production model needed to be overhauled began with the FAO, in a report that came out six years before LEAP's formation,¹²³⁵ and which Mitloehner played a key role¹²³⁶ in undermining. In 2006, the pioneering study *Livestock's Long Shadow*¹²³⁷ estimated, for the first time, that the share of global greenhouse gas emissions adduceable to livestock was 18%, including 9% of all carbon emissions, 37% of methane emissions, and 65% of nitrous oxide emissions. The sector was also found responsible for 68% of total ammonia emissions.

Livestock production was described in the study as *'one of the top two or three most significant contributors to the most serious environmental problems, at every scale from local to global'*.¹²³⁸ These problems included global heating, land degradation, air and water pollution and biodiversity loss. Livestock's contribution to these was *'on a massive scale and ... the impact is so significant that it needs to be addressed with urgency'*, the report said.¹²³⁹

Where food security was concerned, *'livestock actually detract more from total food supply than they provide'*,¹²⁴⁰ the report said, because they consumed more human edible protein in the form of feed (77m tonnes) than they produced in the form of food products (58m tonnes). In terms of dietary energy, the relative loss was much higher. Health-wise, the paper linked a large number of ailments, including cardiovascular disease, diabetes and certain types of cancer, to the consumption of animal fats and red meat. Environmental damage could be *'significantly reduced'* by lowering over-consumption of meat in the rich world, it argued.¹²⁴¹ In all, livestock accounted for 20% of earth's total terrestrial animal biomass, used 70% of all agricultural land - and 30% of global ice-free land - but made up just 1.4% of global GDP. Nevertheless, the sector accounted for 40% of agricultural GDP.

Given expectations that world population growth would cause a spike in meat demand by mid-century, the FAO's scientists predicted that livestock's environmental impact would 'worsen dramatically'¹²⁴² without corrective measures. Their report called for a robust and far-reaching programme that included the removal of production subsidies, a pricing of land, water and feed resources to reflect their true scarcity values, and the pricing-in of livestock's externalities under the 'polluter pays' principle.

"It didn't create a big splash in the beginning,"¹²⁴³ Henning Steinfeld, its lead author remembered. "It was looked at quite positively within the FAO as a solid piece of analysis. It took some time for them to get organised and to understand that the narrative was slipping out of their hands in a way."

Industry backlash begins

Like an underwater earthquake, the churn from Long Shadow hit the agrifood sector in a series of delayed waves. In 2010, a furore¹²⁴⁴ over the paper's PR trap-pings¹²⁴⁵ - specifically, an erroneous FAO communications department claim that livestock emitted more greenhouse gases than the transportation sector - led by Mitloehner, grabbed press coverage,¹²⁴⁶ and drew an apology from one of the paper's authors. Several of the Long Shadow's author team would later claim¹²⁴⁷ that their subsequent work had been censored, sabotaged and undermined by the FAO hierarchy, in an internal backlash. Some said that they had suffered restricted access to internal resources, meetings, funding and career opportunities. A sense of duress was tangible.

"Pressure takes many different forms," Steinfeld said. "Very often it's not a direct intervention from a member country but someone says something or copies something

*to someone [in the FAO] and then this becomes an attitude somehow and what we suffered from - what I suffered from - was just a lack of collaboration. You don't get support from the organisation. They're all slow. They all forget. They're not doing things and they're delaying. Your money disappears and so on. This is how the game is played."*¹²⁴⁸

Two groups dominated the pro-livestock industry narrative in the FAO - the large private sector producers, and the major developed livestock-producing countries, but also African and Asian nations, which see livestock as a mechanism for small-holder growth.

Steinfeld and others say¹²⁴⁹ that external pressure was brought to bear on the FAO after 2006, from big meat-producing countries including Argentina, Australia, Brazil, Paraguay, Uruguay and the US, and also from large scale meat and dairy producing companies, who encouraged senior FAO officials not to invest in work studying the environmental impacts of livestock.

*"If you worked in the FAO as a technical officer at the time, you were getting into big games with really, millions of dollars moving because of an argument you'd made, and that is of course - they [the FAO leadership] don't like that - that's not for technical people to play with," Steinfeld said.*¹²⁵⁰

In 2009, a study¹²⁵¹ by the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) - co-sponsored by the FAO and other UN agencies was "buried" by the FAO,¹²⁵² according to its author, Frank Herren. The paper singled out livestock as a 'major contributor' to global heating and 'probably the largest sectoral source of water pollution'.

Australia, Canada and the US reacted by entering ‘reservations’ about Herren’s conclusions in an annex¹²⁵³ to his paper. Canada said the study needed more ‘*balanced and objective analysis*’. The US flagged ‘*specific and substantive concerns*’, noting that the paper had neglected the ‘*economic benefits*’ for poor countries of opening up their national agricultural markets.

Backstage capture

Behind the scenes, Herren said that these countries exerted “*huge pressure*” on the FAO not to publicise the study.¹²⁵⁴ At an FAO plenary at which he had expected to present his paper, he says he was warned by an FAO organiser not to mention the IAASTD report.¹²⁵⁵ When the FAO hierarchy tried to censor emissions data in a separate FAO study called ‘Livestock in the Balance’ in 2009, it provoked Steinfeld and his team to remove their names from the authors list in protest, until the FAO leadership backed down.^{1256, 1257}

One industry-friendly advocacy group, the Livestock Global Alliance¹²⁵⁸ (LGA), was set up on the fringes of the LEAP committee to try to thwart the emerging consensus around Livestock’s Long Shadow. Its partners included the Bill and Melinda Gates Foundation, the International Livestock Research Institute, the French foreign affairs ministry and the World Bank.¹²⁵⁹ Former FAO officials say that LGA meetings discussed obtaining funding for industry-friendly research, which could be funnelled back into the FAO policy-making circuits to influence their output.¹²⁶⁰

“It is quite normal that if you organise a multi-stakeholder group meeting that certain groups organise themselves and try to push for their agenda,” Steinfeld said. *“You may be scandalised about it, looking from the outside. But this is the real world, and*

this is how things happen there.” The LGA was, he said, *“a distracting scheme that was silently aborted around 2018”*.¹²⁶¹

“The FAO never completely understood that this was a competing model which tried to preserve the interests of those incumbents who were quite upset that there was critical messaging [on livestock emissions] coming out of the FAO,” he continued. The LGA’s focus *“was a lot about messaging, communication, media, and trying to bring out convincing narratives that would counteract the so-called ‘damage’ done by Long Shadow.”*¹²⁶²

Eventually, the FAO narrative about livestock that coalesced under José Graziano da Silva, its director-general between 2011 and 2019, was one of *“propaganda for smallholders, indigenous people – ‘Feed the World!’ – without being concrete about anything but just regurgitating the current mantra of the day,”* Steinfeld said. Graziano *“was only interested in messaging which was not controversial in any way,”* he said, adding that this was the period in which *“pressure on the [FAO livestock research] group started in earnest”*.¹²⁶³

It included *“moving away key personnel from my group – the secondment of staff to the World Bank and not respecting return arrangements – and competition for funding,”* Steinfeld said.¹²⁶⁴

As the pressure continued, two follow-up reports to Livestock’s Long Shadow dialled down their descriptions of the scale of the problem and the scope of the measures needed to tackle it. In 2013, Tackling Climate Change Through Livestock¹²⁶⁵ estimated livestock’s contribution to global heating at 14.5%. Within the paper, the language describing livestock’s emissions impact also diminished from a “*massive*” problem to an “*important*” one.¹²⁶⁶ The study added significant new data, such as beef and cattle milk accounting for 41% and 20% of sectoral emissions, respectively.¹²⁶⁷ But

its proposals for reform shifted from cutting subsidies and taxing externalities to encouraging the uptake of more efficient supply chain management and farming technologies. These were more palatable to agribusiness and the FAO's state sponsors. Tackling Climate Change argued that a 30% reduction in livestock greenhouse gas emissions could be achieved with measures already available, such as better-quality feeds and feed balancing, improved breeding techniques and better animal health.

'Feeding additives, vaccines and genetic selection methods have a strong potential to reduce emissions but require further development and/or longer time frames to be viable mitigation options,' the study said.¹²⁶⁸ Its conclusion added that livestock mitigation proposals had to be congruent with national development goals and the sectoral vision, so as to *'have traction with policymakers'*.¹²⁶⁹

Pathway to an emissions controversy

At COP28¹²⁷⁰ in December 2023, the FAO's third cornerstone paper 'Pathways towards Lower Emissions' report¹²⁷¹ again revised downward its estimate of livestock's contribution to overall greenhouse gas emissions, this time to 12%. The base year for the estimate was 2015 but the paper's findings seemed to contradict other FAO reports. A separate paper¹²⁷² in 2018 had observed a 39% rise in global meat production between 2000-2014, with a further 19% increase predicted by 2030. Another FAO study¹²⁷³ from 2018 said that livestock emissions had risen by 14% in the same period. Both were based on FAOSTAT data.¹²⁷⁴

These studies were not apparently congruent with the Pathways estimate of total livestock emissions over the same period which, it said, fell from 7.1 gigatonnes of CO₂ equivalent emissions in 2013 (based on 2005 data) to 6.2Gt in 2023 (based on 2015 data). The implied reason for the disparity in Pathways was a new GLEAM 3¹²⁷⁵

model utilised by the FAO for the first time and based on an 'IPCC Tier 2 approach'. This was *'richer in terms of process granularity [and] enables a richer analysis of mitigation options'*, the paper said.¹²⁷⁶ Nonetheless, the GLEAM methodology does not cover emissions from retail, household consumption or the waste disposal of livestock products, and does not include all the land use processes covered by the previous FAOSTAT modelling. The Pathways report also utilised different methodology, input data and global warming potential (GWP) values.¹²⁷⁷

The study was substantially more upbeat than its predecessors, describing livestock as *'playing a vital role'* in providing nutrition and community *'resilience'*.¹²⁷⁸ Far from posing a massive problem that demands urgent attention, Pathways merely said that *'if not managed properly, livestock systems can have negative impacts on the environment with greenhouse gas emissions generated throughout the production chain'*.¹²⁷⁹

It acquiesced to an agribusiness-centric model for solutions, saying that: *'the most promising interventions in terms of GHG reduction include enhancing the livestock productivity, implementing feed and nutrition practices, and improving animal health and welfare. Other practices such as breeding, changes in consumption of TASF [territorial animal source food], reducing food loss and waste, and rumen manipulation also contribute to... mitigation potentials'*.¹²⁸⁰ The paper also recommended adopting circular economy approaches, more feed additives, and greater efficiency. An *'emissions intensity'* metric was introduced to account for the mitigation potential of using different animal breeds, management practices, feed quality and environmental conditions. The report stressed that *'collaborative efforts from all industry stakeholders are critical to successfully mitigate the anticipated increase in sectoral GHG emissions'*.¹²⁸¹

Where Livestock's Long Shadow planted a flag in the soil for an emergency programme to tackle a civilisational crisis, Pathways walked its study back to graze on the more sedate plains of industry-friendly sustainability measures.¹²⁸² The results were nothing if not controversial. In the teeth of a scientific consensus that livestock herd numbers must peak by 2025 and fall thereafter to meet the Paris climate agreement goals,¹²⁸³ Pathways foresaw a 20% increase in demand for animal products by 2050, and a 32% increase in related emissions (from 6.2 Gt to 9.1 Gt). Shifting to more plant-based diets was not a realistic alternative as it would only cut global greenhouse gas emissions by 2-5%, the paper claimed, citing a 2017 paper¹²⁸⁴ whose lead author was Paul Behrens, an associate professor at Leiden University in the Netherlands.

Behrens' paper had analysed the health and environmental outcomes of state-supported nationally recommended diets (NRDs), but it was outdated. Several countries had drastically reduced their recommended meat intake since then - in the case of Spain to as little as, potentially, nothing. Germany now favoured a 75% plant-based diet, while the advisory meat content in diets from China to Denmark all fell. Pathways did not review other, more appropriate papers for making their assessment such as the Eat-Lancet Commission on Healthy Diet,¹²⁸⁵ which called for North Americans and Europeans to cut their red meat consumption by 84% and 77% respectively.

Behrens described Pathways as *“a scientifically flawed report that is already being used to delay the very urgent action we need on reducing livestock numbers for both the planet's health and our own. It's one thing to have your research misused in such an upsetting way to misrepresent the science, but it's another that this report will likely serve to delay the very action we need to transition to a more resilient, sustainable, and healthy food system. In that sense, this report has the potential to cause real-world physical harm to people globally”*.¹²⁸⁶

The study did at least draw praise from one quarter: industry lobbyists such as Constance Cullman, the president of the Animal Feed Industry Association, who hailed it as *“music to our ears”*.¹²⁸⁷ Another academic cited by the FAO in Pathways, Matthew Hayek, complained that the paper misused a report¹²⁸⁸ that he had co-written, by applying measurements of total agrifood emissions to livestock emissions alone. By doing so, the mitigation potential of livestock herd reductions was underestimated by a factor of between six and 40, he said.¹²⁸⁹

Other errors noted by the academics included: double counting meat emissions until 2050, mixing different baseline years in analyses and channelling data inputs that inappropriately favoured diets that allowed increased global meat consumption.¹²⁹⁰ Together, Behrens and Hayek wrote a joint letter¹²⁹¹ demanding that the FAO retract the Pathways report, sparking press stories¹²⁹² across Europe. The FAO responded by promising a dialogue with the two academics. As of 15 May, no FAO officials had contacted them, according to Behrens.

Hayek said: *“The FAO is the global authority on food systems and their relationships to the environment. I don't understand why, with all the public trust they have, they would release reports without a methodology that justifies their authority. This is an institution with great power and influence, and it is not using it responsibly. To paraphrase my grandmother's adage: ‘If you can't produce something accurate, don't produce anything at all’”*.¹²⁹³

The environmental scientist and director of the Project Drawdown¹²⁹⁴ non-profit, Jonathan Foley, went further. *“Even small changes in diets could have a huge impact on climate,”* he said. *“It's a first-order effect. Yet, for some bizarre reason, the FAO seems to have deliberately ignored this science in ‘Pathways toward Lower Emissions’. Instead, it focused on solutions that mainly nibble at the edges of the problem but preserve the status quo of livestock production. It is hard to see how we can cut emissions*

from the food system without facing the tremendous impact that animal-rich diets, crop-based biofuels and high levels of food waste have in the system. Yet the FAO seems content to look the other way, ignoring a broad and established scientific consensus.”

Roadmap to nowhere?

At almost the same time that Pathways was released, the FAO put out another flagship report, the first of three blueprints outlining how agriculture could play its part in preventing global heating above 1.5C and feeding the world. The ‘Global Roadmap’¹²⁹⁵ contained a ‘*portfolio of solutions*’, split across 10 domains with 120 recommended actions. To succeed, the plan would need annual livestock productivity increases of 1.7% (to meet assumed demand) and sectoral emissions cuts of 3% a year (to meet emissions-cutting goals). This would represent a doubling of the farm industry’s current environmental performance.

The roadmap’s genesis appears to have begun¹²⁹⁶ with a call on the FAO from more than 40 investors with a combined share value of \$18 trillion for a sectoral emissions-cutting plan.¹²⁹⁷ The Farm Animal Investment Risk & Return (FAIRR) investors intended this plan to ‘*act in a similar way to the release of a report for the energy sector by the International Energy Agency, which spurred investment into companies, projects and technologies aligned with the plan*’, Reuters reported.¹²⁹⁸

“It’s much needed because for the energy sector there are clear roadmaps which really attracted a lot of investors... but for agriculture we don’t have such a map,” said the FAO deputy director Zitouni Ould-Dada.

FAIRR was launched by the Jeremy Collier Foundation in 2015. Collier, a British-born entrepreneur, had an estimated net worth of \$320m in 2019.¹²⁹⁹ He is also the deputy chair of Tel Aviv University¹³⁰⁰ and a member of the advisory council of The

Elders,¹³⁰¹ which was set up by Nelson Mandela in 2007. Collier’s Foundation opposes intensive factory farming and supports investment in areas including cultured meat¹³⁰² and alternatives to animal antibiotics.¹³⁰³ Its membership list¹³⁰⁴ includes an impressive array of asset managers and investment firms, some of whom, like BlackRock,¹³⁰⁵ ABN-AMRO¹³⁰⁶ and Allianz,¹³⁰⁷ do not appear to always prioritise global heating concerns.

According to one former FAO official who still has connections at the organisation, the internal reaction to FAIRR’s initial proposal was “*not very deep in enthusiasm.*” However, “*Torero was always looking for opportunities to be funded and he hired Laborde to do the work. Normally, there is an internal process where different divisions of the FAO provide comments and clear the work, and, if you really do it right, you submit your plan to a governing body’s committee to give countries an opportunity to discuss or be informed about new initiatives. In this case, it came out of the blue. Everyone was surprised when it came out at the COP28 because there had not even been an internal process of clearance.*”¹³⁰⁸

Another insider broadly confirmed this sequence of events, indicating that the roadmap was seen internally – by those who were given sight of it – as a generic placeholder report, put together quickly without oversight or review from recognised experts in the field, to which substance would be added in forthcoming tomes. The roadmap did set clear milestones – including for a 25% cut in livestock methane emissions by 2030 – but contained no proposals for cuts to livestock production or consumption through reducing meat and dairy – or increasing plant-based – diets. Instead, the vaunted 30-year effort pitched improved productivity through a shopping list of better genetic techniques, veterinary care, intensified production, improved feeding practices, superior animal health and grazing management, restoring degraded pastures, and certification schemes.

Steinfeld saw its assumptions as unrealistic, as livestock productivity growth was notoriously low at around 1% per annum. *“By what miracle would that be doubled all of a sudden?”* he said. *“It’s not clear, nor is it explained how this would happen. It needs massive investment to help to reduce animal [herd] numbers while increasing average productivity.”*¹³⁰⁹

He added that a strategic problem with the roadmap was its neglect of new technologies such as precision fermentation and cultured meat. *“It may not be the future you want but conventional agriculture will be ever-more challenged by climate change,”* he said. *“There will be so much pressure on food in the future that we need to look at all possibilities to produce in innovative ways. That’s a conversation the FAO has not had. It should have been in the roadmap.”*¹³¹⁰

Scientists including Behrens and Hayek have also criticised the roadmap for not explaining why its particular 120 interventions were chosen – and not quantifying their environmental benefits. They also inveighed against a lack of transparency about the paper’s review process and the absence of a list of its authors.¹³¹¹ The agribusiness-friendly nature of the roadmap’s menu was highlighted when the FAO’s chief economist Maximo Torero, who had overall responsibility for it, told the Financial Times last December: *“There’s a need to produce more [meat and dairy] because there’s an enormous amount of countries that are under-consuming those micronutrients and those products,”* he said. Other regions were *“over-consuming and therefore having health issues”*, he further noted. The intensification called for in the report would take place in countries such as the Netherlands and New Zealand, he said.¹³¹² Notably, he did not mention negative environmental impacts from concentrated production of meat and dairy products.

These locations raised eyebrows among experts, as both countries already have high livestock stocking densities with resulting soil damage and air and water pollution. Dutch fields are saturated with Europe’s second highest¹³¹³ nitrogen pollution rate – three times the EU average¹³¹⁴ – mostly due to ammonia from livestock manure. In New Zealand, nitrogen pollution is so bad that in some areas up to 11,000 litres of water¹³¹⁵ are needed to dilute the pollution caused by the production of a single litre of dairy milk.

Working under Torero, the FAO’s Agrifood Economics and Policy Director, David Laborde, was highly involved in producing the roadmap. During an interview in January, he said that Torero’s words had been taken *“a bit out of context”* and that a longer version of the report in February would clarify how livestock production could be intensified in the global south and decreased in the north. At the time of writing this report, the longer version of the FAO Roadmap had not yet been published but Laborde was effusive about its nominal message.

“We want people to adopt healthy diets everywhere,” he said. *“That means that in some places, meat demand will increase per capita and in other places it will have to decrease and in the full version of the roadmap we say explicitly that in a number of advanced economies, consumption of meat is already above the national dietary guidelines. We want an overall increase in meat products that would be lower than if we did nothing. If we do nothing, it will double. If we move to something more reasonable, it will just increase by 10% but, in any case, we’re not seeing a world – even where people adopt a healthy diet – where total meat demand decreases as of today.”*¹³¹⁶

Laborde said that livestock productivity increases should occur in *“the less efficient or less productive systems, that will include the low-income countries in the global south because that’s also where the demand will increase”*.

“It’s not the fact that if tomorrow we set down production in New Zealand or the Netherlands, it will make the world better off because, actually, we’ve seen in Europe some countries that reduced meat production have actually not reduced their meat consumption and so what has happened? They import more meat. And, in some cases, from some countries that have a worse environmental performance.”

Laborde did not say which European countries he was referring to, but this line of argumentation has been heard before in industry circles. The European farm union Copa-Cogeca used it in 2015 to claim that introducing methane reduction targets would ‘*cut production and shift it to non-EU countries which could have lower environmental regimes*’.¹³¹⁷

So where would the need for herd reductions be greatest? *“In Europe you can see [a] limitation of total numbers,”* Laborde replied. *“Potentially [also] in the US, but I really think where we’re going to see a reduction of the number of animals in the system – where today there is very low productivity for animals – is actually in parts of Africa where, when productivity increases, we will see less need to have so many animals. Making productivity gains in many places also means intensification. We want that to be sustainable intensification.”*

Laborde indicated that the trajectory of the next two FAO roadmaps would lean to an “outcome-oriented” approach. *“If industry says we can have methane reductions with technology and it can demonstrate that in five years we have cut methane emissions by 10% with the same number of animals, that is an acceptable pathway,”* he said.

Where possible the FAO may try to skirt rather than confront the power of organised meat lobbies – and environmental NGOs. One official close to the FAO roadmap file added: *“It’s better to change by being technology neutral. You have to cut emissions without saying how you do it, and without too many rules or regulations.”*¹³¹⁸

Laborde stressed that the roadmap would not follow all the calls for action made in Livestock’s Long Shadow. *“You have to be very careful about the taxation narrative as if you tax (meat) tomorrow it will be the poor consumer that will reduce their consumption first, not the high earners,”* he said. *“If we tell people to stop eating burgers to save the planet, half the people will say no.”* He insisted that he would give countries what they needed in terms of sectoral reform, rather than what they wanted. *“I’m pretty strong at not being pressured by anyone,”* he said. *“I’m driven by evidence.”*

A hard shell may be a prerequisite to working in the FAO. Steinfeld noted that the meat and dairy sector had coordinated their messaging ahead of the COP meeting, albeit not necessarily in regard to the Roadmap’s release. *“I know that the meat and dairy sectors had done their homework,”* he said. *“They organised themselves. They harmonised their language. They had their write-ups and key messages and memos, the associations where the different companies collaborate. They went about this in a professional way.”*

Conclusions

Political battles in the FAO are fought over texts in a tug-of-war that veterans say can resemble a horse trade, particularly when seesaws between development and emissions emerge. *“That’s the name of the game,”* one FAO insider said. *“It’s a big tension. If you want a reading lens for how people in the industry try to model the debate, they start by talking about efficiency. They say ‘great improved efficiencies are going to save the world’ – including their profits – and that seems to be the only mitigation solution they push. They know full well that, with efficiencies, economies of scale are typically [evident] only on the intensive [farming] scale. What they miss is that 10 inefficient cows in Masai may emit a lot [of greenhouse gases] but overall, they don’t count for anything [while] the McDonalds’ approach of farming 10,000 cows may be very efficient for the farming of each cow but the (overall) emissions*

*are 100 times larger. We do need to become efficient - but you can't model that and use it as a magic 'sustainability' wand to save the world. You have to go way beyond business as usual."*¹³¹⁹

There is no hope of meeting the Paris climate agreement's goal of limiting global warming to well below 2°C and pursuing 1.5°C without significantly ratcheting down agricultural emissions, according to peer-reviewed studies.¹³²⁰ On our current path, most global warming between 2030 and 2100 will come from the consumption of meat and dairy.¹³²¹ The FAO's institutional and, by now, almost automatic deference to industry narratives - bolstered by long-standing practices that transport a conveyor belt of sectoral demands to the FAO's upper echelons - may still not definitively commit the organisation to a path ending in climatic breakdown. Equally, though, its adaptation to power dynamics, which are not openly articulated internally or subject to meaningful accountability processes leaves it open to charges of being an accessory after such a fact. Officials and scientists working within the FAO quickly and informally learn which behaviours will be rewarded with promotion and which will be punished. The result appears to have been an effective institutional capture, albeit one that - from the outside - may be more clearly judged from its outcomes than its processes.

Favouring technology and efficiency over taxation and regulation as emissions-cutting pathways may win traction among well-lobbied policymakers but that does not make them more effective climate mitigation strategies. Similarly, the current practice of allowing industry representatives and lobbyists to sit on national delegations to FAO committees effectively places a fox on the board of the FAO's hen house. The FAO should follow the EU's lead in banning such practices.¹³²²

Civil society groups such as unions and NGOs should be given equal access to FAO policy-making processes, as should independent academic experts. Major FAO reports should include full lists of authors, peer reviewers and methodologies. Internal transparency should also be increased under the aegis of an independent body capable of holding the FAO to account, and pursuing structural reform, if needed.

As Jonathan Foley said of the reported pressure put on FAO officials from lobbyists and the livestock industry: *"If [this is] true, and if this is connected to their strange discounting of diet changes, this is deeply concerning and calls for a careful review of the FAO's work, and oversight."*¹³²³ In the absence of internal reform, such calls are only likely to grow louder.



4. Conclusion and Recommendations

The climate science is clear: actions that we take in this decade will define temperatures and the world we live in for the decades to come. The livestock sector is both a significant source of GHG emissions and uniquely vulnerable to the impacts of climate change that are already being felt by farmers everywhere. The studies show that as temperatures increase further, climate impacts will only get worse, with significant financial implications for the sector, as well as with potential catastrophic food security implications across the world, impacting the most vulnerable.

It is clear that we cannot stay close to the Paris Agreement's 1.50C trajectory without significant cuts in methane emission (45% by 2030) and without significantly reducing consumption and production of animal products. As we have shown in this report, dietary shift and better production practices have largely been overlooked in the policy debates due to the power of the farm lobbies, especially huge

meat and dairy corporations that profit from the status quo. A recent survey of 210 climate scientists and food and agriculture experts has shown that they believe that the emissions from livestock must peak by 2025 in high- and middle-income countries (later for low-income countries) and be cut globally by 50% by 2030.¹³²⁴

However, the industry is fighting tooth and nail to resist any reduction in livestock numbers and the transition to healthier, more plant-based, diets. Instead, it is trying to sell us silver bullet solutions in the form of techno-fixes with somewhat dubious emissions reductions, while at the same time refusing to invest in them. The report shows that industry is investing way more in advertising and marketing of their products than they do in climate solutions. Even if their seemingly preferred solutions in the form of techno-fixes prove promising, they ask for public money to fund them and try to delay any mandatory measures for as long as possible.

While many countries have embarked on a transition to renewable energy and transport systems through a variety of fiscal measures and policy interventions, the lack of similar measures in the food sector is glaring and could undermine the achievement of net zero targets in many countries. Alternative proteins are a promising technology, but they received only a fraction of investments deployed in other sectors. A report by the Boston Consulting Group found that per dollar invested, plant-based proteins have the highest CO₂ savings of any sector and have ‘*ready consumer interest*’. Despite this, they have received less investment than other sectors.¹³²⁵ Market trends also show that there is a huge appetite for plant-based foods. In 2022, a survey covering 31 countries found a global average of 44% of consumers who were ‘*likely to eat less meat or replace it with alternatives to limit their contribution to climate change*’.¹³²⁶ Millennials are also more likely to try not to eat meat,¹³²⁷ and 22% of the world’s population are vegetarian.¹³²⁸ Actions such as Veganuary have been increasing year on year, with an estimated 25 million people taking part in January 2024.¹³²⁹ In the Global North some trends are even more

pronounced. In the UK meat consumption went down by 17% in 2019 compared to 2008¹³³⁰ and meat consumption in Germany was at its lowest levels in 2023 since records began in 1991.¹³³¹

Despite this, the industry continues to invest in greenwashing approaches targeted at policymakers and the public, particularly targeting younger, more climate aware generations. This is particularly telling of the worries the industry seems to have about a consumer shift away from high meat and dairy consumption. Net-zero targets do not meet recent UN Expert Group standards, while investments are going towards industry-friendly science, which is then used to undermine science-based policy. As action continues to be further and further delayed, the power of the lobbies of which these companies are a part is extremely clear, as the case studies throughout this report show: from delaying legislation in Aotearoa (New Zealand), to embedding lobby groups into legislative bodies in Brazil to derailing all the policies on food and farming in the EU’s Green Deal. We must ensure policymakers legislate in favour of small farmers, people, and the planet, utilising public funds to support green reforms and move away from funding Big Ag to the detriment of a sustainable future.

4.1 Recommendations for governments

Governments can take a variety of demand and supply side, as well as fiscal measures to reduce the emissions from their food systems, as well as guarantee healthier food for all their citizens. Many governments already have in place national dietary health guidance, and several countries have started to include elements of sustainability in those to promote climate-friendly eating. Dietary guidelines are often not implemented properly, and people in the Global North, as well as high- and middle-income consumers in emerging economies, often overconsume meat and dairy products, which is also leading to a number of diet-related diseases and

premature deaths. Implementing these guidelines, starting with public procurement, could lead to significant emissions reductions.

Our analysis of the EU showed that the largest potential for reducing methane in the EU comes from switching to healthier diets. If 50% of EU citizens adopted dietary guidance reducing meat and dairy consumption this, in combination with some manure management, and measures in the waste and energy sectors, could lead to reduction of methane pollution by 45% - what the science says is necessary.¹³³² On the supply side, it is critical that governments, especially big producers of meat and dairy, reduce the number of animals, prioritising reform for animals that are raised in industrial production systems, also called factory farms. This is a critical measure to shift towards so-called 'less and better meat and dairy' and more plant-based production systems that can be based on agroecological and regenerative production principles.

Governments should:

- Develop and implement ambitious national methane action plans, which include detailed plans on how methane emissions from food systems will be addressed. This should include a realistic assessment on how much can be achieved through technical measures vs. dietary shift.
- Include wider food systems transformation into the upcoming revision of National Determined Contributions (NDCs), expected by COP30 at the latest and ensure that mitigation measures align with the 1.5°C trajectory, as per the Paris Agreement.
- Regulate meat and dairy companies by obliging companies operating in these markets to establish science-based emissions reduction targets aligned with a 1.5°C trajectory, including Scope 3 emissions and regular reporting of their progress.

- Support farmers to reduce their herd sizes and switch to more sustainable food production methods, such as organic farming or agroecology.
- Incorporate sustainability into national dietary health guidelines and put in place measures to implement these guidelines, starting with public procurement, which can create positive knock-on effects in normalising healthy and plant-rich foods.
- Impose national targets for reduction in meat sales and food waste in supermarkets, including mandatory reporting on progress.
- Promote research and development, and other measures, for the uptake of plant-based foods and other meat and dairy alternatives.
- Implement measures to crackdown on greenwashing, including clear guidelines on how green claims should be formulated, as well as enforcement of penalties on greenwashing companies.
- Stop public promotions of meat and dairy products and reform subsidies to support more plant-based production and better farming practices.
- Implement fiscal measures to drive transition towards environmentally friendlier and healthier options. These measures should combine fiscal disincentives (taxes or carbon pricing) with fiscal incentives (subsidies or food vouchers) to ensure that low-income households do not suffer disproportionately negative impacts. Governments could phase in such measures, starting with a worst-first approach, for example by introducing taxes on high-methane products, such as beef and dairy first.

Box 4.1: Denmark's emissions tax



With over 60% of its land dedicated to agriculture, the sector is responsible for 22% of Denmark's overall GHG emissions. As other sectors have reduced their emissions, agriculture has increased. To try and mitigate this, Denmark (along with developing a national action plan on plant-based foods) is looking to implement a CO₂e tax; 'e' being 'equivalent', to ensure it includes other GHGs as well, including methane.^{1333, 1334} Denmark has committed to reduce its emissions by 70% by 2030 (compared to 1990 levels),¹³³⁵ and despite being close to reaching this goal,¹³³⁶ the new tax will be placed on farmers who pollute and then reinvested into supporting farmers in the green transition.¹³³⁷ The climate minister has made clear commitments that the green transition '*does not stop in 2030*'.¹³³⁸ This could be a positive example of supporting a shift to sustainable farming practices if properly implemented, although the government will have to ensure that the \$74 million they have committed to feed additives are not the end point for climate action in Denmark.¹³³⁹ Ensuring their national action plan on plant-based foods will need to be central to this process.¹³⁴⁰

4.2 Recommendations for companies

Our report shows that responsibility for the lion's share of environmental impact of our food system is not in the hands of individual farmers or consumers, but in the hands of a small number of multinational corporations. These corporations spend a considerable amount of money and resources to bend regulation according to their preferences, which includes trying to convince consumers and policymakers that change is already happening through a variety of voluntary measures and green-washing. Voluntary action is often used as a smokescreen and it will not be enough to drive transition in the timescale needed for climate action. For this reason, it

is crucial that governments put in place mandatory regulation that will level the playing field and direct significant resources that these companies have towards meaningful climate action (and not towards industry-preferred false solutions).

Companies should:

- Set short- and long-term climate targets aligned with a 1.5°C temperature trajectory, which include an ambitious methane target (at a minimum, 30% reduction by 2030) and regular reporting of methane and other GHG emissions (with independent verification). Companies should present concrete plans that include disclosing investments on how they will reduce emissions from their supply chains (where >90% of their emissions originate).
- Develop climate target plans that focus on absolute emissions reductions as a priority, with limited focus on carbon insetting such as carbon sequestration from soil. Carbon offsetting should not be included as part of meeting climate targets and should be banned.
- Disclose lobbying expenditure (including political donations and fees paid to consultancies and PR firms) and leave industry associations that lobby against climate and health legislation.
- Invest in alternative protein, including plant-based and fermentation-based products, which have significant potential to reduce emissions. Companies should set clear trajectories that include reductions of livestock numbers and shift to less and better meat and dairy as well as more plant-based products.
- Support progressive climate environmental and health policies, including carbon and methane pricing.

Box 4.2: Lidl's investment into plant-based food

Germany, Europe's largest vegan market, produced nearly 17% more plant-based meat in 2023 than in 2022.¹³⁴¹ Traditional meat production has decreased for seven consecutive years, dropping by 4% in 2023 and 21% since 2016.¹³⁴² Per capita meat consumption fell by 12% from 2019 to 2023, with 59% of Germans eating less meat in 2022 than the previous year.¹³⁴³

Forward-thinking retailers are capitalising on Germany's protein transition, seeing it as a significant business opportunity. Lidl, Germany's largest discount retailer, is doubling the plant-based share of its protein portfolio by 2030 and expanding this commitment to Austria, Belgium and the Netherlands.¹³⁴⁴ Similarly, Ahold Delhaize has promised to set targets across all its European markets. This trend creates a virtuous cycle of increased production, revenue, research and development, better products, lower prices, and higher demand. Such initiatives show how retailers are seizing the growing market for plant-based foods and positioning themselves as leaders in the protein transition.

Shifting 50% of their protein sources from meat to plant-based alternatives could lead to significant benefits for retailers, consumers, and the planet. If Ahold Delhaize, Carrefour, CP All, Lidl, Tesco, and Sodexo make this transition, they could collectively reduce emissions by 31.6 million tonnes annually – equivalent to taking 25 million cars off EU roads. Moreover, this change could free up an area of land as large as Hungary (102,000 sq km) and save 670 million cubic metre of water each year, which is comparable to the volume of 268,000 Olympic-size swimming pools. It's truly a win-win-win scenario for everyone involved.¹³⁴⁵

4.3 Recommendations for consumers

Reducing consumption of meat and dairy is one of the more effective climate decisions individuals can make. Going vegan for two-thirds of meals cuts emissions by 60%, while absolute veganism cuts emissions by 85%.¹³⁴⁶ However, even reducing meat consumption in line with dietary health guidelines will bring major health and environmental benefits and, if many consumers adopt such behaviour, can send an important signal to governments, regions and cities to adopt progressive food and farming policies.

Consumers should:

Reduce personal consumption of meat and dairy products, shifting to healthier plant-based options as well as better meat and dairy products, produced with higher environmental and animal welfare standards.

Put pressure on food companies to put in place robust climate targets, which include reduction in sales of meat and dairy and the offering of more plant-based options. Consumers can do this by writing to companies, sharing and signing petitions, and through their purchasing power, among other areas.

Support small organic farmers, for example through veg box schemes, which are associated with increased vegetable consumption, better climate impact and wider environmental impact, such as reduced waste.



CASE STUDY

Brazil: The Role of Big Ag in delaying, distracting and derailing climate policy

Methane and agriculture in Brazil

The agriculture sector in Brazil accounts for 24.1% of the country's GDP,¹³⁴⁷ 26.8% of all jobs¹³⁴⁸ and almost half of exports.¹³⁴⁹ Brazil also has the largest cattle herd in the world and is the largest global exporter of beef.¹³⁵⁰ It is also the third largest milk producer, with exports steadily growing since 2018.¹³⁵¹ Given the considerable role of the sector in the country's economy and the growing middle class in Brazil, it is unsurprising that the industry lobby is well established. Brazil is one of the world's largest greenhouse gas emitters and the fifth largest methane emitter,¹³⁵² largely due to its vast and expanding animal farming sector. Brazil is also home to the highly biodiverse ecosystems of the Amazon and Cerrado, which are under threat due to cattle ranching and soy production.¹³⁵³

Big agriculture, and particularly meat and dairy, play such a central role in Brazil's economy and land use that it is impossible to talk about policymaking on climate in Brazil without talking about this industry. The country is home to some of the largest meat and dairy companies in the world, including JBS, whose methane emissions

exceed the combined livestock methane emissions from France, Germany, Canada and New Zealand. The other two big Brazilian companies are Marfrig, the second largest meat producer globally,¹³⁵⁴ and Minerva Foods. With these major players in the meat and dairy industry, livestock numbers have consistently increased over the last 20 years (2001-2021). Nearly 90% of that increase was in the Amazon region, with two-thirds of all cattle in the Amazon and Cerrado regions.¹³⁵⁵

With 47 million hectares of pasture (the Amazon has 56.6 million hectares), the Cerrado is the largest savannah in South America, the size of England, France, Germany, Italy and Spain combined.¹³⁵⁶ Deforestation is now twice as bad in the Cerrado as in the Amazon, and it lacks proper protection.¹³⁵⁷ US-based company Bunge was recently found by Mighty Earth to be directly linked to 15,897 football fields' (11,351 hectares) worth of deforestation in the Cerrado. Bunge is the primary supplier of soy for animal feed to the EU.¹³⁵⁸ In 2021, 2 million hectares of land was deforested throughout the country, of which 1.47 million was in the Legal Amazon.¹³⁵⁹ Indigenous peoples' land has been stolen and destroyed,¹³⁶⁰ and in 2022, a fifth of all environmental defenders murdered globally trying to protect the planet were in the Amazon.¹³⁶¹ Between 2012 and 2022, Brazil witnessed the deaths of 376 environmental defenders, the second largest number in the world.¹³⁶²

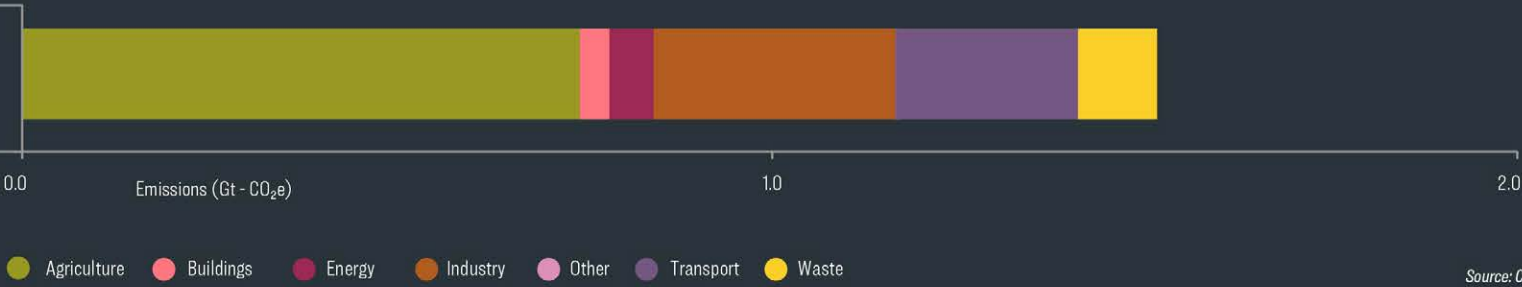
With the largest national economy in Latin America and the ninth largest GDP in the world,¹³⁶³ Brazil has the means and opportunity to take more decisive action on climate.¹³⁶⁴ Brazil has submitted its NDC to the Paris Agreement, updated a national policy on climate change,¹³⁶⁵ and signed the Global Methane Pledge (though there is not yet a clear action plan from the government on achieving this). At COP26, Brazil made a further commitment to reduce emissions by 50% by 2030 and it has also committed to climate neutrality by 2050.¹³⁶⁶



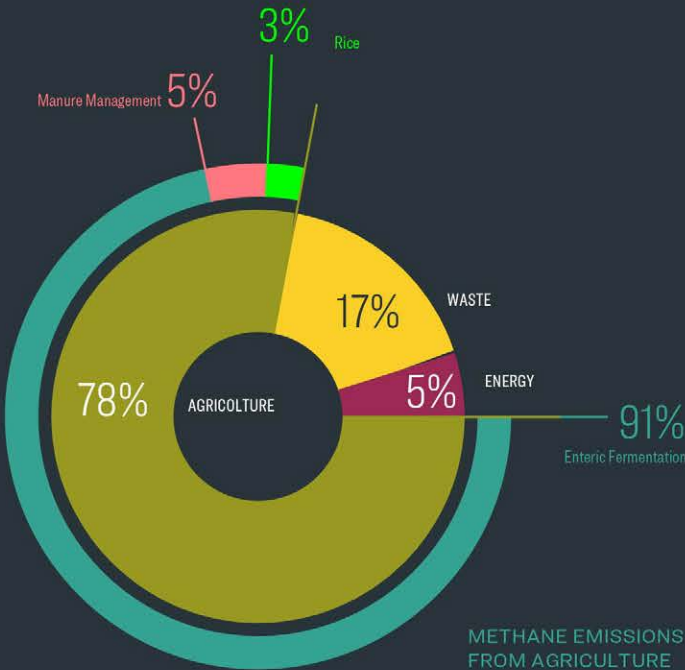
Brazil



Greenhouse gas emissions (in 2022)



Methane emissions by sector (in 2022)



5th
LARGEST GHG EMMITTER

Source: EDGAR



Meat production (in 2021)
33,484,946 MT

LARGEST MEAT PRODUCER

Source: OWID



Dairy production (in 2021)
39,809,391 MT

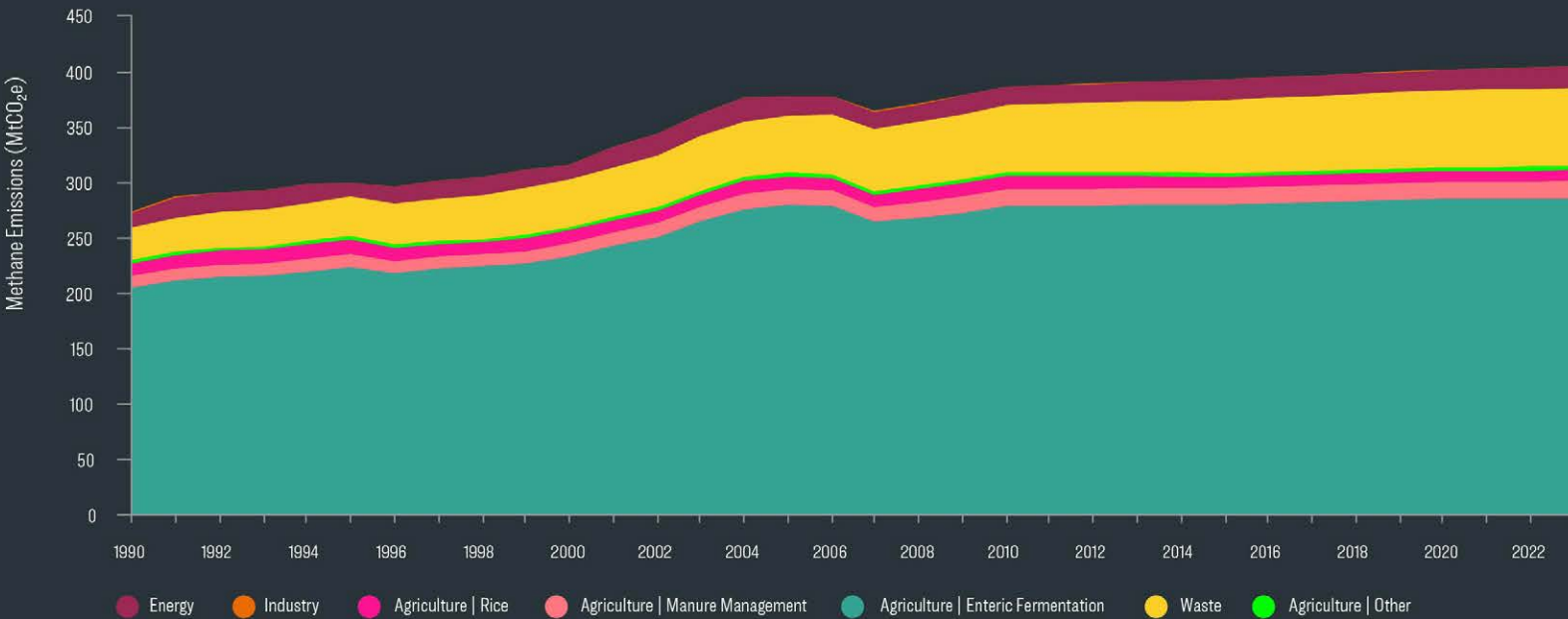
LARGEST DAIRY PRODUCER

Source: OWID

Source: FAOstat

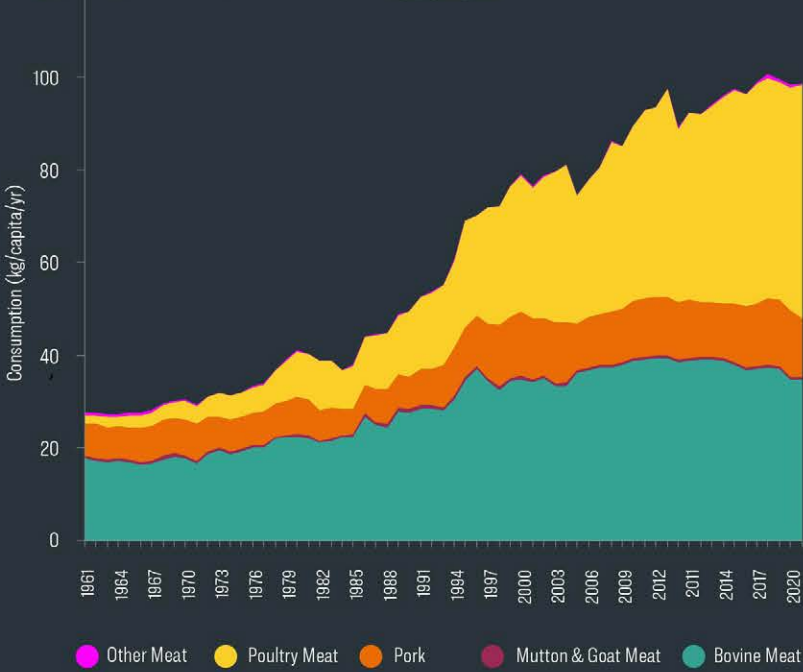
MT = metric tonnes

Methane emission by sector (from 1990 to 2022)



Meat consumption per capita (since 1961)

Source: FAOstat



In 2020 the average Brazilian citizen consumed:



205
Steaks a year
(170g steak)



14
Lamb chops a year
(70g lamb chop)



433
Bacon rashers
(30g a rasher)

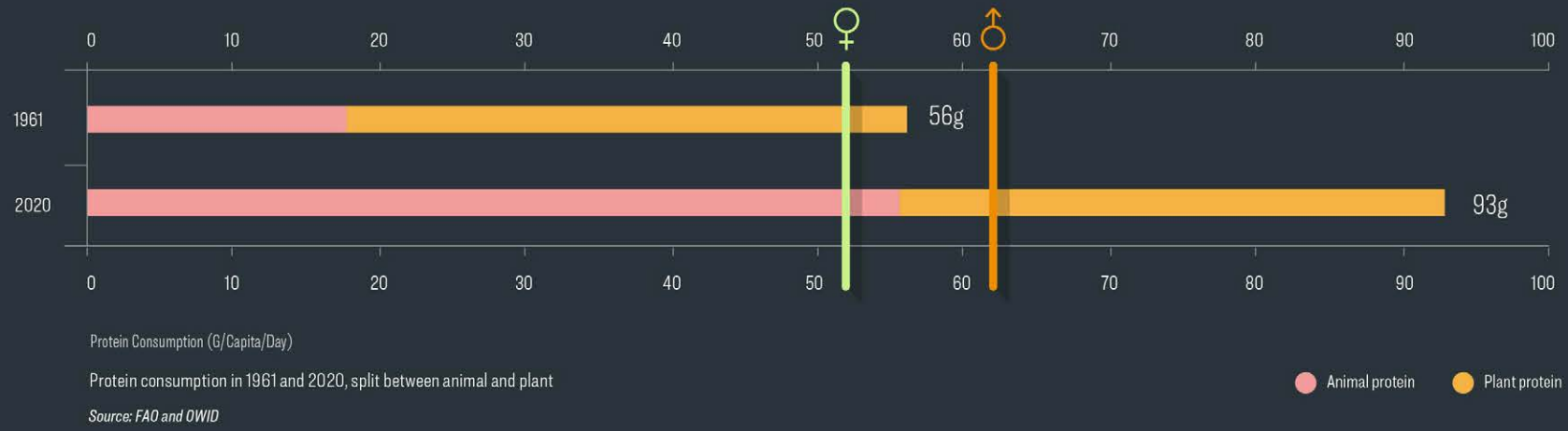


300
Chicken breast a year
(170g chicken breast)

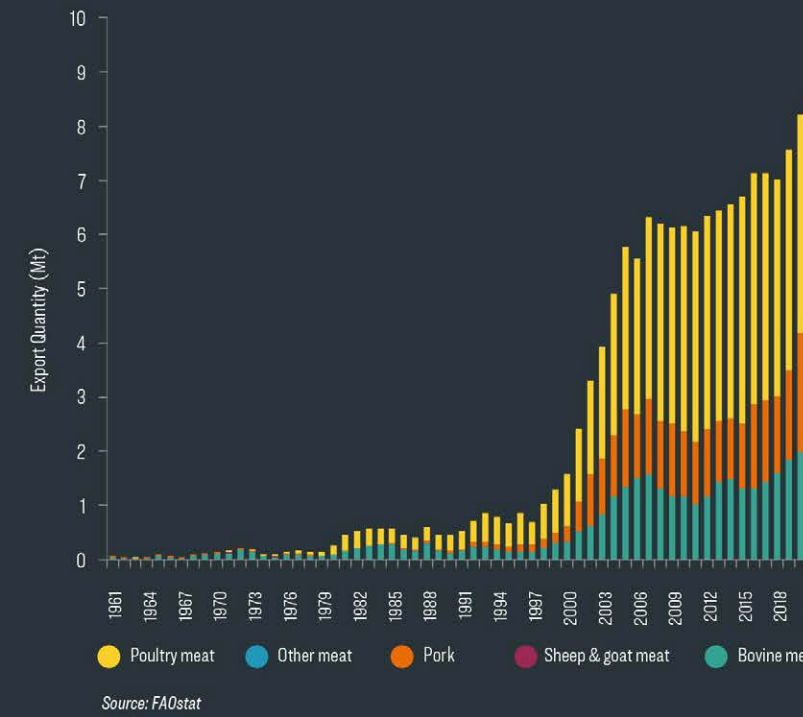
Historical consumption of protein (Grams per day)

Recommended protein intake
Source: EFSA

♀ 52g ♂ 62g



Rise in meat exports



Meat imports



While these appear to be steps in the right direction, in reality, meat and dairy production continues to increase, and as we will see in this case study, the industry has a stranglehold on government policy.

Working behind the scenes

The agriculture lobby in Brazil has worked hard to maintain the status quo and keep growing its profits with little regulatory oversight. It has partly achieved this through a powerful lobby group, named the Agribusiness Parliamentary Front (FPA), which was formed to maintain the interests of the sector.^{1367, 1368} The cross-party ‘ruralist’ bloc, influential in Congress, is politically linked to the interests of Brazilian agriculture. The agribusiness blocs are powerful at a local level also, holding a majority of seats in some states where agribusiness is central to the regional economy, such as Mato Grosso. From 2018 to 2022, they held 257 out of 594 Federal Congress seats,¹³⁶⁹ and since 2023 hold 374 seats.¹³⁷⁰ The agribusiness position appears to be set collectively by think tanks like the Think Agriculture Institute, or IPA.¹³⁷¹ Working together, these groups engage with the established parliamentary lobby, the FPA, to push forward the interests of industry within the Congress and House of Representatives, including negotiating with local government leaders (who have significant control over environmental policy in Brazil).¹³⁷²

The IPA is only part of a vast agribusiness network in Brazil. Others include the Brazilian Confederation of Agriculture and Livestock (CNA), which holds responsibility for tracking cattle in Brazil (see more on cattle washing below);¹³⁷³ the Brazilian Association of Soybean Growers (Apropsoja);¹³⁷⁴ the Brazilian Association of Animal Protein, advocating for poultry and pork; and the Brazilian Association of Vegetable Oil Industries (Abiove). The latter spent €200,000-299,999 on lobbying in the EU between January 2023 and December 2023, including meeting with Frans Timmermans, Executive Vice President of the European Commission for the Euro-

pean Green Deal, and lobbying on the EU Biofuels Directive.¹³⁷⁵ Big meat and dairy in Brazil has also been increasing its presence at international climate events, part of the tripling of meat and dairy lobbyists seen at COP28 in 2023.¹³⁷⁶ JBS brought its executive director, Gilberto Tomazoni, along with ten other delegates (up from four the previous year). Nine of these were present as part of the government delegation, as part of 36 (mostly) meat industry representatives, including 12 from Minerva.¹³⁷⁷

Engaging in such lobby groups is a way for companies to hide their role in influencing policy. The practice has received considerable financial investment from industrial associations, particularly since the Supreme Court ban on corporate financing of electoral campaigns in 2015.¹³⁷⁸ The IPA, for example, is so well funded, because the companies financially supporting it have greater annual revenues than the GDP of Portugal and Finland. The think tank is funded by 48 agricultural associations, made up of over 1,000 private companies – both Brazilian and international. JBS is the biggest funder, with Marfrig and Minerva also providing funding.¹³⁷⁹ Originally formed by cotton and soybean representatives from Mato Grosso state and some members of Congress, the IPA now has a monthly budget of around US\$100,000 (€98,500) and works out of a mansion in one of the wealthiest areas in Brasilia.¹³⁸⁰ The IPA has opposed the demarcation of Indigenous territories,¹³⁸¹ and along with other industry bodies,¹³⁸² have advocated to change the Dietary Guide in Brazil, working to mitigate the negative image of processed meat and other ultra-processed foods, which have been linked to significant health problems.^{1383, 1384}

Distracting from action

Distracting consumers and keeping up appearances

In 2022, 51% of 15-29-year-olds living in urban areas reported a negative perception of agribusiness in Brazil.¹³⁸⁵ The industry is trying to fight these negative perceptions

with initiatives like the IPA's Pensar Agro Project, which claims to 'combat disinformation and distorted information about the sector' and to project a more positive image when it comes to the environment and sustainability.¹³⁸⁶ Communications strategies receive heavy investment from across the sector, including the Brazilian Roundtable (see more on the Roundtable below).¹³⁸⁷

To combat the shift in attitudes towards meat and dairy in younger populations, a trend that we see globally, industry in Brazil is also targeting schools. The All With One Voice Movement is working to 'build empathy for producers' among school-children.¹³⁸⁸ The Movement, whose funders include the Brazilian Agribusiness Association (ABAG) and the Brazilian Association of Meat Exporters, works across the entire agribusiness production chain.^{1389, 1390} It seeks to position the agriculture industry as a central element of Brazil's history and an asset for young people's futures. In 2021, it stepped up the campaign, launching a set of student resources and teaching support materials, and has also produced an audiobook series about the life of producers.¹³⁹¹ The industry also has its own TV channels, programmes and publishing houses and even sponsors journalists.¹³⁹² Campaigns such as 'Agro is cool' and 'Sou Agro' have been sponsored by big meat and dairy companies like JBS, Nestlé and Cargill to encourage a sense of pride in Brazilian agriculture.^{1393, 1394, 1395}

This is based on industry's realisation that internationally, Brazil's agriculture industry has increasingly been seen in a negative light in relation to the environment, and particularly the Amazon.¹³⁹⁶ Following the end of the Bolsonaro administration, groups like the Brazilian Agribusiness Association (ABAG) also monitor the image of agribusiness in Brazil abroad, and are seeking to address this by producing and disseminating information highlighting the sustainability, safety and improved technology of the industry in Brazil, in particular targeting public opinion in places like Europe.¹³⁹⁷

Agrodemia and muddying the waters

In a classic industry distract tactic, the FPA group has also focused its efforts on muddying the waters around the climate science associated with biogenic methane. It states that the IPCC reports on emissions 'ignore the connection to atmosphere, soil, plants and animals. It is as if cattle do not depend on plant production to feed.'¹³⁹⁸ The FPA not only pushes that the science is not clear, but also taps into narratives around an unfair focus on agriculture, suggesting that the industry is unfairly targeted and that the focus should be on how the sector is a net benefit to 'the economy, society, and environmental protection'.¹³⁹⁹ The FPA's analysis of methane from livestock, including for the Global Methane Pledge, focuses on the idea of a natural closed-loop cycle, with technical measures as the primary solution,¹⁴⁰⁰ an increasingly popular narrative from industry.^{1401, 1402, 1403, 1404}

GWP* has also appeared in industry-funded reports in Brazil, including from the Brazilian Observatory of Knowledge and Innovation in Bioeconomy.^{CW} Drawing on common industry talking points, the report suggests that the industry could 'be neutral with regards the warming caused by methane emissions by 2040' in a 'conservative scenario'.¹⁴⁰⁵ Despite several scientists clearly highlighting that GWP* is only a valid metric to estimate global emissions, the report recommends that Brazil use GWP* to assess contributions to the Global Methane Pledge, including reporting in its NDC. Although the report frequently cites the IPCC highlighting this metric in its Sixth Assessment report, the IPCC does not recommend the use of GWP* and uses GWP100.

CW The Observatory of Knowledge and Innovation in Bioeconomy is an interdisciplinary centre created by the Getulio Vargas Foundation (FGV Business School), specialising in climate change, land use and the use of biodiversity. It is sponsored by the CNA. <https://agro.fgv.br/observatorio-de-bioeconomia/quem-somos>

Greenwashing

Narratives surrounding biogenic methane have also been misused to back up claims of carbon neutrality by some of the biggest meat and dairy companies in Brazil. The Carbon Neutral Meat certification was developed in partnership with Embrapa, Brazil's agricultural research corporation, and awarded to Marfrig's beef sold under the Viva brand. With dubious science behind it, the label claims that this beef was farmed on land with trees, and that associated carbon sequestration was enough to offset methane emissions from cattle.¹⁴⁰⁶

These are the distraction tactics industry players are using to paint their products with a green brush and obscure true environmental impacts of their business model.

Delaying action

Since President Lula came to office in 2023, powerful and established lobby groups, like the IPA, have already begun work to weaken the Ministry of Environment and FUNAI, the National Foundation of Indigenous Peoples.¹⁴⁰⁷ The Ministry of Agriculture and Livestock (MAPA), which set up a working group to address methane mitigation, completed in 2022, is yet to publish any outcomes.^{1408, 1409} And, thus far, the government research body looking into climate mitigation solutions, Embrapa, appears to have focused primarily on technical measures.¹⁴¹⁰ Big Meat and Dairy are using a number of tactics outlined in this report to delay action in Brazil. A few key examples are highlighted below.

Technical measures

Established by the federal government in 1973,¹⁴¹¹ Embrapa has partnerships with some of the largest meat and dairy companies, like Nestlé, as well as partnering with the FPA lobby group.^{1412, 1413} Housed under MAPA, Embrapa appears to have

focused on making the current system function more effectively for people and the environment, rather than transformational change, promoting technical improvements and efficiency in crop production and in the meat and dairy industry.^{1414, 1415} As such, it appears an unlikely candidate to lead the systems change needed in the agricultural sector to meet the emission reduction targets the government has set. Embrapa have also announced partnerships with the FPA on specific projects, noting that there had been a “successful union” between scientists and parliamentarians and that the work “is a result of the direct and intense articulation between the Executive Board of Embrapa and the managers of the Units with Parliamentary Front of Agriculture (FPA), which started in September 2023, when Embrapa's budget for 2024 was to be voted on.”¹⁴¹⁶

Delaying legislation

Where legislation does exist to support emissions reduction in Brazil, the industry has pushed either to delay its inclusion or make its involvement voluntary. This even applies in cases where there may be financial incentives such as the Zero Methane Programme - a reward scheme across sectors that aims to set up a market for methane emission reductions.¹⁴¹⁷ The Methane Programme was incorporated in an existing bill on the Brazilian Greenhouse Gas Emissions Trading System (SBCE), approved in December 2023¹⁴¹⁸ and now with the Senate for consideration.¹⁴¹⁹

Not only does the Programme include incentives for biogas, a preferred industry solution to emissions from manure, but after lobbying by the FPA, new amendments were added to ensure that agricultural production was not included in the emissions trading system. Senator and former Agriculture Minister (2019-22) Tereza Cristina stated: “Agro is now excluded. We made an agreement that has been fully complied with. We are already working to ensure that agribusiness has its metrics and can be in this market soon, but safely and with our metrics.”¹⁴²⁰

As in other regions, including the EU, US and Aotearoa, the Big Meat and Dairy industry has continued to push to be excluded from climate policies by promoting ‘voluntary measures’ and get financial incentives for their preferred solutions. The latest bill to pass in the Senate on climate adaption, for example, is positive and has been praised by civil society for its focus on funding support for the most affected and vulnerable areas and communities, even including specific reference to ‘ethnicity, race, gender and disability status’. However, an important amendment ensures changes for producers would be voluntary.^{1421, 1422}

Avoiding Reporting Scope 3

Another way that big companies in Brazil are delaying action and avoiding accountability is by challenging traceability and the feasibility of reporting scope 3 emissions. There are more than five million farm businesses in Brazil,¹⁴²³ while 400,000 rural properties account for 85% of agricultural and livestock production.¹⁴²⁴ Due to the complexity in the system, companies’ reporting of their supply chains often only includes the last farm - the one directly before the slaughterhouse, responsible for fattening the cows, leaving much of the chain unmonitored.^{1425, 1426, 1427}

As most emissions of meat and dairy companies are in scope 3, reporting on this is important to understand companies’ methane emissions, and the wider environmental footprint of meat and dairy giants operating in Brazil. Although companies like JBS, Marfrig and Minerva have committed to being free from illegal deforestation, it appears that their reporting and supporting documentation could be ‘subject to fraud’.^{1428, 1429} This is because the system relies on self-reporting, leaving limited motivation for cattle ranchers to declare if the beef they are selling to the big corporations has come from land which was illegally deforested.¹⁴³⁰ Current systems for tracking cattle were not designed for measuring emissions or tracking deforestation,¹⁴³¹ and documents can be easily filled by hand to hide the original

location of the cattle - a practice called ‘cattle washing’.¹⁴³² JBS has stated that the company is “regularly audited by external, independent parties” and that it had previously cut ties with farms investigated for cattle washing and illegal deforestation in their supply chains, while Marfrig and Minerva have publicly reaffirmed their commitments to protecting the environment and supporting farmers to do so.^{1433, 1434} The reality is that the supply chain system in Brazil makes it very easy to hide when cattle have come from deforested areas.¹⁴³⁵

Suppliers found to be operating in illegally deforested areas are supported by the big three meat and dairy companies to better comply through ‘producer support programs’,¹⁴³⁶ rather than being banned.¹⁴³⁷ However, the guidelines that each company follows for this, as ‘good practice’, excludes land deforested prior to 2019.¹⁴³⁸ Although there is a need to ensure that small producers are able to manage economically, how cattle ranchers will improve the protection of the forest by continuing to operate in deforested land remains unclear.

The CNA, which works to protect the interests of big farmers, has also tried to delay any more efficient policy framework proposed. The CNA insists that the process of individual traceability should be voluntary, there should be at least eight years to implement any new system, and that the ‘numbering and the database will be the responsibility of the CNA and will not be publicly available’.¹⁴³⁹

Derailing climate policy - Big Ag embedded in the system

The current administration in Brazil is trying to reverse numerous anti-climate measures the Bolsonaro government put in place during 2019-2022. This has included shifting the Ministry of Environment to become the Ministry of Environment and Climate Change,¹⁴⁴⁰ creating a Ministry of Indigenous Peoples, reinstating the Amazon Fund supporting an end to deforestation, and annulling decrees encouraging

mining in Indigenous lands.¹⁴⁴¹ Although the agriculture lobby still has significant power, there have been some important steps to limit the environmental destruction caused by the meat and dairy industry, like an increase in environmental inspections from the Brazilian Institution of Environment and Renewable Natural Resources (IBAMA).¹⁴⁴²

However, the President remains beholden to powerful interests, and his relationship with the industry is important for his political image. He has opposed the EU deforestation law, which obliges companies to show their products have not come from deforested areas, following attacks by big agriculture interests in both Brazil and the EU (see Derail chapter). The law includes soybeans, meat, wood, rubber and cocoa - all products exported from Brazil - and industry has called it “a violation of the sovereignty of Brazil”. The definition of ‘forest’ under the EU regulation would leave ‘a great part of the Cerrado biome out of scope’,¹⁴⁴³ though Lula still claims he will take these complaints to the World Trade Organization.¹⁴⁴⁴ Brazil’s commitment to the Global Methane Pledge is also seen by some as a foreign agenda, with the government giving in to pressure from other states like the US.¹⁴⁴⁵

Public funding for more environmental damage

The agriculture industry in Brazil receives significant subsidies. Exactly where these are going in what proportion is unclear, but the numbers are staggering - 79% of all taxes collected in the beef chain go back to the sector in the form of subsidies.¹⁴⁴⁶ Although the industry makes up a significant proportion of the Brazilian economy, much of the national income is being directly reinvested into supporting the industry itself. These resources are in many cases supporting environmentally damaging actions and in some cases labour rights violations. Contrary to the image the industry would like to put forward of the happy small family farm in Brazil, a

recent investigation revealed that of the ten largest cattle ranchers in the country, only one had no environmental or labour problems.¹⁴⁴⁷

All carrots and no stick

Current policy approaches on agriculture can reward good environmental actions but have limited accountability measures and limited budgets. Some key examples include the ABC+ plan (2022-2030) funded through Safra, a similar system to the EU Common Agricultural Policy. Safra provides funds targeting medium and large producers, including funding for rural credit, infrastructure investments, production incentives and sustainability.^{1448, 1449} ABC+ works to expand the use of farming technologies, and ‘efficient production systems that contribute to greenhouse gas emissions mitigation.’¹⁴⁵⁰ Although several public evaluations have recommended to increase the resources to better fund the ABC+ plan,^{CX, 1451, 1452, 1453} funding is at historically low levels at no more than 3% of the total subsidy budget, despite Safra seeing a 26.8% growth in funds on the previous year.¹⁴⁵⁴

Some incentives have also been included through the Safra plan to support sustainable practices in family farming, as well as including access to credit for quilombola^{CY} and Indigenous peoples.^{1455, 1456} However, the environment minister admits this policy is “version 1.0” and that Brazil is unlikely to “become sustainable overnight”. While the plan is recognised as a small step in the right direction,^{1457, 1458} much more ambitious action will need to be taken to ensure that farming activities are low carbon in the coming decades.¹⁴⁵⁹

CX The Brazilian Coalition, World Resources Institute, and the Greenhouse Gas Emissions and Removals Estimation System (SEEG), all delivered public evaluations and recommendations. The Brazilian Coalition is made up of 350 representatives across the private sector, finance, academia and civil society and SEEG is an online initiative estimating emissions in Brazil, housed and run by the Climate Observatory – consisting of 40 NGOs. More information: <https://seeg.eco.br/en/home/#what>

CY Members of the Afro-Brazilian community, the quilombola are descendants of people who escaped slavery and are a historically excluded population in Brazil.

Derailing environmental protection and Indigenous rights

Methane emissions reduction in Brazil is closely tied in with land use, as more and more land is deforested to make way for cattle ranches. Further roll-backs have taken place since Lula's time in government, including what's been dubbed the "law of Indigenous genocide".¹⁴⁶⁰ The law prevents Indigenous peoples from demarcating Indigenous lands unless they can prove they were occupying that land on October 1988 - the year when Brazil's constitution was adopted.¹⁴⁶¹ Many Indigenous peoples had already been forcibly displaced at this time, during the military dictatorship and in the previous decades over the 20th century.¹⁴⁶² The power of the lobby is profoundly clear in this example, as the law has passed despite the Supreme Court declaring it unconstitutional and Lula himself vetoing it. The Senate, however, defied the Supreme Court judgement by voting in favour, and the conservative Congress voted against Lula's veto.¹⁴⁶³ The demarcation of land has been an important issue for the ruralist bloc, being pushed forward by the IPA and the FPA in Congress.¹⁴⁶⁴

Agricultural exceptionalism - free from accountability

As we have seen in the EU and the US, also in Brazil Big Agriculture appears to be largely free from significant regulation and not subject to the same accountability as other sectors. IBAMA, a federal agency under the Ministry of Environment, has traditionally been responsible for monitoring regulations and issuing fines when violations are found.¹⁴⁶⁵ Violations by Big Ag companies are widespread, but sanctions appear to have little effect.

The Vilela de Queiroz family's VDQ Holdings¹⁴⁶⁶ - a major shareholder in Minerva -¹⁴⁶⁷ has properties with around R\$7million in environmental fines.¹⁴⁶⁸ A huge farm belonging to the traditional Rodrigues da Cunha family, from Uberaba, Minas Gerais

was fined R\$2.2million in 2012 for illegally deforesting 1,500 hectares of land; one of the owners donated R\$150,000 to Bolsonaro's 2022 campaign.¹⁴⁶⁹ Many of these suppliers sell their products to big meat and dairy companies, who in turn receive funding from government bodies like the National Bank for Economic and Social Development (BNDES). BNDES finances public policies related to agriculture,¹⁴⁷⁰ and despite a 2009 ruling that investment into meatpacking plants would have to ensure complete traceability in the supply chain, BNDES continued to provide funding to JBS, Marfrig and Minerva for many years after the ruling,¹⁴⁷¹ and currently holds the second largest share in JBS¹⁴⁷²

JBS itself has faced a number of public scandals in recent years, including links to slave labour and environmental damage through the purchase of nearly 9,000 cattle from convicted criminal Chaules Pozzebon.¹⁴⁷³ Most recently, the Batista brothers were reinstated to the board of directors after serving time on corruption charges.¹⁴⁷⁴ The brothers still own a majority share in JBS; BNDES holds the second largest share, at 20%.¹⁴⁷⁵

Conclusion

Industry interests are deeply embedded in Brazilian policymaking on agriculture and its environmental and social impacts. Bolsonaro's government gave a huge boost to the interests of big farmers and landowners, leading to a significant rise in deforestation and dismantling of regulations and safeguards. Accountability suffered during Bolsonaro's term in office as he put industry people in key political positions within IBAMA,¹⁴⁷⁶ limiting its role in holding actors to account for damaging environmental practices. Although Lula reinstated environmental champions like environment and climate minister Marina Silva and Sônia Guajajara, leading

Brazil's first-ever ministry for Indigenous peoples, the industry lobby gained significant ground in the Bolsonaro years, which will be difficult to reverse.

While the Lula government is trying to reverse some of these environmental setbacks, the interests of Big Ag are firmly embedded in political decision-making bodies and public and scientific institutions. Their influence ranges from downplaying the impact of the sector on climate and deforestation, such as promoting GWP*, to promoting all carrots and no stick approach to regulation, which means that industry-preferred solutions, such as technical measures are promoted across government research institutions as well as industry-funded think tanks like the IPA. The agriculture lobby controls the FPA in Congress, a powerful parliamentary group blocking environmental action and Indigenous peoples' rights. The industry has many powerful players including cattle ranchers with huge herds in their portfolio, supplying some of the world's biggest meat and dairy companies, including JBS, Marfrig and Minerva, which in turn sell their products to global markets.

Despite the challenges Lula's government is facing in Congress, this is a unique and important moment for Brazil to take action. In the international spotlight for hosting the upcoming G20 summit in November 2024 and COP30 in November 2025, Brazil has an unmissable opportunity to achieve transformational change. Changing the narrative on big meat and dairy is essential if Brazil has any chance to reach its climate commitments and fulfil its commitment to the Global Methane Pledge.

Note

There is an active civil society in Brazil, fighting back against the status quo. For more information on some of their work please see the references below.¹⁴⁷⁷



| Source: Deforestation for cattle grazing, Shutterstock



CASE STUDY

Australia: How various distraction tactics played out, when the government wanted to join the Global Methane Pledge

Introduction

Australia is a major global player when it comes to (the lack of) climate action. Despite its relatively small population, the country was the 15th biggest CO₂ emitter in 2022.¹⁴⁷⁸ While Australia's huge loyalty to coal is globally known¹⁴⁷⁹ – the country is the world's largest coal exporter¹⁴⁸⁰ while coal is the major source of domestic emissions¹⁴⁸¹ – the agriculture sector is the second major source of Australia's emissions.¹⁴⁸²

The bulk of Australia's agricultural emissions comes from methane produced through enteric fermentation from cattle.¹⁴⁸³ In 2022, Australia exported 67% of its total beef and veal production with a total value of A\$10.4 billion.¹⁴⁸⁴ In 2021, Australia became the fourth largest beef exporter globally, mostly to Japan, South Korea, the

US and Indonesia, in that order.¹⁴⁸⁵ And despite accounting for less than 2% of the world's estimated milk production, Australia ranks fourth in terms of world dairy trade with a 6% share, behind New Zealand, the EU and the US.¹⁴⁸⁶

The country has not been spared the impacts of the emissions it produces. In 2019, a severe drought and other extreme weather events led to a reduction in beef herds and production.¹⁴⁸⁷ Modelling from the Australian Bureau of Agriculture and Resource Economics and Science in 2022 indicated that changes in seasonal conditions over the period 2001 to 2020 (relative to 1950 to 2000) have reduced annual average large-scale farm profits by 23%, or around \$29,200 per farm.¹⁴⁸⁸

Australia may have been long considered a laggard when it came to climate action,¹⁴⁸⁹ but the tables have turned slightly with the newly elected government. The 2022 elections were considered a climate election¹⁴⁹⁰ as voters supporting independent candidates claimed climate change as the number one reason for their choice.¹⁴⁹¹ The new government, shortly after coming to power, enshrined into law an emissions reduction target of 43% by 2030, up from 26-28%.¹⁴⁹² Other policies and moves have followed this first step – but it is still up for debate whether these measures are able to deliver on the government's promise to “take the country forward on climate action”.¹⁴⁹³

Standing in the naughty corner

Addressing methane from agriculture is critical to climate action in Australia. The country ranks fourth when their methane emissions from enteric fermentation – which make up just under half of the country's overall methane emissions – is compared to countries like New Zealand, Brazil, EU and the US.¹⁴⁹⁴ A recent poll showed that even though more people in Australia are opting for a flexitarian diet (especially millennials and Gen Zs eating more plant-based food), two-thirds of the population (66%) still consider themselves meat eaters.¹⁴⁹⁵



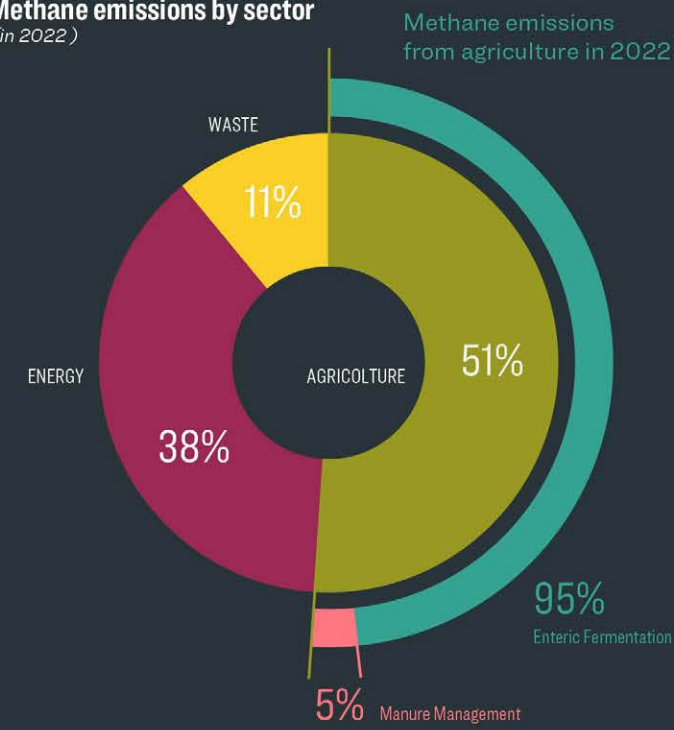
Australia



Emissions by sector



Methane emissions by sector (in 2022)



Source: EDGAR



Meat production (in 2021)
5,502,489 MT

Source: FAOstat



LARGEST MEAT PRODUCER

Source: OWID



Dairy production (in 2021)
12,180,678 MT

MT = metric tonnes

Source: FAOstat



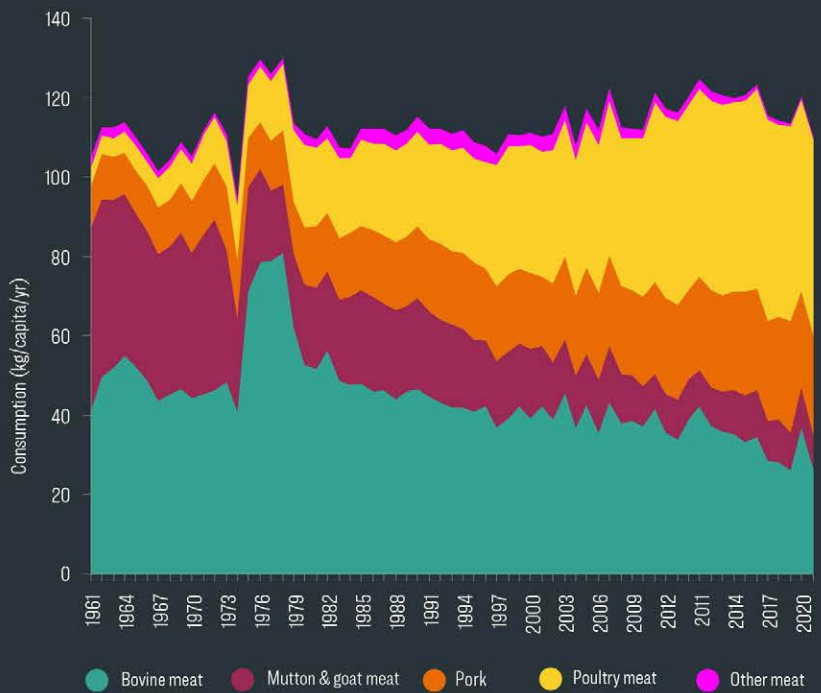
LARGEST DAIRY PRODUCER

Source: OWID

Meat consumption per capita

(since 1961)

Source: FAOstat



In 2020 the average Australian citizen consumed:



Historical consumption of protein

(Grams per day)

Protein Consumption (g/capita/day) [Columns]

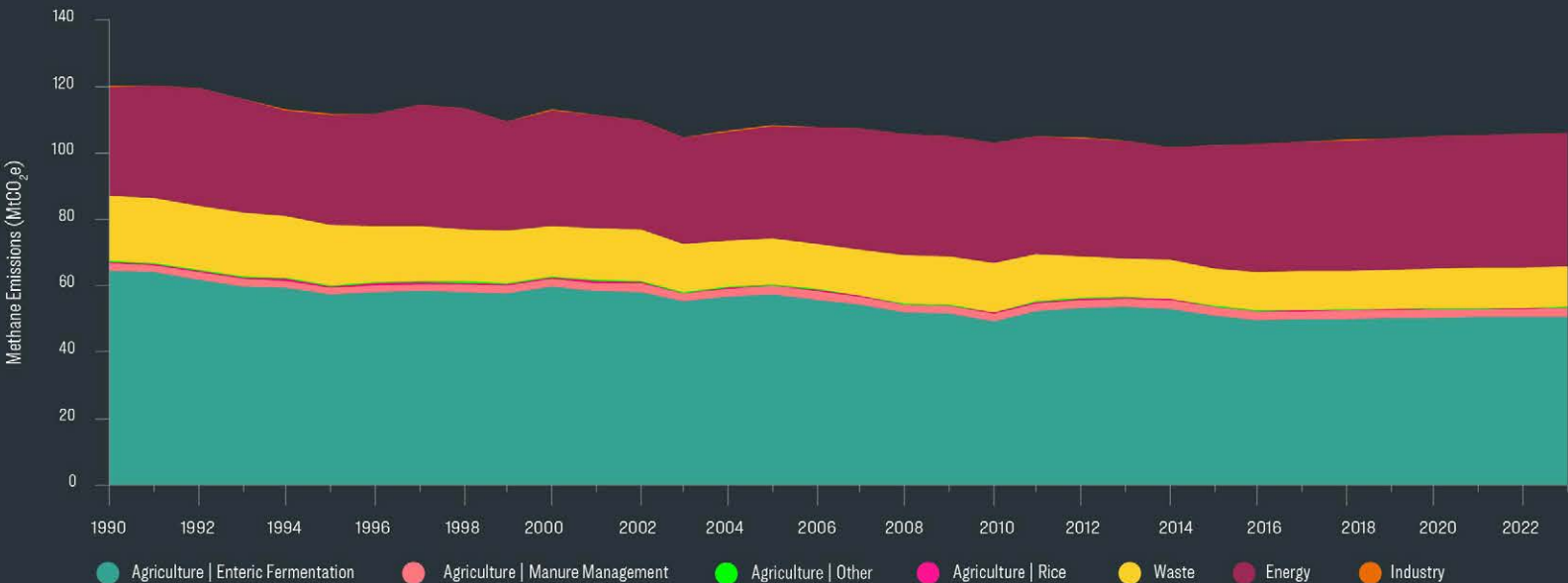
Recommended protein intake
Source: Eat for Health

♀ 46g ♂ 64g



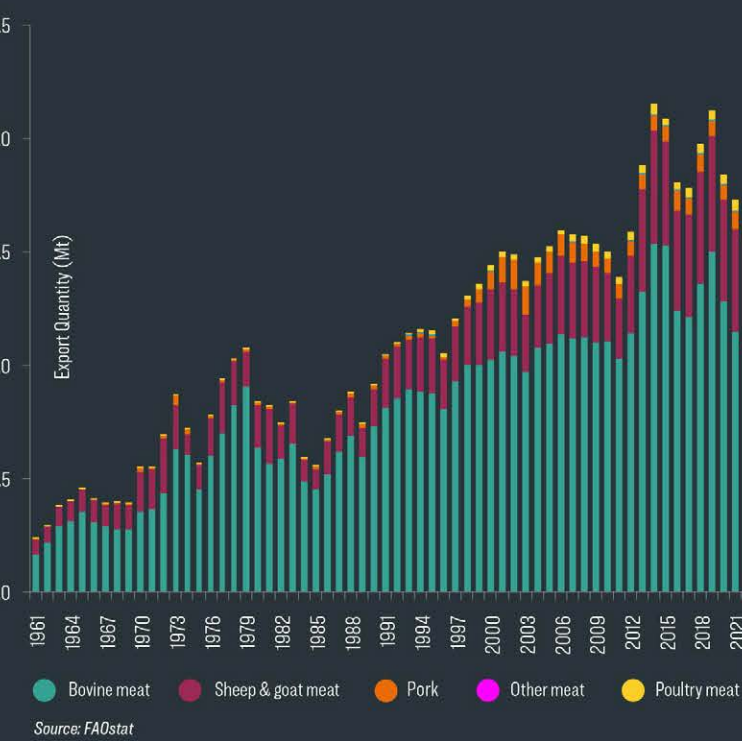
Methane emission by sector

(from 1990 to 2022)



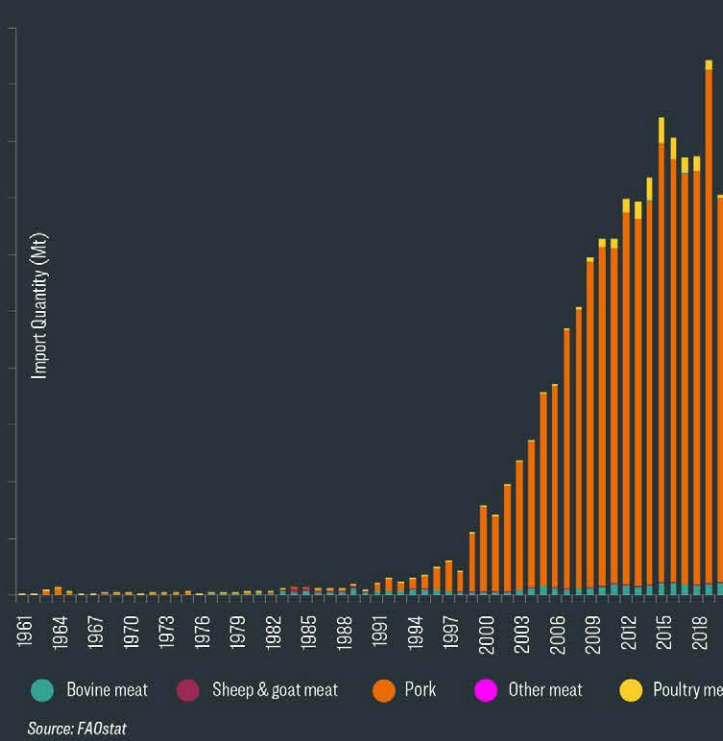
Source: US EPA

Meat exports



Source: FAOstat

Meat imports



Source: FAOstat

In 2021, in a global effort to cut methane emissions, over 100 countries signed the Global Methane Pledge, agreeing there was an urgent need to cut methane emissions by at least 30% by 2030.¹⁴⁹⁶ While countries like Brazil, under the Bolsonaro administration, joined the pledge,¹⁴⁹⁷ Australia was not among them.¹⁴⁹⁸

One of the reasons given by the then Energy and Emissions Reduction Minister, Angus Taylor, was that Australia had already pledged net zero greenhouse gas emissions by 2050 and that it was not going to set separate targets for each sector.¹⁴⁹⁹ According to the then National Party leader, Barnaby Joyce, signing the pledge would be a disaster for both the coal and livestock sectors. He went onto say: “the only way you can get your 30% by 2030 reduction in methane on 2020 levels would be to grab a rifle and go out and start shooting your cattle.”¹⁵⁰⁰

On the side of farmers, opinion on whether to join was split across different lobby groups and industry associations. The National Farmers Federation (NFF) was supportive of the government’s decision not to join the pledge, believing that signing the Pledge could leave “...room for an animal activist [to] come and create all sorts of strange outcomes targeting agriculture”.¹⁵⁰¹ A smaller group, Farmers for Climate Action, urged the government to commit to cut methane emissions.¹⁵⁰² This stance came from a belief that the livestock industry had already been cutting their own emissions, and the government was protecting the fossil gas sector, whose methane emissions “are rising”,¹⁵⁰³ by not signing the Pledge.¹⁵⁰⁴ The Meat and Livestock Association, the industry’s marketing and research body, did not see a problem with signing as it thought the industry’s voluntary goal to be carbon neutral by 2030 was more ambitious than the Pledge¹⁵⁰⁵ – a commitment to reduce and avoid greenhouse gases (including methane) through a range of activities including selective breeding, feed additives and vaccinations.¹⁵⁰⁶ The dairy industry was also split: from one end the Pledge was seen in a positive light as it could provide “long-term opportunities

for dairy processing”,¹⁵⁰⁷ while others saw it as “ill-timed and ill-informed”¹⁵⁰⁸ and criticised it for not providing viable pathways for methane mitigation.

The refusal to join the Pledge drew global criticism from prominent figures such as former Australian Prime Minister Malcolm Turnbull and Rachel Kyte, advisor to the UN Secretary-General, who said, “Australia’s climate position was disappointing”.¹⁵⁰⁹ A different criticism centred on how Australia’s position was inconsistent with the methane reductions the IPCC says are required to stay below 1.5C warming. By focusing on the delivery of net zero by 2050, Australia was ignoring the fact that short-term emissions reductions within this decade are more important to prevent runaway climate change.¹⁵¹⁰

Treading carefully towards the Pledge

On 22 October 2022, the new Australian government announced it had joined the Global Methane Pledge.¹⁵¹¹ As part of the government’s investment towards the reduction of methane emissions in the agriculture sector, up to A\$3 billion from the A\$15 billion National Reconstruction Fund will support investment in low emissions technologies. Under a different plan, the Powering Australia plan, the government also committed A\$8 million for the seaweed industry to support commercialisation of the low-emissions livestock feed supplement Asparagopsis. And finally, A\$5 million will be provided through the second stage of the Methane Emissions Reduction in Livestock (MERiL) Program to develop technologies to deliver low-emission feed supplements to grazing animals and determine their technical viability and commercial potential.¹⁵¹²

Getting to this point was not an easy feat. In the lead up to signing the Pledge, the industry used distraction tactics aimed to spike fear to put pressure on the gov-

ernment. Farming groups like NFF said that the decision should not be rushed as it “could be calamitous” and if the plan was to involve a reduction in agricultural production or livestock numbers, this could jeopardise food security.¹⁵¹³ NFF’s Chief, Tony Mahar, added his concern that the Pledge could introduce regulatory measures, such as a tax similar to the one in New Zealand, and suggested there should be a proper consultation to avoid protests by farmers.¹⁵¹⁴ The Liberal leader, Peter Dutton, also joined these narratives by accusing the government of threatening to “destroy” rural jobs.¹⁵¹⁵

Former National party leader Barnaby Joyce was equally vocal, claiming that the Pledge was a threat to Australia’s sovereignty and would lead to the country being forced to legislate on its livestock industry. In his words: “It starts as a pledge, then it’s a promise, then it’s legislation then a caveat comes on how I produce and how others produce beef.”¹⁵¹⁶

Government officials tried to appease any worries from industry by reiterating that the Pledge was a “non-binding”¹⁵¹⁷ or “aspirational”¹⁵¹⁸ goal. In a statement, the Minister for Climate Change and Energy, Hon. Chris Bowen MP, said:¹⁵¹⁹

“The Pledge does not require Australia to focus solely on agriculture, or reduce agricultural production or livestock numbers. In particular, as a result of signing the Pledge, the Australian government will not legislate or introduce taxes or levies to reduce livestock emissions.”

Ahead of the announcement, the government had secured support from the NFF,¹⁵²⁰ but despite agreeing to a supportive statement at the time, the NFF also stated that it will make sure Australian farmers are not impacted. It vowed to make sure there will be no government interventions like New Zealand’s methane tax or the Netherlands’ regulation to reduce herd sizes.¹⁵²¹

The industry appeared to be willing to accept the government signing the Pledge in exchange for investment of additional public money to support technical measures to cut methane.¹⁵²² The argument mainly centred around the claim that the livestock industry had already reduced its emissions by more than 50% since 2005,¹⁵²³ and investment was needed to achieve its target of carbon neutrality.¹⁵²⁴

This push for investment into tech-fixes also calmed concerns and created a sense of trade-off, allowing the industry to delay any plans to reduce livestock numbers. In a press release, NFF said that “the best way to reduce emissions further is to arm us [farmers] with cost-effective technological solutions.”¹⁵²⁵ This sentiment was shared by dairy industry groups like Australian Dairy Farmers.¹⁵²⁶ ADF’s President, Rick Gladigau, was cautious when it came to promoting new technologies, acknowledging that while they “are promising”, their ability to reduce methane emissions from dairy cows is limited. He also emphasised that implementation will need time, and most importantly investment - something that should be considered in future government policies.

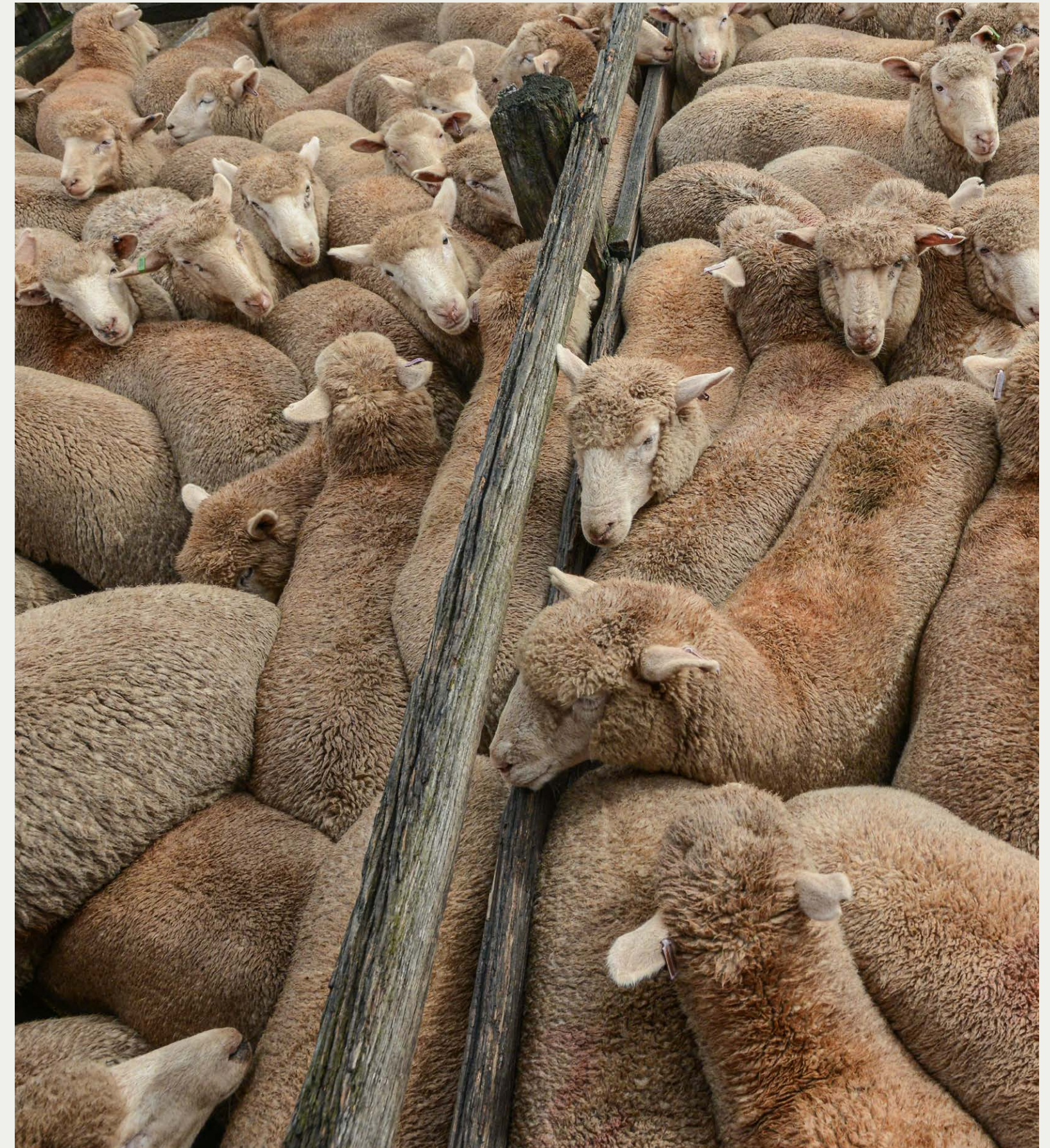
Besides technological solutions, another tactic by some industry groups was to redirect attention to another polluting industry. AgForce, the main body representing Queensland beef, sheep, wool and grain producers, was very vocal on this point. In a press release, it pointed out the shortcomings of other industries when it comes to methane emissions, such as gas infrastructure and its leaks. It went on to say that the farming industry bore the brunt of reducing emissions for every single Australian under the Kyoto Protocol, and did not want to do so again.¹⁵²⁷

A future of empty promises?

Australia's efforts to address its methane emissions show how the meat and dairy industry can use distract, delay and derail tactics to weaken climate action. Despite the split opinion on Australia signing the Global Methane Pledge, the livestock industry resorted to its scaremongering tactics, invoking threats to food security and the likelihood of protests by farmers. It succeeded in gaining political assurances that not much will change in the way the industry operates, given that signing the pledge is non-binding. The industry also received promises of public money to support investment in research and technological solutions - which can provide a convenient excuse for further delaying action given that most of these technologies are not yet available.

By emphasising its past efforts and voluntary commitment to be carbon neutral by 2030, the industry deflects attention from its significant ongoing methane emissions. It also tried to distract the public by putting the focus on emissions from fossil fuels.

It is worrying to see a global Pledge being used as a tick-box exercise, without concrete plans to address emissions from livestock. It is uncertain how the Australian government will respond to global pressure, especially following the outcomes at COP28 as signatories to the Pledge will have to develop national methane action plans and include plans for how they plan to reduce all types of greenhouse gas in their NDCs before COP30.^{CZ, 1528, 1529} Addressing methane emissions from agriculture will be important if Australia wants to be seen as serious about climate action.



CZ The climate 'global stocktake' resolution calling countries to accelerate and substantially reduce (non-CO2) emissions, 'in particular methane emissions by 2030'; and the call by COP President urging countries to cover methane in their NDCs.

| Source: Australian sheep farming, WeAnimal



CASE STUDY

UK: Bold words and zero action

The UK was the host of the UN climate conference (COP26) when the Global Methane Pledge was unveiled, a role which was supposed to entail climate leadership. The government at the time committed to the pledge, but two years on no plan of action has been published. In November 2022, a methane memorandum was published which focused predominantly on actions taken so far. It reiterated various commitments across waste, energy and agriculture that relate to methane but failed to set out a clear trajectory detailing how future reductions will be made.¹⁵³⁰

In this memorandum the government talks up emissions reductions, including from agriculture which it pins in part to a decline in cattle populations and improvements in efficiency since 1990.¹⁵³¹ It also states that its ongoing plan to deal with agricultural methane emissions, which make up almost half (48%) of the UK's total methane emissions, is by “enhancing the efficiency of livestock production in the UK and reducing the emissions intensity associated with producing healthy, nutritious food”.¹⁵³²

This approach relies on improving efficiency despite cattle farming in the UK already being extremely efficient, and supplies no evidence of the opportunities to deliver methane cuts from further efficiency.¹⁵³³ What's more, the phrasing seems

to take the argument often touted by the meat and dairy industry that production cannot be reduced due its health and nutrition benefits, so policy must support the “livestock sector to decarbonise, allowing us to continue to produce healthy, nutritious food while meeting our greenhouse gas emissions targets”.¹⁵³⁴

The government's support to reduce methane emissions from livestock focuses solely on feed additives, although it admits these are only a mid-term solution. A call for evidence was undertaken in 2022, but at the time of writing, results that would outline the scalability of feed additives or their potential to reduce methane emissions across the UK have yet to be shared.¹⁵³⁵

The government has faced criticism for relying on often unproven technologies (more on techno-fixes below) to meet its legally binding climate objectives. Despite ongoing trials in the UK, the effectiveness of methane-suppressing feed additives remains largely uncertain and to date only one licensed additive is available, Bo-vaer.¹⁵³⁶ However, more applications are being submitted as trials continue.

Green Alliance's *Securing Our Future* report urges the upcoming government to enforce the use of methane-suppressing cattle feed additives.¹⁵³⁷ It claims this move could reduce agricultural methane emissions by 9%, with an additional cost of less than 33p per year to the cost of milk for the average person.¹⁵³⁸

Despite a history of pushing technological fixes, farmer lobby groups like the National Farmers Union (NFU) have long resisted the initiative, citing worries about possible price hikes and urging government to consider other methods.¹⁵³⁹ The Department for Environment, Food and Rural Affairs has pledged to collaborate closely with industry and farmers to promote the widespread adoption of these products in England.

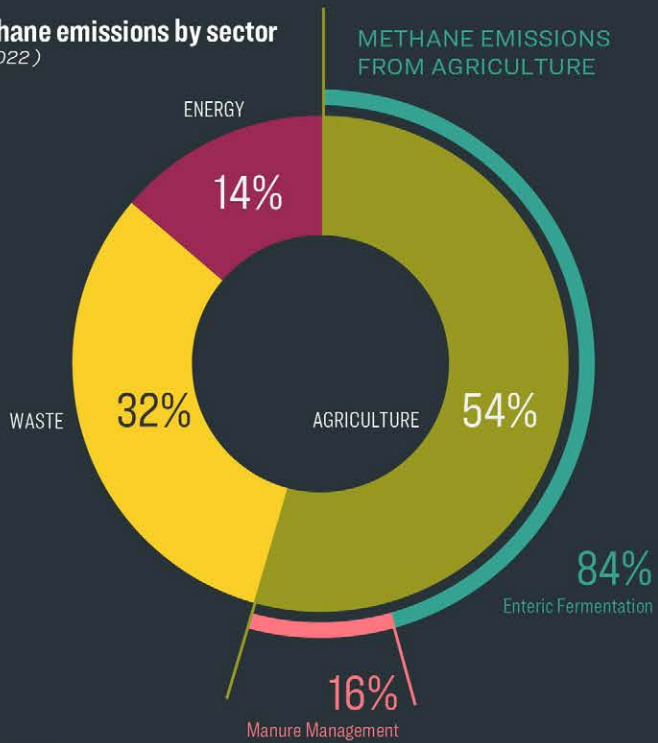
United Kingdom



Greenhouse gas emissions (in 2022)



Methane emissions by sector (in 2022)



LARGEST
GHG
EMITTER

Source: EDGAR



Meat production (in 2021)
4,790,961 MT



LARGEST
MEAT
PRODUCER

Source: OVID



Dairy production (in 2021)
20,194,124 MT

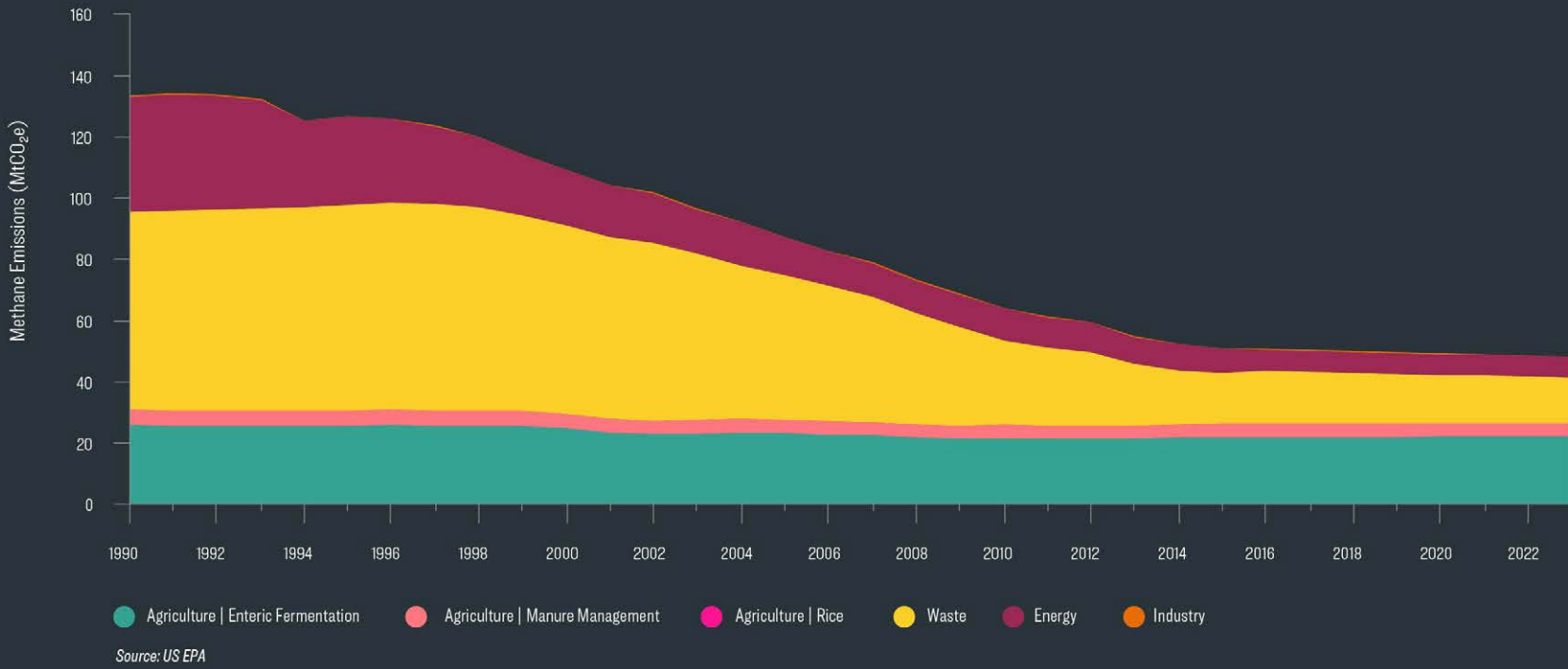
Source: FAOstat



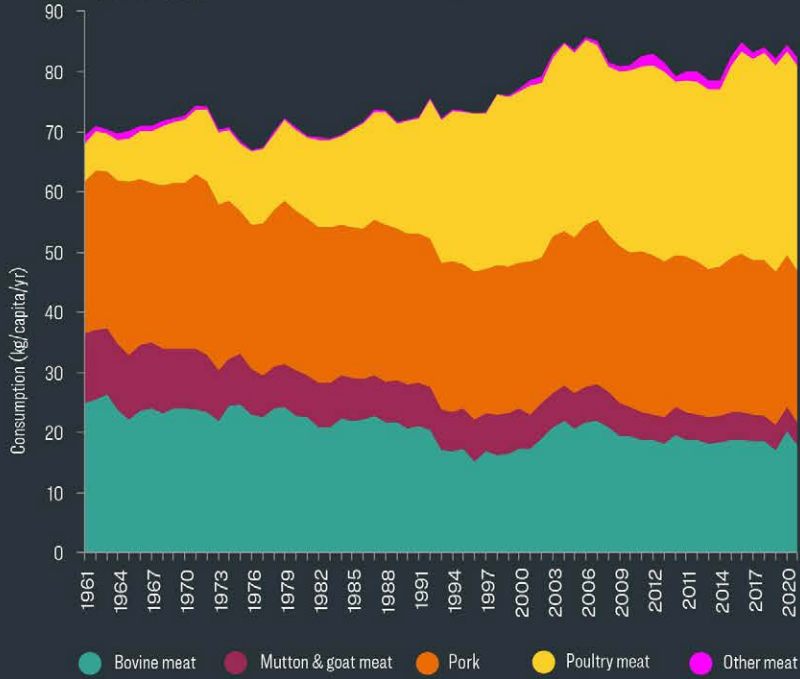
LARGEST
DAIRY
PRODUCER

Source: OVID

Methane emission by sector (from 1990 to 2022)



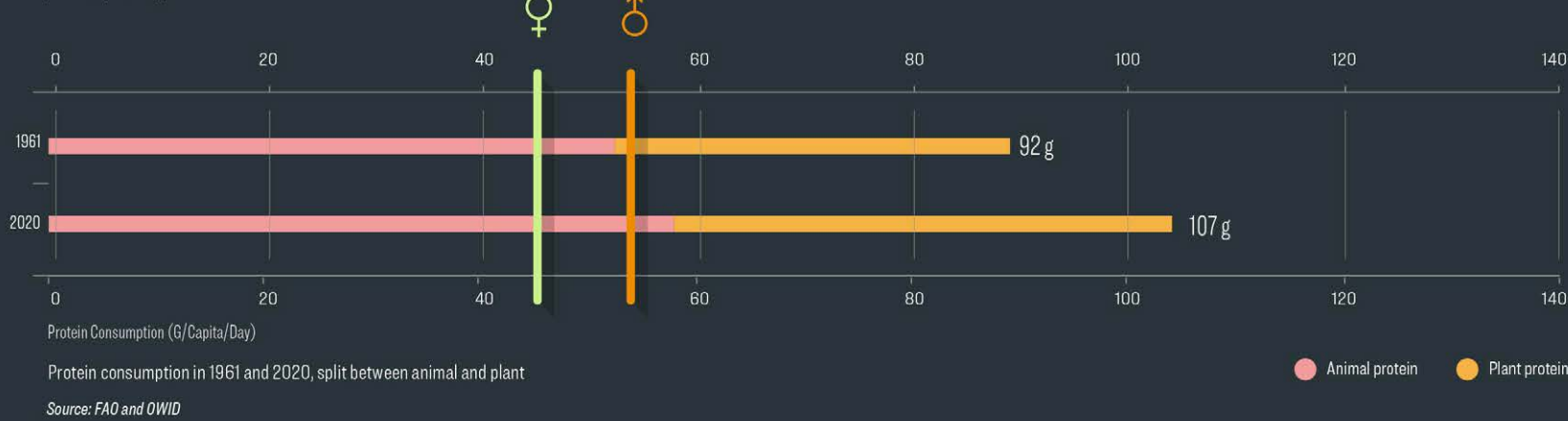
Meat consumption per capita (since 1961)



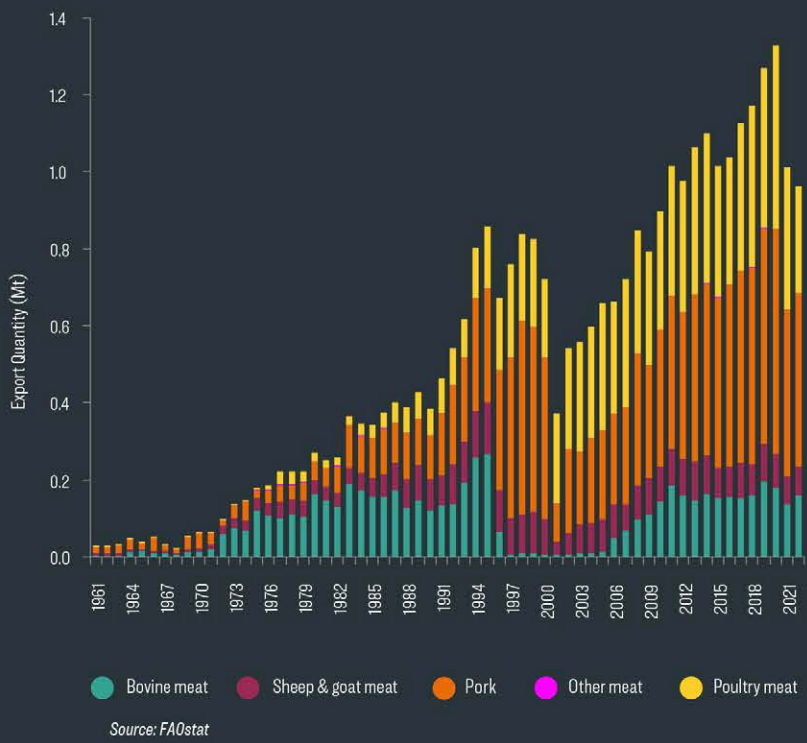
In 2020 the average British citizen consumed:



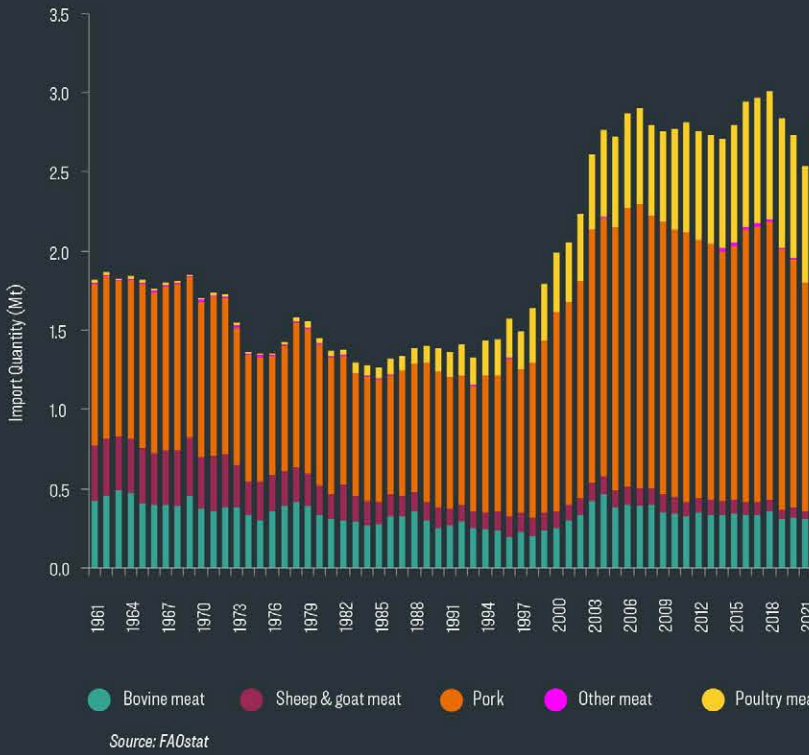
Historical consumption of protein (Grams per day)



Meat exports



Meat imports



It is important to note that prior to 2020, the UK was subject to directives and legislation developed within the EU. As such, UK-based lobby groups such as the NFU (which was a member of Copa Cogeca, see EU section) focused a lot of their efforts on lobbying the EU institutions, actively involved in tactics like falsely claiming that policies such as the National Emission reduction Commitments (*NEC*) *directive* would lead to double regulation.¹⁵⁴⁰

This case study provides an overview of what is happening in the UK with regards to reducing methane and wider climate emissions from the food sector.

Current challenges: the right-wing war on climate

The Climate Change Committee (CCC)¹⁵⁴¹ was established to keep the UK focused on its long-term 2050 climate target by advising the government on emissions goals and reporting progress to Parliament on greenhouse gas emission reductions. The CCC's 2020 report advised the government to implement low-cost, low-regret measures to promote a 20% reduction in meat consumption by 2030, increasing to 35% by 2050, along with a 20% reduction in dairy consumption by 2030.¹⁵⁴² Every CCC net-zero scenario includes dietary change of at least this level of ambition, with the CCC calling it “particularly important”.¹⁵⁴³ The National Food Strategy also recommended that the UK government implement policies to reduce UK meat consumption by 30% by 2032.¹⁵⁴⁴ Despite these recommendations, the government has not implemented a national strategy to encourage reduced meat consumption; instead, it is actively supporting conflicting agendas.

During the 2023 Conservative Party Conference, British Prime Minister Rishi Sunak claimed to have scrapped a proposed meat tax, during a wider announcement to U-turn on government plans that were part of the UK's legally-binding target¹⁵⁴⁵

of achieving net zero emissions by 2050.¹⁵⁴⁶ Sunak's claim that the CCC indirectly proposed a meat tax was false, as this has never even been considered as a government policy.

More recently, Sunak attended a protest in Wales to show support for the No Farmers No Food campaign,¹⁵⁴⁷ which opposes the net-zero agenda and has propagated conspiracy theories regarding climate change action, claiming “farming is being sacrificed on the altar of net zero”.¹⁵⁴⁸

Amid the rise in farmer protests, the Prime Minister announced at the NFU Conference 2024 a new £220 million funding package for agricultural technology and productivity schemes,¹⁵⁴⁹ which he described as “the biggest ever package of grants this year.” The funding aims to reward farmers for environmental benefits and food production; however, it falls short of effectively addressing the farming industry's impacts on climate and nature.

Box 4.3: **Meat, emissions and our health: a recipe for change**

Cattle and sheep contribute 94% of the UK’s agricultural methane emissions.¹⁵⁵⁰ At the same time, UK diets still exceed recommended protein intake by 40-50% while falling short on fruit and vegetable consumption.¹⁵⁵¹ A University of Oxford study showed that excessive meat consumption correlates with coronary heart disease: specifically, each additional 50g of processed meat per day increased the risk by 18%, while the same increase in unprocessed red meat raised the risk by 9%.¹⁵⁵²

In the UK, coronary heart disease accounts for one in eight deaths among men and one in 14 deaths among women.¹⁵⁵³ Reducing meat consumption is not only crucial for meeting emission reduction targets but also for improving public health outcomes.

Figure 25 : Health Risks of increased meat consumption

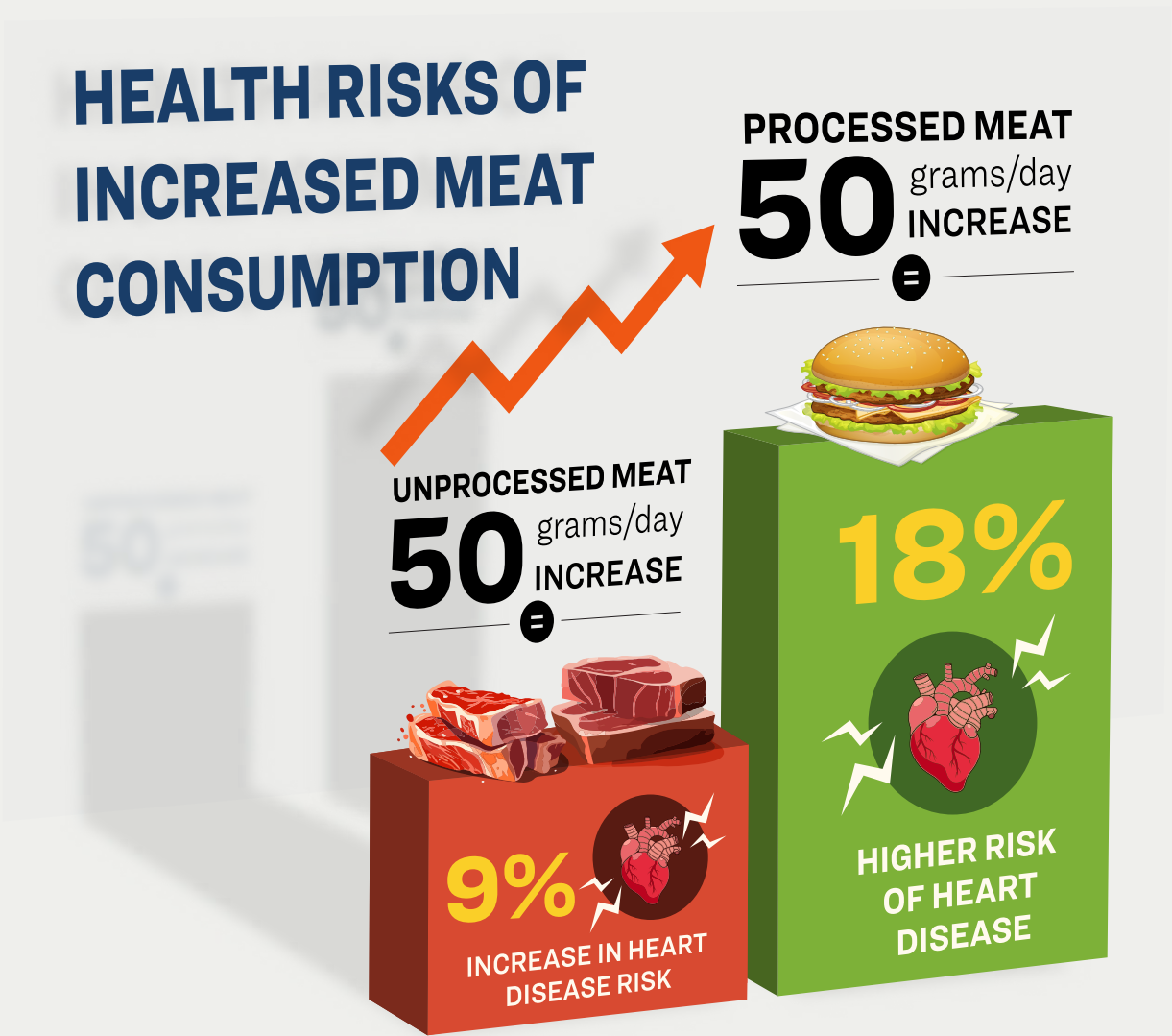
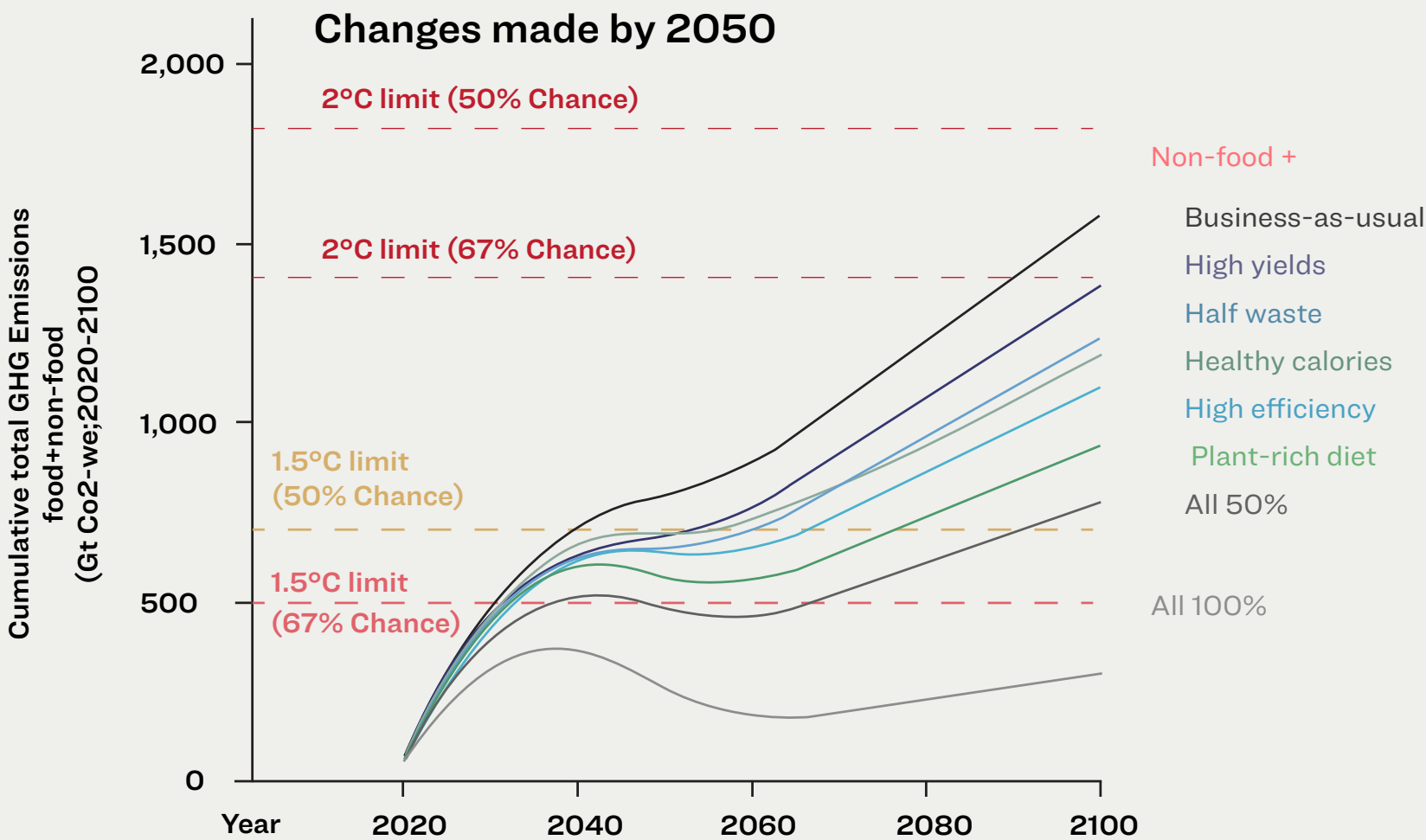


Figure 26 : Dietary changes made by 2050

source: Clark, A. et al (2020).



The influence of big meat and dairy through the National Farmers Union

Within the UK, the big meat and dairy agenda is pushed by the National Farmers Union, which contrary to the name is essentially an agribusiness lobby group - much like Copa-Cogeca in the EU.¹⁵⁵⁴

Controversy around the NFU has grown in recent years as its position against environmental efforts has hardened and the group has supported the interests of large farms and agribusiness, often at the expense of small farms. Despite presenting itself as the voice of all farmers and being given positions of influence over policy that correspond to that, many farmers state they do not feel represented by the group. A report by Ethical Consumer found that many of the NFU’s policies appear to work against small farmers and prioritise promoting mega-dairies and giant farms.¹⁵⁵⁵

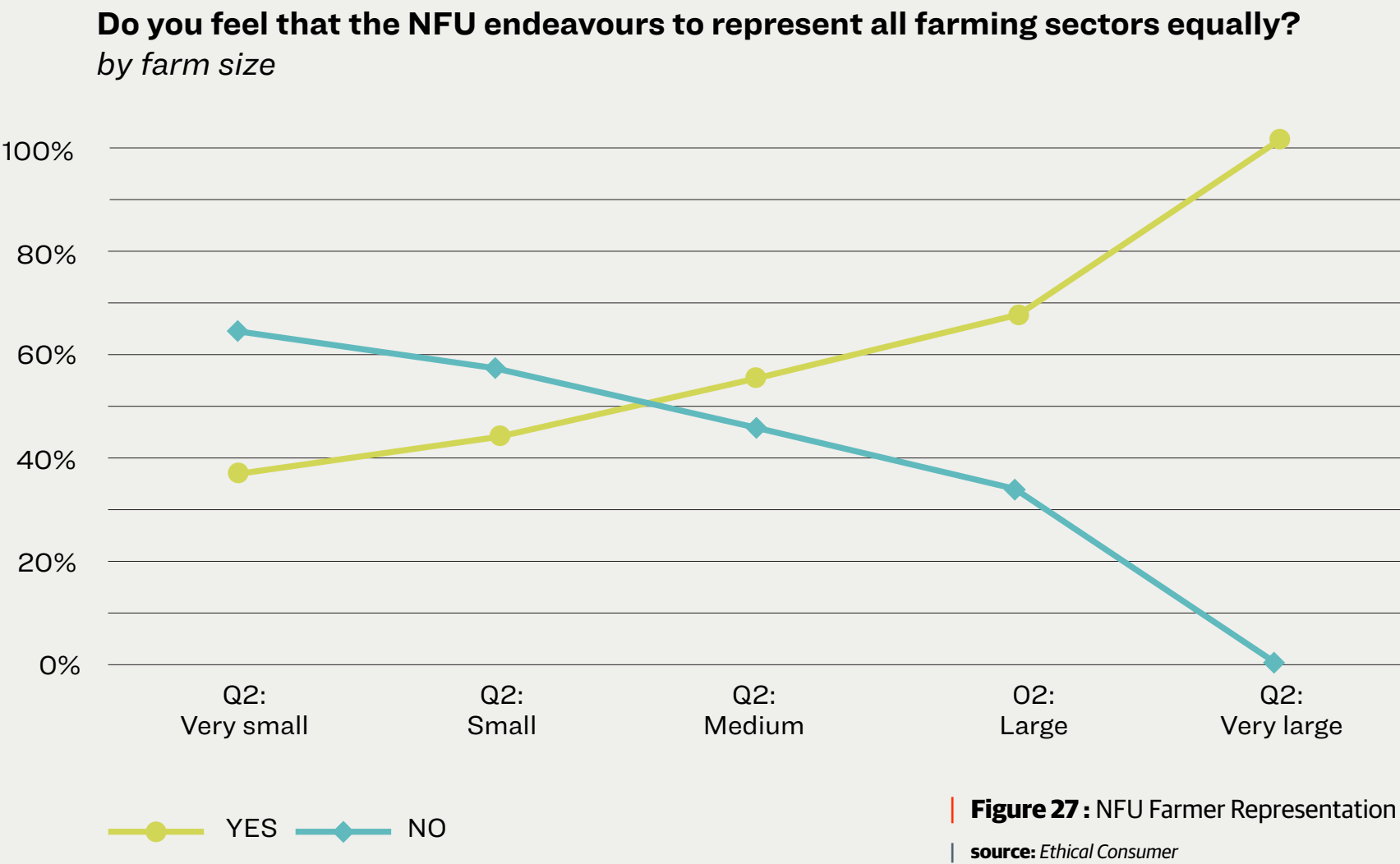
The NFU views success in British agriculture as reliant on enhancing efficiency through greater mechanisation, industrialisation and technological advancements. It sees the inevitable consolidation of smaller farms into larger units as economically sound as it improves overall agricultural efficiencies. The NFU prioritises interventions that benefit its larg-

est members economically. Its focus on maximising profit reflects the interests of major agribusiness firms within its opaque membership.¹⁵⁵⁶

The NFU has openly shown its lack of support for small farmers over their apparent lack of competitiveness.¹⁵⁵⁷ While the UK was still part of the EU, the NFU opposed CAP reforms aimed at redistributing subsidies to reduce the disproportionate funds received by large farm owners in favour of smaller farmers.¹⁵⁵⁸ Around this time, in 2014, 47% of UK farmers received less than €5,000, sharing only 4% of the payments.¹⁵⁵⁹

Post-Brexit, subsidies remain skewed; in 2022, Scotland’s 50 largest landowners collectively received £48 million in subsidies, averaging nearly £1 million each in public funds. The President of NFU Scotland described this allocation as “a lobbying success for NFU Scotland.”¹⁵⁶⁰

When it comes to its vision for climate change, the NFU’s approach leans into distraction tactics and lies firmly on the side of technological fixes. The organisation believes that because beef production in the UK is 40% less emissions intensive than the global average, scientists’ calls for reduced red meat consumption don’t apply to the UK.¹⁵⁶¹ The issue here is that emissions intensity is not



the same as overall absolute emissions. With 10% of UK emissions coming from agriculture and 90% of those being methane from livestock and nitrous oxide from fields and manure, action in this area is necessary if the UK is to meet its climate targets.¹⁵⁶²

This line of argument – that UK livestock is less emissions intensive and therefore not an issue – has also been used to respond to moves that could reduce the UK’s meat and dairy emissions. For example, in response to a call from academics for universities to only serve plant-based meals, the Deputy President of the NFU said “banning all beef and lamb, regardless of where and how it is produced, is a far too simplistic approach”.¹⁵⁶³ This is a clear example of a ‘straw man’ argument: by reframing the proposal for university premises to choose to only sell plant-based meals (while still allowing students and staff to consume whatever they choose on campus) as a ‘ban’ on meat and dairy, the NFU plays into the usual fear-mongering tactics used by big meat and dairy and their representatives (as seen in the derail section on tactics in the EU).

Regenerative will save the day – soil and hedgerows

Efforts to distract from the issues surrounding meat and dairy production by promoting regenerative agriculture have found a ripe audience in the UK. Arguments that a regenerative approach to livestock farming can negate the impact of this vast industry build on strong ideas of pastoralism and the insistence that existing production is already acceptable as it has lower emissions intensity than in many other countries.

The UK government’s methane memorandum highlights existing land management schemes which support farmers to store carbon on their farms. Indeed, the government’s Net Zero Strategy has the stated aim of “75% of farmers in England to be engaged in low carbon practices by 2030, rising to 85% by 2035.”¹⁵⁶⁴ The ab-

sence of targets to reduce meat and dairy production, provides a clear signal that voluntary regenerative efforts are the preferred approach to emissions reductions from agriculture.

A number of meat and dairy companies are supporting regenerative efforts within the UK. Nestlé, Arla and Danone (Danone UK references a project in Ireland) are all supporting research projects or initiatives that seek to promote regenerative farming, particularly for dairy, as a solution:

- Nestlé is a partner (financial link not clear) of Resilient Dairy Landscapes, a project it references in relation to its regenerative approach.¹⁵⁶⁵ The project has been running since 2019 but to date its only clear recommendations are around hedgerow planting and the need to unlock private investment in soil carbon sequestration.¹⁵⁶⁶ The last full (very brief) update appears to be from 2021, and no information is provided in this about actions being rolled out to farms at scale. The only emissions savings data provided is in relation to hedgerows and soil; it does not specify overall emissions.¹⁵⁶⁷
- Arla launched a pilot farm project in 2021 involving 24 farms that will employ regenerative practices, some of which are based in the UK.¹⁵⁶⁸ The project information indicates the project to be running from 2021 to 2022 but no update on progress has been provided at the time of writing.¹⁵⁶⁹ Additionally, the information provided does not dig into actual sequestration data or indicate the scalability of the projects.
- Danone’s UK website highlights its approach to regenerative farming, with a project based in Ireland (so British Isles, not UK). Danone states that through suppliers in Ireland it is connected to Origin Green, a programme aimed at sustainable food production. Origin Green in its most recent progress report (from 2021) provides a detailed breakdown of emissions savings per unit of animal-derived product;¹⁵⁷⁰ however, Danone does not share any details of how the project relates to its products or supply chains.

Not only is regenerative agriculture often used as a distraction from the problem, but projects and pilots such as these can be used to delay regulation by convincing government and consumers that progress is already happening - especially in combination with an industry narrative that UK livestock production is already among the least emissions intensive in the world. Yet these projects are rarely scaled and the results are not comprehensive, as is seen from the patchy updates companies have provided. Carbon storage in soil is very uncertain and impermanent and not able to offset large livestock emissions. Grassland carbon stocks would need to increase by approximately 25% to 2,000% for this to be effective. The vast range highlights the ambiguity and impracticality of solely relying on carbon sequestration in grasslands to offset the warming effect of emissions from current ruminant systems.¹⁵⁷¹

Biogas: a Big Ag win in Northern Ireland

While the UK meat and dairy industry touts regenerative agriculture, Northern Ireland banks on biogas as a techno-fix.

In Northern Ireland, a key focus of big meat and dairy has been around establishing subsidies for biogas. In the rest of the UK, biogas tends to be lower down the priority list and is not even mentioned in the UK government's methane memorandum, yet since 2015 there has been an effort to grow the industry in Northern Ireland.

An investigation by Source Material in collaboration with the BBC and The Guardian revealed that big meat company Moy Park, a subsidiary of JBS, lobbied heavily for biogas support.¹⁵⁷² A senior director at Moy Park, Tony O'Neill, was appointed chair of an industry committee set up by the Northern Ireland government - the Agri-Food Strategy Board. This board published a "Going for Growth" plan that heavily favoured industrial agriculture and that was adopted wholesale by the

government. Promoted as a green technology, biogas provides the meat industry with a solution for managing hundreds of thousands of tonnes of ammonia-laden manure, enabling it to bypass restrictions on harmful emissions. To secure this, Moy Park lobbied for subsidies for anaerobic digestion - the process of converting plant and animal waste into biogas - and for policy exemptions that allowed the development of the infrastructure.¹⁵⁷³ In 2015, Moy Park secured a deal with Northern Ireland's agriculture department allowing its contracted farmers to produce 134,000 tonnes of chicken litter annually. As most of this waste was used for biogas, it enabled new poultry farms to avoid scrutiny of their impact on sensitive habitats,¹⁵⁷⁴ such as disrupting delicate ecosystems and causing habitat degradation, fragmentation and loss. Equally concerning, biogas-powered poultry farms are driving up Northern Ireland's ammonia emissions, which already account for 12% of UK ammonia emissions, despite the region having only 6% of the land area and 3% of the UK's population.¹⁵⁷⁵ In contrast, ammonia pollution in England has declined by 13% since 1990.¹⁵⁷⁶ Ammonia can adversely affect plants and wildlife, while high concentrations can harm human health.¹⁵⁷⁷

By 2016, subsidies for biogas in Northern Ireland were four times higher than elsewhere in the UK, leading to the growth of mega-farms in the country, particularly supported by Moy Park. This shift undermines traditional farming practices. According to Source Material, an investigative journalism organisation, Northern Ireland's subsidy regime offers significant incentives for 500kW digesters, which are too large for typical small cattle farms to supply with home-grown feedstock. Consequently, the Ulster Farmers' Union has cautioned that the subsidy system unfairly favours mega-farms, disadvantaging those engaged in more traditional farming methods.¹⁵⁷⁸

The efforts in Northern Ireland are spreading support for biogas elsewhere in the UK.¹⁵⁷⁹ This example provides a case study of key tactics used by big meat and dairy

to sidestep emission restrictions - pushing for techno-fixes and securing large subsidies to support them. It also highlights agricultural exceptionalism, demonstrated by the industry's use of government advisory committees to secure preferential access to decision-makers.

Conclusion

Until 2014, the power sector held the title of the UK's largest emissions contributor. According to Carbon Brief's analysis, by 2023, its emissions had fallen below those of agriculture.¹⁵⁸⁰ During this time, emissions from farming have seen little decrease, while other sectors have made significant reductions. Today, agricultural emissions account for slightly over 12% of the UK's total emissions and 54% of methane emissions.¹⁵⁸¹ The CCC recommends a reduction of at least 64% in UK farming emissions by 2050 compared to 2018 levels to align with the country's climate targets.¹⁵⁸²

Green Alliance's *The Global Methane Pledge* report highlights the UK's potential to cut methane emissions by up to 43%.¹⁵⁸³ Immediate action on putting in place these low-cost measures is essential. Changes in food and farming practices could reduce UK methane emissions by 15%, mainly by boosting food system productivity.¹⁵⁸⁴ This involves using methane-suppressing feed additives, better slurry management, and promoting dietary shifts towards alternative proteins, fruits, and vegetables. These interventions offer profitability or low-cost implementation and align with broader government objectives, benefiting energy security, health and the environment.

Scientists stress that significant changes in food production are essential to meet the 1.5°C global warming limit.¹⁵⁸⁵ The UK buys a third of all the plant-based proteins in Europe.¹⁵⁸⁶ There is a clear market demand for alternative protein: with investment, the UK could be a market leader in an industry which is increasingly cost-compet-

itive. In 2022, the Netherlands saw alternative proteins became cheaper to buy than processed meat.¹⁵⁸⁷ Total global greenhouse gas emissions from animal-based foods are double those from plant-based foods.¹⁵⁸⁸ To effectively combat the climate crisis, reducing meat consumption and transitioning towards more sustainable, plant-based diets is crucial. Replacing processed meat and dairy with alternative proteins (as recommended in the National Food Strategy) would cut agricultural methane emissions by 8%.¹⁵⁸⁹

In the UK, advising on dietary choices has become a polarising political topic. The big picture and opportunity are often left out of the conversation. There is a triple win for the environment, climate and health through a reduction in meat consumption.

Although the UK has made significant strides in reducing methane emissions, with a decrease of 62% percent since 1990, progress has tapered off.¹⁵⁹⁰ While the "UK government recognises the urgency to do more" to reduce emissions,¹⁵⁹¹ its approach involves paying lip service to technical solutions, such as enhancing the efficiency of livestock production. Without making these measures mandatory, the potential methane emissions reductions calculated in the Green Alliance report will not be realised. Shifting to nature-friendly farming practices are low on the political agenda, while more transformative measures like reducing meat and dairy consumption are completely overlooked. The government is ignoring the CCC and National Food Strategy's recommendations under the intense influence by Big Ag.

Current Prime Minister Rishi Sunak seems to be aligning himself with a populist right-wing agenda associated with attacks on net-zero policies - similar to the way right-wing populists in the EU are seizing upon farmers' protests and their discontent. Sunak appears to see a political opportunity in aligning with forces opposed to net-zero initiatives and climate action more widely. As a result, he already weakened UK's climate plan - a step that has recently been found unlawful by the High Court.¹⁵⁹²

Such political calculation seem misguided, as three out of four adults in the UK says they are very or somewhat concerned about climate change (74%) and have made some or a lot of lifestyle changes (75%) to help tackle climate change.¹⁵⁹³ Sunak is underestimating the public's readiness to embrace dietary changes. A study by the Social Market Foundation revealed that 57% of British people believe most individuals should consume less meat, with 58% having attempted to reduce or eliminate their own meat intake.¹⁵⁹⁴ Change is already happening: in 2022, the UK saw its lowest meat consumption levels since records began in 1974, with weekly meat intake declining by 14% since 2012.¹⁵⁹⁵ The next government should seize the opportunity to cut methane emissions and drive a wider transformation of the food and farming system, as part of an ambitious national climate plan.



5. References

1

Charles, K. (2021) Food production emissions make up more than a third of global total. *New Scientist*, 30 September 2021.
[ONLINE] Available at: <https://www.newscientist.com/article/2290068-food-production-emissions-make-up-more-than-a-third-of-global-total/2> United Nations Environment Programme and Climate and Clean Air Coalition (2021) Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions
[ONLINE] Available at: https://wedocs.unep.org/bitstream/handle/20.500.11822/35917/GMA_ES.pdf

3

Clark, M. et al. (2020) Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets. *Science*, 370: 705–708.
[ONLINE] Available at: <https://www.science.org/doi/10.1126/science.aba7357>

4

Brooks McCormick Jr Animal Law & Policy Program Harvard Law School (2024) News: Climate and agriculture scientists set the record straight – emissions from the livestock sector must decline by 50% this decade, and some countries should do more than others, 12 March 2024.
[ONLINE] Available at: <https://animal.law.harvard.edu/news-article/paris-compliant-livestock-report/>

5

Changing Markets Foundation (2020) *Talking Trash: The corporate playbook of false solutions to the plastic crisis*
[ONLINE] Available at: <https://changingmarkets.org/report/talking-trash-the-corporate-playbook-of-false-solutions-to-the-plastic-crisis/>

6

Clark, M. et al. (2020) Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets.

7

US Treasury (2023) *The Inflation Reduction Act: Pro-growth climate policy*
[ONLINE] Available at: [https://home.treasury.gov/news/featured-stories/the-inflation-reduction-act-pro-growth-climate-policy#:~:text=The%20Inflation%20Reduction%20Act%20\(IRA,investment%20in%20our%20economic%20growth](https://home.treasury.gov/news/featured-stories/the-inflation-reduction-act-pro-growth-climate-policy#:~:text=The%20Inflation%20Reduction%20Act%20(IRA,investment%20in%20our%20economic%20growth)

8

European Commission (2020) *Farm to Fork Strategy: For a fair, healthy and environmentally-friendly food system*
[ONLINE] Available at: https://food.ec.europa.eu/system/files/2020-05/f2f_action-plan_2020_strategy-info_en.pdf

9

European Dairy Association (2019) *The Dairy Sector and the Green Deal*
[ONLINE] Available at: http://www.euromilk.org/fileadmin/user_upload/Public_Documents/EDA_Position_papers_-_Fact_Sheets/Sustainability/EDA_Paper_-_Green_Deal_communication_-_Dec_2019.pdf

10

Food and Agriculture Organisation of the United Nations (2023) *Pathways towards lower emissions: A global assessment of the greenhouse gas emissions and mitigation options from livestock agrifood systems*
[ONLINE] Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/a06a30d3-6e9d-4e9c-b4b7-29a6cc307208/content>

11

FAO (2023) *Achieving SDG 2 without breaching the 1.5 °C threshold: A global roadmap*
[ONLINE] Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/61c1ab4e-32f7-47c4-b267-d6410bb1dac3/content>

12

Universiteit Leiden (2024) *Academics requesting retraction of FAO report that misrepresents their research*
[ONLINE] Available at: <https://www.universiteitleiden.nl/en/science/environmental-sciences/research/food>

13

Mridul, A. (2024) Maōri Leader Wins NZ Court Appeal vs Dairy & Fossil Fuel Companies. *Green Queen*, 10 February 2024.
[ONLINE] Available at: <https://www.greenqueen.com.hk/new-zealand-climate-change-court-case-smith-v-fonterra>

14

Murphy, K. (2022) Australian farmers warn PM not to rush into Biden’s global methane pledge. *The Guardian*, 23 Jun 2022.
[ONLINE] Available at: <https://www.theguardian.com/australia-news/2022/jun/23/australian-farmers-warn-pm-not-to-rush-into-bidens-global-methane-pledge>

15

Clarke, T. (2022) ‘Killing jobs’: Coalition rejects methane pledge. *Skynews*, 13 October 2022.
[ONLINE] Available at: <https://www.skynews.com.au/australia-news/politics/coalition-warns-labor-will-legislate-methane-pledge-and-destroy-australian-farming-jobs-amid-concerns-of-burp-tax/news-story/24dbb3c5146bcf5415dec422cc79cde7>

16

Department of Climate Change, Energy, the Environment and Water (2022) *Australia joins Global Methane Pledge*.
[ONLINE] Available at: <https://minister.dcceew.gov.au/bowen/media-releases/australia-joins-global-methane-pledge>

17

Vallone, S and Lambin, E.F. (2023) Public policies and vested interests preserve the animal farming status quo at the expense of animal product analogs. *One Earth*, 6(9): 1213-1226.
[ONLINE] Available at: <https://doi.org/10.1016/j.oneear.2023.07.013>

18

Vallone, S and Lambin, E.F. (2023) Public policies and vested interests preserve the animal farming status quo at the expense of animal product analogs.

19

Statista (2022) *Share of consumers that are likely to eat less meat or replace it with alternatives to limit their contribution to climate change in selected countries worldwide in 2022*.
[ONLINE] Available at: <https://www.statista.com/statistics/1310155/consumers-trying-to-reduce-meat-consumption-due-to-meat-impact-on-climate/>

20

Great Green Wall (2024) *Vegetarian statistics 2024, surprising facts & data*.
[ONLINE] Available at: <https://www.greatgreenwall.org/supplements/vegetarian-statistics/#:~:text=Over%201.5%20Billion%20people%20worldwide,vegetarian%20because%20of%20economic%20reasons>

21

World Animal Foundation (2024) *Shifting attitudes towards meat consumption: understanding vegetarian statistics*.
[ONLINE] Available at: <https://worldanimalfoundation.org/advocate/vegetarian-statistics/>

22

Veganuary (2024) *Increasing participation*.
[ONLINE] Available at: <https://veganuary.com/about/increasing-participation/>

23

Our World in Data (2023) *Meat and dairy production*.
[ONLINE] Available at: <https://ourworldindata.org/meat-production>

24

Monbiot, G. (2022) *Regenesis: Feeding the world without devouring the planet*. New York: Penguin.

25

Monbiot, G. (2022) *Regenesis: Feeding the world without devouring the planet*..

26

Our World in Data (2023) *Meat and dairy production*.
[ONLINE] Available at: <https://ourworldindata.org/meat-production>

27

Our World in Data (2023) *Meat and dairy production*.
[ONLINE] Available at: <https://ourworldindata.org/meat-production>

28

Monbiot, G., (2022) *Regenesis: Feeding the world without devouring the planet*.

29

GRAIN and IATP (2018) *Emissions impossible: How big meat and dairy are heating up the planet*
[ONLINE] Available at: <https://www.iatp.org/emissions-impossible>

30

Howard, P. H. (2018) *Consolidation in global meat processing*.
[ONLINE] Available at: <https://philhoward.net/2017/06/21/consolidation-in-global-meat-processing/>

31

GRAIN and IATP (2018) *Emissions impossible*
[ONLINE] Available at: <https://www.iatp.org/emissions-impossible>

32

Donnelly, E. (2018) Further dairy sector mergers ‘inevitable’. *Irish Independent*, 20 September 2018.
[ONLINE] Available at: <https://www.independent.ie/business/farming/agri-business/agrifood/further-dairy-sector-mergers-inevitable-37336478.html>

33

Our World in Data (2019) *Land use*.
[ONLINE] Available at: <https://ourworldindata.org/land-use>

34

Chatham House (2021) *Food system impacts on biodiversity loss: Three levers for food system transformation in support of nature*
[ONLINE] Available at: https://www.chathamhouse.org/sites/default/files/2021-02/2021-02-03-food-system-biodiversity-loss-benton-et-al_0.pdf

35

Our World in Data (2021) *Drivers of deforestation*.
[ONLINE] Available at: <https://ourworldindata.org/what-are-drivers-deforestation>

36

Friends of the Earth Europe (2021) *Meat Atlas - facts and figures about the animals we eat*.
[ONLINE] Available at: <https://friendsoftheearth.eu/publication/meatatlas-2021/>

37

Xu, X., Sharma, P., and Shu, S., et al. (2021) Global greenhouse gas emissions from animal-based foods are twice those of plant-based foods. *Nature Food*, 2: 724–732.
[ONLINE] Available at: <https://doi.org/10.1038/s43016-021-00358-x>

38

Climate and Clean Air Coalition (n.d.) *Methane*.
[ONLINE] Available at: <https://www.ccacoalition.org/en/slcps/methane>

39

Voiland, A (2020) *Methane emissions continue to rise. NASA Earth Observatory*, 14 July 2020.
[ONLINE] Available at: <https://earthobservatory.nasa.gov/images/146978/methane-emissions-continue-to-rise>

40

Jackson, R. B., Saunio, M., and Bousquet, P., et al. (2020) Increasing anthropogenic methane emissions arise equally from agricultural and fossil fuel sources. *Environmental Research Letters*, 15(7): 071002.
[ONLINE] Available at: <https://iopscience.iop.org/article/10.1088/1748-9326/ab9ed2>

41

IPCC (2022) *Sixth Assessment report*. (2022)
[ONLINE] Available at: <https://www.ipcc.ch/assessment-report/ar6/>

42

Carrington, D. (2023) Meat, dairy and rice production will bust 1.5C climate target, shows study. *The Guardian*, 6 March 2023.
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/mar/06/meat-dairy-rice-high-methane-food-production-bust-climate-target-study>

43

Gabbatiss, J. (2018) Meat and dairy companies surpass oil industry as world's biggest polluters, report finds. *Independent*, 18 July 2018.
[ONLINE] Available at: <https://www.independent.co.uk/climate-change/news/meat-dairy-industry-greenhouse-gas-emissions-fossil-fuels-oil-pollution-iatp-grain-a8451871.html>

44

Changing Markets Foundation (2021) *Blindspot: How lack of action on livestock methane undermines climate targets*
[ONLINE] Available at: http://changingmarkets.org/wp-content/uploads/2021/10/Blindspot_methane-English.pdf

45

Sustain (2022) *COPing out: what can we take away from COP27's adaptation and agriculture day?*
[ONLINE] Available at: <https://www.sustainweb.org/blogs/nov22-cop27-agriculture-day-learnings-outcomes/>

46

Madre Brava (2023) *Tackling industrial meat: Understanding public attitudes, concerning issues and impactful solutions*.
[ONLINE] Available at: https://madrebrava.org/media/pages/insight/people-don-t-see-industrial-meat-as-a-key-cause-of-global-warming-poll/f945535138-1678895057/madre-brava_industrial-meat-production_northstar-public-survey_version-for-publication-media.pdf

47

Jacquet, J. (2021) The meat industry is doing exactly what Big Oil does to fight climate action. *The Washington Post*, 14 May 2021.
[ONLINE] Available at: https://www.washingtonpost.com/outlook/the-meat-industry-is-doing-exactly-what-big-oil-does-to-fight-climate-action/2021/05/14/831e14be-b3fe-11eb-ab43-bebdc5a0f65_story.html

48

Jacquet, J. (2021) The meat industry is doing exactly what Big Oil does to fight climate action. *The Washington Post*, 14 May 2021.
[ONLINE] Available at: https://www.washingtonpost.com/outlook/the-meat-industry-is-doing-exactly-what-big-oil-does-to-fight-climate-action/2021/05/14/831e14be-b3fe-11eb-ab43-bebdc5a0f65_story.html

49

Changing Markets Foundation (2020) *Talking Trash: The corporate playbook of false solutions to the plastic crisis*
[ONLINE] Available at: <https://changingmarkets.org/report/talking-trash-the-corporate-playbook-of-false-solutions-to-the-plastic-crisis/>

50

Madre Brava (2023) *Media analysis of industrial meat and climate change*
[ONLINE] Available at: https://madrebrava.org/media/pages/insight/people-don-t-see-industrial-meat-as-a-key-cause-of-global-warming-poll/e502b-3de61-1678981785/meat-and-climate-media-coverage-analysis_madre-brava_16-march.pdf

51

Sentient Media & Faunalytics (2023) *Animal Agriculture is the missing piece in climate change media coverage*
[ONLINE] Available at: https://faunalytics.org/animal-ag-in-climate-media/?utm_source=IATP+Full+List&utm_campaign=fe9be140d6-MARCH_NEWS_18_COPY_01&utm_medium=email&utm_term=0_3f024f9ff8-fe9be140d6-75058784

52

Sentient Media & Faunalytics (2023) *Animal Agriculture is the missing piece in climate change media coverage*
[ONLINE] Available at: https://faunalytics.org/animal-ag-in-climate-media/?utm_source=IATP+Full+List&utm_campaign=fe9be140d6-MARCH_NEWS_18_COPY_01&utm_medium=email&utm_term=0_3f024f9ff8-fe9be140d6-75058784

53

Fry, J.P., Stodden, B., Brace, A.M., and Laestadius, L.I. (2022) A Tale of Two Urgent Food System Challenges: Comparative Analysis of Approaches to Reduce High-Meat Diets and Wasted Food as Covered in U.S. Newspapers. *Sustainability*, 14(19): 12083.
[ONLINE] Available at: <https://doi.org/10.3390/su141912083>

54

Fry, J.P., Stodden, B., Brace, A.M., and Laestadius, L.I. (2022) A Tale of Two Urgent Food System Challenges: Comparative Analysis of Approaches to Reduce High-Meat Diets and Wasted Food as Covered in U.S. Newspapers.

55

Westervelt, A. (2019) How the fossil fuel industry got the media to think climate change was debatable. *The Washington Post*, 10 January 2019.
[ONLINE] Available at: <https://www.washingtonpost.com/outlook/2019/01/10/how-fossil-fuel-industry-got-media-think-climate-change-was-debatable/>

56

Kateman, B. (2021) Meat is a liberal issue. It shouldn't be. *Forbes*, 02 August 2021.
[ONLINE] Available at: <https://www.forbes.com/sites/briankateman/2021/08/02/meat-is-a-liberal-issue-it-shouldnt-be/?sh=69060e2702da>

57

Muzi, N. (2023) Why is reporting on the climate impact of meat off the menu? *Euronews*, 12 July 2023.
[ONLINE] Available at: <https://www.euronews.com/2023/07/12/why-is-reporting-on-the-climate-impact-of-meat-off-the-menu>

58

Muzi, N. (2023) Why is reporting on the climate impact of meat off the menu?

59

Sentient Media & Faunalytics (2023) *Animal Agriculture is the missing piece in climate change media coverage*.
[ONLINE] Available at: https://faunalytics.org/animal-ag-in-climate-media/?utm_source=IATP+Full+List&utm_campaign=fe9be140d6-MARCH_NEWS_18_COPY_01&utm_medium=email&utm_term=0_3f024f9ff8-fe9be140d6-75058784

60

Muzi, N. (2023) Why is reporting on the climate impact of meat off the menu?

61

Changing Markets Foundation (2021) *Blindspot: How lack of action on livestock methane undermines climate targets*
[ONLINE] Available at: https://changingmarkets.org/wp-content/uploads/2021/10/Blindspot_final.pdf

62

Changing Markets Foundation and IATP (2022) *Emissions Impossible: Methane Edition*
[ONLINE] Available at: <https://changingmarkets.org/wp-content/uploads/2022/11/Emission-Impossible-Full.pdf>

63

Changing Markets Foundation (2023) *Feeding Us Greenwash: An analysis of misleading claims in the food sector*
[ONLINE] Available at: <https://changingmarkets.org/report/feeding-us-greenwash-an-analysis-of-misleading-claims-in-the-food-sector/>

64

Changing Markets Foundation (2023) *Truth, Lies, and Culture Wars: Social listening analysis of meat and dairy persuasion narratives*
[ONLINE] Available at: <https://changingmarkets.org/report/truth-lies-and-culture-wars-social-listening-analysis-of-meat-and-dairy-persuasion-narratives/>

65

Gonçalves, M. (2023) ASA to crack down on carbon offsetting claims. *The Grocer*, 16 May 2023.
[ONLINE] Available at: <https://www.thegrocer.co.uk/sustainability-and-environment/asa-to-crack-down-on-carbon-offsetting-claims/679259.article>

66

White & Case (2023) *EU proposes Green Claims Directive to combat greenwashing*.
[ONLINE] Available at: <https://www.whitecase.com/insight-alert/eu-proposes-green-claims-directive-combat-greenwashing>

67

Mace, M. (2022) 'Integrity matters': UN expert group moves to stamp out net-zero greenwashing at COP27. *Edie*. 8 November 2022
[ONLINE] Available at: <https://www.edie.net/integrity-matters-un-expert-group-moves-to-stamp-out-net-zero-greenwashing-at-cop27/>

68

Changing Markets (2023) *Feeding Us Greenwash: An analysis of misleading claims in the food sector*
[ONLINE] Available at: <https://changingmarkets.org/report/feeding-us-greenwash-an-analysis-of-misleading-claims-in-the-food-sector/>

69

Lamb, W. F., Mattioli, G., and Levi, S. et al. (2020). Discourses of climate delay. *Global Sustainability*, 3(e17):1-5.
[ONLINE] Available at: <https://www.cambridge.org/core/journals/global-sustainability/article/discourses-of-climate-delay/>

70

Changing Markets Foundation (2023) *Feeding Us Greenwash: An analysis of misleading claims*

71

Best, D. (2023) Nestlé to walk away from 'carbon neutral' claims. *Just Food*, 28 June 2023.
[ONLINE] Available at: <https://www.just-food.com/news/nestle-to-walk-away-from-carbon-neutral-claims/>

72

European Parliament (2024) *Procedure: 2022/0092(COD): Texts adopted*.
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/TA-9-2024-0018_EN.html#title2

73

European Commission (2023) *General Publications: Proposal for a Directive on Green Claims*
[ONLINE] Available at: https://environment.ec.europa.eu/publications/proposal-directive-green-claims_en

74

Niranjan, A (2024) Dutch airline KLM misled customers with vague green claims, court rules. *The Guardian*, 20 March 2024.
[ONLINE] Available at: <https://www.theguardian.com/world/2024/mar/20/dutch-airline-klm-misled-customers-green-claims-court-rules>

75

Global Witness (2023) *Shell faces groundbreaking complaint for misleading US authorities and investors on its energy transition efforts*.
[ONLINE] Available at: <https://www.globalwitness.org/en/campaigns/fossil-gas/shell-faces-groundbreaking-complaint-misleading-us-authorities-and-investors-its-energy-transition-efforts/>

76

Crawford, E. (2023) JBS pulls 'aspirational' net zero claims as confusion about environmental claims mounts. *Food Navigator*, 21 June 2023.
[ONLINE] Available at: <https://www.foodnavigator-usa.com/Article/2023/06/21/JBS-pulls-aspirational-net-zero-claims-as-confusion-about-environmental-claims-mounts>

77

Helmore, E. (2024) New York sues JBS, world's largest meatpacker, over sustainability claims. *The Guardian*, 29 February 2024.
[ONLINE] Available at: <https://www.theguardian.com/us-news/2024/feb/29/new-york-jbs-climate-lawsuit>

78

Niranjan, A. (2024) Danish firm's 'climate-controlled pork' claim misleading, court rules. *The Guardian*, 1 March 2024.
[ONLINE] Available at: <https://www.theguardian.com/environment/2024/mar/01/danish-firm-climate-controlled-pork-claim-misleading-court-rules>

79

Edelman (n.d.) *Dairy Management Inc - Undeniably Dairy*.
[ONLINE] Available at: <https://www.edelman.com/work/undeniably-dairy>

80

Pew Research (2021) *Gen Z, Millennials Stand Out for Climate Change Activism, Social Media Engagement With Issue*, 26 May
[ONLINE] Available at: <https://www.pewresearch.org/science/2021/05/26/gen-z-millennials-stand-out-for-climate-change-activism-social-media-engagement-with-issue/>

81

EIT Food (2021) *Gen Z demand radical change from the food sector to tackle access to healthy and affordable food*
[ONLINE] Available at: <https://www.eitfood.eu/news/gen-z-demand-radical-change-from-the-food-sector-to-tackle-access-to-healthy-and-affordable-food>

82

McKinsey & Company (2022) *Mind the Gap* 23 August
[ONLINE] Available at: <https://www.mckinsey.com/-/media/mckinsey/email/genz/2022/08/23/2022-08-23b.html>

83

McClellan, K. (2023). Got Milk? Not This Generation. *The New York Times*, 4 April.
[ONLINE] Available at: <https://www.nytimes.com/2023/04/04/dining/milk-dairy-industry-gen-z.html>

84

Dimitriadis, D. Grostern, J., and Bright, S. (2023) Revealed: Fossil Fuel Giants Are Using British Influencers to go Viral. *DeSmog*, 27 July. Available at: <https://www.desmog.com/2023/07/27/fossil-fuel-oil-gas-giants-shell-bp-using-british-influencers-to-go-viral/>

85

Dairy Farmers of America (2022) *DFA launches new nerd herd campaign for world milk day*.
[ONLINE] Available at: <https://dfamilk.com/newsroom/press-center/press-center-blog/june-2022/dfa-launches-new-nerd-herd-campaign-for-world-milk>

86

First We Feast (2022) *The Ultimate Sean Evans Interview | Hot Ones*, 1 June 2022.
[ONLINE] Available at: <https://www.youtube.com/watch?v=jDIEhgi2IEY&t=80s>

87

Ritchie, H. and Roser, M. (2024). *Half of the world's habitable land is used for agriculture*.
[ONLINE] Available at: <https://ourworldindata.org/global-land-for-agriculture>

88

Union of Concerned Scientists (2016) *What's Driving Deforestation?*
[ONLINE] Available at: <https://www.ucsusa.org/resources/whats-driving-deforestation>

89

Ritchie, H., and Roser, M. (2024). *Half of the world's habitable land is used for agriculture*.
[ONLINE] Available at: <https://ourworldindata.org/global-land-for-agriculture>

90

Poore, J. and Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392): 987-992.
[ONLINE] Available at: <https://science.sciencemag.org/content/360/6392/987>

91

Ranganathan, J., Waite, R., Searchinger, T., and Hanson, C. (2018) *How to Sustainably Feed 10 Billion People by 2050, in 21 Charts*.
[ONLINE] Available at: <https://www.wri.org/insights/how-sustainably-feed-10-billion-people-2050-21-charts>

92

Ranganathan, J., Waite, R., Searchinger, T., and Hanson, C. (2018) *How to Sustainably Feed 10 Billion People by 2050, in 21 Charts*.

93

Dairy Farmers of America (2022) *DFA launches new nerd herd campaign for world milk day*.
[ONLINE] Available at: <https://dfamilk.com/newsroom/press-center/press-center-blog/june-2022/dfa-launches-new-nerd-herd-campaign-for-world-milk>

94

Kirkpatrick, E. (2023) Got Milk? Gen Z Does, Apparently. *Glamour*, 12 July 2023.
[ONLINE] Available at: <https://www.glamour.com/story/got-milk-gen-z-does-apparently>

95

Hsu, T. (2021) A P.R. Giant Is Caught Between Climate Pledges and Fossil Fuel Clients. *The New York Times*, 10 December 2021.
[ONLINE] Available at: <https://www.nytimes.com/2021/12/10/business/media/a-p-r-giant-is-caught-between-climate-pledges-and-fossil-fuel-clients.html>

96

Edelman (n.d.) *Dairy Management Inc - Undeniably Dairy*.
[ONLINE] Available at: <https://www.edelman.com/work/undeniably-dairy>

97

Arla (2022) *Estimated 28 million people in the UK making critical choices about their diets based on social pressures*.
[ONLINE] Available at: <https://news.arlafoods.co.uk/news/estimated-28-million-people-in-the-uk-making-critical-choices-about-their-diets-based-on-social-pres-sures>

98

Farmers Weekly (2023) *New marketing drive for beef and lamb kicks off*.
[ONLINE] Available at: <https://www.farmersweekly.co.nz/markets/new-marketing-drive-for-beef-and-lamb-kicks-off/>

99

AHDB (2023) *Mix up Midweek with Pork 2023*.
[ONLINE] Available at: <https://ahdb.org.uk/mixupmidweek2023>

100

Hawes, C. (2023) Meat and dairy triumph over Veganuary. *Farmers Guardian*, 11 March 2023.
[ONLINE] Available at: <https://www.farmersguardian.com/news/4183639/meat-dairy-trump-animal-free-alternatives-veganuary>

101

ET Brand Equity (2023) McCann, Ogilvy, Publicis Groupe and Edelman under fossil fuel glare, 20 September 2023.
[ONLINE] Available at: <https://brandequity.economictimes.indiatimes.com/news/research/mccann-ogilvy-publicis-groupe-and-edelman-under-fossil-fuel-glare/103803599>

102

Carlile, C. (2024) Government-Backed Meat Ad Campaign Targets Gen Z in Veganuary. *DeSmog*, 19 January 2024.[ONLINE] Available at: <https://www.desmog.com/2024/01/19/government-backed-meat-promo-campaign-targets-gen-z-over-veganuary/>

103

Severson, K. (2023) Got Milk? Not This Generation. *The New York Times*, 4 April 2023.
[ONLINE] Available at: <https://www.nytimes.com/2023/04/04/dining/milk-dairy-industry-gen-z.html>

104

Little Black Book (2022) *Milk Enters Gaming World as Official Performance Drink of Gamers at TwitchCon*, 10 October 2022.
[ONLINE] Available at: <https://lbbonline.com/news/milk-enters-gaming-world-as-official-performance-drink-of-gamers-at-twitchcon-2>

105

Animal Agriculture Alliance (n.d.) *College Aggies Online*.
[ONLINE] Available at: <https://animalagalliance.org/initiatives/college-aggies-online/>

106

DeSmog (n.d.) *Animal Agriculture Alliance*.
[ONLINE] Available at: <https://www.desmog.com/animal-agriculture-alliance/>

107

Animal Agriculture Alliance (2023) *College Aggies Online Impact Report*
[ONLINE] Available at: <https://animalagalliance.org/wp-content/uploads/2023/01/CAO-2022-Impact-Report.pdf>

108

Kempe, Y. (2021) How natural gas propaganda made it into elementary classrooms in deep blue America. *Grist*, 19 May 2021.
[ONLINE] Available at: <https://grist.org/culture/how-natural-gas-propaganda-made-it-into-elementary-classrooms-in-deep-blue-america/>

109

Glenza, J. (2019) Revealed: how big dairy pushed fattier milks into US schools. *The Guardian*, 4 February 2019.
[ONLINE] Available at: <https://www.theguardian.com/us-news/2019/feb/03/revealed-dairy-lobby-fat-milk-trump-sonny-perdue>

110

Barge, E. (2023) Engaging in Excellence: Dairy education programs bring agriculture to life for students of all ages. *Progressive Dairy*, 28 June 2023.
[ONLINE] Available at: <https://www.agproud.com/articles/57717-engaging-in-excellence-dairy-education-programs-bring-agriculture-to-life-for-students-of-all-ag-es>

111

Podall, R. (2013) How the Dairy Lobby Convinced Americans that Cow's Milk = The Best Source of Calcium. *One Green Planet*, 12 March 2013.
[ONLINE] Available at: <https://www.onegreenplanet.org/vegan-food/dairy-lobby-cows-milk-calcium/>

112

Reynolds, M. (2024) Inside the Beef Industry's Campaign to Influence Kids. *Wired*, 1 February 2024.
[ONLINE] Available at: <https://www.wired.com/story/beef-industry-school-education/>

113

Herrmann, M. (2023) The Rise of the 'Climate Friendly' Cow. *DeSmog*, 26 April 2023.
[ONLINE] Available at: <https://www.desmog.com/2023/04/26/rise-of-the-climate-friendly-cow/>

114

Best Food Facts (n.d.) *Gen Z Explores Cattle Ranching and Sustainability*.
[ONLINE] Available at: <https://www.bestfoodfacts.org/best-food-facts-taste-tour-gen-z-explores-cattle-ranching-and-sustainability/>

115

AFBF (2024) *Engaging Gen Z - The Change Makers*.
[ONLINE] Available at: <https://annualconvention.fb.org/engaging-gen-z-the-change-makers>

116

Cattlemen's Beef Promotion and Research Board (2023) Financial Statements.
[ONLINE]. Available at: <https://www.beefboard.org/wp-content/uploads/2024/02/CBB-FY23-Final-Signed-Financial-Statements.pdf>

117

Lazarus, O., McDermid, S., & Jacquet, J. (2021) CEAP Research Brief 5. Department of Environmental Studies, NYU.
[ONLINE]. Available at: https://s18798.pcdn.co/ceap/wp-content/uploads/sites/11111/2021/04/CEAP_Research_Brief_5.pdf

118

5280 (n.d.) Beef Is Tonight's Sustainable Dinner Option. Paid Posts.
[ONLINE]. Available at: <https://paidposts.5280.com/beef-is-tonights-sustainable-dinner-option/>

119

Reynolds, M. (2024) Beef Industry's Influence on School Education. WIRED.
[ONLINE]. Available at: <https://www.wired.com/story/beef-industry-school-education/>

120

Changing Markets Foundation (2023) Truth, lies, and culture wars. Retrieved from <https://changingmarkets.org/wp-content/uploads/2024/01/Truth-lies-and-culture-wars-final.pdf>

121

Fassler, J. (2023) Inside Big Beef's Messaging Machine. *The Guardian*, 3 May 2023.
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/may/03/beef-industry-public-relations-messaging-machine>

122

Scott-Reid, J. (2023) The Backlash to Plant-Based Meat Has a Sneaky, if Not Surprising, Explanation. *SentientMedia*, 24 July 2023.
[ONLINE] Available at: <https://sentientmedia.org/plant-based-backlash-explained/>

123

Sargent, G. (2005) Berman's Battle. *American Prospect*, 3 January 2005.
[ONLINE] Available at: <https://prospect.org/article/berman-s-battle/>

124

DeSmog (n.d.) *Richard Berman*.
[ONLINE] Available at: <https://www.desmog.com/richard-berman/>

125

Rainey, C. (2023) The mystery of the social media disinformation war on plant-based meat. *FastCompany*, 17 August 2023. Available at: <https://www.fastcompany.com/90931204/beyond-impossible-disinformation-mystery-berman>

126

Scott-Reid, J. (2023) The Backlash to Plant-Based Meat Has a Sneaky, if Not Surprising, Explanation. *SentientMedia*, 24 July 2023. Available at: <https://sentientmedia.org/plant-based-backlash-explained/>

127

Rainey, C. (2023) The mystery of the social media disinformation war on plant-based meat.

128

Rainey, C. (2023) The mystery of the social media disinformation war on plant-based meat.

129

Rainey, C. (2023) The mystery of the social media disinformation war on plant-based meat.

130

NCBA (2022) *The Power of Influence*.
[ONLINE] Available at: <https://www.ncba.org/federation/news/details/32064/the-power-of-influence>

131

Fassler, J. (2023) Inside Big Beef’s Messaging Machine.

132

Torella, K. (2023). The Aubrey Plaza ad for Big Dairy that may have violated federal law, explained. *Vox Media*, 31 May 2023. Available at: <https://www.vox.com/future-perfect/2023/5/5/23709822/milk-dairy-plant-based-meat-soy-almond-fake-processed>

133

van Tulleken, C. (2023) Ultra-Processed People: Why Do We All Eat Stuff That Isn't Food ... and Why Can't We Stop? London: Cornerstone Press.

134

Changing Markets Foundation (2021) Truth Lies and Culture Wars: How the Food Industry is Spinning the Story of Ultra-Processed Foods to Its Advantage. [Online] Available at: <https://changingmarkets.org/truth-lies-and-culture-wars>

135

Christopher J. Bryant. (2022) Plant-Based Animal Product Alternatives Are Healthier and More Environmentally Sustainable than Animal Products.
[ONLINE]. Available at: <https://www.sciencedirect.com/science/article/pii/S2666833522000612>

136

Christopher J. Bryant. (2022) Plant-Based Animal Product Alternatives Are Healthier and More Environmentally Sustainable than Animal Products.
[ONLINE]. Available at: <https://www.sciencedirect.com/science/article/pii/S2666833522000612>

137

van Vliet, S., Kronberg, S. L., & Provenza, F. D. (2020) ‘Plant-Based Meats, Human Health, and Climate Change’, *Frontiers in Sustainable Food Systems*.
[ONLINE]. Available at: <https://www.frontiersin.org/articles/10.3389/fsufs.2020.00128/full>

138

United Nations (2023) *Secretary-General’s remarks at the World Economic Forum*.
[ONLINE] Available at: <https://www.un.org/sg/en/content/sg/statement/2023-01-18/secretary-generals-remarks-the-world-economic-forum>

139

United Nations (2022) *Credibility and Accountability of Net-Zero Emissions Commitments of Non-State Entities*.
[ONLINE] Available at: <https://www.un.org/en/climatechange/high-level-expert-group>

140

The High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities (2022) *Integrity matters: Net zero commitments by businesses, financial institutions, cities and regions*
[ONLINE] Available at: https://www.un.org/sites/un2.un.org/files/high-level_expert_group_n7b.pdf

141

National Grid (2022) *Carbon neutral vs net zero – understanding the difference*.
[ONLINE] Available at: <https://www.nationalgrid.com/stories/energy-explained/carbon-neutral-vs-net-zero-understanding-difference>

142

Place, S. E., and Mitloehner, F. M. (2021) *Pathway to Climate Neutrality for US Beef and Dairy Cattle Production*. UC Davis Clear Center.
[ONLINE] Available at: <https://clear.ucdavis.edu/sites/g/files/dgvnsk7876/files/inline-files/White-paper-climate-neutrality-beef-dairy.pdf>

143

FrieslandCampina (2023) *FrieslandCampina Climate Plan: On the way to climate-neutral dairy*
[ONLINE] Available at: <https://www.frieslandcampina.com/uploads/2023/01/Climate-Plan-FrieslandCampina.pdf>

144

Mathieson, K. (2019) EU agrees ‘climate neutral’ target for 2050, but Poland stands alone. *Climate Home News*, 13 December 2019.
[ONLINE] Available at: <https://www.climatechangenews.com/2019/12/13/eu-sets-climate-neutral-target-2050-poland-stands-alone/>

145

National Grid (2022) *Carbon neutral vs net zero – understanding the difference*.

146

Groupe Bigard (n.d.) *Environmental Sustainability*.
[ONLINE] Available at: <https://www.groupebigard.fr/en/our-commitments/environmental-sustainability.html>

147

New Climate Institute and Carbon Market Watch (2024) *Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies’ Emission Reduction and Net Zero Targets*
[ONLINE] Available at: https://newclimate.org/sites/default/files/2024-04/NewClimate_CCRM2024.pdf

148

SBTi (n.d.) *Companies Taking Action – Dashboard*.
[ONLINE] Available at: <https://sciencebasedtargets.org/companies-taking-action#dashboard>

149

SBTi (2021) *Climate ambition: SBTi raises the bar to 1.5°C*.
[ONLINE] Available at: <https://sciencebasedtargets.org/news/sbti-raises-the-bar-to-1-5-c>

150

Carbon Trust (2019) *What is the difference between 1.5°C aligned or well below 2°C aligned?*
[ONLINE] Available at: <https://www.carbontrust.com/news-and-insights/insights/how-is-the-science-based-targets-initiative-sbti-changing>

151

New Climate Institute and Carbon Market Watch (2024) *Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies’ Emission Reduction and Net Zero Targets*

152

Planet Tracker (2022) *Nestlé S.A. Climate Transition Analysis*.
[ONLINE] Available at: <https://planet-tracker.org/nestles-net-zero-target-stuck-in-neutral/>

153

Planet Tracker (2023) *Nestlé Upgrades Climate Transition Plan*.
[ONLINE] Available at: <https://planet-tracker.org/nestle-upgrades-climate-transition-plan/>

154

Planet Tracker (2022) *Danone on track for 1.5C warming scenario by 2030 finds Planet Tracker*.
[ONLINE] Available at: <https://planet-tracker.org/danone-on-track-for-1-5-warming-scenario-by-2030-finds-planet-tracker/>

155

New Climate Institute and Carbon Market Watch (2024) *Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies’ Emission Reduction and Net Zero Targets*

156

SBTi (2024) *SBTi corporate near-term criteria: V5.2*
[ONLINE] Available at: <https://sciencebasedtargets.org/resources/files/SBTi-criteria.pdf>

157

SBTi (2023) *FLAG Guidance*
[ONLINE] Available at: <https://sciencebasedtargets.org/resources/files/SBTiFLAGGuidance.pdf>

158

SBTi (2023) *Corporate Net Zero Standard criteria*
[ONLINE] Available online at: <https://sciencebasedtargets.org/resources/files/Net-Zero-Standard-Criteria.pdf>

159

JBS USA (n.d.) *Energy and emissions*.
[ONLINE] Available at: <https://sustainability.jbsfoodsgroup.com/chapters/environment/energy-emissions/>

160

Tyson Foods (2021) *Tyson Foods Targets 2050 to Achieve Net Zero Greenhouse Gas Emissions*.
[ONLINE] Available at: <https://www.tysonfoods.com/news/news-releases/2021/6/tyson-foods-targets-2050-achieve-net-zero-greenhouse-gas-emissions>

161

JBS (2022) *JBS Annual Sustainability Report 2021*.
[ONLINE] Available at: <https://jbs.com.br/wp-content/uploads/2023/10/sustainability-in-report-jbs-2021.pdf>

162

JBS (2023) *JBS sustainability report 2022*.
[ONLINE] Available at: <https://jbsesg.com/wp-content/uploads/2023/08/2022-JBS-SUSTAINABILITY-REPORT.pdf>

163

Nestlé (2023) *Creating Shared Value and Sustainability Report - Advancing regenerative food systems at scale*.
[ONLINE] Available at: <https://www.nestle.com/sites/default/files/2024-02/creating-shared-value-sustainability-report-2023-en.pdf>

164

FrieslandCampina (2023) *FrieslandCampina Climate Plan: On the way to climate-neutral dairy*
[ONLINE] Available at: <https://www.frieslandcampina.com/uploads/2023/01/Climate-Plan-FrieslandCampina.pdf>

165

SBTi (2024) *SBTi corporate near-term criteria: V5.2*
[ONLINE] Available at: <https://sciencebasedtargets.org/resources/files/SBTi-criteria.pdf>

166

SBTi (2023) *FLAG Guidance*
[ONLINE] Available at: <https://sciencebasedtargets.org/resources/files/SBTiFLAGGuidance.pdf>

167

SBTi (2024) *SBTi corporate near-term criteria: V5.2*
[ONLINE] Available at: <https://sciencebasedtargets.org/resources/files/SBTi-criteria.pdf>

168

New Climate Institute (2023) *VCMi's Scope 3 flexibility claim could turn back the corporate ambition dial to business-as-usual*.
[ONLINE] Available at: <https://newclimate.org/news/vcmis-scope-3-flexibility-claim-could-turn-back-the-corporate-ambition-dial-to-business-as-usual>

169

New Climate Institute and Carbon Market Watch (2024) *Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies' Emission Reduction and Net Zero Targets*

170

Danone (2023) *Danone's Methane Ambition*
[ONLINE] Available at: <https://www.danone.com/content/dam/corp/global/danonecom/about-us-impact/policies-and-commitments/en/2023/methane-matters.pdf>

171

De Souza, A. (2023) Dairy Giants Take First Steps to Tackle Planet-Warming Cow Burps. *Bloomberg*, 8 December 2023.
[ONLINE] Available at: <https://www.bloomberg.com/news/newsletters/2023-12-08/cop28-summit-draws-dairy-giants-pledge-to-report-methane-footprint>

172

Danone (2024) *Annual Integrated Report 2023: Danone's Sustainability Performance*
[ONLINE] Available at: <https://www.danone.com/content/dam/corp/global/danonecom/investors/en-all-publications/2023/integratedreports/integratedannualreport2023.pdf>

173

Nestlé (2024) *Creating Shared Value and Sustainability Report 2023: Advancing regenerative food systems at scale*
[ONLINE] Available at: <https://www.nestle.com/sites/default/files/2024-02/creating-shared-value-sustainability-report-2023-en.pdf>

174

Changing Markets and IATP (2022), *Emissions Impossible: Methane Edition*
[ONLINE] Available at: <https://www.iatp.org/emissions-impossible-methane-edition>

175

SBTi (2023) *The SBTi Forest, Land and Agriculture Guidance updates: What has changed?*
[ONLINE] Available at: <https://sciencebasedtargets.org/blog/the-sbti-flag-updates>

176

The High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities (2022) *Integrity matters: Net zero commitments by businesses, financial institutions, cities and regions*
[ONLINE] Available at: https://www.un.org/sites/un2.un.org/files/high-level_expert_group_n7b.pdf

177

Arla Foods (n.d.) *Carbon net zero operations*.
[ONLINE] Available at: <https://www.arlafoods.co.uk/sustainability/carbon-net-zero-operations/>

178

Danish Crown (n.d.) *Setting science-based targets*.
[ONLINE] Available at: <https://www.danishcrown.com/global/sustainability/accountability-and-key-figures/setting-science-based-targets/>

179

Fonterra (2023) *Fonterra announces climate plans for the future*.
[ONLINE] Available at: <https://www.fonterra.com/nz/en/our-stories/media/fonterra-announces-climate-plans-for-the-future.html>

180

Mengniu (2023) *2022 Sustainability Report: China Mengniu Dairy Company Limited*
[ONLINE] Available at: https://mengniuir.com/pdf/esg/esg2022_en.pdf

181

Innter Mongolia Yili Industrial Group Co., Ltd. (2022) *Wish 2030: World Integrally Sharing Health – 2022 Sustainability Report*
[ONLINE] Available at: <https://www.yili.com/uploads/2023-07-19/a519427a-a419-49cd-8bc4-118e642149301689756317076.pdf>

182

World Benchmarking Alliance (2023) *Yili Group*.
[ONLINE] Available at: <https://www.worldbenchmarkingalliance.org/publication/food-agriculture/companies/yili-group-3/>

183

Global Dairy Platform (2022) *Pathways to Dairy Net Zero Declaration*
[ONLINE] Available at: <https://www.globaldairyplatform.com/pdfs/Pathways-to-Dairy-Net-Zero-declaration.pdf>

184

Arla (2022) *Building Sustainable Solutions: Sustainability Report 2021*
[ONLINE] Available at: <https://www.arla.com/492cbb/globalassets/pdf-files/sustainability-report-2021/sustainability-report-2021.pdf>

185

Arla (2024) *Consolidated Annual Report 2023*
[ONLINE] Available at: https://www.arla.com/493575/globalassets/arla-global/company---overview/investor/annual-reports/2023/arla_annual-report-2023_uk_v2.pdf

186

FAO and Global Dairy Platform (2019) *Climate change and the global dairy cattle sector. The role of the dairy sector in a low-carbon future*
[ONLINE] Available at: <http://www.fao.org/3/CA2929EN/ca2929en.pdf>

187

IATP (2020) *Milking the planet: How big dairy is heating up the planet and hollowing rural communities*.
[ONLINE] Available at: https://www.iatp.org/sites/default/files/2020-06/IATP_MilkingThePlanet_f_0.pdf

188

FAO and Global Dairy Platform (2019) *Climate change and the global dairy cattle sector: The role of the dairy sector in a low-carbon future*

189

IATP (2020) *Milking the planet: How big dairy is heating up the planet and hollowing rural communities*
[ONLINE] Available at: https://www.iatp.org/sites/default/files/2020-06/IATP_MilkingThePlanet_f_0.pdf

190

SBTi (2023) *FLAG guidance*
[ONLINE] Available at: <https://sciencebasedtargets.org/resources/files/SBTiFLAGGuidance.pdf>

191

JBS (2021) *JBS Makes Global Commitment to Achieve Net-Zero Greenhouse Gas Emissions by 2040*.
[ONLINE] Available at: <https://jbsfoodsgroup.com/articles/jbs-makes-global-commitment-to-achieve-net-zero-greenhouse-gas-emissions-by-2040>

192

Mano, A. Figueiredo, N. and Figueiredo, N. (2021) Brazil's JBS pledges net zero greenhouse emissions by 2040. *Reuters*, 24 March 2021.
[ONLINE] Available at: <https://www.reuters.com/business/energy/brazils-jbs-pledges-net-zero-greenhouse-emissions-by-2040-2021-03-24/>

193

Letter from NGOs. (2023) *Re: Call for SBTi to align methodology with UN's High Level Expert Group report on Net-zero Commitments*, 12 July 2023.
[ONLINE] Available at: <https://ecostandard.org/wp-content/uploads/2023/07/Letter-to-SBTi-July-2023.pdf>

194

New Climate Institute and Carbon Market Watch (2024) *Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies' Emission Reduction and Net Zero Targets*

195

Mengniu (2023) *China Mengniu Dairy Company: 2022 Annual Results*
[ONLINE] Available at: https://www.mengniuir.com/pdf/presentation/Mengniu_AR2022_PPT_E_20230329_1525.pdf

196

JBS (2022) *Sustainability Report 2021*
[ONLINE] Available at: <https://jbs.com.br/wp-content/uploads/2023/10/sustainability-in-report-jbs-2021.pdf>

197

Greenfield, P. (2023) Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows. *The Guardian*, 18 January 2023.
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe>

198

Lakhani, N. (2023) Revealed: top carbon offset projects may not cut planet-heating emissions, *The Guardian*, 19 September 2023.
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/sep/19/do-carbon-credit-reduce-emissions-greenhouse-gases>

199

Azizuddin, K. (2024) SBTi advisors to ask for retraction on offsets after staff revolt. *Responsible Investor*, 12 April 2024.
[ONLINE] Available at: <https://www.responsible-investor.com/sbti-advisers-to-ask-for-retraction-on-offsets-after-staff-revolt/>

200

New Climate Institute and Carbon Market Watch (2024) *Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies' Emission Reduction and Net Zero Targets*

201

Smith, B. (2024) DFA first to buy credits via new carbon insetting marketplace. *Dairy Processing*, 1 May 2024.
[ONLINE] Available at: <https://www.dairyprocessing.com/articles/2147-dfa-first-to-buy-credits-via-new-carbon-insetting-marketplace>

202

Cargill (2022) *Cargill RegenConnect™ expands program eligibility to 15 states for 2022-23 crop season*.
[ONLINE] Available at: <https://www.cargill.com/2022/cargill-regenconnecttm-expands-program-eligibility-to-15-states>

203

Friends of the Earth and Open Markets (2023) *Agricultural Carbon Markets, Payments, and Data: Big Ag's Latest Power Grab*
[ONLINE] Available at: https://foe.org/wp-content/uploads/2023/02/Carbon-Markets-Report_Final_Updated.pdf

204

New Climate Institute and Carbon Market Watch (2024) *Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies' Emission Reduction and Net Zero Targets*

205

SBTi (2023) *FLAG Guidance*
[ONLINE] Available at: <https://sciencebasedtargets.org/resources/files/SBTiFLAGGuidance.pdf>

206

Visram, T. (2023) What is 'greenhushing'? The new negative sustainability trend, explained. *FastCompany*, 10 March 2023.
[ONLINE]

Available at: <https://www.fastcompany.com/90858144/what-is-green-hushing-the-new-negative-sustainability-trend-explained>

207

Dunning, H. (2024) Voluntary corporate emissions targets not enough to create real climate action, *Imperial College London*, 25 April 2024.
[ONLINE] Available at: <https://www.imperial.ac.uk/news/252893/voluntary-corporate-emissions-targets-enough-create/>

208

CLEAR Center at UC Davis (2020) *Rethinking Methane*, 15 July 2020.
[ONLINE] Available at: <https://www.youtube.com/watch?v=UOPrF8oyDYw>

209

Boren, Z. (2022) Revealed: How the livestock industry funds the 'greenhouse gas guru,' *Unearthed*, 31 October 2022.
[ONLINE] Available at: <https://unearthed.greenpeace.org/2022/10/31/frank-mitloehner-uc-davis-climate-funding/>

210

Lamb, W. F., Mattioli, G., and Levi, S., et al. (2020). Discourses of climate delay. *Global Sustainability*, 3(e17):1-5.
[ONLINE] Available at: <https://www.cambridge.org/core/journals/global-sustainability/article/discourses-of-climate-delay/>

211

University of Wisconsin-Madison, Crops and Soils Division of Extension (n.d) *Methane emissions from livestock and climate change*.
[ONLINE] Available at: <https://cropsandsoils.extension.wisc.edu/articles/methane-emissions-from-livestock-and-climate-change/>

212

CLEAR Center at UC Davis (2020) *Rethinking Methane*, 15 July 2020.
[ONLINE] Available at: <https://www.youtube.com/watch?v=UOPrF8oyDYw>

213

CLEAR Center at UC Davis (2023) *Dr. Frank Mitloehner Joins the Dairy Intelligent Podcast to Discuss How Animal Agriculture Can Be Part of a Climate Solution*.
[ONLINE] Available at: <https://clear.ucdavis.edu/news/dr-frank-mitloehner-guests-dairy-intelligent-podcast-rethinking-methane>

214

CLEAR Center at UC Davis (2021) *Agriculture can play 'powerful' part in reducing greenhouse gases, speaker says*.
[ONLINE] Available at: <https://clear.ucdavis.edu/news/mitloehner-ksu-gardiner-lecture>

215

CLEAR Center (2020) *Explainer: The Biogenic Carbon Cycle and Cattle*.
[ONLINE] Available at: <https://clear.ucdavis.edu/explainers/biogenic-carbon-cycle-and-cattle>

216

British Cattle Breeders Club (2021) *Digest Paper – Why Methane From Cattle Warms The Climate Differently Than CO2 From Fossil Fuels*
[ONLINE] Available at: <https://www.cattlebreeders.org.uk/digests/76/papers/3252/>

217

Copa (2020) *Response to the EU Methane Strategy*.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F541151_en

218

Copa (2020) *Response to the EU Methane Strategy*.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F541151_en

219

Dairy Industry Ireland (2020) *Response to the EU Methane Strategy*.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F540946_en

220

Dairy Industry Ireland (n.d) *Members*.
[ONLINE] Available at: <https://www.ibec.ie/dairyindustryireland>

221

Meat and Livestock Australia (n.d) *The biogenic carbon cycle explained*.
[ONLINE] Available at: <https://www.goodmeat.com.au/environmental-sustainability/>

222

World Meteorological Organization (2022) *Greenhouse gas bulletin: Another year another record*.
[ONLINE] Available at: <https://public.wmo.int/en/media/press-release/greenhouse-gas-bulletin-another-year-another-record>

223

Forster, P., Storelvmo, T., and Armour, K., et al. (2021) *The Earth's Energy Budget, Climate Feedbacks and Climate Sensitivity*.
[ONLINE] Available at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07.pdf In: IPCC (2021) *Climate Change 2021: The Physical Science Basis*.
[ONLINE] Available at: https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf

224

Forster, P., Storelvmo, T., and Armour, K., et al. (2021) *The Earth's Energy Budget, Climate Feedbacks and Climate Sensitivity*.
[ONLINE] Available at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07.pdf In: IPCC (2021) *Climate Change 2021: The Physical Science Basis*.
[ONLINE] Available at: https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf

225

Jacob, M. (2023) Experts refute comparisons of US cattle, bison climate impact. *AFP Fact Check*, 18 December 2023.
[ONLINE] Available at: <https://factcheck.afp.com/doc.afp.com.347Z4ZG>

226

Changing Markets Foundation (2023) *Truth, Lies and Culture Wars: Social listening analysis of meat and dairy persuasion narratives*
[ONLINE] Available at: <https://changingmarkets.org/wp-content/uploads/2024/01/Truth-lies-and-culture-wars-final.pdf>

227

National Park Service (2022) *Where the Buffalo Roamed*.
[ONLINE] Available at: <https://www.nps.gov/gosp/learn/nature/where-the-buffalo-roamed.htm>

228

Economic Research Service of the US Department of Agriculture (n.d) *Cattle and Beef: Sector at a Glance*.
[ONLINE] Available at: <https://www.ers.usda.gov/topics/animal-products/cattle-beef/sector-at-a-glance/>

229

Texas Parks and Wildlife (n.d) *Bison Food Math*.
[ONLINE] Available at: <https://tpwd.texas.gov/education/resources/resources/lesson-plans/texas-regions/panhandle/bison-food-math>

230

Agricultural Research Service, US Department of Agriculture (n.d.) *What Do Dairy Cows Eat?*
[ONLINE] Available at: https://www.ars.usda.gov/ARSUserFiles/50901500/px-based_v3.2/educ-matrls/pdfs/H0_what-cows-eat.pdf

231

Miller, M. (2022) Top 7 U.S. dairy cattle breeds. *AgDaily*, 4 January 2022.
[ONLINE] Available at: <https://www.agdaily.com/livestock/top-us-dairy-cattle-breeds/>

232

IPES Food (2022) *Smoke and Mirrors: Examining competing framings of food system sustainability: agroecology, regenerative agriculture, and nature-based solutions*
[ONLINE] Available at: <https://ipes-food.org/wp-content/uploads/2024/03/SmokeAndMirrors.pdf>

233

Committee on World Food Security High Level Panel of Experts on Food Security and Nutrition (2019) *Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition: A report by the High Level Panel of Experts on Food Security and Nutrition*
[ONLINE] Available at: <https://www.fao.org/3/ca5602en/ca5602en.pdf>

234

Food and Land Use Coalition (2023) *Aligning regenerative agricultural practices with outcomes to deliver for people, nature and climate*.
[ONLINE] Available at: <https://www.foodandlandusecoalition.org/knowledge-hub/regenag-people-nature-climate/>

235

World Benchmarking Alliance (2023) *Food and Agriculture Benchmark - October 2023*.
[ONLINE] Available at: <https://www.worldbenchmarkingalliance.org/publication/food-agriculture/>

236

Savage, S. (2024) The dubious climate gains of turning soil into a carbon sink. *Financial Times*, 23 January 2024.
[ONLINE] Available at: <https://www.ft.com/content/91ed3d25-9d5c-4f46-8bd9-23cbb37e1288>

237

SAI Platform (2023) *Regenerating Together: A Global Framework for Regenerative Agriculture*
[ONLINE] Available at: https://saipatform.org/wp-content/uploads/2023/09/sai-platform_-regenerating-together_september-2023.pdf

238

Nestlé (2023) *Creating Shared Value and Sustainability Report 2023: Advancing regenerative food systems at scale*
[ONLINE] Available online at: <https://www.nestle.com/sites/default/files/2024-02/creating-shared-value-sustainability-report-2023-en.pdf>

239

Monbiot, G. (2022) *Regenesiis: Feeding the world without devouring the planet*. London: Allen Lane.

240

Savory, A. (2013) *How to fight desertification and reverse climate change*
[ONLINE] Available at: https://www.ted.com/talks/allan_savory_how_to_fight_desertification_and_reverse_climate_change

241

Changing Markets Foundation (2023) *Truth, Lies and Culture Wars: Social listening analysis of meat and dairy persuasion narratives*

242

Danone (n.d.) *Developing new agricultural models to regenerate the planet*.
[ONLINE] Available at: <https://www.danone.co.uk/impact/planet/regenerative-agriculture.html#overview>

243

Wang, Y. de Boer, I. J. M., Persson, U. M., and Ripoll-Boch, R., et al. (2023) Risk to rely on soil carbon sequestration to offset global ruminant emissions. *Nature Communications*. 14(7625)
[ONLINE] Available at: <https://www.nature.com/articles/s41467-023-43452-3>

244

Fassler, J. (2024) Research Undermines Claims that Soil Carbon Can Offset Livestock Emissions. *DeSmog*, 1 February 2024.
[ONLINE] Available at: <https://www.desmog.com/2024/02/01/climate-change-livestock-methane-carbon-sequestration-claims/>

245

Blaustein-Rejito, D. and Soltis, N. Blomqvist, L. (2023) Carbon opportunity cost increases carbon footprint advantage of grain-finished beef. *PLOS ONE*, 18(12).
[ONLINE]. Available at: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0295035>

246

Carter, N. (2023) Another failed attempt to greenwash beef. *Sentient Media*, 14 March 2023.
[ONLINE] Available at: <https://sentientmedia.org/another-failed-attempt-to-greenwash-beef/>

247

Brown, A. (2024) Saturation point: Australia's best known carbon-neutral farm can no longer offset its emissions. *The Guardian*, 18 February 2024.
[ONLINE] Available at: <https://www.theguardian.com/australia-news/2024/feb/19/saturation-point-australias-best-known-carbon-neutral-farm-can-no-longer-offset-its-emissions>

248

Savage, S. (2024) The dubious climate gains of turning soil into a carbon sink. *Financial Times*, 23 January 2024.
[ONLINE] Available at: <https://www.ft.com/content/91ed3d25-9d5c-4f46-8bd9-23cbb37e1288>;

249

World Resources Institute (2020) *Regenerative Agriculture: Good for Soil Health, but Limited Potential to Mitigate Climate Change*.
[ONLINE] Available at: <https://www.wri.org/insights/regenerative-agriculture-good-soil-health-limited-potential-mitigate-climate-change>

250

Harwatt, H., Hayek, M. N., Behrens, P., and Ripple, W. J. (2024) *Options for a Paris-Compliant Livestock Sector: Timeframes, targets and trajectories for livestock sector emissions from a survey of climate scientists*
[ONLINE] Available at: <https://animal.law.harvard.edu/wp-content/uploads/Paris-compliant-livestock-report.pdf>

251

Popkin, G. (2021) A Major Climate Idea Is Based on Some Shaky Science. *The Atlantic*, 31 Jul 2021.
[ONLINE] Available at: <https://www.theatlantic.com/science/archive/2021/07/soil-revolution-climate-change/619611/>

252

Blaustein-Rejto, D. Soltis, N. Blomqvist, L. (2023) *Carbon opportunity cost increases carbon footprint advantage of grain-finished beef*.
[ONLINE] Available at: <https://doi.org/10.1371/journal.pone.0295035>

253

A Well-Fed World (n.d.) *Animal Agriculture & Climate Change*.
[ONLINE] Available at: <https://awellfedworld.org/climate/>

254

Hayek, M. N. and Garrett, R. D. (2018) *Nationwide shift to grass-fed beef requires larger cattle population*. *Environmental Research Letters*.
[ONLINE] Available from: <https://iopscience.iop.org/article/10.1088/1748-9326/aad401>

255

Dunne, D. (2017) *Grass-fed beef will not help tackle climate change, report finds*.
[ONLINE] Available at: <https://www.carbonbrief.org/grass-fed-beef-will-not-help-tackle-climate-change/>

256

Nestlé (2023) *Creating Shared Value and Sustainability Report: Advancing regenerative food systems at scale*
[ONLINE] Available at: <https://www.nestle.com/sites/default/files/2024-02/creating-shared-value-sustainability-report-2023-en.pdf>

257

Arla (2021) *Building Sustainable Solutions: Sustainability Report 2021*
[ONLINE] Available at: <https://www.arla.com/492cbb/globalassets/pdf-files/sustainability-report-2021/sustainability-report-2021.pdf>

258

Danone (2021) *Regenerative Agriculture for a Regenerative Future*
[ONLINE] Available at: <https://www.danone.com/content/dam/corp/global/danonecom/about-us/impact/policies-and-commitments/en/2021/Danone-regenerative-agriculture-2021.pdf>

259

FAIRR (2023) *The Four Labours of Regenerative Agriculture: Paving the way towards meaningful commitments*
[ONLINE] Available at: <https://www.fairr.org/resources/reports/regenerative-agriculture-four-labours>

260

FrieslandCampina (2022) *Friesland Campina Annual Report*
[ONLINE] Available at: <https://www.frieslandcampina.com/about-us/financials/financial-and-sustainability-reports/>

261

Cargill (2022) *ESG Report*
[ONLINE] Available at: <https://www.cargill.com/doc/1432219233265/2022-esg-report-all.pdf>

262

Nestlé (2021) *Regenerative Agriculture: Living soils for healthy food*
[ONLINE] Available at: <https://www.nestle.com/sites/default/files/2021-09/regenerative-agriculture.pdf>

263

Dairy Farmers of America (2022) *Social Responsibility Report*
[ONLINE] Available at: https://issuu.com/dairyfarmersofamerica/docs/sust22001_srr_fnl_053122_issuu

264

OSI Group (2021) *Global Sustainability Report*
[ONLINE] Available at: https://www.osigroup.com/wp-content/uploads/OSI-Global-Sustainability-Report-2020-2021_web.pdf

265

OSI Group (2020) *OSI Group Helps Scale Regenerative Grazing Practice in Northern Great Plains* [Online] Available at: <https://www.osigroup.com/wp-content/uploads/Montana-Great-Plains-Grazing-Project.pdf>

266

Cargill (2022) *Cargill RegenConnect™ expands program eligibility to 15 states for 2022-23 crop season*.
[ONLINE] Available at: <https://www.cargill.com/2022/cargill-regenconnecttm-expands-program-eligibility-to-15-states>

267

Friends of the Earth and Open Markets (2023) *Agricultural Carbon Markets, Payments, and Data: Big Ag's Latest Power Grab*
[ONLINE] Available at: https://foe.org/wp-content/uploads/2023/02/Carbon-Markets-Report_Final_Updated.pdf

268

New Climate Institute and Carbon Market Watch (2024) *Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies' Emission Reduction and Net Zero Targets*
[ONLINE] Available at: https://newclimate.org/sites/default/files/2024-04/NewClimate_CCRM2024.pdf

269

New Climate Institute and Carbon Market Watch (2023) *Corporate Climate Responsibility Monitor 2023: Assessing the Transparency and Integrity of Companies' Emission Reduction and Net-Zero Targets*

270

New Climate Institute and Carbon Market Watch (2024) *Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies' Emission Reduction and Net Zero Targets*

271

Nestlé (2023) *Accelerate, Transform, Regenerate: Nestlé's Net Roadmap March 2023*
[ONLINE] Available at: <https://www.nestle.com/sites/default/files/2023-12/nestle-net-zero-roadmap-en.pdf>

272

Cheng, M (2023) Nestlé has changed its mind about using offsets to become carbon-neutral. *Quartz*, July 3 2023.
[ONLINE] Available at: <https://qz.com/nestle-has-changed-its-mind-about-using-offsets-to-beco-1850592939>

273

Nestlé (2023) *Creating Shared Value and Sustainability Report: Advancing regenerative food systems at scale*
[ONLINE] Available at: <https://www.nestle.com/sites/default/files/2024-02/creating-shared-value-sustainability-report-2023-en.pdf>

274

SAI Platform (2023) *Regenerating Together - a Global Framework for Regenerative Agriculture*
[ONLINE] Available at: https://saiplatform.org/wp-content/uploads/2023/09/sai-platform_-regenerating-together_september-2023.pdf

275

SAI Platform (n.d.) *Our Story*.
[ONLINE] Available at: <https://saiplatform.org/who-we-are/our-story/>

276

UN Special Rapporteur on the Right to Food (2022) *Seeds, right to life and farmers' rights: Report of the Special Rapporteur on the right to food, Michael Fakhri*
[ONLINE] Available at: <https://documents.un.org/doc/undoc/gen/g21/397/86/pdf/g2139786.pdf?token=DA7xa1TIA9m0lFORzl&fe=true>

277

SAI Platform (2023) *Regenerating Together - a Global Framework for Regenerative Agriculture*
[ONLINE] Available at: https://saiplatform.org/wp-content/uploads/2023/09/sai-platform_-regenerating-together_september-2023.pdf

278

FAIRR (2023) *The Four Labours of Regenerative Agriculture: Paving the way towards meaningful commitments*.
[ONLINE] Available at: <https://www.fairr.org/resources/reports/regenerative-agriculture-four-labours>

279

Nestlé (2023) *Creating Shared Value and Sustainability Report: Advancing regenerative food systems at scale*
[ONLINE] Available at: <https://www.nestle.com/sites/default/files/2024-02/creating-shared-value-sustainability-report-2023-en.pdf>

280

Nestlé (2023) *Creating Shared Value and Sustainability Report: Advancing regenerative food systems at scale*

281

Nestlé (2023) *Creating Shared Value and Sustainability Report: Advancing regenerative food systems at scale*

282

New Climate Institute and Carbon Market Watch (2024) *Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies’ Emission Reduction and Net Zero Targets*

283

Changing Markets (2023) *Seeing Stars: the new metric that could allow the meat and dairy industry to avoid climate action*
[ONLINE] Available at: <https://changingmarkets.org/report/seeing-stars-the-new-metric-that-could-allow-the-meat-and-dairy-industry-to-avoid-climate-action/>

284

Changing Markets (2023) *Seeing Stars: the new metric that could allow the meat and dairy industry to avoid climate action*

285

Beef + Lamb New Zealand (2020) *Agricultural organisations unite to call for IPCC to consider GWP*/GWP-we for greenhouse gas emissions.*
[ONLINE] Available at: <https://beeflambnz.com/news/agricultural-organisations-unite-call-ipcc-consider-gwp-gwp-we-greenhouse-gas-emissions>

286

Boren, Z. (2022) How the beef industry is trying to change the maths of climate change, *Unearthed*, 9 March 2022.
[ONLINE] Available at: <https://unearthed.greenpeace.org/2022/03/09/global-warming-potential-star-methane-agriculture-net-zero/>

287

Forster, P., Storelvmo, T., and Armour, K., et al. (2021) *The Earth’s Energy Budget, Climate Feedbacks and Climate Sensitivity.*
[ONLINE] Available at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07.pdf In: IPCC (2021) *Climate Change 2021: The Physical Science Basis.*
[ONLINE] Available at: https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf

288

CLEAR Center at UC Davis (2020) *Rethinking Methane, 15 July 2020.*
[ONLINE] Available at: <https://www.youtube.com/watch?v=UOPrF8oyDYw>

289

Mitloehner, F. M., Kebreab, E., and Boccadoro, M (2020) *Methane, Cows, and Climate Change: California Dairy’s Path to Climate Neutrality, UC Davis CLEAR Center*
[ONLINE] Available at: https://clear.ucdavis.edu/sites/g/files/dgvnsk7876/files/inline-files/CLEAR-Center-Methane-Cows-Climate-Change-Sep-2-20_6.pdf

290

McCabe, C. J., Mashad, E. H. M., and Mitloehner, F. M. (2023) The path to climate neutrality for California dairies. *CABI Reviews*
[ONLINE] Available at: <https://www.cabidigitallibrary.org/doi/full/10.1079/cabireviews.2023.0015>

291

Place, S. E. and Mitloehner, F. M (2021) *Pathway to Climate Neutrality for US. Beef and Dairy Cattle Production, CLEAR Center, UC Davis*
[ONLINE] Available at: <https://clear.ucdavis.edu/sites/g/files/dgvnsk7876/files/inline-files/White-paper-climate-neutrality-beef-dairy.pdf>

292

Boren, Z. (2022) Revealed: How the livestock industry funds the ‘greenhouse gas guru,’ *Unearthed*, 31 October 2022.
[ONLINE] Available at: <https://unearthed.greenpeace.org/2022/10/31/frank-mitloehner-uc-davis-climate-funding/>

293

CLEAR Center (2020) *Rethinking Methane, 15 July 2020.*
[ONLINE] Available at: <https://www.youtube.com/watch?v=UOPrF8oyDYw>

294

McCabe, C. J., Mashad, E. H. M., and Mitloehner, F. M. (2023) The path to climate neutrality for California dairies. *CABI Reviews*
[ONLINE] Available at: <https://www.cabidigitallibrary.org/doi/full/10.1079/cabireviews.2023.0015>

295

McKenna, P., Gustin, G., and Aldhous, P. (2023) California’s Top Methane Emitter is a Vast Cattle Feedlot. For Now, Federal and State Green-house Gas Regulators Are Giving It a Pass. *Inside Climate News*, 18 August 2023.
[ONLINE] Available at: <https://insideclimatenews.org/news/18082023/californias-top-methane-emitter-is-cattle-feedlot/>

296

CLEAR Center, University of California, Davis (2020) *Response to the EU Methane Strategy.*
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F540883_en

297

Fassler, J. (2023) The Livestock Industry’s ‘Climate Neutral’ Claims Are Too Good To Be True. *DeSmog*, 14 December 2023.
[ONLINE] Available at: <https://www.desmog.com/2023/12/14/the-livestock-industrys-climate-neutral-claims-are-too-good-to-be-true/>

298

UK Parliament (2024) *New inquiry on methane launched by Lords committee.*
[ONLINE] Available at: <https://committees.parliament.uk/committee/515/environment-and-climate-change-committee/news/200328/new-inquiry-on-methane-launched-by-lords-committee/>

299

House of Lords Environment and Climate Change Committee (2024) *Uncorrected oral evidence: Methane*
[ONLINE] Available at: <https://committees.parliament.uk/oralevidence/14503/pdf/>

300

International Dairy Federation and Global Dairy Platform (2022) *Joint IDF / GDP Statement UN COP27.*
[ONLINE] Available at: https://fil-idf.org/news_insights/joint-idf-gdp-statement-un-cop27/

301

FrieslandCampina (2023) *FrieslandCampina Climate Plan: On the way to climate-neutral dairy*
[ONLINE] Available at: <https://www.frieslandcampina.com/uploads/2023/01/Climate-Plan-FrieslandCampina.pdf>

302

NFU (2023) *NFU calls for new methane metric to be used in GHG calculation.s*
[ONLINE] Available at: <https://www.nfuonline.com/updates-and-information/nfu-calls-for-new-methane-metric-to-be-used-in-ghg-calculations/>

303

Copa (2020) *Response to the EU Methane Strategy.*
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F541151_en

304

Copa (2020) *Response to the EU Methane Strategy.*
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F541151_en

305

Dairy Industry Ireland (2020) Response to the EU Methane Strategy
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F540946_en

306

European Dairy Association (2020) *Response to the EU Methane Strategy.*
[ONLINE] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F540873_en

307

Global Roundtable for Sustainable Beef (n.d.) *Sustainability Goals.*
[ONLINE] Available at: <https://grsbeef.org/sustainability-goals/climate/>

308

FrieslandCampina (2023) *FrieslandCampina Climate Plan: On the way to climate-neutral dairy.*
[ONLINE] Available at: <https://www.frieslandcampina.com/uploads/2023/01/Climate-Plan-FrieslandCampina.pdf>

309

Changing Markets (2023) *Seeing Stars: the new metric that could allow the meat and dairy industry to avoid climate action*
[ONLINE] Available at: <https://changingmarkets.org/report/seeing-stars-the-new-metric-that-could-allow-the-meat-and-dairy-industry-to-avoid-climate-action/>

310

Beef + Lamb New Zealand (2019) *Beef + Lamb New Zealand will continue to push for science based methane target.*
[ONLINE] Available at: <https://beeflambnz.com/news/beef-lamb-new-zealand-will-continue-push-science-based-methane-targets>

311

Cain, M. (2019) New Zealand’s farmers have a chance to be climate leaders. *Oxford Martin School University of Oxford*, 3 June 2019.
[ONLINE] Available at: <https://www.oxfordmartin.ox.ac.uk/blog/new-zealands-farmers-have-a-chance-to-be-climate-leaders/>

312

Donnison, C. L. Murphy-Bokern, D. (2023) Are climate neutrality claims in the livestock sector too good to be true? *Environmental Research Letters*, 19 (1).
[ONLINE] Available at: <https://iopscience.iop.org/article/10.1088/1748-9326/ad0f75>

313

Donnison, C. (2024) The meat and dairy industry is not ‘climate neutral’, despite some eye-catching claims. *The Conversation*, 2 January 2024.

[ONLINE] Available at: <https://theconversation.com/the-meat-and-dairy-industry-is-not-climate-neutral-despite-some-eye-catching-claims-219369>

314

Donnison, C. L. and Murphy-Bokern, D. (2023) Are climate neutrality claims in the livestock sector too good to be true? *Environmental Research Letters*, 19(1).

[ONLINE] Available at: <https://iopscience.iop.org/article/10.1088/1748-9326/ad0f75>

315

Boren, Z. (2022) How the beef industry is trying to change the maths of climate change. *Unearthed*, 9 March 2022.

[ONLINE] Available at: <https://unearthed.greenpeace.org/2022/03/09/global-warming-potential-star-methane-agriculture-net-zero/>

316

Rogelj, J. Schleussner, C-F. (2019) Unintentional unfairness when applying new greenhouse gas emissions metrics at country level. *Environmental Research Letters*, 14 (11).

[ONLINE] Available at: <https://iopscience.iop.org/article/10.1088/1748-9326/ab4928>

317

Sherrington, R. (2024) US Meat Lobby Celebrates ‘Positive Outcome’ of COP28. *DeSmog*, 8 April 2024.

[ONLINE] Available at: <https://www.desmog.com/2024/04/08/us-meat-lobby-celebrates-positive-outcome-cop28/>

318

Thacker, P. D. (2022) Stealing from the tobacco playbook, fossil fuel companies pour money into elite American universities. *British Medical Journal*, 378.

[ONLINE] Available at: <https://www.bmj.com/content/378/bmj.o2095>

319

Oreskes, N. Conway, E. (2010) Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming. Bloomsbury Press: New York.

320

Gillis, J. Schwartz, J. (2015) Deeper ties to corporate cash for doubtful climate researcher. *New York Times*, 12 February 2015.

[ONLINE] Available at: <https://www.nytimes.com/2015/02/22/us/ties-to-corporate-cash-for-climate-change-researcher-Wei-Hock-Soon.html>

321

Thacker, P. D. (2022) Stealing from the tobacco playbook, fossil fuel companies pour money into elite American universities. *British Medical Journal*, 378.

[ONLINE] Available at: <https://www.bmj.com/content/378/bmj.o2095>

322

Morris, V. and Jacquet, J. (2024) The animal agriculture industry, US universities, and the obstruction of climate understanding and policy. *Climatic Change*, 177:41

[ONLINE] Available at: <https://link.springer.com/article/10.1007/s10584-024-03690-w>

323

McCordick, J. (2024) The Academics Helping the Meat Industry Avoid Climate Scrutiny. *The New Republic*, 29 February 2024.

[ONLINE] Available at: <https://newrepublic.com/article/179410/academics-meat-industry-climate-davis-colorado>

324

Morris, V. and Jacquet, J. (2024) The animal agriculture industry, US universities, and the obstruction of climate understanding and policy.

325

Boren, Z. (2022) Revealed: How the livestock industry funds the ‘greenhouse gas guru. *Unearthed*, 31 October 2022.

[ONLINE] Available at: <https://unearthed.greenpeace.org/2022/10/31/frank-mitloehner-uc-davis-climate-funding/>

326

Boren, Z. (2022) Revealed: How the livestock industry funds the ‘greenhouse gas guru.

327

Boren, Z. (2022) Revealed: How the livestock industry funds the ‘greenhouse gas guru.

328

Morris, V. and Jacquet, J. (2024) The animal agriculture industry, US universities, and the obstruction of climate understanding and policy.

329

Atkin, E. Samuelson, A. (2024) Big Meat is lying about sustainability. These media outlets are helping. *Heated*, March 6 2024.

[ONLINE] Available at: <https://heated.world/p/big-meat-is-lying-about-sustainability>

330

Crawford, E. (2023) JBS pulls ‘aspirational’ net zero claims as confusion about environmental claims mounts. *Food Navigator*, 21 June 2023.

[ONLINE] Available at: <https://www.foodnavigator-usa.com/Article/2023/06/21/JBS-pulls-aspirational-net-zero-claims-as-confusion-about-environmental-claims-mounts>

331

Helmore, E. (2024) New York sues JBS, world’s largest meatpacker, over sustainability claims. *The Guardian*, 29 February 2024.

[ONLINE] Available at: <https://www.theguardian.com/us-news/2024/feb/29/new-york-jbs-climate-lawsuit>

332

McCordick, J. (2024) The Academics Helping the Meat Industry Avoid Climate Scrutiny. *The New Republic*, 29 February 2024. Available at: <https://newrepublic.com/article/179410/academics-meat-industry-climate-davis-colorado>

333

Knapton, S. (2023) Meat is crucial for human health, scientists warn. *The Telegraph*, 29 April 2023.

[ONLINE] Available at: <https://www.telegraph.co.uk/news/2023/04/29/vegan-diet-meat-scientists-british-beef-livestock-farming/>

334

Boren, Z. (2023) Revealed: The livestock consultants behind the Dublin Declaration of Scientists. *Unearthed*, 27 October 2023.

[ONLINE] Available at: <https://unearthed.greenpeace.org/2023/10/27/dublin-declaration-meat-livestock-industry/>

335

Lazzaris, S. (2024) Truths, Tactics and the Mist of Meat Lobby Science. *Food Unfolded*, 15 January 2024.

[ONLINE] Available at: <https://www.foodunfolded.com/article/truths-tactics-and-the-mist-of-meat-lobby-science>

336

Carrington, D. (2023) Revealed: the industry figures behind ‘declaration of scientists’ backing meat eating. *The Guardian*, 27 October 2023.

[ONLINE] Available at: <https://www.theguardian.com/environment/2023/oct/27/revealed-industry-figures-declaration-scientists-backing-meat-eating>

337

DeSmog. (n.d.) *Wageningen University and Research*.

[ONLINE] Available at: <https://www.desmog.com/wageningen-university-research/>

338

Carlile, C. (2022) How Big Ag is Delaying Sustainable Farming in Europe. *DeSmog*, 21 December 2022.

[ONLINE] Available at: <https://www.desmog.com/2022/12/21/sowing-doubt-how-big-ag-is-delaying-sustainable-farming-in-europe/>

339

Holland, N., and Tansey, R. (2022) A loud lobby for a silent spring: The pesticide industry’s toxic lobbying tactics against Farm to Fork. *Corporate Europe Observatory*, 17 March 2022.

[ONLINE] Available at: <https://corporateeurope.org/en/2022/03/loud-lobby-silent-spring>

340

Holland, N., and Tansey, R. (2022) A loud lobby for a silent spring: The pesticide industry’s toxic lobbying tactics against Farm to Fork.

341

Holland, N., and Tansey, R. (2022) A loud lobby for a silent spring: The pesticide industry’s toxic lobbying tactics against Farm to Fork.

342

DeSmog (n.d.) *Wageningen University and Research*.

[ONLINE] Available at: <https://www.desmog.com/wageningen-university-research/>

343

Luimes, T., Käller, R., and van den Berg, I. (2021) How FrieslandCampina determines the research agenda of Wageningen University & Research. *Vrij Nederland*, 29 May 2021.

[ONLINE] Available at: <https://www.vn.nl/frieslandcampina-wageningen-university-research/>

344

Sherrington, R. (2024) US Meat Lobby Celebrates ‘Positive Outcome’ of COP28. *DeSmog*, 8 April 2024.

[ONLINE] Available at: <https://www.desmog.com/2024/04/08/us-meat-lobby-celebrates-positive-outcome-cop28/>

345

Sherrington, R. (2024) US Meat Lobby Celebrates ‘Positive Outcome’ of COP28.

346

Gee, K., and Cheah, A. (2023) Comment: With greenwashing lawsuits proliferating, boards need to step up scrutiny of ESG claims. *Reuters*, 21 August 2023.
[ONLINE]. Available at: <https://www.reuters.com/sustainability/sustainable-finance-reporting/comment-with-greenwashing-lawsuits-proliferating-boards-need-step-up-scrutiny-2023-08-21/>

347

Changing Markets and IATP (2022) *Emissions Impossible: Methane Edition*
[ONLINE] Available at: http://changingmarkets.org/wp-content/uploads/2022/11/Emissions-Impossible_Methane-Edition_FINAL-compressed.pdf

348

Greenpeace (2023) *The Dirty Dozen The Climate Greenwashing of 12 European Oil Companies*
[ONLINE] Available at: <https://greenpeace.at/uploads/2023/08/report-the-dirty-dozen-climate-greenwashing-of-12-european-oil-companies.pdf>

349

Danone (2023) *Danone’s Methane Ambition*
[ONLINE] Available at: <https://www.danone.com/content/dam/corp/global/danonecom/about-us-impact/policies-and-commitments/en/2023/methane-matters.pdf>

350

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*
[ONLINE] Available at: https://searchinger.princeton.edu/sites/g/files/toruqf4701/files/methane_discussion_paper_nov_2021.pdf

351

Global Research Alliance (2021) *An evaluation of evidence for efficacy and applicability of methane inhibiting feed additives for livestock*
[ONLINE] Available at: <https://globalresearchalliance.org/wp-content/uploads/2021/12/An-evaluation-of-evidence-for-efficacy-and-applicability-of-methane-inhibiting-feed-additives-for-livestock-FINAL.pdf>

352

Erickson, P. S., and Kalscheur, K. F. (2020) Nutrition and feeding of dairy cattle. *Animal Agriculture*, 2020:157-18.
[ONLINE] Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7153313/>

353

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

354

Zero Carbon Analytics (2022) *The effectiveness of animal feed supplements in cutting methane emissions*
[ONLINE] Available at: https://zerocarbon-analytics.org/wp-content/uploads/2022/10/2022_09_Animal_feed_methane-1.pdf

355

JBS (2023) *Groundbreaking Study with JBS Reveals Tannin Cuts Greenhouse Gas Emissions by 17% in Livestock Farming.*
[ONLINE] Available at: <https://mediaroom.jbs.com.br/noticia/groundbreaking-study-with-jbs-reveals-tannin-cuts-greenhouse-gas-emissions-by-in-livestock-farming>

356

Global Research Alliance (2021) *An evaluation of evidence for efficacy and applicability of methane inhibiting feed additives for livestock*

357

DSM (n.d.) *Bovaer*.
[ONLINE] Available at: <https://www.dsm.com/anh/products-and-services/products/methane-inhibitors/bovaer.html>

358

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

359

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

360

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

361

Elgin, B. (2023) Why Won’t Companies Use This Quick Fix to Reduce Cow Methane Emissions? *Bloomberg*, 28 June 2023.
[ONLINE] Available at: <https://www.bloomberg.com/news/features/2023-06-28/this-quick-fix-reduces-methane-emissions-from-cow-burps>

362

Ólafsson, B. (2024) Is ‘Climate-Friendly Beef’ Always Just Greenwashing? *Sentient Climate*, 19 March 2024. Available online at: <https://sentient-media.org/climate-friendly-beef-greenwashing>

363

Chroback, U. (2020) The inconvenient truth about Burger King’s ‘reduced methane’ Whopper. *Popular Science*, 20 July 2020.
[ONLINE] Available at: <https://www.popsoci.com/story/environment/burger-king-reduced-methane-whopper-debunk/>

364

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

365

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

366

Readfearn, G. (2023) Australian trial of seaweed cow feed fails to achieve hoped-for methane cuts. *The Guardian*, 12 July 2023.
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/jul/13/seaweed-cow-feed-trial-fails-methane-reduction-australia>

367

Roque, B. M., Venegas, M., and Kinley, R. D., et al. (2021.) Red Seaweed (Asparagopsis Taxiformis) Supplementation Reduces Enteric Methane by over 80 Percent in Beef Steers. *PLoS One*, 17;16(3):e0247820.
[ONLINE] Available at: <https://pubmed.ncbi.nlm.nih.gov/33730064/>

368

Roque, B. M., Salwen, J. K., Kinley, R., and Kebreab, E. (2019) Inclusion of Asparagopsis Armata in Lactating Dairy Cows’ Diet Reduces Enteric Methane Emission by over 50 Percent. *Journal of Cleaner Production* 234(132–38)
[ONLINE] Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0959652619321559?via%3Dihub>

369

Kinley, R. D., Martinez-Fernandez, G., and Matthews, M. K., et al. (2020). Mitigating the Carbon Footprint and Improving Productivity of Ruminant Livestock Agriculture Using a Red Seaweed. *Journal of Cleaner Production* 259(120836)
[ONLINE] Available at: https://www.researchgate.net/publication/339633201_Mitigating_the_carbon_footprint_and_improving_productivity_of_ruminant_livestock_agriculture_using_a_red_seaweed

370

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

371

Glasson, C. R. K., Kinley, R. D., de Nys, R., et al. (2022) Benefits and risks of including the bromoform containing seaweed Asparagopsis in feed for the reduction of methane production from ruminants. *Algal Research* 64:102673
[ONLINE] Available at: <https://www.sciencedirect.com/science/article/pii/S2211926422000443>

372

Muizelaar, W., Groot, M, and van Duinkerken, G., et al. (2021) Safety and Transfer Study: Transfer of Bromoform Present in Asparagopsis Taxiformis to Milk and Urine of Lactating Dairy Cows. *Foods* 10(3)584
[ONLINE] Available at: <https://pubmed.ncbi.nlm.nih.gov/33802209/>

373

Reisinger, A., Clark, H., and Cowie, A. L., et al. (2021) How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals? *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 379: 20200452
[ONLINE] Available at: <https://royalsocietypublishing.org/doi/10.1098/rsta.2020.0452>

374

Zero Carbon Analytics (2022) *The effectiveness of animal feed supplements in cutting methane emissions*
[ONLINE] Available at: https://zerocarbon-analytics.org/wp-content/uploads/2022/10/2022_09_Animal_feed_methane-1.pdf

375

DSM (n.d.) *The Proven Solution for Methane Reduction.*
[ONLINE] Available at: <https://www.dsm.com/anh/products-and-services/products/methane-inhibitors/bovaer.html>

376

Reisinger, A., Clark, H., and Cowie, A. L., et al. (2021) How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals? *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 379: 20200452
[ONLINE] Available at: <https://royalsocietypublishing.org/doi/10.1098/rsta.2020.0452>

377

Zero Carbon Analytics (2022) *The effectiveness of animal feed supplements in cutting methane emissions*
[ONLINE] Available at: https://zerocarbon-analytics.org/wp-content/uploads/2022/10/2022_09_Animal_feed_methane-1.pdf

378

Rust, J. M. (2019) The impact of climate change on extensive and intensive livestock production systems. *Animal Frontiers* 9(10)

[ONLINE] Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6951865/>

379

Reisinger, A., Clark, H., and Cowie, A. L., et al. (2021) How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals? *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 379: 20200452

[ONLINE] Available at: <https://royalsocietypublishing.org/doi/10.1098/rsta.2020.0452>

380

DSM (2022) *DSM receives landmark EU market approval for its methane-reducing feed additive Bovaer®*.

[ONLINE] Available at: <https://www.dsm.com/corporate/news/news-archive/2022/dsm-receives-eu-approval-Bovaer.html>

381

DSM (n.d.) *The Proven Solution for Methane Reduction*.

[ONLINE] Available at: <https://www.dsm.com/anh/products-and-services/products/methane-inhibitors/bovaer.html>

382

Reisinger, A., Clark, H., and Cowie, A. L., et al. (2021) How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals?

383

Elgin, B. (2023) Why Won't Companies Use This Quick Fix to Reduce Cow Methane Emissions? *Bloomberg*, 28 June 2023.

[ONLINE] Available at: <https://www.bloomberg.com/news/features/2023-06-28/this-quick-fix-reduces-methane-emissions-from-cow-burps>

384

Readfearn, G. (2023) Australian trial of seaweed cow feed fails to achieve hoped-for methane cuts. *The Guardian*, 12 July 2023.

[ONLINE] Available at: <https://www.theguardian.com/environment/2023/jul/13/seaweed-cow-feed-trial-fails-methane-reduction-australia>

385

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

386

Muizelaar, W., Groot, M., and van Duinkerken, G., et al. (2021) Safety and Transfer Study: Transfer of Bromoform Present in Asparagopsis Taxiformis to Milk and Urine of Lactating Dairy Cows. *Foods*, 10(3): 584.

[ONLINE] Available at: <https://pubmed.ncbi.nlm.nih.gov/33802209/>

387

Glasson, C. R. K., Kinley, R. D., and de Nys, R., et al. (2022) Benefits and risks of including the bromoform containing seaweed Asparagopsis in feed for the reduction of methane production from ruminants. *Algal Research*, 64:102673.

[ONLINE] Available at: <https://www.sciencedirect.com/science/article/pii/S2211926422000443>

388

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

389

Glasson, C. R. K., Kinley, R. D., and de Nys, R., et al. (2022) Benefits and risks of including the bromoform containing seaweed Asparagopsis in feed for the reduction of methane production from ruminants.

390

Reisinger, A., Clark, H., and Cowie, A. L., et al. (2021) How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals?

391

Roque, B. M., Venegas, M., and Kinley, R. D, et al. (2021.) Red Seaweed (Asparagopsis Taxiformis) Supplementation Reduces Enteric Methane by over 80 Percent in Beef Steers. *PLoS One*, 16(3):e0247820.

[ONLINE] Available at: <https://pubmed.ncbi.nlm.nih.gov/33730064/>

392

Roque, B. M., Salwen, J. K., Kinley, R., and Kebreab, E. (2019) Inclusion of Asparagopsis Armata in Lactating Dairy Cows' Diet Reduces Enteric Methane Emission by over 50 Percent. *Journal of Cleaner Production*, 234: 132–38.

[ONLINE] Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0959652619321559?via%3Dihub>

393

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

394

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

395

Reisinger, A., Clark, H., and Cowie, A. L., et al. (2021) How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals?

396

Reisinger, A., Clark, H., and Cowie, A. L., et al. (2021) How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals?

397

Glasson, C. R. K., Kinley, R. D., and de Nys, R., et al. (2022) Benefits and risks of including the bromoform containing seaweed Asparagopsis in feed for the reduction of methane production from ruminants.

398

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

399

Chroback, U. (2020) The inconvenient truth about Burger King's 'reduced methane' Whopper. *Popular Science*, 20 July 2020.

[ONLINE] Available at: <https://www.popsoci.com/story/environment/burger-king-reduced-methane-whopper-debunk/>

400

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

401

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

402

Zero Carbon Analytics (2022) *The effectiveness of animal feed supplements in cutting methane emissions*

[ONLINE] Available at: https://zerocarbon-analytics.org/wp-content/uploads/2022/10/2022_09_Animal_feed_methane-1.pdf

403

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

404

JBS (2023) *Groundbreaking Study with JBS Reveals Tannin Cuts Greenhouse Gas Emissions by 17% in Livestock Farming*

[ONLINE] Available at: <https://mediaroom.jbs.com.br/noticia/groundbreaking-study-with-jbs-reveals-tannin-cuts-greenhouse-gas-emissions-by-in-livestock-farming>

405

Zero Carbon Analytics (2022) *The effectiveness of animal feed supplements in cutting methane emissions*

[ONLINE] Available at: https://zerocarbon-analytics.org/wp-content/uploads/2022/10/2022_09_Animal_feed_methane-1.pdf

406

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

407

S Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

408

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

409

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

410

Zero Carbon Analytics (2022) *The effectiveness of animal feed supplements in cutting methane emissions*

411

Reisinger, A., Clark, H., and Cowie, A. L., et al. (2021) How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals?

412

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

413

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

414

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

415

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

416

Peters, A. (2022). Can a vaccine for cows slash methane emissions? *FastCompany*, 15 December 2022.
[ONLINE] Available at: <https://www.fastcompany.com/90824840/vaccine-cows-methane-emissions>

417

Peters, A. (2022). Can a vaccine for cows slash methane emissions?

418

Steele, M. (2023) Millions invested to progress methane vaccine for livestock. *Radio New Zealand*, 30 May 2023.
[ONLINE] Available at: <https://www.rnz.co.nz/news/national/490956/millions-invested-to-progress-methane-vaccine-for-livestock>

419

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

420

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

421

González-Recio, O., López-Paredes, J., and Ouatahar, L., et al. (2020) Mitigation of Greenhouse Gases in Dairy Cattle via Genetic Selection: 2. Incorporating Methane Emissions into the Breeding Goal. *Journal of Dairy Science* 103 (8): 7210–21.
[ONLINE] Available at: <https://www.sciencedirect.com/science/article/pii/S0022030220303994>

422

Rykers, E. (2023) How New Zealand is reducing methane emissions from farming. *BBC Future*, 15 December.
[ONLINE] Available at: <https://www.bbc.com/future/article/20231214-how-new-zealand-is-reducing-methane-emissions-from-farming>

423

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

424

Ólafsson, B (2024) Is ‘Climate-Friendly Beef’ Always Just Greenwashing? *Sentient Climate*, 19 March. Available online at: <https://sentientmedia.org/climate-friendly-beef-greenwashing>

425

De Souza, A. (2021) Cargill Backs Cow Masks to Trap Methane Burps. *Bloomberg*, 31 May.
[ONLINE] Available at: <https://www.bloomberg.com/news/articles/2021-06-01/wearable-technology-to-filter-cow-methane-burps>

426

Edwards, S. (2023) Kowbucha calf trials showing real promise. *FedsNews*, 30 March.
[ONLINE] Available at: <https://www.fedsnews.co.nz/kowbucha-calf-trials-showing-real-promise/>

427

Fonterra (2020) *Kowbucha - methane buster*
[ONLINE] Available at: <https://www.fonterra.com/nz/en/our-stories/articles/kowbucha-methane-buster.html>

428

Rennie, R. (2024) Fonterra keeps gas on Kowbucha. *Farmers Weekly*, 10 January.
[ONLINE] Available at: <https://www.farmersweekly.co.nz/technology/fonterra-keeps-gas-on-kowbucha/>

429

Edwards, S. (2023) Kowbucha calf trials showing real promise. *FedsNews*, 30 March.
[ONLINE] Available at: <https://www.fedsnews.co.nz/kowbucha-calf-trials-showing-real-promise/>

430

Fonterra (2020) *Kowbucha - methane buster*
[ONLINE] Available at: <https://www.fonterra.com/nz/en/our-stories/articles/kowbucha-methane-buster.html>

431

Rennie, R. (2024) Fonterra keeps gas on Kowbucha. *Farmers Weekly*, 10 January.
[ONLINE] Available at: <https://www.farmersweekly.co.nz/technology/fonterra-keeps-gas-on-kowbucha/>

432

Peters, A. (2022) Can a vaccine for cows slash methane emissions? *FastCompany*, 15 December.
[ONLINE] Available at: <https://www.fastcompany.com/90824840/vaccine-cows-methane-emissions>

433

Edwards, S. (2023) Kowbucha calf trials showing real promise. *FedsNews*, 30 March.
[ONLINE] Available at: <https://www.fedsnews.co.nz/kowbucha-calf-trials-showing-real-promise/>

434

Fonterra (2020) *Kowbucha - methane buster*
[ONLINE] Available at: <https://www.fonterra.com/nz/en/our-stories/articles/kowbucha-methane-buster.html>

435

Rennie, R. (2024) Fonterra keeps gas on Kowbucha. *Farmers Weekly*, 10 January.
[ONLINE] Available at: <https://www.farmersweekly.co.nz/technology/fonterra-keeps-gas-on-kowbucha/>

436

Peters, A. (2022) Can a vaccine for cows slash methane emissions? *FastCompany*, 15 December.
[ONLINE] Available at: <https://www.fastcompany.com/90824840/vaccine-cows-methane-emissions>

437

Reisinger, A., Clark, H., and Cowie, A. L., et al. (2021) How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals?

438

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

439

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

440

Peters, A. (2022). Can a vaccine for cows slash methane emissions? *FastCompany*, 15 December.
[ONLINE] Available at: <https://www.fastcompany.com/90824840/vaccine-cows-methane-emissions>

441

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

442

Paleya, A (2023) How science is helping cows produce less methane. *Interesting Engineering*, 13 October.
[ONLINE] Available at: <https://interestingengineering.com/innovation/science-helping-reduce-methane-emissions-cows>

443

Steele, M. (2023) Millions invested to progress methane vaccine for livestock. *Radio New Zealand*, 30 May.
[ONLINE] Available at: <https://www.rnz.co.nz/news/national/490956/millions-invested-to-progress-methane-vaccine-for-livestock>

444

Global Methane Hub (2023) *Enteric Fermentation Research & Development Accelerator, a \$200M Agricultural Methane Mitigation Funding Initiative*
[ONLINE] Available at: <https://www.globalmethanehub.org/2023/12/02/enteric-fermentation-research-development-accelerator-a-200m-agricultural-methane-mitigation-funding-initiative/>

445

González-Recio, O., López-Paredes, J., and Ouatahar, L., et al. (2020) Mitigation of Greenhouse Gases in Dairy Cattle via Genetic Selection: 2. Incorporating Methane Emissions into the Breeding Goal. *Journal of Dairy Science* 103 (8): 7210–21
[ONLINE] Available at: <https://www.sciencedirect.com/science/article/pii/S0022030220303994>

446

Searchinger, T., Herrero, M., and Yan, X., et al. (2021) *Opportunities to Reduce Methane Emissions from Global Agriculture (Discussion Paper)*

447

Global Methane Hub (2023) *Enteric Fermentation Research & Development Accelerator, a \$200M Agricultural Methane Mitigation Funding Initiative*
[ONLINE] Available at: <https://www.globalmethanehub.org/2023/12/02/enteric-fermentation-research-development-accelerator-a-200m-agricultural-methane-mitigation-funding-initiative/>

448

Wait, L. F. (2023) Could we breed cows that emit less methane? *Penn Today*, 2 August. Available online at: <https://penntoday.upenn.edu/news/penn-vet-could-we-breed-cows-emit-less-methane>

449

Gates invests \$4.8 million into 'smart' gas masks for cows (2023) *Ag Daily*, 24 March.
[ONLINE] Available at: <https://www.agdaily.com/news/gates-invests-5-million-into-smart-gas-masks-for-cows/>

450

Cargill (2022) *ESG Report 2022*
[ONLINE] Available at: <https://www.cargill.com/doc/1432218789039/2022-esg-climate.pdf>

451

Bloomberg Net Zero Pathfinders (n.d.) Feed Additives and Other Technologies to Lower Livestock Emissions. *Bloomberg Pathfinders*
[ONLINE] Available at: <https://www.bloomberg.com/netzeropathfinders/best-practices/feed-additives-and-other-technologies-to-lower-livestock-emissions/>

452

The Changing Markets Foundation and the Institute for Agriculture and Trade Policy (2022) *Emissions Impossible: Methane Edition*
[ONLINE] Available at: http://changingmarkets.org/wp-content/uploads/2022/11/Emissions-Impossible-_Methane-Edition_FINAL-compressed.pdf

453

van Dijk, Z. (2021) A different approach to reducing methane. *Dairy Global*, 12 August
[ONLINE] Available at: <https://www.dairyglobal.net/industry-and-markets/smart-farming/a-different-approach-to-reducing-methane/>

454

Ólafsson, B (2024) Is 'Climate-Friendly Beef' Always Just Greenwashing? *Sentient Climate*, 19 March. Available online at: <https://sentientmedia.org/climate-friendly-beef-greenwashing>

455

Peters, A. (2022) Can a vaccine for cows slash methane emissions? *FastCompany*, 15 December.
[ONLINE] Available at: <https://www.fastcompany.com/90824840/vaccine-cows-methane-emissions>

456

Edwards, S. (2023) Kowbucha calf trials showing real promise. *FedsNews*, 30 March.
[ONLINE] Available at: <https://www.fedsnews.co.nz/kowbucha-calf-trials-showing-real-promise/>

457

Fonterra (2020) *Kowbucha - methane buster*
[ONLINE] Available at: <https://www.fonterra.com/nz/en/our-stories/articles/kowbucha-methane-buster.html>

458

Rennie, R. (2024) Fonterra keeps gas on Kowbucha. *Farmers Weekly*, 10 January.
[ONLINE] Available at: <https://www.farmersweekly.co.nz/technology/fonterra-keeps-gas-on-kowbucha/>

459

JBS (2023) Groundbreaking Study with JBS Reveals Tannin Cuts Greenhouse Gas Emissions by 17% in Livestock Farming
[ONLINE] Available at: <https://mediaroom.jbs.com.br/noticia/groundbreaking-study-with-jbs-reveals-tannin-cuts-greenhouse-gas-emissions-by-in-livestock-farming>

460

Harwatt, H., Hayek, M. N., Behrens, P., and Ripple, W. J. (2024) Options for a Paris-Compliant Livestock Sector: Timeframes, targets and trajectories for livestock sector emissions from a survey of climate scientists. *Brooks McCormick Jr Animal Law & Policy Programme, Harvard Law School*.
[ONLINE] Available at: <https://animal.law.harvard.edu/wp-content/uploads/Paris-compliant-livestock-report.pdf>

461

UNEP and Climate and Clean Air Coalition (2021) Global methane assessment: Benefits and costs of mitigating methane emissions.
[ONLINE] Available at: https://www.ccacoalition.org/sites/default/files/resources/2021_Global-Methane_Assessment_full_0.pdf

462

Ivanovich, C. C. Tianyi, S. Gordon, D. R. Ocko, I. B. (2023) Future warming from global food consumption. *Nature Climate Change* 13(297–302)
[ONLINE] Available at: <https://www.nature.com/articles/s41558-023-01605-8>

463

Reisinger, A., Clark, H., and Cowie, A. L., et al. (2021) How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals?

464

Byrne, J. (2023) COP28 Emirates Declaration: Food is finally at the top table but measurable targets are missing. *Feed Navigator*, 1 December. Available at: <https://www.feednavigator.com/Article/2023/12/01/COP28-Declaration-Food-is-finally-at-the-top-table>

465

Sherrington, R. (2024) US Meat Lobby Celebrates 'Positive Outcome' of COP28. *DeSmog*
[ONLINE] Available at: <https://www.desmog.com/2024/04/08/us-meat-lobby-celebrates-positive-outcome-cop28/>

466

COP28 Presidency (2023) COP28 Declaration on Food and Agriculture
[ONLINE] Available at: <https://www.cop28.com/en/food-and-agriculture>

467

United Nations Food and Agriculture Organisation (2023) *Achieving SDG 2 without breaching the 1.5 °C threshold: A global roadmap [Part 1 - in brief]*
[ONLINE] Available at: <https://www.fao.org/3/cc9113en/cc9113en.pdf>

468

De Sousa, A. (2023) Eat Less Meat Is Message for Rich World in Food's First Net Zero Plan. *Bloomberg*, 26 November
[ONLINE] Available at: <https://www.bloomberg.com/news/articles/2023-11-26/eat-less-meat-is-message-for-rich-world-in-food-s-first-net-zero-plan>

469

Savage, S. (2023) Ramp up meat production to address health challenge in poorer countries, UN says. *Financial Times*, 10 December.
[ONLINE] Available at: <https://www.ft.com/content/2eb93884-0aa3-4590-98ec-5b15cc1d9f44>

470

FeedStuffs (2023) COP28 agreement: What might it mean for the feed and meat industries? 19 December.
[ONLINE] Available at: <https://www.feedstuffs.com/agribusiness-news/cop28-agreement-what-might-it-mean-for-the-feed-and-meat-industries->

471

Sherrington, R. (2024) US Meat Lobby Celebrates 'Positive Outcome' of COP28. *DeSmog*
[ONLINE] Available at: <https://www.desmog.com/2024/04/08/us-meat-lobby-celebrates-positive-outcome-cop28/>

472

Global Methane Hub (2023) *Enteric Fermentation Research & Development Accelerator, a \$200M Agricultural Methane Mitigation Funding Initiative*
[ONLINE] Available online at: <https://www.globalmethanehub.org/2023/12/02/enteric-fermentation-research-development-accelerator-a-200m-agricultural-methane-mitigation-funding-initiative/>

473

Davies, S., Brasher, P., Fatka, J., and Wicks, N. (2023) Daybreak Dec. 11: Vilsack says US 'flipped the script for American agriculture' at COP meeting. *Agripulse*, 11 December, 2023.
[ONLINE] Available at: <https://www.agri-pulse.com/articles/20388-daybreak-dec-11-vilsack-says-us-flipped-the-script-for-american-agriculture-at-cop-meeting>

474

Changing Markets Foundation (2023) *Feeding Us Greenwash: An analysis of misleading claims in the food sector*
[ONLINE] Available at: <https://changingmarkets.org/report/feeding-us-greenwash-an-analysis-of-misleading-claims-in-the-food-sector/>

475

JBS Foods Group (n.d.) *Our approach to net zero*
[ONLINE] Available at: <https://jbsfoodsgroup.com/our-purpose/net-zero>

476

JBS (2022) *Management Report*
[ONLINE] Available at: <https://api.mziq.com/mzfilemanager/v2/d/043a77e1-0127-4502-bc5b-21427b991b22/0736c1c5-95fb-8ede-c8dc-bff01407fad2?origin=2>

477

JBS (n.d.) *Our Approach to Net Zero*
[ONLINE] Available at: <https://jbsfoodsgroup.com/our-purpose/net-zero>

478

Tyson Foods (2016) *Tyson Foods Creates Venture Fund to Fuel the Future of Food*
[ONLINE] Available at: <https://www.tysonfoods.com/news/news-releases/2016/12/tyson-foods-creates-venture-fund-fuel-future-food>

479

Tyson Foods (2022) *United States Securities and Exchange Commission Washington, D.C. 20549 FORM 10-K*
[ONLINE] Available at: https://s22.q4cdn.com/104708849/files/doc_financials/2022/q4/TSN-2022-10K-FINAL.pdf

480

Fonterra (2022) *Fonterra Business Performance - 2022 Annual Results*
[ONLINE] Available at: https://www.fonterra.com/content/dam/fonterra-public-website/fonterra-new-zealand/documents/pdf/financial-results/fy22/2022_Annual_Results_Investor_Pack_Final.pdf p32.

481

Fonterra (2022) *Fonterra Business Performance – 2022 Annual Results*
[ONLINE] Available at: https://www.fonterra.com/content/dam/fonterra-public-website/fonterra-new-zealand/documents/pdf/financial-results/fy22/2022_Annual_Results_Investor_Pack_Final.pdf p16.

482

Fox, A (2023) Fonterra could build giant heat pumps for factories as \$1 billion sustainability drive continues. *New Zealand Herald*, 9 February.
[ONLINE] Available at: <https://www.nzherald.co.nz/business/fonterra-could-build-giant-heat-pumps-for-factories-as-1-billion-dollar-sustainability-drive-continues/>

483

Fonterra (2022) *Fonterra Business Performance – 2022 Annual Results*
[ONLINE] Available at: https://www.fonterra.com/content/dam/fonterra-public-website/fonterra-new-zealand/documents/pdf/financial-results/fy22/2022_Annual_Results_Investor_Pack_Final.pdf

484

Nestlé (2022) Financial Statements 2022 Consolidated Financial Statements of the Nestlé Group 2022 - 156th Financial Statements of Nestlé S.A
[ONLINE] Available at: <https://www.nestle.com/sites/default/files/2023-02/2022-financial-statements-en.pdf>, p72

485

Nestlé (2021) *Nestlé unveils plans to support the transition to a regenerative food system*
[ONLINE] Available at: <https://www.nestle.com/media/pressreleases/allpressreleases/support-transition-regenerative-food-system>

486

Nestlé (2021) *Creating Shared Value and Sustainability Report 2021: We unlock the power of food to enhance quality of life for everyone, today and for generations to come*
[ONLINE] Available at: <https://www.nestle.com/sites/default/files/2022-03/creating-shared-value-sustainability-report-2021-en.pdf>

487

Nestlé (2021) *Nestlé unveils plans to support the transition to a regenerative food system*
[ONLINE] Available at: <https://www.nestle.com/media/pressreleases/allpressreleases/support-transition-regenerative-food-system>

488

Askew, K. (2021) How Nestlé is supporting regenerative agriculture: 'We need to source the right way'. *Food Navigator*, 28 September.
[ONLINE] Available at: <https://www.foodnavigator.com/Article/2021/09/28/How-Nestle-is-supporting-regenerative-agriculture-We-need-to-source-in-the-right-way>

489

Arla (2021) *Building strength in a volatile market: Consolidated Annual Report 2021*
[ONLINE] Available at: https://www.arla.com/493351/globalassets/pdf-files/annual-report-2021/arla_consolidated_annual_report_2021_en.pdf p76

490

Arla (2021) *Building strength in a volatile market: Consolidated Annual Report 2021*
[ONLINE] Available at: https://www.arla.com/493351/globalassets/pdf-files/annual-report-2021/arla_consolidated_annual_report_2021_en.pdf p76

491

Elgin, B. (2023) Why Won't Companies Use This Quick Fix to Reduce Cow Methane Emissions? *Bloomberg*, 28 June.
[ONLINE] Available at: <https://www.bloomberg.com/news/features/2023-06-28/this-quick-fix-reduces-methane-emissions-from-cow-burps>

492

Arla (2020) *Response to the EU Methane Strategy*
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F540931_en

493

Dairy Industry Ireland (2020) *Response to the EU Methane Strategy*
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F540946_en

494

Copa (2020) *Response to the EU Methane Strategy*
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F541151_en

495

Cogeca (2020) *Response to the EU Methane Strategy*
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F541152_en

496

Elgin, B. (2023) Why Won't Companies Use This Quick Fix to Reduce Cow Methane Emissions? *Bloomberg*, 28 June.
[ONLINE] Available at: <https://www.bloomberg.com/news/features/2023-06-28/this-quick-fix-reduces-methane-emissions-from-cow-burps>

497

U.S. Government, 117th Congress (2022) *H.R.5376 - Inflation Reduction Act of 2022: Title II -- Committee on Agriculture, Nutrition, and Forestry, subtitle b—conservation sec. 21001.*
[ONLINE] Available at: <https://www.congress.gov/bill/117th-congress/house-bill/5376/text>

498

U.S. Government, 117th Congress (2022) *H.R.5376 - Inflation Reduction Act of 2022: Title II -- Committee on Agriculture, Nutrition, and Forestry, subtitle b—conservation sec. 21001.*
[ONLINE] Available at: <https://www.congress.gov/bill/117th-congress/house-bill/5376/text>

499

Morris, V. (2021) The Cow-Shaped Hole in Biden's Methane Plan. *Politico*, 16 November.
[ONLINE] Available at: <https://www.politico.com/news/agenda/2021/11/16/methane-emissions-cows-agriculture-climate-change-522550>

500

Arla Foods (2020) Feedback on the EU Methane Strategy.
[ONLINE]. Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F540931_en

501

European Dairy Association (2020) Feedback on the EU Methane Strategy.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F540873_en

502

European Dairy Association (2019) *The Dairy sector and the Green Deal.*
[ONLINE] Available at: http://www.euromilk.org/fileadmin/user_upload/Public_Documents/EDA_Position_papers_-_Fact_Sheets/Sustainability/EDA_Paper_-_Green_Deal_communication_-_Dec_2019.pdf

503

American Biogas Council (n.d.) *How dairy farmers are reducing methane and greenhouse gas emissions*
[ONLINE] Available at: <https://americanbiogascouncil.org/how-dairy-farmers-are-reducing-methane-and-greenhouse-gas-emissions/>

504

Smithfield (2021) *Largest Renewable Natural Gas Project of Its Kind Implements Manure-to-Energy Technology Across Northern Missouri, Celebrates Construction Completion Ahead of Joint Venture's 10-Year Anniversary*
[ONLINE] Available at: <https://www.smithfieldfoods.com/press-room/2021-08-11-Largest-Renewable-Natural-Gas-Project-of-Its-Kind-Implements-Manure-to-Energy-Technology-Across-Northern-Missouri,-Celebrates-Construction-Completion-Ahead-of-Joint-Ventures-10-Year-Anniversary/>

505

Smithfield (2020) *Smithfield Foods to Become Carbon Negative by 2030: Company commits to bold climate action with industry-leading pledge*
[ONLINE] Available at: <https://www.prnewswire.com/news-releases/smithfield-foods-to-become-carbon-negative-by-2030-301124087.html>

506

Sainato, M. (2022) California subsidies for dairy cows' biogas are a lose-lose, campaigners say. *The Guardian*, 4 February.
[ONLINE] Available at: <https://www.theguardian.com/environment/2022/feb/04/california-subsidies-biogas-dairy-cows-emissions-climate>

507

Gustin, G. (2024) The Biden Administration is Spending Its 'Climate Smart' Funding in the Wrong Places, According to New Analyses Inside Climate News, 28 September.
[ONLINE] Available at: <https://insideclimatenews.org/news/04032024/biden-administration-spending-climate-smart-funding-in-wrong-places/>

508

Held, L. (2021) Are Biogas Subsidies Benefiting the Largest Industrial Animal Farms? *Civil Eats*, 20 September.
[ONLINE] Available at: <https://civileats.com/2021/09/20/are-biogas-subsidies-benefiting-the-largest-industrial-animal-farms/>

509

Foehringer Merchant, E. van Deelen, G. (2022) California Has Provided Incentives for Methane Capture at Dairies, but the Program May Have 'Unintended Consequences'. *Inside Climate News*, 19 September.
[ONLINE] Available at: <https://insideclimatenews.org/news/19092022/dairy-digesters-methane-california-manure/>

510

Sainato, M. (2022) California subsidies for dairy cows' biogas are a lose-lose, campaigners say. *The Guardian*, February 4.
[ONLINE] Available at: <https://www.theguardian.com/environment/2022/feb/04/california-subsidies-biogas-dairy-cows-emissions-climate>

511

IATP (2022) *IATP Comments on Implementation of the Inflation Reduction Act*
[ONLINE] Available at: <https://www.iatp.org/iatp-comments-implementation-inflation-reduction-act>

512

Smithfield (2022) *Sustainability Impact Report 2022*
[ONLINE] Available at: https://assets-us-01.kc-usercontent.com/9b20431f-d6b6-0045-fb3a-04b2808dbf02/6cb6d5c5-5f22-4598-a271-315ae3310e49/Smithfield_Sustainability_Report_2022.pdf

513

Vallone, S.Lambin, E. F. (2023) Public policies and vested interests preserve the animal farming status quo at the expense of animal product analogs. *OneEarth* 6(9)1213-1226
[ONLINE] Available at: [https://www.cell.com/one-earth/fulltext/S2590-3322\(23\)00347-0](https://www.cell.com/one-earth/fulltext/S2590-3322(23)00347-0)

514

Foehringer Merchant, E. van Deelen, G. (2022) California Has Provided Incentives for Methane Capture at Dairies, but the Program May Have 'Unintended Consequences'. *Inside Climate News*, 19 September.
[ONLINE] Available at: <https://insideclimatenews.org/news/19092022/dairy-digesters-methane-california-manure/>

515

Sainato, M. (2022) California subsidies for dairy cows' biogas are a lose-lose, campaigners say. *The Guardian*, February 4.
[ONLINE] Available at: <https://www.theguardian.com/environment/2022/feb/04/california-subsidies-biogas-dairy-cows-emissions-climate>

516

IATP (2022). *IATP Comments on Implementation of the Inflation Reduction Act*
[ONLINE] Available at: <https://www.iatp.org/iatp-comments-implementation-inflation-reduction-act>

517

Food and Water Watch (2024) *The Big Oil and Big Ag Ponzi Scheme: Factory Farm Biogas*
[ONLINE] Available at: <https://www.foodandwaterwatch.org/2024/01/09/the-big-oil-and-big-ag-ponzi-scheme-factory-farm-biogas/>

518

Gross, L. (2021) Can California Reduce Dairy Methane Emissions Equitably? *Inside Climate News*, 9 August.
[ONLINE] Available at: <https://insideclimatenews.org/news/09082021/california-dairy-methane-emissions/>

519

Bakkaloglu, S. Cooper, J. Hawkes, A. (2022) Methane emissions along biomethane and biogas supply chains are underestimated. *One Earth*, 5(6), 724-236
[ONLINE] Available at: <https://www.sciencedirect.com/science/article/pii/S259033222002676>

520

Association of Irrigated Residents (AIR), Leadership Counsel for Justice & Accountability, Food & Water Watch, and Animal Legal Defense Fund (2021) Re: Petition For Rulemaking To Exclude All Fuels Derived From Biomethane From Dairy And Swine Manure From The Low Carbon Fuel Standard Program. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-01/2021.10.27%20Petition%20for%20Rulemaking%20AIR%20et%20al_.pdf

521

IATP (2022) IATP Comments on Implementation of the Inflation Reduction Act
[ONLINE] Available at: <https://www.iatp.org/iatp-comments-implementation-inflation-reduction-act>

522

European Commission (2020) *Communication from the commission to the European Parliament, the council, the European economic and social committee and the committee of the regions: On an EU strategy to reduce methane emissions.*
[ONLINE] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0663&rid=1>

523

Gittelson, P., Diamond, D., and Henning, L., et al. (2022) The False Promises of Biogas: Why Biogas Is an Environmental Justice Issue. *Environmental Justice* 15(6).
[ONLINE] Available at: <https://www.liebertpub.com/doi/10.1089/env.2021.0025>

524

Food and Water Watch (2024) *The Big Oil and Big Ag Ponzi Scheme: Factory Farm Biogas*
[ONLINE] Available at: <https://www.foodandwaterwatch.org/2024/01/09/the-big-oil-and-big-ag-ponzi-scheme-factory-farm-biogas/>

525

Vallone, S., and Lambin, E. F. (2023) Public policies and vested interests preserve the animal farming status quo at the expense of animal product analogs. *OneEarth* 6(9)1213-1226
[ONLINE] Available at: [https://www.cell.com/one-earth/fulltext/S2590-3322\(23\)00347-0](https://www.cell.com/one-earth/fulltext/S2590-3322(23)00347-0)

526

Carlile, C. (2024) Government-Backed Meat Ad Campaign Targets Gen Z in Veganuary. *DeSmog*, 19 January.
[ONLINE] Available at: <https://www.desmog.com/2024/01/19/government-backed-meat-promo-campaign-targets-gen-z-over-veganuary/>

527

The Danish Agriculture and Food Council (2021) *Feedback on the sustainable EU food system - new initiative*
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13174-Sustainable-EU-food-system-new-initiative/F2745557_en

528

Arla Foods (2021)
[ONLINE] *Feedback on the sustainable EU food system - new initiative*
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13174-Sustainable-EU-food-system-new-initiative/F2745692_en

529

Nestlé (2023) Creating Shared Value and Sustainability Report 2022 Advancing regenerative food systems at scale
[ONLINE] Available at: <https://www.nestle.com/sites/default/files/2023-03/creating-shared-value-sustainability-report-2022-en.pdf>

530

Patton, D. (2019) Danish pork producer opens factory amid huge meat shortage. *Reuters*. 11 September.
[ONLINE] Available at: <https://www.reuters.com/article/idUSKCN1VWIBM/>

531

Danish Crown (n.d.) Danish Crown boost sales in South East Asia.
[ONLINE] Available at: <https://www.danishcrown.com/da-dk/kontakt/presse-og-nyheder/nyhedsarkiv/danish-crown-boosts-sales-in-southeast-asia/>

532

Changing Markets Foundation (2018) *Growing the Good: The case for low-carbon transition in the food sector*
[ONLINE] Available at: https://changingmarkets.org/wp-content/uploads/2023/10/Growing_the_Good-The_Case_for_Low-Carbon_Transition_in_the_Food_Sector.pdf

533

Sherrington, R. (2021) Revealed: Two Thirds of Online Posts from Six Major European Fossil Fuel Companies ‘Greenwashing’. *DeSmog*, 3 October.
[ONLINE] Available at: <https://www.desmog.com/2021/10/03/european-energy-companies-greenwashing/>

534

Pearce, F. (2008) Greenwash: BP and the myth of a world ‘Beyond Petroleum’. *The Guardian*, 20 November.
[ONLINE] Available at: <https://www.theguardian.com/environment/2008/nov/20/fossilfuels-energy>

535

Lewis, M. (2022) Oil giant Total rebrands as TotalEnergies, but some call it a greenwash, *Elektrek Energy Brief*, 31 May.
[ONLINE] Available at: <https://electrek.co/2021/05/31/egeb-oil-giant-total-rebrands-as-totalenergies-but-some-call-it-a-greenwash/>

536

Greenpeace International (2023) ‘Greenwashing garbage’: Europe’s Dirty Dozen oil and gas companies produce only 0.3% renewable energy despite deceptive net zero pledges
[ONLINE] Available at: <https://www.greenpeace.org/international/press-release/61420/greenwashing-garbage-europes-dirty-dozen-oil-gas-companies-produce-renewable-energy-despite-net-zero-pledges/>

537

Addy, R. (2016) Danish Crown sustained by demand from Asia. *Food Navigator*, 23 November.
[ONLINE] Available at: <https://www.foodnavigator.com/Article/2016/11/23/Danish-Crown-sustained-by-demand-from-Asia#>

538

New Climate Institute (2024) Corporate Climate Responsibility Monitor 2024: Assessing the Transparency and Integrity of Companies’ Emission Reduction and Net Zero Targets
[ONLINE] Available at: https://newclimate.org/sites/default/files/2024-04/NewClimate_CCRM2024.pdf

539

Lamb, W. F. Mattioli, G. Levi, S. Roberts, T. Capstick, S. Creutzig, F. Minx, J. C. Müller-Hansen, F. Culhane, T. Steinberger, J. K. (2020). Discourses of climate delay. *Global Sustainability*, 3(e17):1–5.
[ONLINE] Available at: <https://www.cambridge.org/core/journals/global-sustainability/article/discourses-of-climate-delay/>

540

Ministry for the Environment (n.d.) *Agriculture emissions and climate change*.
[ONLINE] Available at: <https://environment.govt.nz/facts-and-science/climate-change/agriculture-emissions-climate-change>

541

Gibson, E. (2023) New Zealand’s biggest climate polluters, ranked. *Stuff*.
[ONLINE] Available at: <https://www.stuff.co.nz/environment/climate-news/130991637/new-zealands-biggest-climate-polluters-ranked>

542

Fonterra (2023) *Review of FY23 Performance*. Fonterra Cooperative Group.
[ONLINE] Available at: <https://www.fonterra.com/content/dam/fonterra-public-website/fonterra-new-zealand/documents/pdf/financial-results/fy23/fcg-review-of-fy23-performance-october-2023.pdf>

543

Fonterra (2021) *Sustainability Performance Report 2021*.
[ONLINE] Available at: <https://view.publitas.com/fonterra/fonterra-sustainability-report-2021/page/62-63>

544

UNFCCC (n.d.) *Greenhouse Gas Inventory Data*.
[ONLINE] Available at: https://di.unfccc.int/time_series

545

Ministry for the Environment (2023) *About the New Zealand Emissions Trading Scheme*. [online] Available at: <https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/ets/about-nz-ets/>

546

Ministry for the Environment (n.d.) *Agriculture emissions and climate change*.
[ONLINE] Available at: <https://environment.govt.nz/facts-and-science/climate-change/agriculture-emissions-climate-change>

547

Environmental Defense Fund. (n.d.) *Methane: A crucial opportunity in the climate fight*.
[ONLINE] Available at: <https://www.edf.org/climate/methane-crucial-opportunity-climate-fight>

548

Stats NZ (n.d.) *New Zealand Trade Dashboard*.
[ONLINE] Available at: https://statisticsnz.shinyapps.io/trade_dashboard/

549

Ministry for the Environment (n.d.) *New Zealand’s Greenhouse Gas Inventory 1990–2021 snapshot*.
[ONLINE] Available at: <https://environment.govt.nz/publications/new-zealands-greenhouse-gas-inventory-19902021-snapshot>

550

Ministry for the Environment (n.d.) *New Zealand’s Greenhouse Gas Inventory 1990–2021 snapshot*.

551

Ministry for the Environment (2006) New Zealand’s Fourth National Communication under the United Nations Framework Convention on Climate Change.
[ONLINE] Available at: <https://unfccc.int/resource/docs/natc/nzInc4.pdf>

552

The Beehive (n.d.) *Agricultural greenhouse gas research levy is modest and fair*.
[ONLINE] Available at: <https://www.beehive.govt.nz/release/agricultural-greenhouse-gas-research-levy-modest-and-fair>

553

The Beehive (n.d.) *Agricultural greenhouse gas research levy is modest and fair*.

554

Mandow, N. (2022) Tractor protests and hot air: Our greatest emitters put up the biggest fight. *Newsroom*, 22 October 2022
[ONLINE]. Available at: <https://newsroom.co.nz/2022/08/22/tractor-protests-and-hot-air>

555

Singh, N. (2003) Smells like trouble. *Down To Earth*, 15 August
[ONLINE] Available at: <https://www.downtoearth.org.in/news/smells-like-trouble-13305>

556

NZ Herald (2003) Farmers continue protest against ‘ridiculous’ tax. 19 August
[ONLINE] Available at: <https://www.nzherald.co.nz/nz/farmers-continue-protest-against-ridiculous-tax/KLS7T46XMTWDRD4DANUCM3JNB4>

557

NZ Herald (2003.) Farmers invade capital for ‘fart tax’ protest. 4 September
[ONLINE] Available at: <https://www.nzherald.co.nz/nz/farmers-invade-capital-for-fart-tax-protest/6OAPZ5KHG2OT2O5EVCGIOKN4IU>

558

The Beehive. (n.d.) *Agricultural greenhouse gas research levy is modest and fair*.

559

Dann, L. (2003) Hodgson backs down on fart tax. *NZ Herald*, 16 October
[ONLINE] Available at: <https://www.nzherald.co.nz/nz/hodgson-backs-down-on-fart-tax/ESHWSBWAYR57TYZLVWA2NZABKA>

560

MOU (n.d.)
[ONLINE] Available at: <https://www.pggrc.co.nz/files/pggrc-mou.pdf>

561

Rimmer, D. (2016) Breakdown of governance: A critical analysis of New Zealand’s climate change Response.
[ONLINE] Available at: https://mro.massey.ac.nz/bitstream/handle/10179/11438/02_whole.pdf

562

Federated Farmers of New Zealand (2022) Feds: High price on NZ farmers will increase global emissions. 2 February
[ONLINE] Available at: https://fedfarm.org.nz/FFPublic/FFPublic/Media-Releases/2022/Feds_High_price_on_NZ_farmers_will_increase_global_emmissions.aspx

563

Ministry for Primary Industries (2020) Government and industry partners release report on biological emissions.
[ONLINE] Available at: <https://www.mpi.govt.nz/news/media-releases/government-and-industry-partners-release-report-on-biological-emissions>

564

Parliamentary Commissioner for the Environment (2023) *Letter to DairyNZ, Beef + Lamb NZ and Federated Farmers about submission on agricultural emissions*.
[ONLINE] Available at: <https://pce.parliament.nz/publications/letter-to-dairynz-beef-plus-lamb-nz-and-federated-farmers-about-submission-on-agricultural-emissions>

565

Leining, C. (2016) Major milestones of the New Zealand Emissions Trading Scheme. *Motu*.
[ONLINE] Available at: <https://www.motu.nz/our-research/environment-and-resources/emission-mitigation/shaping-new-zealands-low-emissions-future/major-milestones-of-the-new-zealand-emissions-trading-scheme>

566

Environment Guide (n.d.) *Climate Change Response Act 2002*.
[ONLINE] Available at: <https://www.environmentguide.org.nz/issues/climate-change/domestic-law/climate-change-response-act-2002>

567

Ministry for Primary Industries (n.d) *Agriculture in the New Zealand emissions trading scheme*.
[ONLINE] Available at: <https://www.mpi.govt.nz/dmsdocument/26965-agriculture-in-the-new-zealand-emissions-trading-scheme>

568

Norman, R. (2023) Predatory delay of climate action by Fonterra, DairyNZ and FedFarmers. *Greenpeace*, 11 May
[ONLINE] Available at: <https://www.greenpeace.org/aotearoa/story/predatory-delay-climate-action-fonterra-dairynz-federated-farmers>

569

Rautner, M. (2023) New Zealand methane lobbying and history. Unpublished research

570

DairyNZ (2012) New Zealand Dairy Statistics 2011 – 12. Table 2.2
[ONLINE] Available at <https://d1r5hvvxe7dolz.cloudfront.net/media/documents/DAIRY-STATISTICS-11-12.pdf>

571

NZ Herald (2011) Fonterra increases milk payout - \$10b coming to farmers.
[ONLINE] Available at: <https://www.nzherald.co.nz/business/fonterra-increases-milk-payout-10b-coming-to-farmers/NXKFLYPWAX33X7GVAATFL6VNGQ>

572

Wallace, N. (2008) Milk payout up, but prices may rise. *Otago Daily Times Online News*. 3 June
[ONLINE]. Available at: <https://www.odt.co.nz/business/farming/milk-payout-prices-may-rise>

573

Leining, C. and Kerr, S. (2018) *A guide to the New Zealand Emissions Trading Scheme summary haiku*.
[ONLINE] Available at: <https://www.motu.nz/assets/Documents/our-research/environment/climate-change-mitigation/emissions-trading/A-Guide-to-the-New-Zealand-Emissions-Trading-System-2018-Motu-Research.pdf>

574

Bramwell, C. (2015) Agriculture left out of emissions review. *RNZ*, 25 November
[ONLINE] Available at: <https://www.mz.co.nz/news/political/290485/agriculture-left-out-of-emissions-review>

575

Bennet, A. (2010) Farmers may win ETS reprieve. *NZ Herald*, 17 November
[ONLINE] Available at: <https://www.nzherald.co.nz/business/farmers-may-win-ets-reprieve/S5FE42CJSP2AELB4GXFSEB65HI>

576

NZPA (2011) Farming backlash over carbon tax. *Hawke's Bay Today*, 1 August
[ONLINE] Available at: <https://www.nzherald.co.nz/hawkes-bay-today/news/farming-backlash-over-carbon-tax/R324YLZLCD3QJSLV2IDDQV5WE>

577

Wright, G. (2022) New Zealand proposes taxing cow burps to reduce emissions. *BBC News*, 11 October
[ONLINE] Available at: <https://www.bbc.co.uk/news/world-asia-63211506>

578

Federated Farmers of New Zealand (n.d.). *Government's farm emissions plan - say goodbye small town New Zealand*.
[ONLINE] Available at: <https://www.fedfarm.org.nz/FFPublic/FFPublic/Media-Releases/2022/Governments-farm-emissions-plan---say-goodbye-small-town-New-Zealand.aspx>

579

Cardwell, H. (2022) No certainty global emission 'leakage' will come from reduced dairy exports. *RNZ*, 15 October
[ONLINE] Available at: <https://www.rnz.co.nz/news/national/476749/no-certainty-global-emission-leakage-will-come-from-reduced-dairy-exports>

580

Federated Farmers of New Zealand (n.d.). *Government's farm emissions plan - say goodbye small town New Zealand*.

581

Cardwell, H. (2022) No certainty global emission 'leakage' will come from reduced dairy exports.

582

Small, V. (2017) Jacinda Ardern's climate change challenge. *Stuff*, 20 August
[ONLINE] Available at: <https://www.stuff.co.nz/national/politics/95964245/jacinda-arderns-climate-change-challenge>

583

RNZ. (2017). *Labour reveals climate plan details*.
[ONLINE] Available at: <https://www.rnz.co.nz/news/political/338979/labour-reveals-climate-plan-details>

584

Labour. (n.d.) Coalition Agreement, New Zealand Labour Party and New Zealand First.
[ONLINE] Available at: <https://www.parliament.nz/media/4486/362429780labourandnewzealandfirstcoalitionagreement.pdf>

585

Johnston, K. (2023) Crown vs Cow: The inside story of how we failed to regulate our worst climate polluter. *RNZ*, 17 August
[ONLINE] Available at: <https://www.rnz.co.nz/programmes/in-depth-special-projects/story/2018902262/crown-vs-cow-the-inside-story-of-how-we-failed-to-regulate-our-worst-climate-polluter>

586

Johnston, K. (2023) Crown vs Cow: The inside story of how we failed to regulate our worst climate polluter.

587

Harman, R. (2019) Farm leaders win Government backdown. *Politik*, 24 October.
[ONLINE] Available at: <https://www.politik.co.nz/farm-leaders-win-government-backdown/>

588

Norman, R. (2023) Predatory delay of climate action by Fonterra, DairyNZ and FedFarmers.

589

Ministry for the Environment. (n.d.) *Te tātai utu o ngā tukunga ahuwhenua – Pricing agricultural emissions: A snapshot of the consultation*.
[ONLINE] Available at: <https://environment.govt.nz/assets/publications/Pricing-agricultural-emissions-summary-of-the-consultation.pdf>

590

Daalder, M. (2022) Farm pricing to cut emissions by just 1 percent. *Newsroom*, 8 June
[ONLINE] Available at: <https://newsroom.co.nz/2022/06/08/farm-plan-still-cuts-emissions-by-just-1-percent>

591

Forest and Bird (2021) *He Waka Eke Noa admits agriculture scheme won't cut emissions*.
[ONLINE] Available at: <https://www.forestandbird.org.nz/resources/he-waka-eke-noa-admits-agriculture-scheme-wont-cut-emissions>

592

Federated Farmers of New Zealand (n.d.) *Government's farm emissions plan - say goodbye small town New Zealand*.

593

Oram, R. (2019) Fed Farmers' dangerous climate strategy. *Newsroom*, 24 August
[ONLINE] Available at: <https://newsroom.co.nz/2019/08/24/fed-farmers-dangerous-strategy>

594

Hollingworth, A. (2023) Farmers at Groundswell protest furious over climate regulations, but unconvinced by politicians' pitches. *Newshub*, 1 October [online] Available at: <https://www.newshub.co.nz/home/politics/2023/10/election-2023-farmers-at-groundswell-protest-furious-over-climate-regulations-but-unconvinced-by-politicians-pitches.html>

595

Ministry for Environment (2022) Pricing Agricultural Emissions.
[ONLINE] Available at: <https://consult.environment.govt.nz/climate/agriculture-emissions-and-pricing>

596

RNZ (2022) Federated Farmers still opposed to agriculture pricing scheme.
[ONLINE] Available at: <https://www.rnz.co.nz/national/programmes/morningreport/audio/2018872162/federated-farmers-still-opposed-to-agriculture-pricing-scheme>

597

Norman, R. (2023). Predatory delay of climate action by Fonterra, DairyNZ and FedFarmers.

598

Whyte, A. (2023) He Waka Eke Noa is 'dead', says National, while Government has 'no intention' of walking away. *The Post*, 6 June
[ONLINE] Available at: <https://www.thepost.co.nz/politics/350018509/he-waka-eke-noa-dead-says-national-while-government-has-no-intention-walking>

599

Watts, S. (2023). National will meet NZ's climate change targets. *New Zealand National Party*, 12 June
[ONLINE]. Available at: https://www.national.org.nz/national_will_meet_nzs_climate_change_targets

600

Beehive (2023) *Rebuild the economy and ease the cost of living 100-day plan*.
[ONLINE] Available at: <https://www.beehive.govt.nz/sites/default/files/2023-12/100%20Day%20Plan%20%281%29.pdf>.

601

Greenpeace Aotearoa (2023) *National's 100-day plan strips back progress*.
[ONLINE] Available at: <https://www.greenpeace.org/aotearoa/story/national-led-governments-100-day-plan-strips-back-progress>

602

Ministry for the Environment (2024) *About our Emissions Reduction Plan*.
[ONLINE] Available at: <https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/emissions-reductions/erp>

603

Daalder, M. (2024) Govt sidelines Climate Commission in seeking do-over of advice. *Newsroom*, 8 April
[ONLINE] Available at: <https://newsroom.co.nz/2024/04/08/govt-sidelines-climate-commission-in-seeking-do-over-of-advice>

604

1News (2023) New MP intake heavy on farmers, light on unionists. 29 October
[ONLINE] Available at: <https://www.1news.co.nz/2023/10/29/new-mp-intake-heavy-on-farmers-light-on-unionists>

605

Mrdul, A. (2024) Māori Leader Wins NZ Court Appeal vs Dairy & Fossil Fuel Companies. *Green Queen*, 10 February
[ONLINE] Available at: <https://www.greenqueen.com.hk/new-zealand-climate-change-court-case-smith-v-fonterra>

606

Fonterra (2023) *Fonterra announces climate plans for the future*.
[ONLINE] Available at: <https://www.fonterra.com/nz/en/our-stories/media/fonterra-announces-climate-plans-for-the-future.html>.

607

Wannan, O. (2023) Fonterra pledges to make milk production 30% greener by 2030. *Stuff*, 8 November [online] Available at: <https://www.stuff.co.nz/environment/climate-news/133258547/fonterra-pledges-to-make-milk-production-30-greener-by-2030>

608

Ipsos (2023) *Ipsos NZ 2023 Global Advisor Climate Change Report*.
[ONLINE] Available at: <https://www.ipsos.com/en-nz/ipsos-nz-2023-global-advisor-climate-change-report>

609

Vallone, S. Lambin, E.F. (2023) Public policies and vested interests preserve the animal farming status quo at the expense of animal product analogs, in *One Earth* 6, 1213–1226, <https://www.cell.com/action/showPdf?pii=S2590-3322%2823%2900347-0> p.1

610

Vallone, S. Lambin, E.F. (2023) Public policies and vested interests preserve the animal farming status quo at the expense of animal product analogs, in *One Earth* 6, 1213–1226, <https://www.cell.com/action/showPdf?pii=S2590-3322%2823%2900347-0> p.1

611

Torrella, K. (2023) The myths we tell ourselves about American farming: Agricultural exceptionalism," explained, Vox,
[ONLINE] Available at: <https://www.vox.com/future-perfect/2023/8/31/23852325/farming-myths-agricultural-exceptionalism-pollution-labor-animal-welfare-laws>

612

Torrella, K. (2023) The myths we tell ourselves about American farming: Agricultural exceptionalism," explained, Vox,
[ONLINE] Available at: <https://www.vox.com/future-perfect/2023/8/31/23852325/farming-myths-agricultural-exceptionalism-pollution-labor-animal-welfare-laws>

613

Changing Markets Foundation (2023) *Feeding Us Greenwash: An analysis of misleading claims in the food sector* Available at: <https://changing-markets.org/report/feeding-us-greenwash-an-analysis-of-misleading-claims-in-the-food-sector/>

614

Sophia Murphy., and S.Hansen-Kuhn, K. (2017) *Counting the Costs of Agricultural Dumping*. Institute for Agriculture & Trade Policy, June, page 4.
[ONLINE] Available at: https://www.iatp.org/sites/default/files/2017-06/2017_06_26_DumpingPaper.pdf

615

Ritchie, H. (2023) How many animals are factory-farmed? Our World in Data.
[ONLINE] Available at: <https://ourworldindata.org/how-many-animals-are-factory-farmed>

616

Animal Equality (n.d.) You Can End Factory Farming.
[ONLINE] Available at: https://animalequality.org/campaign/end-factory-farming/?utm_source=website&utm_medium=cta

617

Vallone, S. Lambin, E.F. (2023) Public policies and vested interests preserve the animal farming status quo at the expense of animal product analogs, in *One Earth* 6, 1213–1226, <https://www.cell.com/action/showPdf?pii=S2590-3322%2823%2900347-0>

618

Vallone, S. Lambin, E.F. (2023) Public policies and vested interests preserve the animal farming status quo at the expense of animal product analogs, in *One Earth* 6, 1213–1226, <https://www.cell.com/action/showPdf?pii=S2590-3322%2823%2900347-0>

619

Carrington, D. (2023) Vast fossil fuel and farming subsidies causing 'environmental havoc'. *The Guardian*, 15 June
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/jun/15/vast-fossil-fuel-and-farming-subsidies-causing-environmental-havoc-world-bank>

620

Environmental Working Group (2023) *Despite record farm income and subsidies, some seek even more handouts*. 28 September
[ONLINE] Available at: <https://www.ewg.org/news-insights/news/2023/09/despite-record-farm-income-and-subsidies-some-seek-even-more-handouts>

621

Iowa State University Center for Agriculture and Rural Development (2001)The Concentration of U.S. Agricultural Subsidies. *Iowa Ag Review*, 7 (4),
[ONLINE] Available at: https://www.card.iastate.edu/iowa_ag_review/fall_01/concentration.aspx

622

Environmental Working Group (2023) Despite new climate-smart funds, agricultural conservation programs remain oversubscribed. 12 September
[ONLINE] Available at: <https://www.ewg.org/news-insights/news/2023/09/despite-new-climate-smart-funds-agricultural-conservation-programs>

623

Legal Defence Fund (2024) Black Farmers FAQ, Legal Defence Fund, 2024.
[ONLINE] Available at: <https://www.naacpldf.org/case-issue/black-farmers-faq/>;

624

Thomas J. Vilsack (2021) From Vilsack to all U.S. Department of Agriculture Employees: *Our Commitment to Civil Rights* [Letter], 29 March 2021,
[ONLINE] Available at: <https://www.usda.gov/oascr/our-commitment-to-civil-rights>

625

Sentient Policy (2023) What Farm Subsidies Are and Why They Matter, Explained, 11 August,
[ONLINE] Available at: <https://sentientmedia.org/why-are-farmers-subsidized/>

626

Friends of the Earth (2017) Friends of the Earth Supports Alternative Farm Bill. 16 November
[ONLINE] Available at: <https://foe.org/news/8734-2/>

627

Environmental Working Group (2023) *Despite new climate-smart funds, agricultural conservation programs remain oversubscribed*.
[ONLINE] Available at: <https://www.ewg.org/news-insights/news/2023/09/despite-new-climate-smart-funds-agricultural-conservation-programs>

628

Murphy,S., and Hansen-Kuhn, K. *Counting the Costs of Agricultural Dumping*. Institute for Agriculture & Trade Policy
[ONLINE] Available at: https://www.iatp.org/sites/default/files/2017-06/2017_06_26_DumpingPaper.pdf

629

New York Times (2020) *E.U. Defends Farm Subsidy Program Exploited by Autocrats*, 27 August
[ONLINE] Available at: <https://www.nytimes.com/2019/11/04/world/europe/EU-farm-subsidy.html>

630

Herman, C. (2024) The real deal behind Europe's farmer protests, *Birdlife International* 1 February 2024
[ONLINE] Available at: <https://www.birdlife.org/news/2024/02/01/the-real-deal-behind-europes-farmer-protests/>

631

Sherrington, R. (2024) Are Europe's Farmers Protesting Green Reforms? It's Complicated. *DeSmog*, 7 February
[ONLINE] Available at: <https://www.desmog.com/2024/02/07/are-europes-farmers-protesting-green-reforms-its-complicated/>

632

Brunner, A. (2024) Disinformation is fuelling Europe's farming protests, *Inside Track*, 19 February
[ONLINE] Available at: <https://greenallianceblog.org.uk/2024/02/19/disinformation-is-fuelling-europes-farming-protests>

633

Greenpeace European Unit (2018) *Out of Balance: Industry links in the European Parliament Agriculture Committee*.
[ONLINE] Available at: <https://www.greenpeace.org/static/planet4-eu-unit-stateless/2018/08/66d83622-66d83622-20180524-out-of-balance-industry-links-eu-agri-committee.pdf>

634

Herman, C. (2024) The real deal behind Europe's farmer protests, *Birdlife International* 1 February 2024
[ONLINE] Available at: <https://www.birdlife.org/news/2024/02/01/the-real-deal-behind-europes-farmer-protests/>

635

Kortleve, A. J., Mogollón, J. M., Harwatt, H., and Behrens, P. (2023) Over 80% of the European Union's Common Agricultural Policy supports emissions-intensive animal products. *Nature Food*, 5: 288-292
[ONLINE] Available at: <https://www.nature.com/articles/s43016-024-00949-4>

636

European Parliament (n.d.) Financing of the CAP: facts and figures
[ONLINE] Available at: <https://www.europarl.europa.eu/factsheets/en/sheet/106/financing-of-the-cap#>

637

Greenpeace European Unit (2018) *Out of Balance: Industry links in the European Parliament Agriculture Committee*.
[ONLINE] Available at: <https://www.greenpeace.org/static/planet4-eu-unit-stateless/2018/08/66d83622-66d83622-20180524-out-of-balance-industry-links-eu-agri-committee.pdf>

638

New York Times (2019) Who Keeps Europe's Farm Billions Flowing? Often, Those Who Benefit, 11 December
[ONLINE] Available at: <https://www.nytimes.com/2019/12/11/world/europe/eu-farm-subsidy-lobbying.html>

639

New York Times (2019) Who Keeps Europe's Farm Billions Flowing? Often, Those Who Benefit, 11 December
[ONLINE] Available at: <https://www.nytimes.com/2019/12/11/world/europe/eu-farm-subsidy-lobbying.html>

640

New York Times (2019) The Money Farmers: How Oligarchs and Populists Milk the E.U. for Millions, 3 November
[ONLINE] Available at: <https://www.nytimes.com/2019/11/03/world/europe/eu-farm-subsidy-hungary.html?action=click&module=Top%20Stories&pg-type=Homepage>

641

Greens/EFA (2021) *Where Does the EU Money Go? An Analysis of the Implementation of CAP Funds in Bulgaria, the Czech Republic, Hungary, Slovakia and Romania*.
[ONLINE] Available at: <https://www.arc2020.eu/wp-content/uploads/2021/03/where-does-the-money-go.pdf>

642

Curation (2023) *US and EU subsidies for meat and dairy dwarf spending on plant-based alternatives*.
[ONLINE] Available at: <https://curationcorp.com/blog/us-and-eu-subsidies-for-meat-and-dairy-dwarf-spending-on-plant-based-alternatives/>

643

Vallone, S. Lambin, E. F. (2023) Public policies and vested interests preserve the animal farming status quo at the expense of animal product analogs. *OneEarth* 6(9)1213-1226
[ONLINE] Available at: [https://www.cell.com/one-earth/fulltext/S2590-3322\(23\)00347-0](https://www.cell.com/one-earth/fulltext/S2590-3322(23)00347-0)

644

Vallone, S. Lambin, E. F. (2023) Public policies and vested interests preserve the animal farming status quo at the expense of animal product analogs.

645

Environmental Working Group. (n.d.) Total Commodity Subsidies in the United States.
[ONLINE] Available at: <https://farm.ewg.org/progdetail.php?fips=00000&progcode=totalfarm®ionname=theUnitedState s>

646

Amadeo, K. (2022). U.S. Federal Government Tax Revenue: Who really pays the bills? The Balance Money.
[ONLINE] Available at: <https://www.thebalancemoney.com/current-u-s-federal-government-tax-revenue-3305762>

647

Elbein, S. (2023). Americans want farm subsidies to go to human food, not animal feed: survey. *The Hill*.
[ONLINE] Available at: <https://thehill.com/policy/equilibrium-sustainability/3841276-americans-want-farm-subsidies-to-go-to-human-food-not-animal-feed-survey>

648

Elbein, S. (2023). Americans want farm subsidies to go to human food, not animal feed: survey.

649

Simon, F. (2019) EU Commission unveils 'European Green Deal': The key points. *Euractiv* 11 December
[ONLINE] Available at: <https://www.euractiv.com/section/energy-environment/news/eu-commission-unveils-european-green-deal-the-key-points/>

650

Simon, F. (2019) EU Commission unveils 'European Green Deal': The key points.

651

European Commission (2020) *Farm to Fork Strategy: For a fair, healthy and environmentally-friendly food system*.
[ONLINE] Available at: https://food.ec.europa.eu/system/files/2020-05/f2f_action-plan_2020_strategy-info_en.pdf

652

European Commission, *Farm to Fork Strategy: About the strategy, European Commission, Food, Farming and Fisheries*. Accessed: 10 April 2024.
[ONLINE] Available at: https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en

653

Foote, N. (2020) Farm to Fork strategy softens stance on meat but backs alternative proteins. *Euractiv*, 22 May 2020.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/farm-to-fork-strategy-softens-stance-on-meat-but-backs-alternative-proteins/>

654

Wax, E. (2021) MEPs vote on EU's green food plan amid lobbying blitz. *Politico*, October
[ONLINE] Available at: <https://www.politico.eu/article/meps-vote-eus-green-food-plan-farm-to-fork/>

655

Arboleas, M.S. (2023) 'Ciao' cows: Cattle excluded from EU's industrial emissions cut plan. *Euractiv*, 30 November.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/ciao-cows-cattle-excluded-from-eus-industrial-emissions-cut-plan/>

656

Foote, N. (2023) Agri Commissioner admits data weakness in EU plans to slash emissions, *Euractiv* 8 March,
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/agri-commissioner-admits-data-weakness-in-eu-plans-to-slash-emissions/>

657

Tolotto, M. (2023) EU Strategy is failing to tackle the biggest methane emitter: agriculture. *EEB*
[ONLINE] Available at: <https://meta.eeb.org/2020/10/13/the-european-commissions-methane-strategy-is-failing-to-tackle-the-biggest-methane-emitter-agriculture/>

658

European Parliament (2024) EU ‘farm to fork’ strategy: State of play, February 2024,
[ONLINE] Available at: [https://www.europarl.europa.eu/RegData/etudes/ATAG/2021/690622/EPRS_ATA\(2021\)690622_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2021/690622/EPRS_ATA(2021)690622_EN.pdf)

659

16.1 Commissioner Wojciechowski and 12 agri-food organisations (2022). ‘Annual work programme and the revision of the promotion policy’. *Minutes of meeting between Commissioner Wojciechowski and agri-food organisations on 2022 annual work programme and the revision of the promotion policy*, 27 January 2022 , European Commission. [Partial Redacted version]
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2

660

16.1 Commissioner Wojciechowski and 12 agri-food organisations (2022). ‘Annual work programme and the revision of the promotion policy’. *Minutes of meeting between Commissioner Wojciechowski and agri-food organisations on 2022 annual work programme and the revision of the promotion policy*, 27 January 2022 , European Commission. [Partial Redacted version]
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2

661

European Parliament (2023) *European Parliament resolution of 9 May 2023 on the implementation of the school scheme*.
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/TA-9-2023-0135_EN.html

662

Lyumbomirova, T. (2023) No plant-based dairy in EU schools, says the European Parliament, *Dairy Reporter*, 18 May 2023.
[ONLINE] Available at: <https://www.dairyreporter.com/Article/2023/05/18/no-plant-based-dairy-in-eu-schools-says-the-european-parliament>

663

Agrifood Hub and Andrés, P. (2023) Agrifood Brief: Spill the milk. *Euractiv*, 31 March 2023.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/agrifood-brief-spill-the-milk/>

664

European Commission (n.d.) *Review of the EU school fruit, vegetables, and milk scheme: About this initiative*.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12970-Review-of-the-EU-school-fruit-vegetables-and-milk-scheme_en [Accessed: April 2024.]

665

Byrne, J. (2024) Commission announces U-turn on bill to slash pesticide us in EU. *Feed Navigator*, 7 February 2024.
[ONLINE] Available at:<https://www.feednavigator.com/Article/2024/02/07/commission-withdraws-eu-pesticide-reduction-bill>

666

Corporate Europe Observatory (2023) *Sabotaging EU Pesticide Reduction Law (SUR): Pesticide industry lobby’s reckless assault on biodiversity and health*.
[ONLINE] Available at: <https://corporateeurope.org/en/2023/11/sabotaging-eu-pesticide-reduction-law-sur>

667

Henley, J., Jones, S., and Tondo, L. (2024) ‘Symbol of polarisation’: EU scraps plans to halve use of pesticides. *The Guardian*, 6 February 2024.
[ONLINE] Available at: <https://www.theguardian.com/environment/2024/feb/06/symbol-of-polarisation-eu-scraps-plans-to-halve-use-of-pesticides>

668

Foote, N. (2023) Leaked Commission agenda sounds death knell for missing Farm to Fork files. *Euractiv*, 16 October 2023.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/leaked-commission-agenda-sounds-death-knell-for-missing-farm-to-fork-files/>

669

Foote, N. (2023) NGOs urge EU not to abandon flagship sustainable food systems law. *Euractiv*, 7 September 2023.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/ngos-urge-eu-not-to-abandon-flagship-sustainable-food-systems-law/>

670

Slow Food (2023) *To the European Commission: We Want A Strong Sustainable Food Systems Law, Now*.
[ONLINE] Available at: <https://www.slowfood.com/blog-and-news/to-the-european-commission-we-want-a-strong-sustainable-food-systems-law-now-2/>

671

FoodWatch (2023) Farm to flop – One year before the end of the Green Deal, 15 February 2023.
[ONLINE] Available at: <https://www.foodwatch.org/en/farm-to-flop-one-year-before-the-end-of-the-green-deal>

672

Mathiesen, K., and Wax, E. (2024) Facing farm protests, EU eases demands in 2040 climate proposal. *Politico*, 6 February 2024.
[ONLINE] Available at: <https://www.politico.eu/article/eu-eases-farming-demands-in-2040-climate-proposal/>

673

Copa-Cogeca (2024) EU 2040 climate target and carbon management Communications – A dialogue with farmers has finally been chosen! 6 February 2024.
[ONLINE] Available at: <https://copa-cogeca.eu/Flexpage/DownloadFile/?id=13486103>

674

Brzezinski, B. and Mathiesen, K. (2024) EU dumped lab meats from climate plans on farm chief’s demand. *Politico*, 9 February 2024
[ONLINE] Available at: <https://www.politico.eu/article/eu-lab-meat-climate-plan-agriculture-commissioner-janusz-wojciechowski/>

675

Copa-Cogeca (2024) EU 2040 climate target and carbon management Communications – A dialogue with farmers has finally been chosen! 6 February 2024.
[ONLINE] Available at: <https://copa-cogeca.eu/Flexpage/DownloadFile/?id=13486103>

676

Compassion in World Farming (2024) *End the Cage Age: We want empty cages*.
[ONLINE] Available at: <https://endthecageage.eu/en/> [Accessed March 2024]

677

European Union (n.d.) *European Citizens Initiative: End the Cage Age*.
[ONLINE] Available at: https://citizens-initiative.europa.eu/initiatives/details/2018/000004/end-cage-age_en [Accessed March 2024]

678

Dahm, J. (2023) Commission tables a fraction of promised animal welfare package. *Euractiv*, 7 December 2023.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/commission-tables-a-fraction-of-promised-animal-welfare-package/>

679

Foote, N. (2023) Leaked Commission agenda sounds death knell for missing Farm to Fork files. *Euractiv*, 16 October 2023.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/leaked-commission-agenda-sounds-death-knell-for-missing-farm-to-fork-files/>

680

European Commission (2023) *Eurobarometer shows how important Animal Welfare is for Europeans*
[ONLINE] Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4951

681

Lighthouse Reports (2023) *Animal welfare wrecked*.
[ONLINE] Available at: <https://www.lighthousereports.com/investigation/animal-welfare-wrecked/>.

682

EU Scream: Politics Podcast from Brussels (2023) *Big Meat’s Big Win in Europe*.
[ONLINE] Available at: <https://euscream.com/big-meats-big-win-in-europe/>

683

European Environment Bureau (2023) *Weber fails to derail EU Green Deal, but Parliament agrees to a weakened Nature Restoration Law*.
[ONLINE] Available at: <https://eeb.org/weber-fails-to-derail-eu-green-deal-but-parliament-agrees-to-a-weakened-nature-restoration-law/>

684

Politico (2023) *Parliament backs new EU nature law in blow to conservatives*.
[ONLINE] Available at: <https://www.politico.eu/article/parliament-backs-new-nature-rules-in-blow-to-eu-conservatives/>

685

592 European Environment Bureau (2023) *Weber fails to derail EU Green Deal, but Parliament agrees to a weakened Nature Restoration Law*.
[ONLINE] Available at: <https://eeb.org/weber-fails-to-derail-eu-green-deal-but-parliament-agrees-to-a-weakened-nature-restoration-law/>

686

Copa-Cogeca and Europeche (2023) *Joint Press Release: United call for rejection of unrealistic nature legislation that endangers farmers and fishers' livelihoods and food production in the EU.*
[ONLINE] Available at: <https://copa-cogeca.eu/Flexpage/DownloadFile/?id=13428537>

687

WWF (2024) *Historic win for EU's nature: EU Council seals the deal on Nature Restoration Law*
[ONLINE] Available at: <https://www.wwf.eu/?14108441/Historic-win-for-EUs-nature-EU-Council-seals-the-deal-on-Nature-Restoration-Law> - :::text=Today, after a nail-biting,climate action, citizens and future

688

Foote, N. (2021) Soils to receive same legal status as air, water in first EU-wide soil health law. *Euractiv*, 17 November 2021.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/soils-to-receive-same-legal-status-as-air-water-in-first-eu-wide-soil-health-law/>

689

EEB et al. (2023) *Open letter to Commissioners regarding the Soil Health Law proposal publication delay.*
[ONLINE] Available at: <https://eeb.org/library/delay-soil-health-law-proposal/>

690

Dahm, J. (2023) Commission tables first EU soil law, slammed for 'lacking ambition'. *Euractiv*, 5 July 2023.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/commission-tables-first-eu-soil-law-slammed-for-lacking-ambition/>

691

Dahm, J. (2023) Commission tables first EU soil law, slammed for 'lacking ambition'.

692

European Parliament (2024) BRIEFING EU Legislation in Progress: Soil monitoring and resilience directive, January 2024,
[ONLINE] Available at: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2024/757627/EPRS_BRI\(2024\)757627_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2024/757627/EPRS_BRI(2024)757627_EN.pdf)

693

European Commission (2020) *Farm to Fork Strategy.*
[ONLINE] Available at: https://food.ec.europa.eu/system/files/2020-05/f2f_action-plan_2020_strategy-info_en.pdf

694

European Commission (n.d.) *Zero pollution action plan.*
[ONLINE] Available at: https://environment.ec.europa.eu/strategy/zero-pollution-action-plan_en,

695

European Commission (n.d.) *Biodiversity Strategy.*
[ONLINE] Available at: https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en;

696

European Commission (n.d.) *The European Green Deal: Striving to be the first climate-neutral continent.*
[ONLINE] Available at: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

697

Legislative framework for sustainable food systems (n.d.)
[ONLINE] Available at: https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy/legislative-framework_en

698

European Union (2022) *Methane Action Plan.*

699

Changing Markets Foundation (2022) *High Steaks: Taking methane from animal farming out of its blindspot.* Part 2.
[ONLINE] Available at: <https://changingmarkets.org/report/net-zero-integrity-nestles-methane-blindspot-april-2023-nestle-is-among-the-largest-food-companies-in-the-world-with-a-huge-climate-footprint-due-to-its-focus-on-dairy-a-large-chunk-of/>

700

LobbyFacts.EU (n.d.) *Welcome to LobbyFacts – exposing lobbying in the European institutions*
[ONLINE] Available at: <https://www.lobbyfacts.eu>

701

European Union (n.d.) *Transparency Register: American Chamber of Commerce to the European Union*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/search-register_en?queryText=AmCHam*EU [Accessed: April 2023]

702

European Union (n.d.) *Transparency Register: Association de la Transformation Latiere*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=058844929898-09 [Accessed: April 2023]

703

Interbev (2024) *Organisations Nationales: Les 22 Organisations Nationales de la filière*
[ONLINE] Available at: <https://www.interbev.fr/interbev/organisations-nationales/>

704

European Union (n.d.) *Transparency Register: Association nationale interprofessionnelle du bétail et des viandes*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=963373911020-79 [Accessed: April 2023]

705

Euoprean Union (n.d.) *Transparency Register: Breiz Europe*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=509176138694-78 [Accessed: April 2023]

706

Ciltravi (2019) *Members*
[ONLINE] Available at: <http://www.ciltravi.com/members/>

707

European Union (n.d.) *Transparency Register: Centre de liaison des industries transformatrices de viande de l'UE*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=02978802379-31 [Accessed: April 2023]

708

Dansk Industri (n.d.) *DI's medlemmer*
[ONLINE] Available at: <https://www.danskindustri.dk/om-di/hvad-er-di/dis-medlemmer/>

709

European Union (n.d.) *Transparency Register: Confederation of Danish Industry*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=5749958415-41 [Accessed: April 2023]

710

Culture Viande Les Entreprises (2022) *Présentation*
[ONLINE] Available at: <https://cultureviande.eu/presentation/>

711

European Union (n.d.) *Transparency Register: Culture Viande*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=340811745544-64 [Accessed: April 2023]

712

European Union (n.d.) *Transparency Register: Dairy UK*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=776259317589-13 [Accessed: April 2023]

713

Danish Dairy Board (n.d.) *Dairy companies in Denmark*
[ONLINE] Available at: <https://danishdairyboard.dk/danish-dairy-industry/dairy-companies/> [Accessed: April 2023]

714

European Union (n.d.) *Transparency Register: Danish Dairy Board Brussels s.a.*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=13118423364-86 [Accessed: April 2023]

715

Copa Cogeca (n.d.) *Members*
[ONLINE] Available at: https://copa-cogeca.eu/home/cogeca_members [Accessed: April 2023]

716

European Union (n.d.) *Transparency Register: European agri-cooperatives*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=09586631237-74 [Accessed: April 2023]

717

NFU Mutual (2022) *Our Performance: 2022 Financial Results*
[ONLINE] Available at: <https://www.nfumutual.co.uk/globalassets/about-us/agm/agm-2023/2023-agm-booklet3.pdf>

718

European Biogas Association (2023) *Other Members*
[ONLINE] Available at: <https://www.europeanbiogas.eu/type-of-member/standard-members/> [Accessed: April 2023]

719

European Union (n.d.) *Transparency Register: European Biogas Association*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=18191445640-83 [Accessed: April 2023]

720

European Dairy Association (n.d.) *About EDA: Members*
[ONLINE] Available at: <https://eda.euomilk.org/about-eda/mm.html> [Accessed: April 2023]

721

European Union (n.d.) *Transparency Register: European Dairy Association aisbl*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=42967152383-63 [Accessed: April 2023]

722

Eucolait (2023) *About*
[ONLINE] Available at: <https://www.eucolait.eu/about/#members> [Accessed: April 2023]

723

European Union (n.d.) *Transparency Register: European Dairy Trade Association*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=5159980776-55 [Accessed: April 2023]

724

Copa Cogeca (n.d.) *Members*
[ONLINE] Available at: https://copa-cogeca.eu/home/cogeca_members [Accessed: April 2023]

725

European Union (n.d.) *Transparency Register: European Farmers*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=44856881231-49 [Accessed: April 2023]

726

FoodDrinkEurope (2023) *List of Board Members*
[ONLINE] Available at: <https://www.fooddrinkeurope.eu/wp-content/uploads/2023/03/230201-Board-Members.pdf> and FoodDrinkEurope (n.d.) *Members*
[ONLINE] Available at: <https://www.fooddrinkeurope.eu/members/>

727

European Union (n.d.) *Transparency Register: FoodDrinkEurope*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=75818824519-45 [Accessed: April 2023]

728

The International Meat Trade Association (2023) *Representing members engaged in the international meat trade*
[ONLINE] Available at: <https://imta-uk.org/members> [Accessed: April 2023]

729

European Union (n.d.) *Transparency Register: International Meat Trade Association*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=61890167724-24 [Accessed: April 2023]

730

Landbrug & Fødevarer (n.d.) *Hovedbestyrelsen*
[ONLINE] Available at: <https://lf.dk/om-os/organisation-og-ledelse/hovedbestyrelsen/> [Accessed: April 2023]

731

Arla (2023) *Board of Directors*
[ONLINE] Available at: <https://www.arla.com/company/management/board-of-directors/> [Accessed: April 2023]

732

European Union (n.d.) *Transparency Register: Landbrug & Fødevarer - Danish Agriculture and Food Council*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=1634450483-86 [Accessed: April 2023]

733

Lantbrukarnas Riksförbund (2022) *Svensk Mjölk går in som ny delägare i Tillväxtbolaget*
[ONLINE] Available at: <https://www.lrf.se/nyheter/svensk-mjolk-gar-in-som-ny-delagare-i-tillvaxtbolaget/>

734

European Union (n.d.) *Transparency Register: Lantbrukarnas Riksförbund*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=79239225070-38 [Accessed: April 2023]

735

European Union (n.d.) *Transparency Register: Medical Nutrition International Industry*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=021098528481-42 [Accessed: April 2023]

736

Milch Industrie Verband (2023) *Mitgliederverzeichnis*
[ONLINE] Available at: <https://milchindustrie.de/ueber-uns/unsere-mitglieder/> [Accessed: April 2023]

737

European Union (n.d.) *Transparency Register: Milcherzeugergemeinschaft Milch Board*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=679321111546-68 [Accessed: April 2023]

738

NFU Mutual (2022) *Our Performance: 2022 Financial Results*
[ONLINE] Available at: <https://www.nfmutual.co.uk/globalassets/about-us/agm/agm-2023/2023-agm-booklet3.pdf>

739

European Union (n.d.) *Transparency Register: National Farmers Union*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=960454549620-76 [Accessed: April 2023]

740

NZO (n.d.) *Leden*
[ONLINE] Available at: <https://www.nzo.nl/organisatie/leden/> [Accessed: April 2023]

741

European Union (n.d.) *Transparency Register: Nederlandse Zuivel Organisatie*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=603906626884-46 [Accessed: April 2023]

742

European Union (n.d.) *Transparency Register: New Zealand International Business Forum*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=383785247030-48 [Accessed: April 2023]

743

European Union (n.d.) *Transparency Register: Union Européenne du Commerce du Bétail et des Métiers de la Viande*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=4422649896-52 [Accessed: April 2023]

744

U.S. Dairy Export Council (2015) *Members*
[ONLINE] Available at: https://resources.usdec.org/About/members.cfm?_ga=2.107776582.536159926.1521018375-704118969.1516354650&RDtoken=49115&Use-riD= [Accessed: April 2023]

745

European Union (n.d.) *Transparency Register: US Dairy Export Council*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=927974415051-53 [Accessed: April 2023]

746

Herman, C. (2024) The real deal behind Europe's farmer protests, *Birdlife International* 1 February 2024
[ONLINE] Available at: <https://www.birdlife.org/news/2024/02/01/the-real-deal-behind-europes-farmer-protests/>

747

Bărbulescu, M., Faull, L., and Hekman, L., et al. (2023) 'Europe's Potemkin Lobby. *Lighthouse Reports*, 29 June 2023.
[ONLINE] Available at: <https://www.lighthousereports.com/investigation/europes-potemkin-lobby/>

748

Savage, S. and Lei Win, T. (2023) The truth behind Europe's most powerful farmers lobby. *Politico*, 29 June.
[ONLINE] Available at: <https://www.politico.eu/article/copa-cogeca-farmering-lobby-europe/>

749

Savage, S. and Lei Win, T. (2023) The truth behind Europe's most powerful farmers lobby. *Politico*, 29 June.
[ONLINE] Available at: <https://www.politico.eu/article/copa-cogeca-farmering-lobby-europe/>

750

Corporate Europe Observatory (2021) *Leak: industrial farm lobbies’ coordinated attack on Farm to Fork targets*, 12 October 2021, <https://corporateeurope.org/en/2021/10/leak-industrial-farm-lobbies-coordinated-attack-farm-fork-targets>

751

Corporate Europe Observatory (2023) *Sabotaging EU Pesticide Reduction Law*
[ONLINE] Available at: <https://corporateeurope.org/en/2023/11/sabotaging-eu-pesticide-reduction-law-sur>

752

DeSmog (n.d.) *COPA-COGECA: Background*
[ONLINE] Available at: <https://www.desmog.com/copa-cogeca/>

753

Copa-Cogeca, CropLife Europe, Fertilizers Europe, et al., (2022) *JOINT STATEMENT 27 January 2022*
[ONLINE] Available at: <https://www.fertilizerseurope.com/wp-content/uploads/2022/01/Joint-Statement-Agri-Food-Sector-FINAL.pdf>

754

Foote, N. (2023) LEAK: EU emission cutting plan hits three times more pig, poultry farms than thought. Euractiv, 16 February,
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/leak-eu-emission-cutting-plan-hits-three-times-more-pig-poultry-farms-than-thought/>

755

Copa-Cogeca (2023) Statement: – IED livestock threshold, Is the house of cards falling? 17 February
[ONLINE] Available at: <https://copa-cogeca.eu/Flexpage/DownloadFile/?id=13397154>

756

Savage, S. and Lei Win, T. (2023) The truth behind Europe’s most powerful farmers lobby. *Politico*, 29 June
[ONLINE] Available at: <https://www.politico.eu/article/copa-cogeca-farmering-lobby-europe/>

757

Savage, S. and Lei Win, T. (2023) The truth behind Europe’s most powerful farmers lobby. *Politico*, 29 June
[ONLINE] Available at: <https://www.politico.eu/article/copa-cogeca-farmering-lobby-europe/>

758

Savage, S. and Lei Win, T. (2023) The truth behind Europe’s most powerful farmers lobby. *Politico*, 29 June
[ONLINE] Available at: <https://www.politico.eu/article/copa-cogeca-farmering-lobby-europe/>

759

EU (n.d.) *Transparency Register*
[ONLINE] Available at: https://transparency-register.europa.eu/index_en

760

European Parliament (2019)Transparency: key MEPs to declare meetings with lobbyists, 1 February
[ONLINE] Available at: <https://www.europarl.europa.eu/topics/en/article/20190124ST024226/transparency-key-meps-to-declare-meetings-with-lobbyists>

761

European Parliament (2023) *Parliament strengthens rules on integrity, transparency and accountability*, 13 September
[ONLINE] Available at: <https://www.europarl.europa.eu/news/en/press-room/20230911IPRO4919/parliament-strengthens-rules-on-integrity-transparency-and-accountability>

762

European Parliament (2023) *Rules of Procedure of the European Parliament*
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/RULES-9-2023-11-01-ANN-01_EN.html

763

Transparency Register (n.d.) *Stichting IMAGINE Foundation/ The Food Collective*
[ONLINE] Available at: <https://ec.europa.eu/transparencyregister/public/consultation/displaylobbyist.do?id=009532038479-10> [Accessed April 2023]

764

European Union (n.d.) *Organisational detail – list of meetings with the European Commission*
[ONLINE] Available at: https://transparency-register.europa.eu/searchregister-or-update/organisation-detail_en?id=009532038479-10 [Accessed February 2024]

765

Stichting IMAGINE Foundation (2023) Meeting Frans Timmermans, 7 February Redacted pdf,
[ONLINE] Available at: https://www.asktheeu.org/en/request/12890/response/48662/attach/14/22.Meeting%20Frans%20Timmermans%20Stichting%20IM-AGINE%20Foundation%2007.02.2023%20Redacted.pdf?cookie_passthrough=1

766

Workshop with the EU Commission on Regenerative Agriculture (2022) Nestlé, Cargill, Arla Foods and Danone, with food chain companies on FSFS and SHL, 2 December, Redacted 13 December 20222, Ares(2022)8656428,
[ONLINE] Available at: https://www.asktheeu.org/en/request/12890/response/48661/attach/11/9.Workshop%20with%20Nestle%20Cargill%20Arla%20Foods%20and%20Danone%20with%20food%20chain%20companies%20on%20FSFS%20and%20SHL%2002.12.2022%20Redacted.pdf?cookie_passthrough=1

767

European Commission (2022) Workshop on the transition towards sustainable food systems: Legislative Framework. Ares(2023)1675406,
[ONLINE] Available at: https://www.asktheeu.org/en/request/12890/response/48662/attach/3/11.Workshop%20on%20the%20transition%20towards%20sustainable%20food%20systems%2002.12.2022.pdf?cookie_passthrough=1

768

Kelly, S. (2020) Regenerative Agriculture – Criticisms and Concerns. *DeSmog*, 11 September
[ONLINE] Available at: <https://www.desmog.com/2020/09/11/regenerative-agriculture-criticisms-and-concerns/>

769

Workshop with the EU Commission on Regenerative Agriculture (2022) Nestlé, Cargill, Arla Foods and Danone, with food chain companies on FSFS and SHL, 2 December, Redacted 13 December 20222, Ares(2022)8656428,
[ONLINE] Available at: https://www.asktheeu.org/en/request/12890/response/48661/attach/11/9.Workshop%20with%20Nestle%20Cargill%20Arla%20Foods%20and%20Danone%20with%20food%20chain%20companies%20on%20FSFS%20and%20SHL%2002.12.2022%20Redacted.pdf?cookie_passthrough=1

770

Workshop with the EU Commission on Regenerative Agriculture (2022) Nestlé, Cargill, Arla Foods and Danone, with food chain companies on FSFS and SHL, 2 December, Redacted 13 December 20222, Ares(2022)8656428,
[ONLINE] Available at: https://www.asktheeu.org/en/request/12890/response/48661/attach/11/9.Workshop%20with%20Nestle%20Cargill%20Arla%20Foods%20and%20Danone%20with%20food%20chain%20companies%20on%20FSFS%20and%20SHL%2002.12.2022%20Redacted.pdf?cookie_passthrough=1

771

Meeting and PPT with Nestlé (2021) Meeting on 8 January 202, Redacted 28 August 2023 Ares(2023)5845909
[ONLINE] Available at: https://www.asktheeu.org/en/request/12890/response/48662/attach/4/12.Meeting%20and%20PPT%20with%20Nestle%2008.01.2021%20Redacted.pdf?cookie_passthrough=1

772

Follow-up to the meeting in between EVP Timmermans and Danone (2020) Redacted 16 March 2023, Ares(2023)1902695
[ONLINE] Available at: https://www.asktheeu.org/en/request/12890/response/48661/attach/5/3.Follow%20up%20to%20the%20meeting%20in%20between%20EVP%20Timmermans%20and%20Danone%20Redacted.pdf?cookie_passthrough=1

773

Meeting and PPT with Nestlé (2021) Meeting on 8 January 202, Redacted 28 August 2023 Ares(2023)5845909
[ONLINE] Available at: https://www.asktheeu.org/en/request/12890/response/48662/attach/4/12.Meeting%20and%20PPT%20with%20Nestle%2008.01.2021%20Redacted.pdf?cookie_passthrough=1

774

Brzezinski, B. Andrés, P. (2023) Meet the farmers who control one third of the EU’s budget. *Politico*, 6 October
[ONLINE] Available at: <https://www.politico.eu/article/eu-parliament-farmers-who-control-one-third-of-the-eu-budget-franc-bogovic/>

775

Poinssot, A. (2020) The MEPs shaping the Common Agricultural Policy and receiving its handouts. *Mediapart* 20 October
[ONLINE] Available at: <https://www.mediapart.fr/en/journal/international/201020/meps-shaping-common-agricultural-policy-and-receiving-its-handouts>

776

Teffer, p. (2017) MEPs on agriculture committee get €100,000 in farm payments. *EU Observer*, 26 January
[ONLINE] Available at: <https://euobserver.com/eu-political/136633>

777

Crisp, J. (2015) MEPs vote to cap some agricultural emissions, but not cow burps. *Euractiv*, 28 October[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/meps-vote-to-cap-some-agricultural-emissions-but-not-cow-burps/>

778

European Environment Agency (2022) *Methane emissions in the EU: the key to immediate action on climate change*, 30 November[ONLINE] Available at: <https://www.eea.europa.eu/publications/methane-emissions-in-the-eu>

779

MEPs European Parliamet (n.d.) *Jan Huitema*
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/58789/JAN_HUITEMA/declarations#detailedcardmep

780

MEPs European Parliament (n.d.) *Ulrike Müller*
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/124862/ULRIKE_MULLER/declarations#detailedcardmep

781

MEPs European Parliament (n.d.) *Andrzej Grzyb*
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/23785/ANDRZEJ_GRZYB/history/8

782

MEPs European Parliament (n.d.) *Peter Jahr*
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/96772/PETER_JAHR/declarations#detailedcardmep

783

EPP Group (2024) *Peter Jahr*
[ONLINE] Available at: <https://www.eppgroup.eu/who-we-are/our-members/peter-jahr>

784

MEPs European Parliament (n.d.) *Herbert Dorfmann*
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/96787/HERBERT_DORFMANN/declarations#detailedcardmep.

785

EPP (2024) *Herbert Dorfmann*
[ONLINE] Available at: <https://www.eppgroup.eu/de/ueber-uns/unsere-mitglieder/herbert-dorfmann>

786

MEPs European Parliament (n.d.) *Annie Schreijer-Pierik*
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/125030/ANNIE_SCHREIJER-PIERIK/cv

787

Harmsen, V. van Vilsteren, B. (2016) Clean air bought the farm: agro-lobby decimates air quality directive, *Corporate Europe Observatory* 12 October
[ONLINE] Available at: <https://corporateeurope.org/en/food-and-agriculture/2016/10/clean-air-bought-farm-agro-lobby-decimates-air-quality-directive>

788

BirdLife Europe and Central Asia (2024) *Video explainer on Wociechowski’s letter to Polish farmers*, February 2024
[ONLINE] Available at: https://www.linkedin.com/posts/birdlife-europe-and-central-asia_eugreendear-farmerprotests2024-nonaturenofood-ug-cPost-7163145940411891712-ht5M?utm_source=share&utm_medium=member_desktop

789

BirdLife Europe and Central Asia (2024) *Video explainer on Wociechowski’s letter to Polish farmers*, February 2024
[ONLINE] Available at: https://www.linkedin.com/posts/birdlife-europe-and-central-asia_eugreendear-farmerprotests2024-nonaturenofood-ug-cPost-7163145940411891712-ht5M?utm_source=share&utm_medium=member_desktop

790

BirdLife International (2024) *Press Release: European Parliament’s reckless vote pushes farmers further into the abyss by scrapping CAP’s green architecture*
[ONLINE] Available at: <https://www.birdlife.org/news/2024/04/24/press-release-european-parliaments-reckless-vote-pushes-farmers-further-into-the-abyss-by-scrapping-caps-green-architecture/>

791

Brzezinski, B. Mathiesen, K. (2024) EU dumped lab meats from climate plans on farm chief’s demand. *Politico*, 9 February[ONLINE] Available at: <https://www.politico.eu/article/eu-lab-meat-climate-plan-agriculture-commissioner-janusz-wojciechowski/>

792

Corporate Europe Observatory (2020) *Privileged access for Copa-Cogeca and industry in DG Agriculture*. 9 October
[ONLINE] Available at: <https://corporateeurope.org/en/2020/10/privileged-access-copa-cogeca-and-industry-dg-agriculture>

793

Corporate Europe Observatory (2020) *Privileged access for Copa-Cogeca and industry in DG Agriculture*. 9 October
[ONLINE] Available at: <https://corporateeurope.org/en/2020/10/privileged-access-copa-cogeca-and-industry-dg-agriculture>

794

European Commission (n.d.) Animal products: 16 seats out of 73, re. Milk: 20 seats out of 53 seats.
[ONLINE] Available at: https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/committees-and-expert-groups/civil-dialogue-groups/2014-22-agricultural-cdgs/animal-products_en and https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/committees-and-expert-groups/civil-dialogue-groups/2014-22-agricultural-cdgs/milk_en, [Accessed February 2024]

795

Azevedo, D. Linked-in
[ONLINE] Available at: <https://www.linkedin.com/in/daniel-azevedo-1114421a/> (information as of 21 February 2024)

796

Transparency Register (n.d.) *European farmers (COPA)*
[ONLINE] Available at: <https://ec.europa.eu/transparencyregister/public/consultation/displaylobbyist.do?id=44856881231-49> [Accessed: April 2023]

797

Transparency Register (n.d.) *EDA*
[ONLINE] Available at: <https://ec.europa.eu/transparencyregister/péublic/consultation/displaylobbyist.do?id=42967152383-63> [Accessed: February 2024]

798

Linked-In (n.d.) *Alexander Anton profile*
[ONLINE] Available at: <https://www.linkedin.com/in/alexander-anton-6700a632/> [Accessed: 21 February 2024]

799

Transparency Register (n.d.) *Nestlé*
[ONLINE] Available at: <https://ec.europa.eu/transparencyregister/public/consultation/displaylobbyist.do?id=15366395387-57> [Accessed: April 2023]

800

Linked-In (n.d.) *Johannes Weber profile*
[ONLINE] Available at: <https://www.linkedin.com/in/johannes-weber-453b768b/> [Accessed 21 February 2024]

801

Christensen, A. (2019) Declaration of financial interests, Original declaration – 02-07-2019
[ONLINE] Available at: https://www.europarl.europa.eu/mepdif/197558_DFI_LEG9_rev0_DA.pdf

802

Christensen, A. (n.d.) Google translated from Asger Christensen’s website
[ONLINE] Available at: <https://www.asgerchristensen.dk/om/>

803

Arla Foods Amba (2020) *Feedback to EU Methane Strategy Consultation*, 5 August 20
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F540931_en

804

EDA (2020) *Dairy_Flash_3*. (euomilk.org),
[ONLINE] Available at: www.euomilk.org/fileadmin/user_upload/Public_Documents/Dairy_Flash/Dairy_Flash_3_-_2020.pdf

805

European Dairy Association (2020), *Feedback to EU Methane Strategy Consultation*, 4 August
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F540873_en

806

EDA (2019) *The Dairy sector & the Green Deal BACKGROUND DOCUMENT*
[ONLINE] Available at: http://www.euromilk.org/fileadmin/user_upload/Public_Documents/EDA_Position_papers_-_Fact_Sheets/Sustainability/EDA_Paper_-_Green_Deal_INTERNAL_-_long_version_-_Dec._2019.pdf [Accessed May 2023]

807

MEPs European Parliament (n.d.) *Asger Christensen: Past Meetings*
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/197558/ASGER_CHRISTENSEN/meetings/past#detailedcardmep

808

Danish Agriculture and Food Council (2020) Feedback to EU Methane Strategy Consultation, 20 July[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12504-EU-methane-strategy/F538723_en

809

Asger Christensen, A. (2021) *OPINION on an EU strategy to reduce methane emissions, 14-07-2021 AGRI_AD(2021)691267 PE691.267v02-00*,
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/197558/ASGER_CHRISTENSEN/main-activities/opinions#detailedcardmep

810

European Parliament Legislative Train Schedule (n.d.) *The new EU Methane Strategy, In A European Green Deal*.
[ONLINE] Available at: <https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-methane-strategy>

811

MEPs European Parliament (n.d.) *Jérémy Decerle*.
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/197504/JEREMY_DECERLE/declarations#detailedcardmep, as of mid-2023

812

Wax, E. (2022) The farming MEP with a renegade plan to fix the food system. *Politico*, 10 October
[ONLINE] Available at: <https://www.politico.eu/article/france-farming-mep-benoit-biteau-with-a-renegade-plan-to-fix-the-food-system/>

813

MEPs European Parliament (n.d.) *Asger Christensen*.
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/197558/ASGER_CHRISTENSEN/home

814

MEPs European Parliament (n.d.) *Elsi Katainen*.
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/191693/ELSI_KATAINEN/home#detailedcardmep

815

MEPs European Parliament (n.d.) *Irène Tolleret: Declarations*.
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/197547/IRENE_TOLLERET/declarations#detailedcardmep

816

Corporate Europe Observatory (2015) *Lobbying under the radar continues: MEP-industry forums still avoid scrutiny*
[ONLINE] Available at: <https://corporateeurope.org/en/power-lobbies/2015/10/lobbying-under-radar-continues-mep-industry-forums-still-avoid-scrutiny>

817

Arla Foods (Denmark) (2021) *Response to Commission's Sept-Oct 2021 call for feedback on FSFS*.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13174-Sustainable-EU-food-system-new-initiative/F2745692_en

818

Copa-Cogeca (Belgium) (2021) Response to Commission's Sept-Oct 2021 call for feedback on FSFS.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13174-Sustainable-EU-food-system-new-initiative/F2745633_en

819

Ares (2022) 5980742, 21 Minutes Meeting CAB Wojciechowski with COPA-COGECA on the project for a framework law for sustainable food systems – 25 08 2022. Partially Redacted version
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2

820

European Dairy Association (Belgium) (2021) Response to Commission's Sept-Oct 2021 call for feedback on FSFS.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13174-Sustainable-EU-food-system-new-initiative/F2743185_en

821

CLITRAVI (Netherlands) (2021) Response to Commission's Sept-Oct 2021 call for feedback on FSFS.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13174-Sustainable-EU-food-system-new-initiative/F2742933_en

822

Eucolait (Belgium) (2021) Response to Commission's Sept-Oct 2021 call for feedback on FSFS.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13174-Sustainable-EU-food-system-new-initiative/F2708070_en

823

INTERBEV (France) (2021) Response to Commission's Sept-Oct 2021 call for feedback on FSFS.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13174-Sustainable-EU-food-system-new-initiative/F2745416_en

824

European Parliament (2013) *Committee on Agriculture and Rural Development: Opinion 2022/0104 (COD)*
[ONLINE] Available at:https://www.europarl.europa.eu/doceo/document/AGRI-AD-736485_EN.docx

825

DG Environment (2023) *Annex Ease 2023 2378.xls, DG Env, Contacts re IED*
[ONLINE] Available at[https://www.asktheeu.org/en/request/contacts_re_ied

826

European Commission (n.d.) *Contributions ESR Review*:
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12656-Updating-Member-State-emissions-reduction-targets-Effort-Sharing-Regulation-in-line-with-the-2030-climate-target-plan/public-consultation_en (zip)

827

European Dairy Association (2019) *The Dairy Sector and the Green Deal* [internal document].
[ONLINE] Available at: http://www.euromilk.org/fileadmin/user_upload/Public_Documents/EDA_Position_papers_-_Fact_Sheets/Sustainability/EDA_Paper_-_Green_Deal_INTERNAL_-_long_version_-_Dec._2019.pdf

828

Foote, N. (2023) LEAK: EU emission cutting plan hits three times more pig, poultry farms than thought. *Euractiv*, 16 February 2023
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/leak-eu-emission-cutting-plan-hits-three-times-more-pig-poultry-farms-than-thought/>

829

Greenpeace European Unit (2023) *Animal farms, not factories: Concerns on the review of the Industrial Emissions Directive and policy demands*.
[ONLINE] Available at:https://www.greenpeace.org/static/planet4-eu-unit-stateless/2023/06/2dca1629-animal-farms-not-factories_final_en_print.pdf

830

Greenpeace European Unit (2023) *EU gives factory farms a free pass to pollute*, 29 November
[ONLINE] Available at: <https://www.greenpeace.org/eu-unit/issues/nature-food/46847/eu-gives-factory-farms-a-free-pass-to-pollute/>

831

Copa-Cogeca (2022) 4 April 2022 letter to Commissioner Wojciechowski, CABJW Ares 2022 2499980 marked Redacted.pdf
[ONLINE] Available at: <https://www.asktheeu.org/en/request/11818/response/39886/attach/4/01>

832

Foote, N. (2023) LEAK: EU emission cutting plan hits three times more pig, poultry farms than thought. *Euractiv*, 16 February 2023
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/leak-eu-emission-cutting-plan-hits-three-times-more-pig-poultry-farms-than-thought/>

833

Sander, A.(2022) C 2023 3429 2 EN annexe acte autonome nlw part1 v1 2.pdf.
[ONLINE] Available at: https://www.asktheeu.org/en/request/12673/response/45225/attach/6/C%202023%203429%202%20EN%20annexe%20acte%20auto-nome%20nlw%20part1%20v1%202.pdf?cookie_passthrough=1

834

Rogal, A. (2021) European Parliament signs off on EU's flagship Farm to Fork plans. *The Parliament*, 20 October
[ONLINE] Available at: <https://www.theparliamentmagazine.eu/news/article/european-parliament-signs-off-on-eus-flagship-farm-to-fork-plans>

835

European Livestock Voice (2021) The Farm to Fork Strategy – what do studies say about its impact on the European livestock sector? 13 October,
[ONLINE] Available at: <https://meatthefacts.eu/home/activity/campaign-updates/the-farm-to-fork-strategy-what-do-studies-say-about-its-impact-on-the-european-livestock-sector/>

836

Carlile, C. (2023) Mapped: The Deep Ties Between Big Ag and Europe's Right-Wing Politicians. *DeSmog*, 18 October
[ONLINE] Available at: <https://www.desmog.com/2023/10/18/mapped-the-deep-ties-between-big-ag-and-europes-right-wing-politicians/>

837

Carlile, C. (2023) Mapped: The Deep Ties Between Big Ag and Europe's Right-Wing Politicians. *DeSmog*, 18 October
[ONLINE] Available at: <https://www.desmog.com/2023/10/18/mapped-the-deep-ties-between-big-ag-and-europes-right-wing-politicians/>

838

Copa-Cogeca (n.d.) *Christiane Lambert, Copa President (FNSEA, France)*
[ONLINE] Available at: <https://copa-cogeca.eu/cv-president-copa>

839

Corporate Europe Observator (2020) *FNSEA, France's agribusiness war machine in the name of farmers' defence*
[ONLINE] Available at: <https://corporateeurope.org/en/2020/10/fnsea-frances-agribusiness-war-machine-name-farmers-defence>

840

Carlile, C. (2023) Mapped: The Deep Ties Between Big Ag and Europe's Right-Wing Politicians. *DeSmog*, 18 October
[ONLINE] Available at: <https://www.desmog.com/2023/10/18/mapped-the-deep-ties-between-big-ag-and-europes-right-wing-politicians/>

841

Copa-Cogeca (2022) Revision of the Industrial Emissions Directive – Livestock Family farming will pay a high price.
[ONLINE] Available at: <https://www.agroportal.pt/press-release-revision-of-the-industrial-emissions-directive-livestock-family-farming-will-pay-a-high-price/>

842

Herman, C. (2024) The real deal behind Europe's farmer protests, *Birdlife International* 1 February 2024
[ONLINE] Available at: <https://www.birdlife.org/news/2024/02/01/the-real-deal-behind-europes-farmer-protests/>

843

European Parliament ENVI Committee (2022) Draft report on IED revision, 14/11/22,
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/ENVI-PR-737352_EN.pdf

844

Irish Farmers Association (2023) *Open Letter: To the ministers members of the environment and agriculture and fisheries council of the EU*
[ONLINE] Available at: <https://www.ifa.ie/wp-content/uploads/2023/03/IED-letter-to-EU-Environment-and-Agrifish-Council-.pdf>

845

European Parliament (2022) *Presence of farmers' association COPA-COGECA at AGRIFISH (Agriculture and Fisheries Council) meetings*
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/E-9-2022-003818_EN.html

846

Lambert, C. Armengol, R. (2022) *Key point during Agri-Fish Council, 26 September 2022.*
[ONLINE] Available at: https://www.youtube.com/watch?v=eXn2_DqFCaw [From 40 seconds in].

847

Lambert, C. (2023) *Key points during Agri-Fish Council by Copa President Christine Lambert*
[ONLINE] Available at: <https://www.youtube.com/watch?v=nl8tzpKGpe4&t=42s> [From 1 minute 13 seconds in].

848

AGRI Committee (2022) *OPINION on the proposal for a Directive of the European Parliament and of the Council amending Directive 2010/75/ EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste, 28-04-2023 AGRI_AD(2023)736485 PE736.485v02-00, Benoît LUT- GEN*
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/AGRI-AD-736485_EN.docx

849

Pirlot, R. (2022) It is totally unreasonable to include the agricultural sector in the Industrial Emission Directive! *European Livestock Voice*, 21 September
[ONLINE] Available at: <https://meatthefacts.eu/home/activity/beyond-the-headlines/it-is-totally-unreasonable-to-include-the-agricultural-sector-in-the-industrial-emission-directive/>

850

European Parliament AGRI Committee (2023) *Opinion <CommissionResp>of the Committee on Agriculture and Rural Development</CommissionResp> <CommissionInt>for the Committee on the Environment, Public Health and Food Safety </CommissionInt><Titre>on the proposal for a Directive of the European Parliament and of the Council amending Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste. </Titre><DocRef>(COM(2022)0156 – C90144/2022 – 2022/0104(COD) (COD)*
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/AGRI-AD-736485_EN.docx

851

Pirlot, R. (2022) It is totally unreasonable to include the agricultural sector in the Industrial Emission Directive! *European Livestock Voice*, 21 September
[ONLINE] Available at: <https://meatthefacts.eu/home/activity/beyond-the-headlines/it-is-totally-unreasonable-to-include-the-agricultural-sector-in-the-industrial-emission-directive/>

852

European Livestock Voice (n.d.) Partners and supporters
[ONLINE] Available at: <https://meatthefacts.eu/>

853

Corporate Europe Observatory (2024) CEO makes new complaint about unregistered industry lobbying. 15 January
[ONLINE] Available at: <https://corporateeurope.org/en/2024/01/complaint-unregistered-industry-lobbying>

854

European Livestock Voice (2019) #MeattheFacts: European Livestock Voice sets to balance the debate around livestock production Brussels, 25 September
[ONLINE] Available at: <https://meatthefacts.eu/wp-content/uploads/2019/09/RESS-RELEASE-MeattheFacts-European-Livestock-Voice-sets-to-balance-the-debate-around-livestock-production-.pdf>

855

Crisp, J. (2015) MEPs vote to cap some agricultural emissions, but not cow burps. *Euractiv*, 28 October[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/meps-vote-to-cap-some-agricultural-emissions-but-not-cow-burps/>

856

Estonian Chamber of Agriculture and Commerce (2015) *Copa-Cogeca, Copa and Cogeca is calling for credible targets to be included in Review of EU Air Quality Policy*, 27 October
[ONLINE] Available at: <https://epkk.ee/copa-and-cogeca-is-calling-for-credible-targets-to-be-included-in-review-of-eu-air-quality-policy/>

857

World Resources Institute (2016) Animal-Based Foods Are More Resource-Intensive Than Plant-Based Foods.
[ONLINE] Available at: <https://www.wri.org/data/animal-based-foods-are-more-resource-intensive-plant-based-foods>

858

World Economic Forum (n.d.) Scientists say plant-based diets are essential to save the planet.
[ONLINE] Available at: <https://www.weforum.org/videos/scientists-say-plant-based-diets-are-essential-to-save-the-planet/>

859

CIWF and Eurogroup for Animals (2023) *EU School Scheme: Towards a more ethical, eco-friendly and inclusive food distribution at schools*
[ONLINE] Available at: <https://www.ciwf.eu/media/7453755/school-scheme-briefing-ciwf-efa-march-2023.pdf>

860

Euractiv Agrifood Hub, Andrés, P. (2023) Brief: Spill the milk.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/agrifood-brief-spill-the-milk/>

861

De Lorenzo, D. (2023) More Budget For EU Schools’ Food Scheme, No Clear Path For Plant-Based Milk. *Forbes*, 09 May 2023.
[ONLINE] Available at: <https://www.forbes.com/sites/danieladelorenzo/2023/05/09/more-budget-and-milk-options-for-the-eu-schools-food-scheme-agrees-the-european-parliament/>

862

CIWF, Greenpeace, EEB (2023) *Joint position paper on the inclusion of plant-based milk alternatives in the EU School Scheme*
[ONLINE] Available at: https://plantbasedfoodalliance.eu/wp-content/uploads/2023/05/Final-Joint-Position-on-EU-School-Milk_May.doc-3.pdf

863

Vegconomist (2023)*Plant-Based Milk in School Rejected: European Parliament Fails Children and the Planet*,10 May 2023.
[ONLINE] Available at: <https://vegconomist.com/politics-law/eu-parliament-votes-against-plant-based-milks-in-schools/>

864

European Commission (2020) *EU school scheme: €250 million for fruit, vegetables and milk for the school year 2020/21*.
[ONLINE] Available at: https://agriculture.ec.europa.eu/news/eu-school-scheme-eu250-million-fruit-vegetables-and-milk-school-year-202021-2020-03-31_en

865

European Parliament (2022) Implementation of the EU school scheme for fruit, vegetables and milk products: A mid-term review - European implementation assessment, 14 July 2022
[ONLINE] Available at:[https://www.europarl.europa.eu/thinktank/en/document/EPRS_STU\(2022\)730339](https://www.europarl.europa.eu/thinktank/en/document/EPRS_STU(2022)730339)

866

Savage, S. Lei Win, T. (2023) The truth behind Europe’s most powerful farmers lobby, *Politico*, 29 June
[ONLINE] Available at: <https://www.politico.eu/article/copa-cogeca-farmering-lobby-europe/>

867

Brzezinski, B. Guillot, L. (2023) Fake news and personal attacks: How the political right took down Europe’s green agenda, *Politico* 1 December
[ONLINE] Available at: <https://www.politico.eu/article/fake-news-and-personal-attacks-how-the-political-right-took-down-europes-green-agenda/>

868

Minutes EVP meeting with COPA COGECA 16 June2022 Redacted.pdf,
[ONLINE] Available at: [https://www.asktheeu.org/en/request/12890/response/48662/attach/17/25.Minutes EVP meeting with COPA COGECA 16.06.2022 Redacted.pdf?cookie_passthrough=1](https://www.asktheeu.org/en/request/12890/response/48662/attach/17/25.Minutes%20EVP%20meeting%20with%20COPA%20COGECA%2016.06.2022%20Redacted.pdf?cookie_passthrough=1)

869

Changing Markets Foundation (2020) Talking trash: the corporate playbook of false solutions to the plastic crisis.
[ONLINE] Available at: <https://changingmarkets.org/report/talking-trash-the-corporate-playbook-of-false-solutions-to-the-plastic-crisis/>

870

Struna, H. (2024) Eleven EU countries call for more ‘flexibility’ on CAP’s fallow land rules. *Euractiv*, 21 November 20/23
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/eleven-eu-countries-call-for-more-flexibility-on-caps-fallow-land-rules/>

871

Struna, H. (2024) EU Commission proposes package to defuse farmers’ anger. *Euractiv*, 31 January 2024.
[ONLINE] Available at: <https://www.euractiv.com/section/agriculture-food/news/eu-commission-proposes-package-to-defuse-farmers-anger/>

872

Razouk, N., Pronina, L., and Konrad Krasuski, K. (2024) Europe’s Support for Ukrainian Wheat gets Farmers Even Angrier. *Bloomberg*, 21 March 2024
[ONLINE] Available at: <https://www.bloomberg.com/news/articles/2024-03-21/eu-support-for-ukraine-wheat-gets-farmers-angry?srnd=undefined&ref=7YMSv3yk&embedded-checkout=true>

873

Cockburn, H. (2020) ‘Become a beefatarian’, urges odd EU-funded advert for European beef *The Independent*, 30 November
[ONLINE] Available at: <https://www.independent.co.uk/climate-change/news/beefatarian-advert-video-eu-beef-climate-b1762427.html>

874

European Commission (n.d.) *Consultation on review of Promotion Policy, 2021*.
[ONLINE] Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12782-EU-farm-and-food-products-review-of-policy-on-promotion-inside-and-outside-the-EU_en

875

Spencer-Joilliffe, N. (2023) European Commission assigns more than €185 million to grow agrifood products. *Food Navigator*, 18 December 2023
[ONLINE] Available at:<https://www.foodnavigator.com/Article/2023/12/18/european-commission-fund-to-promote-agrifood-products-in-2024>

876

European Council (2023) *Commission’s draft 2024 Work Programme for the EU’s promotion policy for agri-food products - Information from the Italian delegation*, 20 October 2023
[ONLINE] Available at: <https://data.consilium.europa.eu/doc/document/ST-14469-2023-INIT/en/pdf>

877

Copa-Cogeca (2022) *4 April 2022 letter to Commissioner Wojciechowski, CABJW Ares 2022 2499980 marked Redacted.pdf*
[ONLINE] Available at: <https://www.asktheeu.org/en/request/11818/response/39886/attach/4/01>

878

Sander, A. (2022) *C 2023 3429 2 EN annexe acte autonome nlw part1 v1 2.pdf*.
[ONLINE] Available at: [https://www.asktheeu.org/en/request/12673/response/45225/attach/6/C%202023%203429%202%20EN%20annexe%20acte%20auto-](https://www.asktheeu.org/en/request/12673/response/45225/attach/6/C%202023%203429%202%20EN%20annexe%20acte%20autonome%20nlw%20part1%20v1%202.pdf?cookie_passthrough=1)

879

European Dairy Association (2020) Annex 23.6 update 250320 milk and dairy supply is vital in COVID19 time, Partial Redacted version,
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2#outgoing-25398

880

European Dairy Association (2020) Annex 23.5 Dairy Flash 6 – 2020, Partial Redacted version,
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2#outgoing-25398

881

Copa-Cogeca (n.d.) *Full Members*
[ONLINE] Available at: https://copa-cogeca.eu/home/copa_members

882

Carlile, C. (2023) Mapped: The Deep Ties Between Big Ag and Europe’s Right-Wing Politicians. *DeSmog*, 18 October
[ONLINE] Available at: <https://www.desmog.com/2023/10/18/mapped-the-deep-ties-between-big-ag-and-europes-right-wing-politicians/>

883

European Dairy Association (2020) Annex 23.5 Dairy Flash 6 – 2020, Partial Redacted version,
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2#outgoing-25398 .

884

Brzezinski, B. and Guillot, L. (2023) Fake news and personal attacks: How the political right took down Europe’s green agenda. *Politico*, 1 December
[ONLINE] Available at: <https://eeb.org/green-cap-rollback-right-as-scientists-warn-about-the-need-for-urgent-and-decisive-action/>

885

Guillot, L. and Brzenzinski, B. (2023) EPP pitches itself as farmers’ party ahead of 2024 European election. *Politico*, 4 May 2023.
[ONLINE] Available at: <https://www.politico.eu/article/european-peoples-party-farmer-rural-interest-2024-european-election/>

886

Majumdar, R. (2024) Right-wing parties forecast for gains in 2024 EU elections. *DW* 25 January
[ONLINE] Available at: <https://www.dw.com/en/right-wing-parties-forecast-for-gains-in-2024-eu-elections/a-68078383>

887

Vinocur, V. and Brzeziński B. (2024) How the far right aims to ride farmers’ outrage to power in Europe. *Politico*, 26 January
[ONLINE] Available at: <https://www.politico.eu/article/france-far-right-farmers-outrage-power-europe-eu-election-agriculture/>

888

Herman, C. (2024) The real deal behind Europe’s farmer protests, *Birdlife International* 1 February 2024
[ONLINE] Available at: <https://www.birdlife.org/news/2024/02/01/the-real-deal-behind-europes-farmer-protests/>

889

Carlile, C. (2023) Mapped: The Deep Ties Between Big Ag and Europe’s Right-Wing Politicians. *DeSmog*, 18 October
[ONLINE] Available at: <https://www.desmog.com/2023/10/18/mapped-the-deep-ties-between-big-ag-and-europes-right-wing-politicians/>

890

Vinocur, V. and Brzeziński B. (2024) How the far right aims to ride farmers' outrage to power in Europe.

891

European People's Party (2024) EPP Congress elects its lead candidate for European Commission President, EPP, March 2024.
[ONLINE] Available at: <https://www.epp.eu/news/epp-congress-elects-its-lead-candidate-for-european-commission-president>

892

Bărbulescu, M., Faull, L., and Hekman, L., et al. (2023) 'Europe's Potemkin Lobby. *Lighthouse Reports*, 29 June,
[ONLINE] Available at: <https://www.lighthousereports.com/investigation/europes-potemkin-lobby/>

893

Bărbulescu, M., Faull, L., and Hekman, L., et al. (2023) 'Europe's Potemkin Lobby.

894

Copa-Cogeca (n.d.) *Full Members*.
[ONLINE] Available at: https://copa-cogeca.eu/home/copa_members

895

Dongo, D. (2024) Italy, farmers protest against Coldiretti. #CleanSpades. GIFT, 26 January 2024.
[ONLINE] Available at: <https://www.greatitalianfoodtrade.it/en/ideas/italy-farmers-protest-against-coldiretti-vanghepulite/>

896

Herman, C. (2024) Farmers are in an abusive relationship with farm lobbies...can they get out? *Birdlife International*, 20 February 2024,
[ONLINE] Available at: <https://www.birdlife.org/news/2024/02/20/farmers-are-in-an-abusive-relationship-with-farm-lobbies/>

897

Dongo, D. (2024) Italy, farmers protest against Coldiretti. #CleanSpades. GIFT, 26 January 2024,
[ONLINE] Available at: <https://www.greatitalianfoodtrade.it/en/ideas/italy-farmers-protest-against-coldiretti-vanghepulite/>

898

European Coordination Via Campesina (n.d.) *We are the collective voice of peasant farmers in Europe*
[ONLINE] Available at: <https://www.eurovia.org>

899

Uppington, E. (2024) Supermarkets are the gatekeepers stacked against people who grow what we eat. *Euronews*, 13 February 2024
[ONLINE] Available at <https://www.euronews.com/green/2024/02/07/supermarkets-are-the-gatekeepers-stacked-against-people-who-grow-what-we-eat>

900

Piketty, T. (2024) Farming appears to be the most unequal of professions in France. *Le Monde*,, 12 February 2024
[ONLINE] Available at https://www.lemonde.fr/en/opinion/article/2024/02/12/thomas-piketty-farming-appears-to-be-the-most-unequal-of-professions-in-france-today_6516411_23.html

901

Matthews, A. (2024) Who feeds Europe, and how much do they earn? *CAP Reform: Europe's common agricultural policy is broken – let's fix it!* , February 2024,
[ONLINE] Available at <http://capreform.eu/who-feeds-europe-and-how-much-do-they-earn/>

902

European Environment Agency (2023) *More action needed in the EU to reduce the impacts of chemical pesticides*, April 2023.
[ONLINE] Available at <https://www.eea.europa.eu/en/newsroom/news/more-action-needed-in-the-eu>

903

Brunner, A. (2024) Disinformation is fuelling Europe's farming protests, *Inside Track*, 19 February
[ONLINE] Available at: <https://greenallianceblog.org.uk/2024/02/19/disinformation-is-fuelling-europes-farming-protests>

904

Birdlife International (2024) *5 things you need to know about the farmer protests*, 8 February 2024,
[ONLINE] Available at: <https://www.birdlife.org/news/2024/02/08/5-things-you-need-to-know-about-the-farmer-protests/>

905

Uppington, E. (2024) Supermarkets are the gatekeepers stacked against people who grow what we eat. *Euronews*, 13 February 2024
[ONLINE] Available at <https://www.euronews.com/green/2024/02/07/supermarkets-are-the-gatekeepers-stacked-against-people-who-grow-what-we-eat>

906

EU Scream (2023) Big Meat's Big Win in Europe, 15 December 2023,
[ONLINE] Available at <https://euscream.com/big-meats-big-win-in-europe/>

907

Niranjan, A. Crucial European Green Deal package staggers to legislative conclusion. *The Guardian*, 30 March 2024.
[ONLINE] Available at: <https://www.theguardian.com/world/2024/mar/30/crucial-european-green-deal-package-staggers-to-legislative-conclusion>

908

Frost, R. (2024) Over half of European voters think climate action is a priority, exclusive Euronews poll reveals. *Euronews*, 25 March 2024.
[ONLINE] Available at: <https://www.euronews.com/green/2024/03/25/over-half-of-european-voters-think-climate-action-is-a-priority-exclusive-euronews-poll-re>

909

Ford, A. and Chiappa, C. (2024) Chaos, fires and tear gas roil Brussels as farmers clash with police, *Politico*, February 2024:
[ONLINE] Available at: https://www.politico.eu/article/manure-and-fire-farmers-escalate-protests-in-brussels/?utm_source=email&utm_medium=alert&utm_campaign=Brussels

910

Hancock, A., Abboud, L., Klasa, A., and Chazan, G. (2024) Brussels struggles to placate farmers as far right stokes protests, *The Financial Times* January 2024, .
[ONLINE] Available at: https://www.ft.com/content/302c4a17-a91b-4ea2-a33d-ed563da8900d?accessToken=zwAGD8akHUHQkc8wLEoXqRtOotOjPe1WPaiQDQ.MEUCIBb1Am2sBFG03PVbVIV0yJT9Szd4S7_oEBsW3TU0LxzjAiEAkNTE7T4nbj6NNBsLRbVaG_HTCpu6t8pKLZEalgfYzuo&sharetype=gift&token=4cd96711-0aba-4e50-9114-3771f5a50405 [Accessed: January 2024]

911

Kasztelan, M., Carlile, C., and Grostern, J. (2024) Orbán -backed think tank courts farmers linked to far right ahead of EU poll. *DeSmog*, 2 May 2024
[ONLINE] Available at: <https://www.desmog.com/2024/05/02/orban-backed-think-tank-courts-farmers-linked-to-far-right-ahead-of-eu-poll/>

912

Kasztelan, M., Carlile, C., and Grostern, J. (2024) Orbán -backed think tank courts farmers linked to far right ahead of EU poll.

913

Carlile, C., Barnett, A., and Cooke, P. (2024) Revealed: The climate denial network behind 'classic astroturf' farmers' campaign. *DeSmog*, 8 February, 2024.
[ONLINE] Available at: <https://www.desmog.com/2024/02/08/revealed-the-climate-denial-network-behind-classic-astroturf-farmers-campaign/>

914

Bnnvara (2020) Extremist farmers carry out intimidation. *Bnnvara*, 8 July 2020.
[ONLINE] Available at: <https://www.bnnvara.nl/joop/artikelen/extremistische-boeren-voeren-intimidatie-op>

915

Henley, J. (2024) Why are farmers protesting across the EU and what can the bloc do about it? *The Guardian*, 2 February 2024.
[ONLINE] Available at: [https://www.theguardian.com/environment/2024/feb/02/why-are-farmers-protesting-across-the-eu-and-what-can-the-bloc-do-about-it#:~:text=Farmers%20have%20said%20they%20face,that%20"bigger%20is%20better"](https://www.theguardian.com/environment/2024/feb/02/why-are-farmers-protesting-across-the-eu-and-what-can-the-bloc-do-about-it#:~:text=Farmers%20have%20said%20they%20face,that%20)

916

Lynch, S. (2024) Occupy Brussels! Viktor Orbán's plan for Europe. *Politico EU*, 8 April 2024.
[ONLINE] Available at: <https://www.politico.eu/article/viktor-orban-plan-europe-hungary-council-presidency-election/>

917

Kasztelan, M., Carlile, C., and Grostern, J. (2024) Orbán-backed think tahnk courts farmers linked to far right ahead of EU poll.

918

Carlile, C., Barnett, A., and Cooke, P. (2024) Revealed: The climate denial network behind 'classic astroturf' farmers' campaign. *DeSmog*, 8 February, 2024.
[ONLINE] Available at: <https://www.desmog.com/2024/02/08/revealed-the-climate-denial-network-behind-classic-astroturf-farmers-campaign/>

919

Changing Markets Foundation (2023) *Truth, Lies and Culture Wars – Social listening analysis of meat and dairy persuasion narratives*, November 2023,
[ONLINE] Available at: <https://changingmarkets.org/report/truth-lies-and-culture-wars-social-listening-analysis-of-meat-and-dairy-persuasion-narratives/>

920

Schwab, K. (2020) *Now is the time for a 'great reset'*. *World Economic Forum*, June 2020.
[ONLINE] Available at: <https://www.weforum.org/agenda/2020/06/now-is-the-time-for-a-great-reset/>

921

BBC Verify (2021) *What is the Great Reset - and how did it get hijacked by conspiracy theories?* BBC News., June 2021,
[ONLINE] Available at: <https://www.bbc.co.uk/news/blogs-trending-57532368>

922

Scott-Reid, J. (2024) The Bill Gates Bug-Eating Conspiracy, Explained. *Sentient Media*, January 2024
[ONLINE] Available at: <https://sentientmedia.org/bill-gates-bug-eating-conspiracy/>

923

Bateman, B. (2012) Evolutionary Psychology of Climate Change. *State of the Planet*, January 2012. Available from: <https://news.climate.columbia.edu/2012/01/09/evolutionary-psychology-of-climate-change/>

924

Mertens, M. Why aren't we more scared of the climate crisis? It's complicated. *The Guardian*, July 2023.
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/jul/22/climate-crisis-fear-psychology>

925

Scott-Reid, J. (2024) The Bill Gates Bug-Eating Conspiracy, Explained. *Sentient Media*, January 2024
[ONLINE] Available at: <https://sentientmedia.org/bill-gates-bug-eating-conspiracy/>

926

Changing Markets Foundation (2023) *Truth, Lies, and Culture Wars: Social listening analysis of meat and dairy persuasion narratives*

927

Kirby,P. and Holligan, A. (2023) Dutch election: Anti-Islam populist Geert Wilders wins dramatic victory. *BBC News*, 23 November 2023,
[ONLINE] Available at: <https://www.bbc.co.uk/news/world-europe-67504272> [Accessed January 2024]

928

Kirby,P. and Holligan, A. (2023) Dutch election: Anti-Islam populist Geert Wilders wins dramatic victory.

929

Rainey, C. (2023) The mystery of the social media disinformation war on plant-based meat. *The Fast Company*, 17 August 2023.
[ONLINE] Available at: <https://www.fastcompany.com/90931204/beyond-impossible-disinformation-mystery-berman>

930

Carlile, C., Barnett, A., and Cooke, P. (2024) Revealed: The Climate Denial Network Behind 'Classic Astroturf' Farmers' Campaign. *DeSmog*, 8 February 2024,
[ONLINE] Available at: <https://www.desmog.com/2024/02/08/revealed-the-climate-denial-network-behind-classic-astroturf-farmers-campaign/>

931

Farmers Weekly (n.d.) No Farmers No Food group sets out vision to save industry
[ONLINE] Available at: <https://www.fwi.co.uk/news/no-farmers-no-food-group-sets-out-vision-to-save-industry> [Accessed February 2024]

932

Farmers Weekly (n.d.) No Farmers No Food group sets out vision to save industry.

933

Hancock, A., Abboud, L., Klasa, A., and Chazan, G. (2024) Brussels struggles to placate farmers as far right stokes protests. *The Financial Times*, 25 January 2024
[ONLINE] Available at: https://www.ft.com/content/302c4a17-a91b-4ea2-a33d-ed563da8900d?accessToken=zwAGD8akHUHQkc8wLEoXqRtOotOjPe1WPaiQDQ.MEUCIBb1Am2sBFGO3PVbVIV0yJT9SzD4S7_oEBsW3TUOLxziAiEAkNTE7T4nbj6NNBsLRbVaG_HtCpu6t8pKLZEalgyZuo&sharetype=gift&token=4cd96711-0aba-4e50-9114-3771f5a50405 [Accessed: January 2024]

934

Monbiot, G. (2024) What do angry farmers in Nevada and Germany have in common? They're being exploited by the far right. *The Guardian*, 19 January 2024
[ONLINE] Available at: <https://www.theguardian.com/commentisfree/2024/jan/19/angry-farmers-nevada-germany-far-right-protest> Accessed January 2024

935

O'Carroll L. L. and Chrisafis, A. (2024) EU to delay new green rule in bid to appease protesting farmers, *The Guardian*, 31 January 2024
[ONLINE] Available at: <https://www.theguardian.com/environment/2024/jan/31/eu-delays-biodiversity-rules-amid-rising-protests-from-farmers>

936

Brunner, A. (2024) Disinformation is fuelling Europe's farming protests. *Inside Track*, 19 February
[ONLINE] Available at: <https://greenallianceblog.org.uk/2024/02/19/disinformation-is-fuelling-europes-farming-protests>

937

Lei Win, T., Nelsen A., and Kanter J., et al. (2023) Animal Welfare Wrecked. *Lighthouse Reports*, 23 October 2023.
[ONLINE] Available at: <https://www.lighthousereports.com/investigation/animal-welfare-wrecked/>

938

European Livestock Voice (2022) *South Africa bans "meaty" denominations for plant-based foods*, 4 July
[ONLINE] Available at: <https://meatthefacts.eu/home/activity/beyond-the-headlines/south-africa-bans-meaty-denominations-for-plant-based-foods/>

939

European Livestock Voice (2023) *Plant-based drinks cannot replace milk*, 10 March 2023,
[ONLINE] Available at: <https://meatthefacts.publishingbureau.co.uk/home/activity/beyond-the-headlines/plant-based-drinks-cannot-replace-milk/>

940

European Parliament (2019) *Amendments 171 (dairy) and 165 (meat) in Agri Committee Report 07/05/19*.
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/A-8-2019-0198_EN.pdf#page=169

941

Barry, S. (2021) Cheesed off? Controversial amendment 171 withdrawn from EU, *Euronews*, 28 May 2021
[ONLINE] Available at: <https://www.euronews.com/green/2021/05/28/cheesed-off-controversial-amendment-171-withdrawn-from-eu>

942

Vegeconomist (2021) Breaking! Dairy Lobby's Amendment 171 Is Rejected By The Eu Parliament, May 25, 2021, <https://vegconomist.com/society/breaking-dairy-lobbys-amendment-171-is-rejected-by-the-eu-parliament/>

943

Carrington, D. (2020) Battle over EU ban on 'veggie burger' label reaches key vote: Farmers and meat lobbyists accuse plant-based food producers of 'cultural hijacking'. *The Guardian*, 16 October 2020, <https://www.theguardian.com/environment/2020/oct/16/eu-ban-veggie-burger-label-parliament-vote-meat>

944

Carrington, D. (2020) Battle over EU ban on 'veggie burger' label reaches key vote: Farmers and meat lobbyists accuse plant-based food producers of 'cultural hijacking'.

945

BEUC letter to MEPs (2020) Subject: Plenary vote on meat and dairy denominations for plant-based products, 14 October 2020
[ONLINE] Available at: https://www.beuc.eu/publications/beuc-x-2020-095_plenary_vote_on_meat_and_dairy_denominations_for_plant-based_products.pdf

946

McCaffrey, D. (2020) What's the beef? Veggie burger ban rejected by MEPs, *Euronews*, 23 October2020
[ONLINE] Available at: <https://www.euronews.com/my-europe/2020/10/20/what-s-the-beef-veggie-burger-ban-faces-key-vote-in-brussels>

947

BEUC letter to MEPs (2020) Subject: Plenary vote on meat and dairy denominations for plant-based products.

948

Carrington, D. (2020) Battle over EU ban on 'veggie burger' label reaches key vote: Farmers and meat lobbyists accuse plant-based food producers of 'cultural hijacking', *The Guardian*, 16 October 2020, <https://www.theguardian.com/environment/2020/oct/16/eu-ban-veggie-burger-label-parliament-vote-meat>

949

EVP Timmermans and Danone (2020) Follow-up to the meeting in between EVP Timmermans and Danone. Redacted 16 March 2023, Ares(2023)1902695
[ONLINE] Available at: https://www.asktheeu.org/en/request/12890/response/48661/attach/5/3.Follow%20up%20to%20the%20meeting%20in%20between%20EVP%20Timmermans%20and%20Danone%20Redacted.pdf?cookie_passthrough=1

950

Meeting minutes (2021) *Danone Unilever Nestle_26.04.2021*
[ONLINE] Available at: https://www.asktheeu.org/en/request/12890/response/48663/attach/10/8.Minutes%20Lukas%20Visek%20Nestle%20Danone%20Unilever%2026.04.2021.pdf?cookie_passthrough=1

951

Brzeziński, B. and Mathiesen, M. (2024) EU dumped lab meats from climate plans on farm chief’s demand. *Politico*, 9 February 2024
[ONLINE] Available at: <https://www.politico.eu/article/eu-lab-meat-climate-plan-agriculture-commissioner-janusz-wojciechowski/>

952

Boren, Z. (2023) UK to crack down on plant-based food and drink labels. *Unearthed*, 20 May
[ONLINE] Available at: <https://unearthed.greenpeace.org/2023/05/20/plant-based-dairy-marketing-lobbying/>

953

Brzeziński, B. and Mathiesen, M. (2024) EU dumped lab meats from climate plans on farm chief’s demand.

954

Kirby, P. (2023) Italy bans lab-grown meat in nod to farmers. *BBC News*, 17 November 2023
[ONLINE] Available at: <https://www.bbc.co.uk/news/world-europe-67448116>

955

Rajesh, A. M. (2023) Beyond Meat again cuts annual revenue forecast, launches new cost-cut program. *Reuters*, 2 November 2023.
[ONLINE] Available at: <https://www.reuters.com/business/retail-consumer/beyond-meat-cuts-annual-revenue-forecast-reviewing-china-operations-2023-11-02/> [Accessed: January 2024].

956

Butler S. and Kollewe, J. (2023) Sales at vegan burger maker Beyond Meat fall by almost a third, *The Guardian*, 8 August 2023,
[ONLINE] Available at: <https://www.theguardian.com/business/2023/aug/08/sales-at-vegan-burger-maker-beyond-meat-fall-by-almost-a-third> [Accessed: January 2024.]

957

Rainey, C. (2023) Beyond Meat’s new ads send the trillion-dollar meat industry a coded message: Here’s what they mean. *The Fast Company*. 4 August 2023.
[ONLINE] Available at: <https://www.fastcompany.com/90933389/beyond-meat-new-ad-campaign-meat-industry-attacks-fight-back#:~:text=The%20%27s%20Goodness%20Here%20campaign,base%20ingredient%20in%20Beyond%20products> [Accessed: January 2024]

958

Butler, S., and Kollewe, J. (2023) Sales at vegan burger maker Beyond Meat fall by almost a third. *The Guardian*, 08 August 2023.
[ONLINE] Available at: <https://www.theguardian.com/business/2023/aug/08/sales-at-vegan-burger-maker-beyond-meat-fall-by-almost-a-third>

959

Graham, M. (2023) What happened to the thrill of plan-based meat? *Grist*, 3 August 2023
[ONLINE] Available at: <https://grist.org/culture/plant-based-meat-beyond-beef-sales-decline-impossible-burger/>

960

Rajesh, MN. (2023) Beyond Meat again cuts annual revenue forecast, launches new cost-cut program. *Reuters*, 02 November 2023.
[ONLINE] Available at: <https://www.reuters.com/business/retail-consumer/beyond-meat-cuts-annual-revenue-forecast-reviewing-china-operations-2023-11-02/>

961

Butler, S., and Kollewe, J. (2023) Sales at vegan burger maker Beyond Meat fall by almost a third.

962

AGRI Committee (2022) Amendments 87 and 243 In: *AMENDMENTS 29 - 267 - Draft opinion Amending Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste*, 16 November 2022
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/AGRI-AM-737533_EN.docx

963

European Parliament AGRI Committee (2023) Amendment 24 In: Opinion <CommissionResp>of the Committee on Agriculture and Rural Development</CommissionResp> <CommissionInt>for the Committee on the Environment, Public Health and Food Safety </CommissionInt><Titre>on the proposal for a Directive of the European Parliament and of the Council amending Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste. </Titre><DocRef>(COM(2022)0156 – C90144/2022 – 2022/0104(COD) (COD))
[ONLINE] Available at:https://www.europarl.europa.eu/doceo/document/AGRI-AD-736485_EN.docx

964

AGRI Committee (2022) Amendments 87 and 243 In: *AMENDMENTS 29 - 267 - Draft opinion Amending Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste*, 16 November 2022
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/AGRI-AM-737533_EN.docx

965

AGRI Committee (2022) Amendments 87 and 243 In: *AMENDMENTS 29 - 267 - Draft opinion Amending Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste*, 16 November 2022
[ONLINE] Available at: https://www.europarl.europa.eu/doceo/document/AGRI-AM-737533_EN.docx

966

Kirby, P. (2023) Italy bans lab-grown meat in nod to farmers. *BBC*, 17 November 2024.
[ONLINE] Available at: <https://www.bbc.co.uk/news/world-europe-67448116>

967

Amante, A. (2023) Italy wages war on lab-grown food in drive to protect tradition. *Reuters*, 28 March 2023.
[ONLINE] Available at: <https://www.reuters.com/world/europe/italy-moves-ban-lab-grown-meat-drive-protect-home-products-2023-03-28/>

968

Changing Markets Foundation (2023) *Truth, Lies and Culture Wars: Social listening analysis of meat and dairy persuasion narratives*

969

Changing Markets Foundation (2023) *Truth, Lies and Culture Wars: Social listening analysis of meat and dairy persuasion narratives*

970

Euronews (2024) Italian farmers protest 'Made in Italy' labelling. *Euronews*, 09 April 2024
[ONLINE] Available at: <https://www.euronews.com/2024/04/09/italian-farmers-protest-made-in-italy-labelling>

971

Kirby, P. (2023) Italy bans lab-grown meat in nod to farmers.

972

Changing Markets Foundation (2023) *Truth, Lies and Culture Wars: Social listening analysis of meat and dairy persuasion narratives*

973

Giuffrida, A. (2024) The Italian cricket-breeders putting a positive spin on insect-based food. *The Guardian*, 24 February 2024
[ONLINE] Available at: <https://www.theguardian.com/world/2024/feb/25/italian-cricket-breeders-insect-based-food>

974

Bambridge-Sutton, A (2024) The future of Italy’s cultivated meat ban. *FoodNavigator Europe*, 22 February 2024
[ONLINE] Available at: <https://www.foodnavigator.com/Article/2024/02/22/Italy-s-cultivated-meat-ban-postponed>

975

Wall Street Apes (2023) Italy says no to Bill Gates, X (Twitter) post, 20 October 2023
[ONLINE] Available at: <https://twitter.com/WallStreetApes/status/1715224379867681208>

976

Luca F (2024) Italy abstains on another part of the European Green Deal. *EU News*, 29 January 2024
[ONLINE] Available at: <https://www.eunews.it/en/2024/01/29/italy-abstains-on-another-part-of-the-european-green-deal/#>

977

BBC (2024) *BBC The Context: Giorgia Meloni to run in EU elections*, BBC [VIDEO] Available at: <https://www.youtube.com/watch?v=fZFjwXb7bo>

978

Greco, C. (2023) Italian farmer battles frost, floods, heat and hail in epic year. *Reuters*, 21 July 2023
[ONLINE] Available at: <https://www.reuters.com/world/europe/italian-farmer-battles-frost-floods-heat-hail-epic-year-2023-07-20/>

979

O’Carroll, L (2024) EU nature restoration laws face collapse as member states withdraw support. *The Guardian*, 25 March 2024
[ONLINE] Available at: <https://www.theguardian.com/world/2024/mar/25/eu-nature-restoration-laws-in-balance-as-member-states-withdraw-support>

980

O’Carroll, L (2024) EU nature restoration laws face collapse as member states withdraw support.

981

Camut, N. (2024) Italy’s PM Giorgia Meloni to run in EU election, *Politico EU*, 28 April
[ONLINE] Available at: <https://www.politico.eu/article/giorgia-meloni-european-election-2024-italy-prime-minister>

982

Guillot, L and Brzezinski, B. (2024) EPP pitches itself as farmers’ party ahead of 2024 European election. *Politico EU*, 04 May 2024
[ONLINE] Available at: <https://www.politico.eu/article/european-peoples-party-farmer-rural-interest-2024-european-election/>

983

Camut, N (2024) Italy’s PM Giorgia Meloni to run in EU election, *Politico EU*, 28 April 2024
[ONLINE] Available at: <https://www.politico.eu/article/giorgia-meloni-european-election-2024-italy-prime-minister/>

984

MEPs European Parliament (n.d.) *Paolo De Castro: Group of the Progressive Alliance of Socialists and Democrats in the European Parliament*
[ONLINE] Available at: https://www.europarl.europa.eu/meps/en/96891/PAOLO_DE+CASTRO/history/9

985

D’Ambrosi P and Inocenzi G. (2024) *Food for Profit* [FILM] <https://www.imdb.com/title/tt31315519/>

986

DeSmog (2023) *European Livestock Voice*
[ONLINE] Available at: <https://www.desmog.com/european-livestock-voice/>

987

Carni Sostenibili (2023) *Lab-grown meat can impact 50 times more than meat*
[ONLINE] Available at: <https://www.carnisostenibili.it/en/lab-grown-meat-impacts-10-to-50-times-more-than-natural-meat/>

988

Carni Sostenibili (2023) *The uselessness of lab-grown meat*
[ONLINE] Available at: <https://www.carnisostenibili.it/en/the-uselessness-of-lab-grown-meat/>

989

Wageningen University & research (2022) *Review and analysis of studies on sustainability of cultured meat*
[ONLINE] Available at: <https://www.carnisostenibili.it/wp-content/uploads/2023/04/da-un-gruppo-di-scientiati-di-Wageningen.pdf>

990

Changing Markets Foundation (2023) *Truth, Lies and Culture Wars: Social listening analysis of meat and dairy persuasion narratives.*

991

Changing Markets Foundation (2023) *Truth, Lies and Culture Wars: Social listening analysis of meat and dairy persuasion narratives.*

992

Changing Markets Foundation (2023) *Truth, Lies and Culture Wars: Social listening analysis of meat and dairy persuasion narratives.*

993

Council of the European Union (2024) *Subject: The CAP’s role on safeguarding high-quality and primary farm-based food production* [Letter] 18 January 2024. Available at:<https://data.consilium.europa.eu/doc/document/ST-5469-2024-INIT/en/pdf>

994

Fassler, J. (2023) Inside big beef’s climate messaging machine: confuse, defend and downplay. *The Guardian*, 3 May 2023. Available from: <https://amp.theguardian.com/environment/2023/may/03/beef-industry-public-relations-messaging-machine>

995

Boren, Z. (2022) Revealed: How the livestock industry funds the ‘greenhouse gas guru’. *UnEarthed*, 31 October 2022. Available from: <https://uneearthed.greenpeace.org/2022/10/31/frank-mitloehner-uc-davis-climate-funding/>

996

Kainz, N. (2024) Florida bans lab-grown meat, adding to similar efforts in three other states. *NBC News*, 02 May 2024.
[ONLINE] Available at: <https://www.nbcnews.com/science/science-news/florida-bans-lab-grown-meat-adding-similar-efforts-four-states-rcna150386#>

997

Lee, AM. (2024) Alabama follows DeSantis’ lead in banning lab-grown meat. *CBS News*, 15 May 2024.
[ONLINE] Available at: <https://www.cbsnews.com/news/florida-alabama-lab-grown-mean-ban-2024/#:~:text=The%20Alabama%20bill%2C%20proposed%20by,made%20from%20cultured%20animal%20cells.%22>

998

Nowell, C. (2024) ‘Political efforts’: The Republican states trying to ban lab-grown meat. *The Guardian*, 09 April 2024
[ONLINE] Available at: <https://www.theguardian.com/environment/2024/apr/09/us-states-republicans-banning-lab-grown-meat#:~:text=In%202018%2C%20Missouri%20became%20the,Texas%20have%20since%20joined%20them>

999

Kainz, N. (2024) Florida bans lab-grown meat, adding to similar efforts in three other states. *NBC News*, 02 May 2024.
[ONLINE] Available at: <https://www.nbcnews.com/science/science-news/florida-bans-lab-grown-meat-adding-similar-efforts-four-states-rcna150386#>

1000

Hanke Vela, J. (2024) Throwing Ukraine under the tractor. *Politico*, 19 March 2024.
[ONLINE] Available at: <https://www.politico.eu/newsletter/brussels-playbook/throwing-ukraine-under-the-tractor/>

1001

Shahbandeh, M. (2023) Number of beef and milk cows in the United States from 2001 to 2023. *Statista*, 21 September 2023
[ONLINE] Available at: <https://www.statista.com/statistics/194302/number-of-beef-and-milk-cows-in-the-us/>

1002

EPA (2020) *Agriculture and Aquaculture: Food for Thought*, October 2020,
[ONLINE] Available at: <https://www.epa.gov/snep/agriculture-and-aquaculture-food-thought>

1003

Douglas, L. and Groome, N. (2022) Biden spending bill ignites debate over dairy methane pollution. *Reuters*, 12 January, 2022
[ONLINE] Available at: <https://www.reuters.com/markets/commodities/biden-spending-bill-ignites-debate-over-dairy-methane-pollution-2022-01-11/>

1004

EPA (n.d.) *Sources of Greenhouse Gas Emissions*.
[ONLINE] Available at: <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

1005

NYU (2021) *Is the US Understating Climate Emissions from Meat and Dairy Production*1 June 2021,
[ONLINE] Available at: <https://www.nyu.edu/about/news-publications/news/2021/june/is-the-u-s--understating-climate-emissions-from-meat-and-dairy-p.html>

1006

Gustin, G. and McKenna, P. (2023) Reducing Methane From Livestock Is Critical for Stabilizing the Climate, but Congress Continues to Block Farms From Reporting Emissions Anyway. *Inside Climate News*, 22 December 2023
[ONLINE] Available at: <https://insideclimatenews.org/news/22122023/milking-it-reducing-methane-from-livestock-critical-for-climate/>

1007

Gustin, G. and McKenna, P. (2023) Reducing Methane From Livestock Is Critical for Stabilizing the Climate, but Congress Continues to Block Farms From Reporting Emissions Anyway.

1008

Gustin, G. and McKenna, P. (2023) Reducing Methane From Livestock Is Critical for Stabilizing the Climate, but Congress Continues to Block Farms From Reporting Emissions Anyway.

1009

Gustin, G. and McKenna, P. (2023) Reducing Methane From Livestock Is Critical for Stabilizing the Climate, but Congress Continues to Block Farms From Reporting Emissions Anyway.

1010

McKenna, P., Gustin, G., and Aldhous, P. (2023) California’s Top Methane Emitter is a Vast Cattle Feedlot. For Now, Federal and State Green-house Gas Regulators Are Giving It a Pass. *Inside Climate News*, 18 August 2023
[ONLINE] Available at: <https://insideclimatenews.org/news/18082023/californias-top-methane-emitter-is-cattle-feedlot/>

1011

Gustin, G. and McKenna, P. (2023) Reducing Methane From Livestock Is Critical for Stabilizing the Climate, but Congress Continues to Block Farms From Reporting Emissions Anyway.

1012

United States Congress (2009) *Nomination of Gov. Thomas J. Vilsack, of Iowa, to be Secretary of Agriculture, By. Senate*. Committee on Agriculture, Nutrition, and Forestry, Hearing 14 January, 2009
[ONLINE] Available at: https://books.google.co.uk/books?id=lqD-W_61_OYC&pg=PA107&lpg=PA107&dq=NMPF+vilsack&source=bl&ots=yBQByS003M&sig=AC-fU3U01-waXgFzY9isrfUbeSNudQl4Akw&hl=en&sa=X&ved=2ahUKEwil3qriy73_AhX4QEEAHVsMBrYQ6AF6BAGbEAM#v=onepage&q=NMPF%20vilsack&f=false

1013

Kelloway, C. (2020) Tom Vilsack for Agriculture Secretary Is Everything That's Wrong With the Democratic Party. *The Intercept*, 11 December 2020
[ONLINE] Available at:<https://theintercept.com/2020/12/11/democrat-tom-vilsack-usda-secretary-farms/>

1014

United States Department for Agriculture (2014) *2014 Farm Bill Highlights*.
[ONLINE] Available at: <https://www.usda.gov/sites/default/files/documents/usda-2014-farm-bill-highlights.pdf>

1015

Ranney, J. (2022), Third Time Is Not the Charm for Secretary Vilsack. *Center for Food Safety*, 10 March 2022
[ONLINE] Available at: <https://www.centerforfoodsafety.org/blog/6590/third-time-is-not-the-charm-for-secretary-vilsack>

1016

Kelloway, C. (2020) Tom Vilsack for Agriculture Secretary Is Everything That's Wrong With the Democratic Party. *The Intercept*, 11 December 2020
[ONLINE] Available at: <https://theintercept.com/2020/12/11/democrat-tom-vilsack-usda-secretary-farms/>

1017

USDA (2012) *Agriculture Secretary Vilsack Tours a Methane Digester Operation on a Pennsylvania Dairy Farm*
[ONLINE] Available at: <https://www.usda.gov/media/press-releases/2012/07/17/agriculture-secretary-vilsack-tours-methane-digester-operation>

1018

Spivak, C. (2019) Ex-agriculture secretary Tom Vilsack is the top paid executive at Dairy Management. *Milwaukee Journal Sentinel*, 2 December 2019
[ONLINE] Available at: <https://eu.jsonline.com/story/news/special-reports/dairy-crisis/2019/12/02/former-secretary-agriculture-tom-vilsack-top-paid-dairy-management-exec/4265818002/>

1019

Goldstein, L. (2023) Farmers Pay Big Ag to Lobby Against Them. *The American Prospect*, 4 April 2023
[ONLINE] Available at: <https://prospect.org/power/2023-04-04-big-ag-lobbies-against-farmers/>

1020

Douglas, L. (2020) *Successful Farming, Farmers, advocates concerned about Vilsack's record on dairy issues*
[ONLINE] Available at: <https://www.agriculture.com/news/business/farmers-advocates-concerned-about-vilsack-s-record-on-dairy-issues>

1021

Farm Action (2023) *Checkoff Corruption: It's What's for Dinner*
[ONLINE] Available at: <https://farmaction.us/2023/04/12/checkoff-corruption/>

1022

Spiegel, B. (2021) Why Black farmers don't trust Tom Vilsack. *Successful Farming*, 2 February 2021,
[ONLINE] Available at: <https://www.agriculture.com/news/why-black-farmers-dont-trust-tom-vilsack>

1023

Kelloway, C. (2020) Tom Vilsack for Agriculture Secretary Is Everything That's Wrong With the Democratic Party. *The Intercept*, 11 December 2020
[ONLINE] Available at:<https://theintercept.com/2020/12/11/democrat-tom-vilsack-usda-secretary-farms/>

1024

Ranney, J. (2022), Third Time Is Not the Charm for Secretary Vilsack. *Center for Food Safety*, 10 March 2022
[ONLINE] Available at:<https://www.centerforfoodsafety.org/blog/6590/third-time-is-not-the-charm-for-secretary-vilsack>

1025

Douglas, L. (2020) *Successful Farming, Farmers, advocates concerned about Vilsack's record on dairy issues*, 18 December 2020
[ONLINE] Available at: <https://www.agriculture.com/news/business/farmers-advocates-concerned-about-vilsack-s-record-on-dairy-issues>

1026

Philpott, T. (2017) The Head of Obama's USDA Just Took a Cushy Big Dairy Job. *Mother Jones*, 10 January 201,
[ONLINE] Available at: <https://www.motherjones.com/politics/2017/01/obamas-usda-chief-mulls-move-big-dairy/>

1027

Goldstein, L. (2023) Farmers Pay Big Ag to Lobby Against Them. *The American Prospect*, 4 April 2023
[ONLINE] Available at: <https://prospect.org/power/2023-04-04-big-ag-lobbies-against-farmers/>

1028

Dairy Cares (2020) *California's Planet-Smart Dairies: A Model for National Climate Efforts*, 30 December 2020
[ONLINE] Available at: <https://www.dairycares.com/post/california-s-planet-smart-dairies-a-model-for-national-climate-efforts>

1029

Dayen, D. (2019) Obama's Agriculture Secretary, Now Working for the Dairy Industry, Urges 2020 Democrats to Be Nice to the Dairy Industry. *The Intercept*,
[ONLINE] Available at: <https://theintercept.com/2019/05/06/tom-vilsack-dairy-farm-monopoly/>

1030

Kelloway, C. (2020) Tom Vilsack for Agriculture Secretary Is Everything That's Wrong With the Democratic Party. *The Intercept*, 11 December 2020
[ONLINE] Available at: <https://theintercept.com/2020/12/11/democrat-tom-vilsack-usda-secretary-farms/>

1031

Hansen-Kuhn, K. (2022) *Who really won the U.S. versus Canada dairy trade dispute?* Institute for Agriculture & Trade Policy
[ONLINE] Available at: <https://www.iatp.org/blog/202202/who-really-won-us-versus-canada-dairy-trade-dispute>

1032

Office of the United States Trade Representative, Executive Office of the President (2023) *What they are saying: USMCA dairy ruling*
[ONLINE] Available at: <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2023/november/what-they-are-saying-usmca-dairy-ruling#:~:text=U.S.%20Secretary%20of%20Agriculture%20Tom,workers%2C%20processors%2C%20and%20exporters>

1033

Hansen-Kuhn, K. (2022) *Who really won the U.S. versus Canada dairy trade dispute?* Institute for Agriculture & Trade Policy
[ONLINE] Available at: <https://www.iatp.org/blog/202202/who-really-won-us-versus-canada-dairy-trade-dispute>

1034

Kelloway, C. (2020) Tom Vilsack for Agriculture Secretary Is Everything That's Wrong With the Democratic Party. *The Intercept*, 11 December 2020
[ONLINE] Available at:<https://theintercept.com/2020/12/11/democrat-tom-vilsack-usda-secretary-farms/>

1035

USDEC (2019) U.S. Dairy Exports Start with Farmer Passion for Sustainability, Customer Focus, Animal Care and Efficiency, 9 April 2019
[ONLINE] Available at: <https://blog.usdec.org/usdairyexporter/us-dairy-exports-start-with-farmer-passion-for-sustainability-customer-focus-animal-care-and-efficiency-0>

1036

USDEC (2023) For U.S. dairy farmers, every day is Earth Day, 19 April 2023,
[ONLINE] Available at: <https://blog.usdec.org/usdairyexporter/for-us-dairy-farmers-every-day-is-earth-day-0>

1037

Dayen, D. (2019) Obama's Agriculture Secretary, Now Working for the Dairy Industry, Urges 2020 Democrats to Be Nice to the Dairy Industry. *The Intercept*,
[ONLINE] Available at: <https://theintercept.com/2019/05/06/tom-vilsack-dairy-farm-monopoly/>

1038

USDEC (2021) USDEC Commends Senate Confirmation of President and CEO Tom Vilsack as U.S. Agriculture Secretary
[ONLINE] Available at: <https://www.usdec.org/newsroom/news-releases/news-releases/news-release-02/23/2021>

1039

Douglas, L. (2020) *Successful Farming, Farmers, advocates concerned about Vilsack's record on dairy issues*, 18 December 2020,
[ONLINE] Available at: <https://www.agriculture.com/news/business/farmers-advocates-concerned-about-vilsack-s-record-on-dairy-issues>

1040

Ranney, J. (2022) Third Time Is Not the Charm for Secretary Vilsack. *Center for Food Safety*, 10 March 2022
[ONLINE] Available at: <https://www.centerforfoodsafety.org/blog/6590/third-time-is-not-the-charm-for-secretary-vilsack>

885

Morris, V. (2021) The Cow-Shaped Hole in Biden's Methane Plan. *Politico*, 16 November 2021,
[ONLINE] Available at: <https://www.politico.com/news/agenda/2021/11/16/methane-emissions-cows-agriculture-climate-change-522550>

1041

1042 Morris, V. (2021) The Cow-Shaped Hole in Biden's Methane Plan. *Politico*, 16 November 2021,

1043

Harvey, F. (2021) Americans can eat meat while cutting global heating, says agriculture secretary. *The Guardian*, 6 November 2021,
[ONLINE] Available at: <https://www.theguardian.com/environment/2021/nov/06/americans-can-eat-meat-while-cutting-global-heating-says-agriculture-secretary>

1044

Changing Markets Foundation (2023) *High Steaks: How focusing on agriculture can ensure the EU meets its methane reduction goals*
[ONLINE] Available at: <https://changingmarkets.org/wp-content/uploads/2022/06/High-stakes-Part-1.pdf>

1045

Delft, C.E. (2022) *Methane reduction potential in the EU. Between 2020 and 2030.*
[ONLINE] Available at: <https://cedelft.eu/publications/methane-reduction-potential-in-the-eu-between-2020-and-2030/>

1046

Fakta, J. (2021) Biden's climate goals don't call for less meat production, *Farm Progress*, 10 November 2021
[ONLINE] Available at: <https://www.farmprogress.com/farm-operations/biden-s-climate-goals-don-t-call-for-less-meat-production>

1047

Compassion in World Farming (2023) *More Money More Meat.*
[ONLINE] Available at: <https://www.ciwfdocs.org/docs/-D187968>

1048

National Sustainable Agriculture Coalition (2023) *Who benefits? A look at the partnership for climate smart commodities preliminary awards.*
[ONLINE] Available at: <https://sustainableagriculture.net/blog/who-benefits-a-look-at-the-partnership-for-climate-smart-commodities-preliminary-awards/>

1049

Lilliston, B. (2022) *Who owns the climate smart commodity?* Institute for Agriculture & Trade Policy
[ONLINE] Available at: <https://www.iatp.org/who-owns-climate-smart-commodity>

1050

National Sustainable Agriculture Coalition (2023) *Who benefits? A look at the partnership for climate smart commodities preliminary awards.*

1051

Yarrow, G. (2024) Lawmakers press Mexico to deliver on water treaty. *Politico*, 22 April 2024
[ONLINE] Available at: <https://www.politico.com/newsletters/weekly-agriculture/2024/04/22/lawmakers-press-mexico-to-deliver-on-water-treaty-00153547>

1052

Lilliston, B. (2022) *Who owns the climate smart commodity?* Institute for Agriculture & Trade Policy
[ONLINE] Available at: <https://www.iatp.org/who-owns-climate-smart-commodity>

1053

National Sustainable Agriculture Coalition (2023) *Who benefits? A look at the partnership for climate smart commodities preliminary awards.*

1054

Dickey, D. (2023) Big Meat lobbyists are bullying lawmakers into submission. *Investigate Midwest*, 1June 2023
[ONLINE] Available at: <https://investigatemidwest.org/2023/06/01/big-meat-lobbyists-are-bullying-lawmakers-into-submission/>

1055

Agricultural Marketing Service, U.S. Department of Agriculture (2024) *FAQ for Transparency in Poultry Grower Contracting and Tournaments Final Rule.*
[ONLINE] Available at: <https://www.ams.usda.gov/rules-regulations/faqs-transparency-poultry-grower-contracting-and-tournaments-final-rule>

1056

Environmental Working Group (n.d.) *Farm Subsidy Primer.* Retrieved from <https://farm.ewg.org/subsidyprimer.php>

1057

Simon, D. R. (2013) *Meatonomics: How the Rigged Economics of Meat and Dairy Make You Consume Too Much — and How to Eat Better, Live Longer, and Spend Smarter.* San Francisco, CA: Conari Press.

1058

Simon, D. R. (2013) *Meatonomics: How the Rigged Economics of Meat and Dairy Make You Consume Too Much — and How to Eat Better, Live Longer, and Spend Smarter.*

1059

Stray Dog Institute (2022) *Challenges and Opportunities Surrounding US Agricultural Subsidies.*
[ONLINE] Available at: <https://straydoginstitute.org/agricultural-subsidies/>

1060

Garofalo, P. (2021) The Big Tax Breaks Behind Big Chicken. *Public Seminar*, 1 September 2021
[ONLINE] Available at <https://publicseminar.org/essays/the-big-tax-breaks-behind-big-chicken/>

1061

Simon, D. R. (2013) *Meatonomics: How the Rigged Economics of Meat and Dairy Make You Consume Too Much — and How to Eat Better, Live Longer, and Spend Smarter.* San Francisco, CA: Conari Press.

1062

USDA (2022) *Farms and Land in Farms: 2021 Summary.*
[ONLINE] Available at: https://www.nass.usda.gov/Publications/Todays_Reports/reports/fnlo0222.pdf

1063

Deese, B., Fazili, S., and Ramamurti, B. (2021). Addressing Concentration in the Meat-Processing Industry to Lower Food Prices for American Families. *The White House Blog*, 8 September
[ONLINE] Available at: <https://www.whitehouse.gov/briefing-room/blog/2021/09/08/addressing-concentration-in-the-meat-processing-industry-to-low-er-food-prices-for-american-families/>

1064

Harvey, F. (2021) Americans can eat meat while cutting global heating, says agriculture secretary. *The Guardian*, 6 November
[ONLINE] Available at: <https://www.theguardian.com/environment/2021/nov/06/americans-can-eat-meat-while-cutting-global-heating-says-agriculture-secretary>

1065

Xu, X., Sharma, P., and Shu, S., et al. (2021) Global greenhouse gas emissions from animal-based foods are twice those of plant-based foods. *Nature Food* 2, 724–732
[ONLINE] Available at: <https://doi.org/10.1038/s43016-021-00358-x>

1066

Xu, X., Sharma, P., and Shu, S., et al. (2021) Global greenhouse gas emissions from animal-based foods are twice those of plant-based foods.

1067

Harwatt, H., Ripple, W. J., and Chaudhary, A., et al. (2019) Scientists call for renewed Paris pledges to transform agriculture. *The Lancet Planetary Health*
[ONLINE] Available at: [https://www.thelancet.com/journals/lanpih/article/PIIS2542-5196\(19\)30245-1/fulltext](https://www.thelancet.com/journals/lanpih/article/PIIS2542-5196(19)30245-1/fulltext)

1068

Dutkiewicz, J. and Rosenberg, G. N. (2023) Why Right-Wingers Are So Afraid of Men Eating Vegetables. *The New Republic*, 17 April 2023
[ONLINE] Available at: <https://newrepublic.com/article/171781/meat-culture-war-cricket>

1069

Samuel, S. (2021) It's not just Big Oil. Big Meat also spends millions to crush good climate policy. *Vox*, 13 April 20/21
[ONLINE] Available at: <https://www.vox.com/future-perfect/22379909/big-meat-companies-spend-millions-lobbying-climate>

1070

Samuel, S. (2021) It's not just Big Oil. Big Meat also spends millions to crush good climate policy.

1071

Lazarus, O., McDermid, S., and Jacquet, J. (2021)The climate responsibilities of industrial meat and dairy producers. *Climatic Change* 165: 30.
[ONLINE] Available at: <https://link.springer.com/article/10.1007/s10584-021-03047-7#citeas>

1072

Samuel, S. (2021) It's not just Big Oil. Big Meat also spends millions to crush good climate policy.

1073

Samuel, S. (2021) It's not just Big Oil. Big Meat also spends millions to crush good climate policy.

1074

OpenSecrets (n.d.) *Tyson Foods*
[ONLINE] Available at: <https://www.opensecrets.org/orgs/tyson-foods/totals?id=D000000460>

1075

US Federal Election Commission (n.d.) *Contribution limits*.
[ONLINE] Available at: <https://www.fec.gov/help-candidates-and-committees/candidate-taking-receipts/contribution-limits/>

1076

Open Secrets (n.d.) *Political Action Committees (PACs)*
[ONLINE] Available at: <https://www.opensecrets.org/political-action-committees-pacs/2022>

1077

USDA (2019) *ATAC for Trade in Animals and Animal Products Committee Charter*.
[ONLINE] Available at: https://www.fas.usda.gov/sites/default/files/2019-06/trade_-_animals_charter_2019_as_filed_6.7.19.pdf

1078

USDA (n.d.) *ATAC for Trade in Animals and Animal Products*.
[ONLINE] Available at: <https://www.fas.usda.gov/atac-trade-animals-and-animal-products>

1079

USDA (n.d.) *ATAC for Trade in Animals and Animal Products*.
[ONLINE] Available at: <https://www.fas.usda.gov/atac-trade-animals-and-animal-products>

1080

Norton, H. (2021) Two dozen countries announce commitment to EU-US global methane pledge. *Euractiv*, 12 October 2021
[ONLINE] Available at: <https://www.euractiv.com/section/climate-environment/news/two-dozen-countries-announce-commitment-to-eu-us-global-methane-pledge/>

1081

Lockwood, A. (2021) Animal Agriculture Was Critically Ignored at COP26—But Why? *Sentient Media*, 16 November 2021
[ONLINE] Available at: <https://sentientmedia.org/animal-agriculture-was-critically-ignored-at-cop26-but-why/>

1082

Lilliston, B. (2021) Meeting the Methane Pledge: The U.S. can do more on agriculture. *IATP*, 21 June 2022.
[ONLINE] Available at: <https://www.iatp.org/meeting-methane-pledge-us-can-do-more-agriculture>

1083

Boren, Z. (2022) Beef lobbyists celebrate methane 'win' at COP26. *Unearthed*, 7 March 2022
[ONLINE] Available at: <https://unearthed.greenpeace.org/2022/03/07/biden-methane-pledge-beef-climate-lobbying/>

1084

National Hog Farmer (2021) *Biden makes 30% methane emissions reduction goal*, 21 September 2021,
[ONLINE] Available at: <https://web.archive.org/web/20211020093305/https://www.nationalhogfarmer.com/news/biden-makes-30-methane-emissions-reduction-goal>

1085

NCBA (2021) *NCBA Confident in U.S. Cattle Record, Urges Open Dialogue on Methane Target*, 17 September 2021
[ONLINE] Available at: <https://www.ncba.org/ncba-news/news-releases/news/details/27815/ncba-confident-in-us-cattle-record-urges-open-dialogue-on-methane-target>

1086

Krupnick, M. (2022) US beef industry emerges from Biden's climate pledges 'relatively unscathed', The Guardian,7 March 2022
[ONLINE] Available at: <https://www.theguardian.com/environment/2022/mar/07/us-beef-industry-cop26-methane-gas>

1087

National Hog Farmer (2021) *Biden makes 30% methane emissions reduction goal*, 21 September 2021,
[ONLINE] Available at: <https://web.archive.org/web/20211020093305/https://www.nationalhogfarmer.com/news/biden-makes-30-methane-emissions-reduction-goal>

1088

Global Dairy Platform (2022) *GDP Bulletin January / February 2022*,
[ONLINE] Available at: <https://globaldairyplatform.com/media-archives/gdp-bulletin-january-february-2022/>

1089

Global Dairy Platform (2022) *GDP Bulletin January / February 2022*,
[ONLINE] Available at: <https://globaldairyplatform.com/media-archives/gdp-bulletin-january-february-2022/>

1090

AIM for Climate (2022) *AIM for Climate Ministerial Meeting February 21, 2022 - Expo 2020, Dubai, United Arab Emirates*
[ONLINE] Available at: https://www.asktheeu.org/en/request/11953/response/41234/attach/8/AIM%20for%20Climate%20Ministerial%20Meeting%20Summary.pdf?cookie_passthrough=1

1091

Aim for Climate (n.d.) Partners
[ONLINE] Available at: <https://www.aimforclimate.org/#partners>

1092

Undeniably Dairy (n.d.) Checkoff funded Dairy Manamgement Inc. 'founded the U.S. Dairy Export Council and the Innovation Center for U.S. Dairy'
[ONLINE] Available at: <https://www.usdairy.com/about-us/dmi>

1093

Fisher, P. (2022) *The 'Dark Horse' of Climate Change: Agricultural Methane Governance in the United States and Canada*.
[ONLINE] Available at: https://fordschool.umich.edu/sites/default/files/2022-04/NACP_Fisher_final.pdf

1094

Fisher, P. (2022) *The 'Dark Horse' of Climate Change: Agricultural Methane Governance in the United States and Canada*.
[ONLINE] Available at: https://fordschool.umich.edu/sites/default/files/2022-04/NACP_Fisher_final.pdf

1095

Morris, V. (2021) The Cow-Shaped Hole in Biden's Methane Plan. *Politico*, 16 November 2021
[ONLINE] Available at: <https://www.politico.com/news/agenda/2021/11/16/methane-emissions-cows-agriculture-climate-change-522550>

1096

943 Morris, V. (2021) The Cow-Shaped Hole in Biden's Methane Plan. *Politico*, 16 November 2021
[ONLINE] Available at: <https://www.politico.com/news/agenda/2021/11/16/methane-emissions-cows-agriculture-climate-change-522550>

1097

Lilliston, B. (2022) Meeting the Methane Pledge: The U.S. can do more on agriculture., *IATP*, 21 June 2022
[ONLINE] Available at: <https://www.iatp.org/meeting-methane-pledge-us-can-do-more-agriculture>

1098

Krupnick, M.(2022) US beef industry emerges from Biden's climate pledges 'relatively unscathed', The Guardian,7 March 2022
[ONLINE] Available at: <https://www.theguardian.com/environment/2022/mar/07/us-beef-industry-cop26-methane-gas>

1099

Krupnick, M.(2022) US beef industry emerges from Biden's climate pledges 'relatively unscathed',

1100

Lilliston, B. (2021) Meeting the Methane Pledge: The U.S. can do more on agriculture. *IATP*, 21 June 2022 By,
[ONLINE] Available at: <https://www.iatp.org/meeting-methane-pledge-us-can-do-more-agriculture>

1101

Van Nostrand, V. and Levinson, A. (2023) The Inflation Reduction Act: Pro-Growth Climate Policy, *US Treasury*, 13 November 2023
[ONLINE] Available at:<https://home.treasury.gov/news/featured-stories/the-inflation-reduction-act-pro-growth-climate-policy>

1102

Douglas, L. and Groome, N. (2022) Biden spending bill ignites debate over dairy methane pollution. *Reuters*, 12 January, 2022
[ONLINE] Available at: <https://www.reuters.com/markets/commodities/biden-spending-bill-ignites-debate-over-dairy-methane-pollution-2022-01-11/>

1103

Lilliston, B. (2021) Meeting the Methane Pledge: The U.S. can do more on agriculture. *IATP*, 21 June 2022 By,
[ONLINE] Available at: <https://www.iatp.org/meeting-methane-pledge-us-can-do-more-agriculture>

1104

EarthJustice (2022) *Cut the Crap: The Need to Do More to Address Agricultural Methane Emissions*
[ONLINE] Available at: <https://earthjustice.org/experts/carrie-apfel/cut-the-crap-the-need-to-do-more-to-address-agricultural-methane-emissions>

1105

Fisher, P. (2022) *The ‘Dark Horse’ of Climate Change: Agricultural Methane Governance in the United States and Canada*.
[ONLINE] Available at: https://fordschool.umich.edu/sites/default/files/2022-04/NACP_Fisher_final.pdf

1106

Douglas, L. and Groome, N. (2022) Biden spending bill ignites debate over dairy methane pollution. *Reuters*, 12 January, 2022
[ONLINE] Available at: <https://www.reuters.com/markets/commodities/biden-spending-bill-ignites-debate-over-dairy-methane-pollution-2022-01-11/>

1107

Douglas, L. and Groome, N. (2022) Biden spending bill ignites debate over dairy methane pollution.

1108

OpenSecrets (2022) Bills Lobbied By Cargill Inc, H.R.5376 - Inflation Reduction Act of 2022
[ONLINE] Available at: <https://www.opensecrets.org/federal-lobbying/clients/bills?bid=hr5376-117&cycle=2022&id=D000000511&year=2022>

1109

Clerk of the House of Representatives (2022) *Lobbying Report – Federal Street Strategies, LLC Q4*
[ONLINE] Available at: <https://lda.senate.gov/filings/public/filing/58d57ff7-150c-47ca-bc9a-d5ccdd79a751/print/>

1110

OpenSecrets (2022) Bills Lobbied By Nestle SA, 2022, International tax provisions in the Build Back Better Act (H.R. 5376); Inflation Reduction Act (HR 5376)
[ONLINE] Available at: <https://www.opensecrets.org/federal-lobbying/clients/bills?bid=hr5376-117&cycle=2022&id=D000042332&year=2022>

1111

Clerk of the House of Representatives (2022) *Lobbying Report – Nestle USA Q3*.
[ONLINE] Available at: <https://lda.senate.gov/filings/public/filing/6c05e8d6-3e20-4b3f-9c34-e9e5192bd152/print/>

1112

OpenSecrets (2022) Bills Lobbied By National Cattlemen’s Beef Association, 2022 Re. Build Back Better Act (H.R. 5376)
[ONLINE] Available at: <https://www.opensecrets.org/federal-lobbying/clients/bills?bid=hr5376-117&cycle=2022&id=D000000252&year=2022>

1113

Clerk of the House of Representatives (2022) *Lobbying Report – National Cattlemen’s Beef Association Q1, Q2, Q3, and Q4*.
[ONLINE] Available at: <https://lda.senate.gov/filings/public/filing/6c05e8d6-3e20-4b3f-9c34-e9e5192bd152/print/>; <https://lda.senate.gov/filings/public/filing/b152c5b8-336c-4d8d-b33d-b8345353b983/print/>; <https://lda.senate.gov/filings/public/filing/a4adb5a5-5de2-4ec7-a0b9-8013685df334/print/>; <https://lda.senate.gov/filings/public/filing/ecbe567b-603d-4130-b006-ec404c575d74/print/>

1114

OpenSecrets (2022) *Bills Lobbied By National Pork Producers Council, 2022*.
[ONLINE] Available at: <https://www.opensecrets.org/federal-lobbying/clients/bills?cycle=2022&id=D000000676>

1115

Clerk of the House of Representatives (2022) *Lobbying Report – National Pork Producers Council Q1, Q3 and Q4*
[ONLINE] Available at: <https://lda.senate.gov/filings/public/filing/c6f3e268-fc2c-4fe0-b420-6e9562ff0ded/print/>; <https://lda.senate.gov/filings/public/filing/c8f57fe3-9d31-4a5a-aa81-0d12a8a80994/print/>; <https://lda.senate.gov/filings/public/filing/88124ecd-f0bf-493f-ad46-09f60c958611/print/>

1116

Open Secrets (2023) *Client Profile: National Pork Producers Council*
[ONLINE] Available at: <https://www.opensecrets.org/federal-lobbying/clients/bills?bid=hr5376-117&cycle=2023&id=D000000676&year=2023>

1117

OpenSecrets (2022) Bills Lobbied By National Milk Producers Federation, 2022.
[ONLINE] Available at: <https://www.opensecrets.org/federal-lobbying/clients/bills?cycle=2022&id=D000027865> See Report and Report.

1118

Clerk of the House of Representatives (2022) *Lobbying Report – National Milk Producers Federation Q3 and Q4*
[ONLINE] Available at: <https://lda.senate.gov/filings/public/filing/2877402f-219a-46a0-8dcf-0d119d62cd40/print/>; <https://lda.senate.gov/filings/public/filing/66b5fa93-a69a-4ee9-ac40-93617f1adae0/print/>

1119

Apfel, C. and Saifuddin, M. (2022) Cut the Crap: The Need to Do More to Address Agricultural Methane Emissions. *EarthJustice*, 17 August 2022
[ONLINE] Available at: <https://earthjustice.org/experts/carrie-apfel/cut-the-crap-the-need-to-do-more-to-address-agricultural-methane-emissions>

1120

National Sustainable Agriculture Coalition (2022) *Inflation Reduction Act of 2022: A Deep Dive on an Historic Investment in Climate and Conservation Agriculture*.
[ONLINE] Available at: <https://lda.senate.gov/filings/public/filing/6c05e8d6-3e20-4b3f-9c34-e9e5192bd152/print/>

1121

Happ, M. (2024) *Opening the door for more conservation* Institute for Agriculture & Trade Policy
[ONLINE] Available at: <https://www.iatp.org/opening-door-more-conservation>

1122

US Congress (2022) H.R.5376 - Inflation Reduction Act of 2022, TITLE II--Committee on Agriculture, Nutrition, and Forestry, Subtitle B--Conservation SEC. 21001. Additional Agricultural Conservation Investments,
[ONLINE] Available at: <https://www.congress.gov/bill/117th-congress/house-bill/5376/text>

1123

Environmental Working Group (2024) *Many newly labelled USDA climate-smart conservation practices lack climate benefits*
[ONLINE] Available at: <https://www.ewg.org/who-we-are>

1124

Happ, M. (2024) *Costly versus cost-effective*. Institute for Agriculture & Trade Policy
[ONLINE] Available at: <https://www.iatp.org/costly-versus-cost-effective>

1125

Environmental Working Group (2024) *Many newly labelled USDA climate-smart conservation practices lack climate benefits*
[ONLINE] Available at: <https://www.ewg.org/who-we-are>

1126

Northern Ag Network (2021) *American Farm Bureau: No Methane Tax on Livestock in Reconciliation Bill*, 1 October 2021,
[ONLINE] Available at: <https://northernag.net/american-farm-bureau-no-methane-tax-on-livestock-in-reconciliation-bill/>

1127

Herman, C. (2024) Farmers are in an abusive relationship with farm lobbies...can they get out? *Birdlife International*, 20 February 2024,
[ONLINE] Available at: <https://www.birdlife.org/news/2024/02/20/farmers-are-in-an-abusive-relationship-with-farm-lobbies/>

1128

McVan, M. (2022) American Farm Bureau Federation claims it’s the ‘voice of agriculture.’ Others beg to differ. *Missouri Independent*, -15 February 2022
[ONLINE] Available at: <https://missouriindependent.com/2022/02/15/american-farm-bureau-federation-claims-its-the-voice-of-agriculture-others-beg-to-differ/>

1129

Mullin, M. (2021) Mullin’ It Over Column: Blank Check for Socialism, Washington, 22 September 2021
[ONLINE] Available at: <https://web.archive.org/web/20210929013124/https://mullin.house.gov/news/documentsingle.aspx?DocumentID=4949>

1130

Northern Ag Network (2021) *American Farm Bureau: No Methane Tax on Livestock in Reconciliation Bill*
[ONLINE] Available at: <https://www.northernag.net/american-farm-bureau-no-methane-tax-on-livestock-in-reconciliation-bill/#:~:text=American%20Farm%20Bureau%20Federation%20Vice,a%20methane%20tax%20on%20agriculture>

1131

OpenSecrets (n.d.) Data About Mullins’ Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined.
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/markwayne-mullin/summary?cid=N00033410>

1132

Archive Today (2021) *Blank check for socialism*
[ONLINE] Available at: <https://archive.is/y2CWf>

1133

Funke, D. (2021) Fact check: \$3.5 trillion reconciliation bill doesn't include 'animal agriculture tax'. *USA Today*, 30 September 2021
[ONLINE] Available at: <https://eu.usatoday.com/story/news/factcheck/2021/09/30/fact-check-build-back-better-act-wouldnt-tax-cattle-farmers/5913599001/>

1134

OpenSecrets (n.d.) *Data About Kelly's Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined, 2022 data*
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/trent-kelly/contributors?cid=N00037003&cycle=2022&recs=100&type=C>

1135

Internet Archive WayBack Machine (2023) *Republican Motion #2 REPEAL THE COW TAX Offered by Representative Trent Kelly (MS-01)*
[ONLINE] Available at: <https://web.archive.org/web/20230419195622/https://budget.house.gov/wp-content/uploads/2021/09/MT1-2-Kelly-REPEAL-THE-COW-TAX.pdf>

1136

Northern Ag Network (2021) *American Farm Bureau: No Methane Tax on Livestock in Reconciliation Bill*
[ONLINE] Available at: <https://www.northernag.net/american-farm-bureau-no-methane-tax-on-livestock-in-reconciliation-bill/#::-:text=American%20Farm%20Bureau%20Federation%20Vice,a%20methane%20tax%20on%20agriculture>

1137

Apfel, C. and Saifuddin, M. (2022) Cut the Crap: The Need to Do More to Address Agricultural Methane Emissions. *EarthJustice*, 17 August 2022
[ONLINE] Available at: <https://earthjustice.org/experts/carrie-apfel/cut-the-crap-the-need-to-do-more-to-address-agricultural-methane-emissions>

1138

US Congress (n.d.) S.Amdt.5251 to S.Amdt.5194, 117th Congress (2021-2022)
[ONLINE] Available at: <https://www.congress.gov/amendment/117th-congress/senate-amendment/5251/text?s=a&r=237>

1139

OpenSecrets (n.d.) Data About Thune's Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined; 2022 data
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/john-thune/contributors?cid=N00004572&cycle=2022&recs=100&type=C> - 2022

1140

John Thune (2022) *Thune, Ernst Introduce Bill to Prohibit Government Monitoring of Livestock Emissions, Block Radical Climate Policies*, 14 September 2022
[ONLINE] Available at: <https://www.thune.senate.gov/public/index.cfm/2022/9/thune-ernst-introduce-bill-to-prohibit-government-monitoring-of-livestock-emissions-block-radical-climate-policies>

1141

Gustin, G. and McKenna, P. (2023) Reducing Methane From Livestock Is Critical for Stabilizing the Climate, but Congress Continues to Block Farms From Reporting Emissions Anyway. *Inside Climate News*, 22 December 2023
[ONLINE] Available at: <https://insideclimatenews.org/news/22122023/milking-it-reducing-methane-from-livestock-critical-for-climate/>

1142

Gustin, G. and McKenna, P. (2023) Reducing Methane From Livestock Is Critical for Stabilizing the Climate, but Congress Continues to Block Farms From Reporting Emissions Anyway.

1143

Gustin, G. and McKenna, P. (2023) Reducing Methane From Livestock Is Critical for Stabilizing the Climate, but Congress Continues to Block Farms From Reporting Emissions Anyway.

1144

Internet Archive WayBack Machine (2023) *Republican Motion #2 REPEAL THE COW TAX Offered by Representative Trent Kelly (MS-01)*
[ONLINE] Available at: <https://web.archive.org/web/20230419195622/https://budget.house.gov/wp-content/uploads/2021/09/MT1-2-Kelly-REPEAL-THE-COW-TAX.pdf>

1145

Fisher, P. (2022) *The 'Dark Horse' of Climate Change: Agricultural Methane Governance in the United States and Canada*.
[ONLINE] Available at: https://fordschool.umich.edu/sites/default/files/2022-04/NACP_Fisher_final.pdf

1146

OpenSecrets (n.d.) Data About Ernst's Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined; 2022 data
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/joni-ernst/contributors?cid=N00035483&cycle=2022&recs=100&type=C>

1147

US Congress (n.d.) S.1475 - Livestock Regulatory Protection Act of 2021 117th Congress (2021-2022)
[ONLINE] Available at: <https://www.congress.gov/bill/117th-congress/senate-bill/1475/committees?s=1&r=66>

1148

Miller, K. (2022) Arkansas Senator Could Take Helm of Powerful Agriculture Panel. *Food Manufacturing*, 8 November 2022
[ONLINE] Available at: <https://www.foodmanufacturing.com/ingredients/news/22538971/arkansas-senator-could-take-helm-of-powerful-agriculture-panel>

1149

OpenSecrets (n.d.) Data About Boozman's Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined; 2022 data:
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/john-boozman/contributors?cid=N00013873&cycle=2022&recs=100&type=C>

1150

OpenSecrets (n.d.) Data About Sinema's Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined; 2022 data:
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/kyrsten-sinema/contributors?cid=N00033983&cycle=2022&type=C>

1151

OpenSecrets (n.d.) Data About Mark Kelly's Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined; 2022 data:
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/mark-kelly/industries?cid=N00044223&cycle=2022&recs=0&type=C>

1152

John Thune U.S. Senator for South Dakota (2021) *Thune, Sinema Introduce Bill to Prevent Regulation of Livestock Emissions*.
[ONLINE] Available at: <https://www.thune.senate.gov/public/index.cfm/2021/4/thune-sinema-introduce-bill-to-prevent-regulation-of-livestock-emissions#::-:text=The%20Livestock%20Regulatory%20Protection%20Act,processes%20associated%20with%20livestock%20production>

1153

John Thune U.S. Senator for South Dakota (2009) *Thune, Schumer Introduce "Cow Tax" Prevention Bill, Puts Nail In Coffin Of Inane Proposal That Could Cost SD Farmers An Estimated \$367 Million And Put Family Farms At Risk Of Going Out Of Business*.
[ONLINE] Available at: <https://www.thune.senate.gov/public/index.cfm/press-releases?ID=1640F3EF-02E7-4618-BD72-36BBD5FFC69D>

1154

Earth Justice (2022) *Cut the Crap: The need to do more to address agricultural methane emissions*
[ONLINE] Available at: <https://earthjustice.org/experts/carrie-apfel/cut-the-crap-the-need-to-do-more-to-address-agricultural-methane-emissions>

1155

John Thune U.S. Senator for South Dakota (2021) *Thune, Sinema Introduce Bill to Prevent Regulation of Livestock Emissions*, 29 April 2021
[ONLINE] Available at: <https://www.thune.senate.gov/public/index.cfm/2021/4/thune-sinema-introduce-bill-to-prevent-regulation-of-livestock-emissions#::-:text=The%20Livestock%20Regulatory%20Protection%20Act,processes%20associated%20with%20livestock%20production>

1156

John Thune U.S. Senator for South Dakota (2022) *Thune, South Dakota Farm Bureau President Testify in Favor of Thune-Led Livestock Regulatory Protection Act*, 7 September 2022
[ONLINE] Available at: <https://www.thune.senate.gov/public/index.cfm/press-releases?ID=807AD73F-EF97-4E0C-B693-7D607436A5EA>

1157

John Thune U.S. Senator for South Dakota (2022) *Thune, South Dakota Farm Bureau President Testify in Favor of Thune-Led Livestock Regulatory Protection Act*, 7 September 2022
[ONLINE] Available at: <https://www.thune.senate.gov/public/index.cfm/press-releases?ID=807AD73F-EF97-4E0C-B693-7D607436A5EA>

1158

Congress.Gov (2023) *S.997 - Livestock Regulatory Protection Act of 2023, 118th Congress (2023-2024)*.
[ONLINE] Available at: <https://www.congress.gov/bill/118th-congress/senate-bill/997?s=1&r=27>

1159

John Thune U.S. Senator for South Dakota (2023) *Thune-Sinema Bill Would Prevent Regulation of Livestock Emissions*, 28 March 2023.
[ONLINE] Available at: <https://www.thune.senate.gov/public/index.cfm/press-releases?ID=CD7F8DF7-D7B6-496A-8FC3-1AD49E01C51A>

1160

John Thune U.S. Senator for South Dakota (2023) *Thune-Sinema Bill Would Prevent Regulation of Livestock Emissions*, 28 March 2023.
[ONLINE] Available at: <https://www.thune.senate.gov/public/index.cfm/press-releases?ID=CD7F8DF7-D7B6-496A-8FC3-1AD49E01C51A>

1161

Levin, S. (2021) *Global Methane Pledge Should Curb Meat and Dairy Production*. Physicians Committee for Responsible Medicine, 17 September 2021,
[ONLINE] Available at: <https://www.pcrm.org/news/blog/global-methane-pledge-should-curb-meat-and-dairy-production>

1162

Open Secrets (n.d.) *Bills Lobbied By National Cattlemen's Beef Assn, 2022*.
[ONLINE] Available at: <https://www.opensecrets.org/federal-lobbying/clients/bills?bid=s1475-117&cycle=2022&id=D000000252&year=2022;>

1163

Clerk of the House of Representatives (2022) *Lobbying Report – National Cattlemen's Beef Association Q1, Q2, Q3, Q4*.
[ONLINE] Available at: <https://lda.senate.gov/filings/public/filing/698a0e43-a4b6-4f6f-9804-b4f7a202eda8/print/>; <https://lda.senate.gov/filings/public/filing/b152c5b8-336c-4d8d-b33d-b8345353b983/print/>; <https://lda.senate.gov/filings/public/filing/a4adb5a5-5de2-4ec7-a0b9-8013685df334/print/> Q4 <https://lda.senate.gov/filings/public/filing/ecbe567b-603d-4130-b006-ec404c575d74/print/>

1164

Open Secrets (n.d) *Bills Lobbied By National Cattlemen's Beef Assn, 2023*.
[ONLINE] Available at: <https://www.opensecrets.org/federal-lobbying/clients/bills?bid=s1475-117&cycle=2023&id=D000000252&year=2022>

1165

Clerk of the House of Representatives (2023) *Lobbying Report – National Cattlemen's Beef Association Q1*.
[ONLINE] Available at: <https://lda.senate.gov/filings/public/filing/9dddbb7c-e4b8-4bb6-abbf-06bd018c7042/print/>

1166

Congress.Gov (2023) S.997 - *Livestock Regulatory Protection Act of 2023, 118th Congress (2023-2024)*
[ONLINE] Available at: <https://www.congress.gov/bill/118th-congress/senate-bill/997?s=1&r=27>

1167

Open Secrets (n.d.) *Kaitlynn Glover – Public Lands Council, Lobbyist*
[ONLINE] Available at: <https://www.opensecrets.org/revolving-door/glover-kaitlynn/summary?id=83412>

1168

European Commission (n.d.) *EU-US Collaboration Platform on Agriculture*.
[ONLINE] Available at: https://agriculture.ec.europa.eu/international/international-cooperation/eu-us-collaboration_en

1169

European Commission (2022) *Note for the File: Minutes of the Meeting of Golubiewski with USDEC, 17 October 2022*
[ONLINE] Available at: https://www.asktheeu.org/en/request/contacts_with_usda

1170

European Commission (2022) *Note for the File: Minutes of the Meeting of Golubiewski with USDEC, 17 October 2022*
[ONLINE] Available at: https://www.asktheeu.org/en/request/contacts_with_usda

1171

European Commission (n.d.) *EU-US Collaboration Platform on Agriculture*.
[ONLINE] Available at: https://agriculture.ec.europa.eu/international/international-cooperation/eu-us-collaboration_en

1172

European Commission (n.d.) 8.3 Annex 8.3 1533_001- background adm,
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2#outgoing-25398

1173

European Commission (n.d.) Annex 8.4 2021.11.30 Participation HoC to the AmCham EU_s Agriculture and Food Committee meeting – briefing,
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2#outgoing-25398

1174

European Commission (n.d.) *EU-US Collaboration Platform on Agriculture*.
[ONLINE] Available at: https://agriculture.ec.europa.eu/international/international-cooperation/eu-us-collaboration_en

1175

European Commission (2022) USDA-DG AGRI Virtual Event on Strategies to Reduce GHG Emissions from Livestock, 13 December 2022
[ONLINE] Available at: https://agriculture.ec.europa.eu/document/download/ef4ef61c-34ee-420a-b269-1fb7149b2aca_en?filename=event-report-cpa-live-stock-summary_en_0.pdf

1176

European Commission (2022) USDA-DG AGRI Virtual Event on Strategies to Reduce GHG Emissions from Livestock, 13 December 2022
[ONLINE] Available at: https://agriculture.ec.europa.eu/document/download/ef4ef61c-34ee-420a-b269-1fb7149b2aca_en?filename=event-report-cpa-live-stock-summary_en_0.pdf

1177

European Commission (2020) Cover letter 9.1 email - meeting with AmCham EU – follow-up Partial Redacted version, 2020
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2#outgoing-25398

1178

European Commission (2021) 7447449 7 Summary of the meeting between Head of Cabinet Golubiewski and the Agriculture and Food Committee of the American Chamber of Commerce (AmCham), 30 November 2021 Partial Redacted version, 2022
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2#outgoing-25398

1179

European Commission (2021) Annex 8.4 2021.11.30 Participation HoC to the AmCham EU_s Agriculture and Food Committee meeting – briefing,
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2#outgoing-25398

1180

European Commission (2021) Annex 8.4 2021.11.30 Participation HoC to the AmCham EU_s Agriculture and Food Committee meeting – briefing
[ONLINE] Available at: https://www.asktheeu.org/en/request/request_for_minutes_of_meetings_2#outgoing-25398

1181

Simpson, M. (2023) Simpson Reintroduces DAIRY PRIDE Act, March 8, 2023
[ONLINE] Available at: <https://simpson.house.gov/news/documentsingle.aspx?DocumentID=399876>

1182

US Congress (n.d.) S.1346 - DAIRY PRIDE Act 117th Congress (2021-2022)
[ONLINE] Available at: <https://www.congress.gov/bill/117th-congress/senate-bill/1346/text>

1183

US Congress (n.d.) S.549 - DAIRY PRIDE Act 118th Congress (2023-2024)
[ONLINE] Available at: <https://www.congress.gov/bill/118th-congress/senate-bill/549>

1184

US Congress (n.d.) S.549 - DAIRY PRIDE Act 118th Congress (2023-2024)
[ONLINE] Available at: <https://www.congress.gov/bill/118th-congress/senate-bill/549>

1185

Open Secrets (n.d.) Bills Lobbied By National Milk Producers Federation, 2022
[ONLINE] Available at: <https://www.opensecrets.org/federal-lobbying/clients/bills?bid=s1346-117&cycle=2022&id=D000027865&year=2022>

1186

OpenSecrets (n.d.) Data About Baldwin's Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined, 2022 data
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/tammy-baldwin/contributors?cid=N00004367&cycle=2022&recs=100&type=C>

1187

OpenSecrets (n.d.) Data About Collins' Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined, 2022 data
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/susan-collins/contributors?cid=N00000491&cycle=2022&recs=100&type=C>

1188

OpenSecrets, (n.d.) Data about Collins’ Personal finances
[ONLINE] Available at: <https://www.opensecrets.org/personal-finances/susan-collins/assets?cid=N00000491&year=2018>

1189

Peter Welch (n.d.) *About Peter*.
[ONLINE] Available at: <https://www.welch.senate.gov/about/>

1190

OpenSecrets (n.d.) Data About Welch’s Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined, 2022 data
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/peter-welch/contributors?cid=N00000515&cycle=2022&type=C>

1191

Simpson, M. (2023) Simpson Reintroduces DAIRY PRIDE Act, March 8, 2023
[ONLINE] Available at: <https://simpson.house.gov/news/documentsingle.aspx?DocumentID=399876>

1192

OpenSecrets (n.d.) Data About Simpson’s Federal Congressional Candidacy election cycle for the campaign committee & leadership PAC combined, 2022 data
[ONLINE] Available at: <https://www.opensecrets.org/members-of-congress/mike-simpson/contributors?cid=N00006263&cycle=2022&recs=100&type=C>

1193

Simpson, M. (2023) Simpson Reintroduces DAIRY PRIDE Act, March 8, 2023
[ONLINE] Available at: <https://simpson.house.gov/news/documentsingle.aspx?DocumentID=399876>

1194

US Congress (n.d.) S.549 - DAIRY PRIDE Act 118th Congress (2023-2024)
[ONLINE] Available at: <https://www.congress.gov/bill/118th-congress/senate-bill/549>

1195

Joshi, I., et al. (2015) Saving the Planet: The Market for Sustainable Meat Alternatives. Berkeley.
[ONLINE]. Available at: <https://scet.berkeley.edu/wp-content/uploads/CopyofFINALSavingThePlanetSustainableMeatAlternatives.pdf>

1196

Lucas, E., Guo, M. & Guillén-Gosálbez, G. (2023) Low-carbon diets can reduce global ecological and health costs. [Online]. Available at: <https://doi.org/10.1038/s43016-023-00749-2>

1197

de Sousa, A. Europe is Wargaming a Food Crisis. *Bloomberg*, March 2024.
[ONLINE] Available at: <https://www.bloomberg.com/news/features/2024-03-06/eu-governments-prepare-for-possibility-of-food-crisis?srnd=undefined&s-ref=7YMSv3yk&embedded-checkout=true>

1198

de Sousa, A. Europe is Wargaming a Food Crisis. *Bloomberg*, March 2024.
[ONLINE] Available at: <https://www.bloomberg.com/news/features/2024-03-06/eu-governments-prepare-for-possibility-of-food-crisis?srnd=undefined&s-ref=7YMSv3yk&embedded-checkout=true>

1199

Weise, Z. (2024) 5 things we learned from the EU’s big (and first) climate risk report. *Politico* 11 March 2024
[ONLINE] Available at: <https://www.politico.eu/article/5-things-we-learned-eu-first-climate-change-risk-report-eea/>

1200

Higuera, P, Balch, J, Cook, M, Stravros, N. (2023) Western wildfires destroyed 246% more homes and buildings over the past decade. *Colorado Arts and Sciences Magazine*, 1 February 2023
[ONLINE] Available at: <https://www.colorado.edu/asmagazine/2023/02/01/western-wildfires-destroyed-246-more-homes-and-buildings-over-past-decade#:~:text=In%20a%20new%20study%2C%20we,%2D2009%20and%202010%2D2020>

1201

NASA (n.d.) *The Effects of Climate Change*.
[ONLINE] Available at: <https://climate.nasa.gov/effects/>

1202

Environmental Protection Agency (n.d.) *Climate Change Impacts on Agriculture and Food Supply*.
[ONLINE] Available at: <https://www.epa.gov/climateimpacts/climate-change-impacts-agriculture-and-food-supply>

1203

Polansek, T. (2023) Heat, humidity kill hundreds of US cattle during world’s hottest month. *Reuters*, 7 August 2023. Available from: <https://www.reuters.com/world/us/heat-humidity-kill-hundreds-us-cattle-during-worlds-hottest-month-2023-08-07/>

1204

Asma-Sadeque, S. (2022) Thousands of cattle dead due to heatwave in Kansas, *The Guardian*, June 2022.
[ONLINE] Available at: <https://www.theguardian.com/us-news/2022/jun/16/cattle-deaths-kansas-heat-wave-climate>

1205

Liliston, B. (2024) US ag emissions declined in 2022. A blip or trend? *IATP* 11 April 2024
[ONLINE] Available at: <https://www.iatp.org/us-ag-emissions-declined-2022-blip-or-trend>

1206

FAO (n.d.) *FAO homepage*.
[ONLINE] Available at: <https://www.fao.org/home/en>

1207

United Nations (n.d.) *World Food Conference*.
[ONLINE] Available at: <https://www.un.org/en/library/digitization-update-world-food-conference#:~:text=The%20World%20Food%20Conference%20was,and%20national%20non%2Dgovernmental%20organizations>

1208

IPCC (2019) *IPCC special report on climate and land. Executive summary on food security*.
[ONLINE] Available at: <https://www.ipcc.ch/srccl/chapter/chapter-5/>

1209

FAO Office of strategy, programme and budget:
[ONLINE] Available at: <https://www.fao.org/about/strategy-programme-budget/budget/en/#:~:text=How%20is%20FAO%20funded%3F,from%20Members%20and%20other%20partners.>

1210

Twine, R. (2021) Emissions from animal agriculture: 16.5% is the new minimum figure. *Sustainability*, 13(11):6276
[ONLINE] Available at: https://www.researchgate.net/publication/352100490_Emissions_from_Animal_Agriculture-165_Is_the_New_Minimum_Figure

1211

IPCC (2020) *Climate change and land. Summary for policymakers*.
[ONLINE] Available at: https://www.ipcc.ch/site/assets/uploads/sites/4/2020/02/SPM_Updated-Jan20.pdf

1212

Sharma, S. (2021) Climate: A lighter hoofprint. *Heinrich Böll Stiftung*, 7 September 2021
[ONLINE] Available at: <https://eu.boell.org/en/2021/09/07/climate-lighter-hoofprint>

1213

FAO (2017) Livestock solutions for climate change. *Family farming knowledge platform*.
[ONLINE] Available at: [https://www.fao.org/family-farming/detail/en/c/1634679/#:~:text=Cattle%20\(beef%2C%20milk\)%20are,30%25%20of%20global%20methane%20emissions](https://www.fao.org/family-farming/detail/en/c/1634679/#:~:text=Cattle%20(beef%2C%20milk)%20are,30%25%20of%20global%20methane%20emissions)

1214

FAO (2023) *Pathways to lower emissions*.
[ONLINE] Available at: <https://openknowledge.fao.org/items/b3f21d6d-bd6d-4e66-b8ca-63ce376560b5>

1215

FAO (1945) *FAO Constitution*.
[ONLINE] Available at: <https://www.fao.org/4/x5584e/x5584e0i.htm>

1216

Committee on World Food Security (n.d.)Sustainable agricultural development for food security and nutrition: what role for livestock?
[ONLINE] Available at: https://www.fao.org/fileadmin/templates/cfs/CFS43/MS207_Food_Sec_General_SAD_Livestock_en.pdf

1217

FAO (n.d.) Livestock and food security.
[ONLINE] Available at: <https://web.archive.org/web/20200506200811/https://www.fao.org/3/x0262e/x0262e13.htm>

1218

Dutkiewicz, J. (2024) How rioting farmers unravelled Europe's ambitious climate plan: Vox. 2 May 2024
[ONLINE] Available at: <https://www.vox.com/future-perfect/24146466/europe-farmer-protests-eu-climate-environmental-policy-subsidies-livestock>

1219

Thomas, M. (2023) How meat and fossil fuel producers watered down the latest IPCC report: Distilled 23 March 2023
[ONLINE] Available at: <https://www.distilled.earth/p/how-meat-and-fossil-fuel-producers>

1220

FAO (n.d.) *FAO Committee on Agriculture*.
[ONLINE] Available at: <https://www.fao.org/coag/en/>

1221

FAO (n.d.) *FAO Committee on commodity problems*.
[ONLINE] Available at: <https://www.fao.org/ccp/en/#:~:text=The%20FAO%20Council%20standing%20committee,and%20consumption%20of%20agricultural%20products.>

1222

FAO (n.d.) *FAO Committee on World Food Security*.
[ONLINE] Available at: <https://www.fao.org/in-action/right-to-food-global/global-level/cfs/en/#:~:text=The%20Committee%20on%20World%20Food,and%20economic%20access%20to%20food>

1223

FAO (n.d.) *FAO Committee on forestry*.
[ONLINE] Available at: <https://www.fao.org/forestry/committee-on-forestry/en>

1224

FAO (n.d.) *FAO Commission on Genetic Resources for Food and Agriculture*. <https://www.fao.org/cgrfa/en#:~:text=The%20Commission%20on%20Genetic%20Resources,for%20current%20and%20future%20generations>

1225

FAO (n.d.) *FAO Committee on World Food Security*:
[ONLINE] Available at: [https://www.fao.org/policy-support/mechanisms/mechanisms-details/en/c/426373/#:~:text=The%20Committee%20on%20World%20Food,ECOSOC\)%20and%20to%20FAO%20Conference](https://www.fao.org/policy-support/mechanisms/mechanisms-details/en/c/426373/#:~:text=The%20Committee%20on%20World%20Food,ECOSOC)%20and%20to%20FAO%20Conference)

1226

FAO (2020) *FAO and Croplife International strengthen commitment to promote agrifood system transformation*.
[ONLINE] Available at: <https://www.fao.org/newsroom/detail/FAO-and-CropLife-International-strengthen-commitment-to-promote-agri-food-systems-transformation/>

1227

Croplife International (n.d.) *Home page*
[ONLINE] Available at: <https://croplife.org>

1228

FAO (n.d.) *Partnerships*.
[ONLINE] Available at: <https://www.fao.org/partnerships/en/>

1229

Interview with FAO former official, 16 May 2024.

1230

FAO (n.d.) *Livestock Environmental Assessment and Performance Partnership*.
[ONLINE] Available at: <https://www.fao.org/partnerships/leap/en/>

1231

FAO (n.d.) *LEAP partnership: Who we are*.
[ONLINE] Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/abcb1e85-e2b5-4148-96ed-d07e97130027/content>

1232

Boren, Z. (2022) Revealed: How the livestock industry funds the “greenhouse gas guru”. *Unearthed*, 31 October 2022
[ONLINE] Available at: <https://unearthed.greenpeace.org/2022/10/31/frank-mitloehner-uc-davis-climate-funding/>

1233

Frank Mitloehner (2022) Tweet: 1 July
[ONLINE] Available at: <https://x.com/ghgguru/status/1542770211631267840>

1234

FAO LEAP (2022) *Yes, Livestock will contribute to the future of food*.
[ONLINE] Available at: <https://www.fao.org/partnerships/leap/news-and-events/news/detail/en/c/1565249/>

1235

FAO (n.d.) *LEAP policy support and governance gateway*.
[ONLINE] Available at: <https://www.fao.org/policy-support/mechanisms/mechanisms-details/en/c/458117/>

1236

Jamieson, A. (2010) UN admits flaw in report on meat and climate change. *Daily Telegraph*, 24 March 2010:
[ONLINE] Available at: <https://www.telegraph.co.uk/news/earth/environment/climatechange/7509978/UN-admits-flaw-in-report-on-meat-and-climate-change.html>

1237

FAO (2006) *Livestock’s long Shadow*.
[ONLINE] Available at: <https://www.fao.org/4/a0701e/a0701e00.htm>

1238

FAO (2006) *Livestock’s long Shadow*.
[ONLINE] Available at: <https://www.fao.org/4/a0701e/a0701e00.htm>

1239

FAO (2006) *Livestock’s long Shadow*.
[ONLINE] Available at: <https://www.fao.org/4/a0701e/a0701e00.htm>

1240

FAO (2006) *Livestock’s long Shadow*.
[ONLINE] Available at: <https://www.fao.org/4/a0701e/a0701e00.htm> p.270

1241

FAO (2006) *Livestock’s long Shadow*.
[ONLINE] Available at: <https://www.fao.org/4/a0701e/a0701e00.htm> p.269

1242

FAO (2006) *Livestock’s long Shadow*.
[ONLINE] Available at: <https://www.fao.org/4/a0701e/a0701e00.htm> p.275

1243

Interview with Henning Steinfeld, 17 February 2023.

1244

Armstong, P. (2010) Scientist: Don’t blame cows for climate change. *CNN*, 24 March 2010
[ONLINE] Available at: <https://edition.cnn.com/2010/TECH/science/03/24/meat.industry.global.warming/index.html>

1245

Neslen, A. (2023) The anti-livestock people are a pest: how un food body played down role of farming in climate change. *The Guardian*. 20 October 2023
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/oct/20/the-anti-livestock-people-are-a-pest-how-un-fao-played-down-role-of-farming-in-climate-change>

1246

Black, R. (2010) UN body to look at meat and climate link. *BBC News*, 24 March 2010
[ONLINE] Available at: <http://news.bbc.co.uk/2/hi/8583308.stm>

1247

Neslen, A. (2023) Ex-officials at UN farming body say work on methane emissions was censored. *The Guardian*. 20 October 2023
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/oct/20/ex-officials-at-un-farming-fao-say-work-on-methane-emissions-was-censored>

1248

Interview with Henning Steinfeld, 17 February 2023.

1249

Neslen, A. (2023) Ex-officials at UN farming body say work on methane emissions was censored. *The Guardian*. 20 October 2023
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/oct/20/ex-officials-at-un-farming-fao-say-work-on-methane-emissions-was-censored>

1250

Interview with Henning Steinfeld, 17 February 2023.

1251

IAAST (2009). *Agriculture at the crossroads*.
[ONLINE] Available at: <https://www.globalagriculture.org/fileadmin/files/weltagrarbericht/IAASTDBerichte/IAASTDExecutiveSummarySynthesisReport.pdf>

1252

Neslen, A. (2023) Ex-officials at UN farming body say work on methane emissions was censored. *The Guardian*. 20 October 2023
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/oct/20/ex-officials-at-un-farming-fao-say-work-on-methane-emissions-was-censored>

1253

IAAST (2009). *Agriculture at the crossroads*. Annex A. Reservations on executive summary, p12.
[ONLINE] Available at: <https://www.globalagriculture.org/fileadmin/files/weltagrarbericht/IAASTDBerichte/IAASTDExecutiveSummarySynthesisReport.pdf>

1254

Neslen, A. (2023) Ex-officials at UN farming body say work on methane emissions was censored. *The Guardian*. 20 October 2023
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/oct/20/ex-officials-at-un-farming-fao-say-work-on-methane-emissions-was-censored>

1255

Neslen, A. (2023) Ex-officials at UN farming body say work on methane emissions was censored. *The Guardian*. 20 October 2023
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/oct/20/ex-officials-at-un-farming-fao-say-work-on-methane-emissions-was-censored>

1256

Neslen, A. (2023) Ex-officials at UN farming body say work on methane emissions was censored. *The Guardian*. 20 October 2023
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/oct/20/ex-officials-at-un-farming-fao-say-work-on-methane-emissions-was-censored>

1257

FAO (2009) *The state of food and agriculture – Livestock in the balance*.
[ONLINE] Available at: <https://www.fao.org/policy-support/tools-and-publications/resources-details/en/c/1235525/>

1258

World Animal Net (n.d.) *Livestock Global Alliance*.
[ONLINE] Available at: <https://worldanimal.net/53-our-programs/international-policy/558-livestock-global-alliance>

1259

Livestock Global Alliance (n.d.) *Homepage* (archived).
[ONLINE] Available at: <https://web.archive.org/web/20170716230807/http://www.livestockglobalalliance.org/>

1260

Neslen, A. (2023) Ex-officials at UN farming body say work on methane emissions was censored. *The Guardian*. 20 October 2023
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/oct/20/ex-officials-at-un-farming-fao-say-work-on-methane-emissions-was-censored>

1261

Interview with Henning Steinfeld, 17 February 2023.

1262

Interview with Henning Steinfeld, 17 February 2023.

1263

Email from Henning Steinfeld, 23 February 2023.

1264

Email from Henning Steinfeld, 23 February 2023

1265

FAO (2013) *Tackling climate change through livestock*.
[ONLINE] Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/e1afd815-5a76-4b88-beac-fb9bc0e92001/content>

1266

FAO (2013) *Tackling climate change through livestock*. p.ix and 116.
[ONLINE] Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/e1afd815-5a76-4b88-beac-fb9bc0e92001/content>

1267

FAO (2013) *Tackling climate change through livestock*. p.16.
[ONLINE] Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/e1afd815-5a76-4b88-beac-fb9bc0e92001/content>

1268

FAO (2013) *Tackling climate change through livestock*. p.xiii
[ONLINE] Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/e1afd815-5a76-4b88-beac-fb9bc0e92001/content>

1269

FAO (2013) *Tackling climate change through livestock*. p.99.
[ONLINE] Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/e1afd815-5a76-4b88-beac-fb9bc0e92001/content>

1270

COP28 (n.d.) *About COP28*.
[ONLINE] Available at: <https://www.cop28.com/en/about-cop28>

1271

FAO (2023) Pathways towards lower emissions.
[ONLINE] Available at: <https://openknowledge.fao.org/items/b3f21d6d-bd6d-4e66-b8ca-63ce376560b5>

1272

FAO (2018) *Transforming the livestock report through the sustainable development goals*.
[ONLINE] Available at: <https://www.globalagriculture.org/fileadmin/files/weltagrarbericht/Weltagrarbericht/04Fleisch/2018FAOLivestockSDGs.pdf>

1273

FAO (2021) *Emissions due to agriculture*.
[ONLINE] Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/cc09fbbc-eb1d-436b-a88a-bed42a1f12f3/content>

1274

FAOSTAT (n.d.) *Homepage*.
[ONLINE] Available at: <https://www.fao.org/statistics/en>

1275

FAO (2022) *GLEAM 3 dashboard*.
[ONLINE] Available at: https://foodandagricultureorganization.shinyapps.io/GLEAMV3_Public/

1276

FAO (2023) *Pathways towards lower emissions*. P. 8
[ONLINE] Available at: <https://openknowledge.fao.org/items/b3f21d6d-bd6d-4e66-b8ca-63ce376560b5>

1277

IPCC (2021) *Sixthl Assessment Report Global Warming Potentials*.
[ONLINE] Available at: <https://erce.energy/erceipccsixthassessment/>

1278

IPCC (2021) *Sixth Assessment Report Global Warming Potentials*. p.vii
[ONLINE] Available at: <https://erce.energy/erceipccsixthassessment/>

1279

IPCC (2021) *Sixth Assessment Report Global Warming Potentials*.
[ONLINE] Available at: <https://erce.energy/erceipccsixthassessment/>

1280

IPCC (2021) *Sixth Assessment Report Global Warming Potentials*. p.48
[ONLINE] Available at: <https://erce.energy/erceipccsixthassessment/>

1281

IPCC (2021) *Sixth Assessment Report Global Warming Potentials*.
[ONLINE] Available at: <https://erce.energy/erceipccsixthassessment/>

1282

European Livestock Voice (2023) *The importance of feed additives for sustainable animal farming, animal health and welfare*.
[ONLINE] Available at: <https://meatthefacts.eu/home/activity/campaign-updates/the-importance-of-feed-additives-for-sustainable-animal-farming-animal-health-and-welfare/>

1283

Harwatt, H., Hayek, M., Behrens, P., and Ripple, W. J. (2024) *Options for a Paris-compliant livestock sector*. Harvard Law School.
[ONLINE] Available at: <https://animal.law.harvard.edu/wp-content/uploads/Paris-compliant-livestock-report.pdf>

1284

Behrens, P., Kiefte-de Jong J., C. Bosker, T., et al. (2017) Evaluating the environmental impacts of dietary recommendations. *Proceedings of the National Academy of Sciences of the United States of America*, 114(51): 13412-13417
[ONLINE] Available at: <https://pubmed.ncbi.nlm.nih.gov/29203655/>

1285

The Lancet (2019) Food in the Anthropocene: The EAT-Lancet Commission on healthy diets from sustainable food systems. *The Lancet*, 16 January 2019
[ONLINE] Available at: <https://www.thelancet.com/commissions/EAT>

1286

Email from Paul Behrens. 20 May 2024.

1287

Sherrington, R. (2024) US meat lobby celebrates 'positive outcome' to COP28. *De Smog* 8 April 2024
[ONLINE] Available at: <https://www.desmog.com/2024/04/08/us-meat-lobby-celebrates-positive-outcome-cop28/>

1288

Tubiello, F., N. Rosenzweig, C., and Conchedda, G., et al. (2021) Greenhouse gas emissions from food systems – building the evidence base. *Environmental Research Letters*, 16(6)
[ONLINE] Available at: <https://iopscience.iop.org/article/10.1088/1748-9326/ac018e>

1289

University of Leiden (2024) *Academics requesting retraction of report that misrepresents their research*.
[ONLINE] Available at: <https://www.universiteitleiden.nl/en/science/environmental-sciences/research/food>

1290

Neslen, A. (2024) UN livestock emissions report seriously distorted our work, say scientists. *The Guardian*, 19 April 2024
[ONLINE] Available at: <https://www.theguardian.com/environment/2024/apr/19/un-livestock-emissions-report-seriously-distorted-our-work-say-experts>

1291

University of Leiden (2024) *Academics requesting retraction of report that misrepresents their research*.
[ONLINE] Available at: <https://www.universiteitleiden.nl/en/science/environmental-sciences/research/food>

1292

Neslen, A. (2024) UN livestock emissions report seriously distorted our work, say scientists. *The Guardian*, 19 April 2024
[ONLINE] Available at: <https://www.theguardian.com/environment/2024/apr/19/un-livestock-emissions-report-seriously-distorted-our-work-say-experts>

1293

Interview with Matthew Hayek, 10 April 2024.

1294

Project Drawdown (n.d.) *Project Drawdown Homepage*.
[ONLINE] Available at: <https://drawdown.org>

1295

FAO (2023) *Achieving SDG 2 with breaching the 1.5C threshold: A global roadmap*.
[ONLINE] Available at: <https://openknowledge.fao.org/server/api/core/bitstreams/61c1ab4e-32f7-47c4-b267-d6410bb1dac3/content>

1296

Jessop, S. Dickie, G. (2023) Global investors write to UN to request global plan on farming emissions. *Reuters*, 9 June 2023
[ONLINE] Available at: <https://www.reuters.com/business/sustainable-business/exclusive-global-investors-write-un-urge-global-plan-farming-emissions-2022-06-08/>

1297

FAIRR (n.d.) *Global roadmap to 2050 for food and agriculture*.
[ONLINE] Available at: <https://www.fairr.org/investor-statements/roadmap-to-2050>

1298

Jessop, S. and Dickie, G. (2023) Global investors write to UN to request global plan on farming emissions. *Reuters*, 9 June 2023
[ONLINE] Available at: <https://www.reuters.com/business/sustainable-business/exclusive-global-investors-write-un-urge-global-plan-farming-emissions-2022-06-08/>

1299

The Times (2019) *Rich List 2019*.
[ONLINE] Available at: <https://www.thetimes.co.uk/article/sunday-times-rich-list-2019-profiles-351-399-queen-elton-john-david-beckham-tfs5wbck9>

1300

Tel Aviv University (n.d.) Board of Governors.
[ONLINE] Available at: https://bog.tau.ac.il/officers_and_chairs

1301

The Elders (n.d.) *Advisory Council*. <https://theelders.org/who-we-are/advisory-council>

1302

FAIRR (2019) *Clean meat*.
[ONLINE] Available at: <https://www.fairr.org/resources/knowledge-hub/key-terms/clean-meat>

1303

FAIRR (2024) Animals pharmaceutical engagement:
[ONLINE] Available at: <https://www.fairr.org/engagements/animal-pharma>

1304

FAIRR (n.d.) *Network membership*.
[ONLINE] Available at: https://www.fairr.org/about/network-members?page_QAU9EOYWFw1GkNCV2sP4=3

1305

Albright, A., Benhamou, B., and Kishan, S. (2024) Even BlackRock funds buying oil stocks are banned by Texas ESG fight. *BNN Bloomberg*, 10 January 2024
[ONLINE] Available at: <https://www.bnnbloomberg.ca/even-blackrock-funds-buying-oil-stocks-are-banned-by-texas-esg-fight-1.2020179>

1306

Reggiori Wilkes, T. (2023) Four banks quit initiative assessing climate targets. *Reuters*.29 November
[ONLINE] Available at: <https://www.reuters.com/sustainability/four-banks-quit-initiative-assessing-climate-targets-sources-2023-11-29/>

1307

Araullo, K. Revealed: Insurers covering the most fossil fuels. *Insurance Business*, 9 November 2023
[ONLINE] Available at: <https://www.insurancebusinessmag.com/asia/news/environmental/revealed--insurers-covering-the-most-fossil-fuels-465652.aspx#:~:text=In%20the%20assessment%20of%20fossil,Swiss%20Re%20following%20closely%20behind>

1308

Interview with FAO official, 28 December 2023.

1309

Interview with Henning Steinfeld, 27 December 2023.

1310

Interview with Henning Steinfeld, 27 December 2023.

1311

Carrington, D. (2024) 'Bewildering' to omit meat eating reduction from UN climate plan: *The Guardian*, 18 March 2024
[ONLINE] Available at: <https://www.theguardian.com/environment/2024/mar/18/bewildering-to-omit-meat-eating-reduction-from-un-climate-plan>

1312

Financial Times (2023) Ramp up meat production to address health challenge in poorer countries, UN says. *Financial Times*,10 December 2023
[ONLINE] Available at: <https://www.ft.com/content/2eb93884-0aa3-4590-98ec-5b15cc1d9f44>

1313

European Environment Agency (n.d.). *Agriculture – nitrogen balance*.
[ONLINE] Available at: <https://www.eea.europa.eu/data-and-maps/indicators/agriculture-nitrogen-balance-1/assessment>

1314

Mathiesen, M. (2023) The chemist v the Dutch farmers. *Politico*, 9 March 2023
[ONLINE] Available at: <https://www.politico.eu/article/johan-vollenbroek-netherlands-nitrogen-pollution-climate-change-farming/>

1315

Joy, M. K. Rankin, D.A. Wohler, L. Boyce, P. Canning, A. Foote, K. J. McNie, P. M. (2022) The grey water footprint of milk, due to nitrate leaching from dairy farms in Canterbury, New Zealand. *Australasian Journal of Environmental Management*, 29(2 177-179
[ONLINE] Available at: <https://www.tandfonline.com/doi/full/10.1080/14486563.2022.2068685>

1316

Interview with David Laborde, 25 January 2024.

1317

EPKK (2015) *Copa and Cogeca is calling for credible targets to be included in review of EU air quality policy*.
[ONLINE] Available at: <https://epkk.ee/copa-and-cogeca-is-calling-for-credible-targets-to-be-included-in-review-of-eu-air-quality-policy/>

1318

Interview with FAO official, 17 March 2024.

1319

Interview with FAO official, 13 July 2023.

1320

Clark, M. A., Domingo, N. G. G., and Colgan, K, et al. Global food systems emissions could preclude achieving the 1.5C and 2°C climate change targets: *Science*, 6 November 2020
[ONLINE] Available at: <https://www.science.org/doi/10.1126/science.aba7357>

1321

Ivanovich, C. C., Sun, T., Gordon, D. R., and Ocko, I. B. (2023) Future warming from global food consumption. *Nature Climate Change*, 13, 207-302
[ONLINE] Available at: <https://www.nature.com/articles/s41558-023-01605-8>

1322

Nelsen, A. (2015) Brussels moves to limit coal lobby’s influence on pollution standards. *The Guardian*, 28 May 2015
[ONLINE] Available at: <https://www.theguardian.com/environment/2015/may/28/brussels-moves-to-limit-coal-lobbys-influence-on-pollution-standards>

1323

Email from Jonathan Foley. 10 April 2024.

1324

Brooks McCormick Jr Animal Law & Policy Program Harvard Law School (2024) *News: Climate and agriculture scientists set the record straight – emissions from the livestock sector must decline by 50% this decade, and some countries should do more than others*, 12 March 2024.
[ONLINE] Available at: <https://animal.law.harvard.edu/news-article/paris-compliant-livestock-report/>

1325

Boston Consulting Group (2022) *The untapped climate opportunity in alternative proteins*
[ONLINE] Available at: <https://web-assets.bcg.com/6f/f1/087a0cc74221ac3fe6332a2ac765/the-untapped-climate-opportunity-in-alternative-proteins-july-2022.pdf>

1326

Wunsch, N-G. (2023) *Share of consumers that are likely to eat less meat or replace it with alternatives to limit their contribution to climate change in selected countries worldwide in 2022*. *Statista* 25 April 2023
[ONLINE] Available at: <https://www.statista.com/statistics/1310155/consumers-trying-to-reduce-meat-consumption-due-to-meat-impact-on-climate/>

1327

Phoenix, S. (2024) Vegetarian statistics 2024, surprising facts & data *Great Green Wall*, 29 March 2024
[ONLINE] Available at: <https://www.greatgreenwall.org/supplements/vegetarian-statistics/#::-:text=Over%201.5%20Billion%20people%20worldwide,vegetarian%20because%20of%20economic%20reasons>

1328

Van Niekirk, T. (2024) Vegetarian Statistics – Surprising Facts & Data in 2024World Animal Foundation, 1 June 2024
[ONLINE] Available at: <https://worldanimalfoundation.org/advocate/vegetarian-statistics/>

1329

Veganuary (2024) *Increasing participation*
[ONLINE] Available at: <https://veganuary.com/about/increasing-participation/>

1330

Vegetarian Society (2023) *Facts and figures*
[ONLINE] Available at: <https://vegsoc.org/facts-and-figures/>

1331

Kyllmann, C. (2024) German meat consumption falls to record low in 2023. *Clean Energy Wire*, 4 April 2024
[ONLINE] Available at: <https://www.cleanenergywire.org/news/german-meat-consumption-falls-record-low-2023>

1332

Changing Markets Foundation (2023) *High Steaks: how focusing on agriculture can ensure the EU meets its methane-reduction goals*
[ONLINE] Available at: <https://changingmarkets.org/wp-content/uploads/2022/06/High-stakes-Part-1.pdf>

1333

Hunter, L. (2024) Explainer: Denmark’s CO2 tax on farming. *CPH Post*, 20 February 2024
[ONLINE] Available at: <https://cphpost.dk/2024-02-20/news/climate/explainer-denmarks-co2-tax-on-farming/>

1334

Szumski, C. (2024) Denmark pushes ahead with agri-carbon tax plans despite nearing the 2030 climate target. *Euractive*, 01 May 2024
[ONLINE] Available at: <https://www.euractiv.com/section/politics/news/denmark-pushes-ahead-with-agri-carbon-tax-plans-despite-nearing-the-2030-climate-target/>

1335

Carlsso, I. (2024) Denmark bets on cow feed additive to reduce methane emissions. *Reuters*, 15 April 2024.
[ONLINE] Available at: <https://www.reuters.com/sustainability/climate-energy/denmark-bets-cow-feed-additive-reduce-methane-emissions-2024-04-15/>

1336

Szumski, C. (2024) Denmark pushes ahead with agri-carbon tax plans despite nearing the 2030 climate target. *Euractive*, 1 May 2024
[ONLINE] Available at: <https://www.euractiv.com/section/politics/news/denmark-pushes-ahead-with-agri-carbon-tax-plans-despite-nearing-the-2030-climate-target/>

1337

Hunter, L. (2024) Explainer: Denmark’s CO2 tax on farming. *CPH Post*, 20 February 2024
[ONLINE] Available at: <https://cphpost.dk/2024-02-20/news/climate/explainer-denmarks-co2-tax-on-farming/>

1338

Szumski, C. (2024) Denmark pushes ahead with agri-carbon tax plans despite nearing the 2030 climate target. *Euractive*, 1 May 2024
[ONLINE] Available at: <https://www.euractiv.com/section/politics/news/denmark-pushes-ahead-with-agri-carbon-tax-plans-despite-nearing-the-2030-climate-target/>

1339

Carlsso, I. (2024) Denmark bets on cow feed additive to reduce methane emissions. *Reuters*, 15 April 2024.
[ONLINE] Available at: <https://www.reuters.com/sustainability/climate-energy/denmark-bets-cow-feed-additive-reduce-methane-emissions-2024-04-15/>

1340

Ministry of Food, Agriculture and Fisheries of Denmark (2023) *Danish action plan for plant-based foods*
[ONLINE] Available at: https://fvm.dk/fileadmin/user_upload/Dokumentation/Danish-Action-Plan-for-Plant-based-Foods.pdf [Accessed May 2024]

1341

Racz, E. (2024) Germany’s mean production drops again in 2023. *Just-Food*, 12 February 2024
[ONLINE] Available at: <https://www.just-food.com/news/germanys-meat-production-drops-4-in-2023/>

1342

Mridul, A. (2024) In Germany, Plant-Based Meat Production Rose By 17% in 2023. *Green Queen*. 20 May 2024 [ONLINE] Available at: <https://www.greenqueen.com.hk/germany-plant-based-meat-production-value/>

1343

Smart Protein Project (2023) *Evolving appetites: an in-depth look at European attitudes towards plant-based eating*.
[ONLINE] Available at: https://smartproteinproject.eu/wp-content/uploads/Smart-Protein-European-Consumer-Survey_2023.pdf

1344

Muzi, N. (2023) A 50% shift to plant proteins by six leading food retailers alone could save emissions equivalent to removing 25 million cars in the EU. *Madre Brava Insight*, 28 November 2023
[ONLINE] Available at: <https://madrebrava.org/insight/50-shift-to-plant-proteins-by-six-food-retailers-equivalent-of-removing-25-million-cars-in-the-eu>

1345

Muzi, N. (2023) A 50% shift to plant proteins by six leading food retailers alone could save emissions equivalent to removing 25 million cars in the EU.

1346

The Economist (2019) How much would giving up meat help the environment? *The Economist*, 15 November 2019
[ONLINE] Available at: <https://www.economist.com/graphic-detail/2019/11/15/how-much-would-giving-up-meat-help-the-environment>

1347

CEPEA/CNA (2023) *PIB do agronegócio cai no terceiro trimestre e acumula baixa de 0,91% EM 2023*
[ONLINE] Available at: <https://cepea.esalq.usp.br/upload/kceditor/files/CNA-PIB-DO-AGRO-21DEZ2023.pdf>

1348

CEPEA/CNA (2023) *Boletim Mercado de Trabalho do Agronegócio Brasileiro. 3º trimestre 2023*
[ONLINE] Available at: [https://cepea.esalq.usp.br/upload/kceditor/files/Boletim%20MT%20Agro%20\(2\).pdf](https://cepea.esalq.usp.br/upload/kceditor/files/Boletim%20MT%20Agro%20(2).pdf)

1349

Gov.br (2024) Exportações do agronegócio fecham 2023 com US\$ 166,55 bilhões em vendas
[ONLINE] Available at: <https://www.gov.br/agricultura/pt-br/assuntos/noticias/exportacoes-do-agronegocio-fecham-2023-com-us-166-55-bilhoes-em-vendas>

1350

USDA (2023) *Brazil: Livestock and products annual*.
[ONLINE] Available at: <https://fas.usda.gov/data/brazil-livestock-and-products-annual-10>

1351

Embrapa (2023) *Anuário Leite 2023: leite baixo carbono*.
[ONLINE] Available at: <https://www.embrapa.br/en/busca-de-publicacoes/-/publicacao/1154264/anuario-leite-2023-leite-baixo-carbono>

1352

IEA (2022) *Global Methane Tracker – Overview*
[ONLINE] Available at: <https://www.iea.org/reports/global-methane-tracker-2022/overview>

1353

Global Witness (2024) *Deforestation footprint of Brazil’s three biggest meat companies five times larger in fragile Cerrado than in Amazon*
[ONLINE] Available at: <https://www.globalwitness.org/en/press-releases/deforestation-footprint-cerrado-amazon/#:~:text=Deforestation%20is%20now%20the%20single,in%20at%20least%20five%20years>.

1354

Changing Markets Foundation and the Institute for Agriculture and Trade Policy (2022) *Emissions Impossible: How emissions from big meat and dairy are heating up the planet*
[ONLINE] Available at: <https://changingmarkets.org/report/emissions-impossible-how-emissions-from-big-meat-and-dairy-are-heating-up-the-planet-methane-edition/>

1355

Agricultural Policies in Debate (2023) *Animal Traceability in Brazil Inputs for establishing a nationwide system to ensure deforestation-free cattle production in Brazil*
[ONLINE] Available at: https://de.apdbrasil.de/wp-content/uploads/2023/06/Animal_Traceability_Brazil.pdf

1356

WWF (2023) *Species of the Savannah*
[ONLINE] Available at: https://wwf.panda.org/discover/knowledge_hub/where_we_work/cerrado/ Accessed February 2024.

1357

Mighty Earth (2023) *Soy Traders’ New Commitment on Deforestation and Ecosystem Conversion*
[ONLINE] Available at: <https://mightyearth.org/article/soy-traders-new-commitment-on-deforestation-and-ecosystem-conversion-at-cop28-could-be-the-death-knell-for-the-cerrado-in-brazil/>

1358

Mighty Earth (2023) *Saving the Cerrado: Why Bunge, supermarkets and governments must act fast*
[ONLINE] Available at: <https://mightyearth.org/article/saving-the-cerrado-why-supermarkets-bunge-and-governments-must-act-fast/>

1359

WWF (2023) *Grupo científico lança documento com orientações para a transparência na cadeia bovina do Brasil*
[ONLINE] Available at: <https://www.wwf.org.br/?86341/Grupo-cientifico-lanca-documento-com-orientacoes-para-a-transparencia-na-cadeia-bovina-do-Brasil>

1360

NICFI and WWF (2023) *Transparência Da Cadeia Bovina No Brasil Desafios E Oportunidades*
[ONLINE] Available at: https://wwfbrnew.awsassets.panda.org/downloads/pb_transparencia_cadeia_bovina_final_v2_1_.pdf

1361

Greenfield, P. (2023) Environmental activists kills at a rate of one every other day in 2022 - report. *The Guardian*, 13 September 2023.
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/sep/13/environmental-activists-killed-at-a-rate-of-one-every-other-day-in-2022-global-witness-report-aoe>

1362

Global Witness (2023) *Standing firm: The land and environmental defender on the frontlines of the climate crisis*
[ONLINE] Available at: <https://www.globalwitness.org/en/campaigns/environmental-activists/standing-firm/#:~:text=A%20total%20of%20177%20people,still%20paints%20a%20grim%20picture>

1363

Agencia Brasil (2023) *Brazil jumps two places, becomes world's ninth largest economy in 2023*
[ONLINE] Available at: <https://agenciabrasil.ebc.com.br/en/economia/noticia/2023-12/brazil-jumps-two-places-becomes-worlds-ninth-largest-economy-2023>

1364

SEEG Climate Observatory (2021) *Análise das emissões brasileiras de GHG e suas implicações para as metas climáticas do Brasil 1970 – 2020*
[ONLINE] Available at: <https://educacao.cemaden.gov.br/midioteca/analise-das-emissoes-de-gases-de-efeito-estufa-e-suas-implicacoes-para-as-metas-climaticas-do-brasil-1970-2021/>

1365

Gov.br (2010) *Brazilian National Policy on Climate Change*
[ONLINE] Available at: <https://www.gov.br/mma/pt-br/noticias/brazilian-national-policy-on-climate-change>

1366

Climate Scorecard (2023) *Brazil News Brief and Action Alert*
[ONLINE] Available at: <https://www.climatescorecard.org/2023/06/brazils-goal-of-reducing-carbon-emissions-by-50-by-2030-at-cop-26-is-contingent-on-slowing-the-rate-of-deforestation-in-the-amazon/#:~:text=At%20the%2026th%20United%20Nations,carbon%20neutral%20at%20that%20time>.

1367

Frente Parlamentar da Agropecuária (2023) *História da FPA*
[ONLINE] Available at: <https://fpagropecuaria.org.br/historia-da-fpa/>

1368

Stankevicius Bassi, B. (2019) Nova Frente Parlamentar da Agropecuária reúne 257 deputados e senadores; com 25, PSL de Bolsonaro só fica atrás de PP e PSD. *De Olho Nos Ruralistas*, 22 March 2019.
[ONLINE] Available at: <https://deolhonosruralistas.com.br/2019/03/22/nova-frente-parlamentar-da-agropecuaria-reune-257-deputados-e-senadores-com-25-psl-de-bolsonaro-so-fica-atras-de-pp-e-psd/>

1369

Stankevicius Bassi, B. (2019) Nova Frente Parlamentar da Agropecuária reúne 257 deputados e senadores; com 25, PSL de Bolsonaro só fica atrás de PP e PSD.

1370

Frente Parlamentar da Agropecuária (2023) *Todos os membros*
[ONLINE] Available at: <https://fpagropecuaria.org.br/todos-os-membros/>

1371

Pompeia, C. (2023) ‘What will the agribusiness lobby do next?’. Interviewed by Cristiane Fonte, *Sumaúma*, 05 April 2023
[ONLINE] Available at: <https://sumauma.com/en/como-a-alianca-entre-o-agronegocio-e-o-congresso-atua-para-garantir-o-retrocesso-na-legislacao-socioambiental-do-brasil/>

1372

Pompeia, C. (2023) 'What will the agribusiness lobby do next?'.
1373 CNA Brazil (2024) *Agritrace*
[ONLINE] Available at: <https://www.cnabrasil.org.br/agritrace>
1374 Aprosoja Brasil (2023) About Us.
[ONLINE] Available at: <https://aprosojabrasil.com.br/en/about-us>
1375 LobbyFacts.eu (2024) Brazilian Association of Vegetable Oil Industries. *LobbyFacts*, 18 March.
[ONLINE] Available at: <https://www.lobbyfacts.eu/datacard/brazilian-association-of-vegetable-oil-industries?rid=222239840460-31>
1376 Sherrington, S., Carlile, C. and Healy, H. (2023) Big Meat and Dairy Delegates Triple at COP28. *DeSmog*, 8 December.
[ONLINE] Available at: <https://www.desmog.com/2023/12/08/big-meat-dairy-delegates-triple-cop28>
1377 Sherrington, S., Carlile, C. and Healy, H. (2023) Big Meat and Dairy Delegates Triple at COP28.
1378 Pompeia, C. (2023) 'What will the agribusiness lobby do next?'
1379 Agribusiness Watch (2022) *The Financers of destruction - how multinational companies sponsor agribusiness lobby and sustain the socio-environmental regulation in Brazil*.
[ONLINE] Available at: <https://deolhonosruralistas.com.br/wp-content/uploads/2022/08/Financiers-of-Destruction-2022-EN.pdf>
1380 Pompeia, C. (2023) 'What will the agribusiness lobby do next?'.
1381 Pompeia, C. (2023) 'What will the agribusiness lobby do next?'.
1382 Monteiro, C. and Jaime, P. (2020) Brazilian Food Guide attacked: Now, overwhelming support for the Guide in Brazil and worldwide. *World Nutrition*, 11(4): 94-99.
[ONLINE] Available at: https://www.researchgate.net/publication/348106528_Brazilian_Food_Guide_attacked_Now_overwhelming_support_for_the_Guide_in_Brazil_and_worldwide
1383 Pompeia, C. (2023) 'What will the agribusiness lobby do next?'.
1384 Harvard Health Publishing (2020) What's the beef with red meat? 1 February.
[ONLINE] Available at: <https://www.health.harvard.edu/staying-healthy/whats-the-beef-with-red-meat>
1385 AgriBrasilis (2024) *What do people think about Agribusiness in Brazil?*
[ONLINE] Available at: <https://agribrasilis.com/2023/10/02/o-que-o-brasileiro-pensa-sobre-o-agro-2/>
1386 Pensar Agro | Instituto Pensar Agropecuária (n.d) Homepage.
[ONLINE] Available at: <https://www.pensaragro.org.br/> [Accessed: August 2023]
1387 Brazilian Roundtable on Sustainable Livestock (2022) *Results Report*
[ONLINE] Available at: https://pecuariasustentavel.org.br/website/wp-content/uploads/2024/05/Relatorio-de-Resultados-GTPS-2022_ingles-1.pdf
1388 Todos A Uma So Voz (n.d) Agro Na Escola.
[ONLINE] Available from: <https://todosaumasovoz.com.br/site/agro-na-escola/> [Accessed: August 2023]

1389

Todos A Uma So Voz (n.d) Quem Faz.
[ONLINE] Available from: <https://todosaumasovoz.com.br/site/quem-faz/>. [Accessed August 2023]
1390 Todos A Uma So Voz (n.d) O que e esse movimento.
[ONLINE] Available from: <https://todosaumasovoz.com.br/site/o-que-e-esse-movimento>. Accessed February, 2024.
1391 Mitidiero Junior, MA. and Goldfarb, Y. (2021) Agro é tech, agro é pop, agro é tudo. *Biodiversidad La*, 05 November 2021.
[ONLINE] Available at: <https://www.biodiversidadla.org/Documentos/Agro-e-tech-agro-e-pop-agro-e-tudo>
1392 Mitidiero Junior, MA. and Goldfarb, Y. (2021) Agro é tech, agro é pop, agro é tudo.
1393 Mitidiero Junior, MA. and Goldfarb, Y. (2021) Agro é tech, agro é pop, agro é tudo.
1394 Start Agro (2017) *Por que a Globo criou a campanha "Agro é tech, agro é pop"*, 05 April 2017.
[ONLINE] Available at: <https://www.startagro.agr.br/por-que-o-agronegocio-precisa-de-uma-comunicacao-moderna/>
1395 Abapa (2011) *Movimento Sou Agro lança campanha e será "divisor de águas" para comunicação*. Associação Baiana dos Produtores de Algodão Associacao, 19 July.
[ONLINE] Available at: <https://abapa.com.br/mais-noticias/movimento-sou-agro-lanca-campanha-e-sera-divisor-de-aguas-para-comunicacao>
1396 Associação Brasileira do Agronegócio (2021). Informativo 117. Ano 22.
[ONLINE] Available at: <https://abag.com.br/wp-content/uploads/2021/09/INFORMATIVO117-online.pdf>
1397 Brazilian Trade and Investment Promotion Agency (Apex-Brasil) (n.d.) Apex-Brasil, MAPA, MRE e entidades do setor privado unem esforços para promover a imagem do agronegócio brasileiro no exterior.
[ONLINE] Available at: <https://portal.apexbrasil.com.br/noticia/apex-brasil-mapa-mre-e-entidades-do-setor-privado-unem-esforcos-para-promover-a-imagem-do-agronegocio-brasileiro-no-exterior>
1398 Frente Parlamentar do Agropecuária (2021) Technical Note on the Global Methane Pledge. November, 2021.
1399 Frente Parlamentar do Agropecuária. (2021) Technical Note on the Global Methane Pledge. November, 2021.
1400 Frente Parlamentar do Agropecuária. (2021) Technical Note on the Global Methane Pledge. November, 2021.
1401 Liu, S., Proudman, J., and and Mitloehner, F. M. (2021) Rethinking methane from animal agriculture. *CABI Agriculture and Bioscience*, 2(1): 1-13. <https://cabiagbio.biomedcentral.com/articles/10.1186/s43170-021-00041-y>
1402 Thompson, L. R. and Rowntree, J. E. (2020) Invited review: methane sources, quantification, and mitigation in grazing beef sys- tems. *Applied Animal Science*, 36(4): 556-573. <https://www.sciencedirect.com/science/article/pii/S259028652030094X>
1403 Leroy, F., Abraini, F., and Beal, T., et al. (2022) Animal board invited review: Animal source foods in healthy, sustainable, and ethical diets – An argument against drastic limitation of livestock in the food system. *Animal*, 16(3): 100457. <https://www.sciencedirect.com/science/article/pii/S1751731122000040>
1404 University of California Davis. (n.d.) Biogenic carbon cycle and cattle. Center for Livable Future, Clear Center. <https://clear.ucda-vis.edu/explainers/biogenic-carbon-cycle-and-cattle>. In: *Seeing Stars*, Changing Markets Foundation, 2023. Available from: <https://changingmarkets.org/wp-content/uploads/2023/11/Seeing-stars-report.pdf>

1405

Observatory of Knowledge and Innovation in Bioeconomy/ Fundação Getulio Vargas (2022) Overview of Methane Emissions and Implications of Different Metrics.
[ONLINE] Available at: https://eesp.fgv.br/sites/eesp.fgv.br/files/eesp_relatorio_metano-eng_ap1_v1.pdf

1406

Changing Markets (n.d.) Viva carbon neutral beef. Greenwash.com
[ONLINE] Available at: <https://greenwash.com/brands/marfrig>

1407

Pompeia, C. (2023) 'What will the agribussness lobby do next?'

1408

Gov.br (2021) *Mapa cria grupos de trabalho para acompanhar compromissos estabelecidos na COP 26*
[ONLINE] Available at: <https://www.gov.br/agricultura/pt-br/assuntos/noticias/mapa-cria-grupos-de-trabalho-para-acompanhar-compromissos-estabelecidos-na-cop-26>

1409

Gov.br (2021) *Resolução CDSA/MAPA nº 3, de 23 de dezembro de 2021*
[ONLINE] Available at: <https://www.in.gov.br/en/web/dou/-/resolucao-cdsa/mapa-n-3-de-23-de-dezembro-de-2021-370086464>

1410

Embrapa (n.d.) *Research and innovation for Brazilian agriculture.*
[ONLINE] Available at: <https://www.embrapa.br/en/international>

1411

Embrapa (n.d.) *Research and innovation for Brazilian agriculture.*
[ONLINE] Available at: <https://www.embrapa.br/en/international>

1412

Innovation Forum (2024) *Webinar recording - Nestlé Global Virtual Event: A 2023 Climate Progress Update*
[ONLINE] Available at: <https://www.innovationforum.co.uk/articles/webinar-recording-nestle-global-virtual-event-a-2023-climate-progress-update>

1413

Embrapa News, Embrapa creates a platform with carbon metrics adapted to tropical conditions, Embrapa, February 2024. Available from: <https://www.embrapa.br/en/busca-de-noticias/-/noticia/86797832/embrapa-cria-plataforma-com-metricas-de-carbono-adaptadas-as-condicoes-tropicais>

1414

Embrapa (n.d.) *Research and innovation for Brazilian agriculture.*
[ONLINE] Available at: <https://www.embrapa.br/en/international>

1415

Embrapa (n.d.) *The Revolution of the Future Begins Now: Embrapa 50+*
[ONLINE] Available at: <https://www.embrapa.br/en/50mais/pilares/sustentabilidade>

1416

Embrapa News, Embrapa creates a platform with carbon metrics adapted to tropical conditions, Embrapa, February 2024. Available from: <https://www.embrapa.br/en/busca-de-noticias/-/noticia/86797832/embrapa-cria-plataforma-com-metricas-de-carbono-adaptadas-as-condicoes-tropicais>

1417

Ministry of Environment (2022) Programa Nacional Metano Zero.
[ONLINE] Available at: <https://www.gov.br/mma/pt-br/assuntos/climaozoniodesertificacao/MinutaProgramaMetanoZero.pdf>

1418

Senado, A. (2023) CMA exclui agronegócio e aprova projeto que regulamenta mercado de carbono. *Senadonoticias*, 04 October 2023.
[ONLINE] Available at: <https://www12.senado.leg.br/noticias/noticias/materias/2023/10/04/cma-exclui-agronegocio-e-aprova-projeto-que-regulamenta-mercado-de-carbono>

1419

Amaral, R., Mello, M. and Jabra, A. (2024) What you need to know about the proposed carbon market. Baker McKenzie.
[ONLINE] Available at: https://insightplus-bakermckenzie-com-bm-energy-mining-infrastructure_1-brazil-what-you-need-to-know-about-the-proposed-brazilian-carbon-market_01102024

1420

Senado, A. (2023) CMA exclui agronegócio e aprova projeto que regulamenta mercado de carbono. o

1421

De Souza, O.B. (2024) Senate Committee approves bill on climate adaptation. *Instituto Socioambiental*, 28 February 2024.
[ONLINE] Available at: <https://www.socioambiental.org/en/index.php/socio-environmental-news/Senate-committee-improves-project-on-climate-adaptation-but-agriculture-remains>

1422

De Souza, O.B. (2024) Senate Committee approves bill on climate adaptation.

1423

IBGE (n.d.) Censo agro 2017: Resultados definitivos
[ONLINE] Available at: https://censoagro2017.ibge.gov.br/templates/censo_agro/resultadosagro/estabelecimentos.html

1424

Rural 21 The International Journal for Rural Development (2022) *Brazil's approach to low-carbon agriculture*
[ONLINE] Available at: <https://www2.rural21.com/english/a-closer-look-at/detail/article/brazils-approach-to-low-carbon-agriculture.html>

1425

WWF (2023) *Grupo científico lança documento com orientações para a transparência na cadeia bovina do Brasil*
[ONLINE] Available at: <https://www.wwf.org.br/?86341/Grupo-cientifico-lanca-documento-com-orientacoes-para-a-transparencia-na-cadeia-bovina-do-Brasil>

1426

WWF (2023) *Grupo científico lança documento com orientações para a transparência na cadeia bovina do Brasil*

1427

Agricultural Policies in Debate (2023) *Animal Traceability in Brazil: Inputs for establishing a nationwide system to ensure deforestation-free cattle production in Brazil*
[ONLINE] Available at: https://de.apdbrasil.de/wp-content/uploads/2023/06/Animal_Traceability_Brazil.pdf

1428

Hofmeister, N. and Harari, I. (2022) Analysis: Do the meat industry's promises on deforestation add up? *Greenpeace Unearthed*, 4 July.
[ONLINE] Available at: <https://unearthed.greenpeace.org/2022/07/04/analysis-do-the-meat-industrys-promises-on-deforestation-add-up>

1429

Hofmeister, N., Campos, A., Harari, I. and Jordan, L. (2022) JBS admits to buying almost 9,000 cattle from 'one of Brazil's biggest deforesters'. *Repórter Brazil, Greenpeace Brazil and Unearthed*, 11 November.
[ONLINE] Available at: <https://unearthed.greenpeace.org/2022/11/11/jbs-cattle-brazils-biggest-deforester-amazon>

1430

Hofmeister, N. and Harari, I. (2022) Analysis: Do the meat industry's promises on deforestation add up?

1431

Tropical Forest Alliance (2022) TFA EU Deep Dives: Geolocation & traceability session: Beef.
[ONLINE] Available at: <https://www.tropicalforestalliance.org/assets/TFA-EU-deep-dives-beef.pdf>

1432

Naira Hofmeister and Isabel Harari, Analysis: Do the meat industry's promises on deforestation add up?

1433

Hofmeister, N. and Harari, I. (2022) Analysis: Do the meat industry's promises on deforestation add up?

1434

Tropical Forest Alliance (2022) TFA EU Deep Dives: Geolocation & traceability session: Beef.

1435

Hofmeister, N. and Harari, I. (2022) Analysis: Do the meat industry's promises on deforestation add up?

1436

Tropical Forest Alliance (2022) TFA EU Deep Dives: Geolocation & traceability session: Beef.

1437

Hofmeister, N. and Harari, I. (2022) Analysis: Do the meat industry's promises on deforestation add up?

1438

Hofmeister, N. and Harari, I. (2022) Analysis: Do the meat industry's promises on deforestation add up?

1439

CNA (2023) Individual traceability proposal provides for voluntary adherence and with a period of 8 years for adaptation.
[ONLINE] Available at: <https://www.cnabrazil.org.br/noticias/proposta-de-rastreabilidade-individual-preve-adesao-voluntaria-e-com-prazo-de-8-anos-para-adaptacao>

1440

WWF (2023) Marina Silva takes over Brazil’s Ministry of Environment with a new structure and a department to combat deforestation, 5 January.
[ONLINE] Available at: <https://www.wwf.org.br/?84580/Marina-Silva-takes-over-Brazils-Ministry-of-Environment-with-a-new-structure-and-a-department-to-combat-deforestation>

1441

Mendes, K (2023) President Lula’s first pro-environment acts protect Indigenous people and the Amazon. *Mongabay*, 04 January 2023.
[ONLINE] Available at: <https://news.mongabay.com/2023/01/president-lulas-first-pro-environment-acts-protect-indigenous-people-and-the-amazon/>

1442

Gamada, G. (2024) With more inspection, records of environmental crimes double in the Amazon in 2023, says Ibama. CNN Brazil, 15 January.
[ONLINE] Available at: <https://www.cnnbrasil.com.br/nacional/crimes-contra-flora-dobram-na-amazonia-diz-ibama>

1443

Cesar de Oliveira, S.E.M., Nakagawa, L., and Lopes, G.R., et al. (2024). The European Union and United Kingdom’s deforestation-free supply chains regulations: Implications for Brazil. *Ecological Economics* 217:108053.
[ONLINE] Available at: <https://doi.org/10.1016/j.ecolecon.2023.108053>

1444

Climate Observatory (2024) 10 ocasiões em que o agro tentou melar o combate à crise do clima, que agora o afeta.
[ONLINE] Available at: <https://www.oc.eco.br/10-ocasies-em-que-o-agro-tentou-melar-o-combate-a-crise-do-clima-que-agora-o-afeta>

1445

Amaral, A.C. (2021) Sob pressao americana Brasil se compromete a reduzir emissao de metano na Cop26. *Folha de S.Paulo*.
[ONLINE] Available at: <https://www1.folha.uol.com.br/ambiente/2021/11/sob-pressao-americana-brasil-se-compromete-a-reduzir-emissao-de-metano-na-cop26.shtml>

1446

Instituto Escolhas (2020) Do pasto ao prato: subsídios e pegada ambiental da carne bovina.
[ONLINE] Available at: <https://escolhas.org/publicacao/do-pasto-ao-prato-subsidios-e-pegada-ambiental-da-carne-bovina>.

1447

Repórter Brazil (2022) *Especial Nome Aos Bois*
[ONLINE] Available at: <https://nomeaosbois.reporterbrasil.org.br>

1448

Gov.br (n.d.) *Ministério da Agricultura e Pecuária: Plano Safra o Maior da História*
[ONLINE] Available at: <https://www.gov.br/agricultura/pt-br/assuntos/politica-agricola/plano-safra/2023-2024/>

1449

Siquira, I. (2023) O que é o Plano Safra? Entenda a importância do programa federal para o agronegócio. *Exame Agro*, 14 August 2023.
[ONLINE] Available at: <https://exame.com/agro/o-que-e-o-plano-safra-entenda-a-importancia-do-programa-federal-para-o-agronegocio/>

1450

Climate Policy Initiative (2023) *Contributions to Sustainability in the Brazilian Agricultural Plan 2023/24*
[ONLINE] Available at: <https://www.climatepolicyinitiative.org/publication/contributions-to-sustainability-in-the-brazilian-agricultural-plan-2023-24>

1451

Climate Policy Initiative (2023) *Contributions to Sustainability in the Brazilian Agricultural Plan 2023/24*

1452

WRI (2023) *New Economy for the Brazilian Amazon*
[ONLINE] Available at: <https://www.wri.org/research/new-economy-brazil-amazon>

1453

de Azevedo, T., Costa Junior, C., Brandão Junior, A. et al. SEEG initiative estimates of Brazilian greenhouse gas emissions from 1970 to 2015. *Scientific Data* 5, 180045 (2018). <https://doi.org/10.1038/sdata.2018.45>

1454

MAPA (Ministério da Agricultura, Pecuária e Abastecimento) (2023) *Plano Safra 2023/2024*
[ONLINE] Available at: <https://www.gov.br/agricultura/pt-br/assuntos/politica-agricola/plano-safra/2023-2024/cartilha-plano-safra-2023-2024>

1455

Harfuch, L. and Lobo, G.D. (2023) Plano Safra 2023/2024: Breve análise dos requisitos e incentivos para a sustentabilidade do setor agro-pecuário. *Agroicone*, 8 July
[ONLINE] Available at: <https://agroicone.com.br/portfolio/plano-safra-2023-2024-breve-analise-dos-requisitos-e-incentivos-para-a-sustentabilidade-do-setor-agropecuario>

1456

Harfuch, L. and Lobo, G.D. (2023) Plano Safra 2023/2024: Breve análise dos requisitos e incentivos para a sustentabilidade do setor agro-pecuário.

1457

Garrett Junior, G. (2023) Plano Safra 2023/2024: governo anuncia valor recorde de R\$ 364,22 bilhões. *Exame Agro*, 27 June 2023, Available at: <https://exame.com/agro/lula-lanca-plano-safra-2023-2024-e-valores-devem-ser-recordes/>

1458

Harfuch, L. and Lobo, G.D. (2023) Plano Safra 2023/2024: Breve análise dos requisitos e incentivos para a sustentabilidade do setor agro-pecuário.

1459

Felin, B., Feltran-Barbieri, R. and Barbosa, V. (2023) Nova Economia da Amazônia requer investimentos de R\$ 1,4 trilhão para agricultura e pecuária. WRI Brazil, 24 July.
[ONLINE] Available at: <https://www.wribrasil.org.br/noticias/nova-economia-da-amazonia-requer-investimentos-de-r-14-trilhao-para-agricultura-e-pecuaria>

1460

Climate Observatory (2023) Congress overturns vetoes and approves time frame of indigenous land.
[ONLINE] Available at: <https://oc.eco.br/congresso-derruba-vetos-de-lula-e-aprova-marco-temporal-de-terras-indigenas/?swcfpc=1>

1461

Climate Observatory, Congress overturns vetoes and approves time frame of indigenous land.

1462

Constance Malleret, Controversial Brazil law curbing Indigenous rights comes into force, *The Guardian*, December 2023. Available from: <https://www.theguardian.com/world/2023/dec/28/brazil-law-indigenous-land-rights-claim-time-marker>

1463

Malleret, C. (2023) Controversial Brazil law curbing Indigenous rights comes into force. *The Guardian*, 28 December.
[ONLINE] Available at: <https://www.theguardian.com/world/2023/dec/28/brazil-law-indigenous-land-rights-claim-time-marker>

1464

Pompeia, C. (2023) ‘What will the agribusiness lobby do next?’.

1465

ABC (n.d.) *Brazilian Institute of Environment and Renewable Natural Resources*.
[ONLINE] Available at: https://www.abc.gov.br/training/informacoes/InstituicaoIBAMA_en.aspx

1466

Repórter Brazil (2022) *Especial Nome Aos Bois*
[ONLINE] Available at: <https://nomeaosbois.reporterbrasil.org.br>

1467

Minerva Foods (n.d.) *Ownership breakdown*.
[ONLINE] Available at: <https://ri.minervafafoods.com/en/ownership-breakdown>

1468

Repórter Brazil (2022) *Especial Nome Aos Bois*

1469

Repórter Brazil (2022) *Especial Nome Aos Bois*

1470

The Brazilian Development Bank (n.d.) *The BNDES*.
[ONLINE] Available at: https://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/The_BNDES/

1471

Hofmeister, N., Papini, P., and Wenzel, F. (2020) BNDES poderia ter mudado o curso do desmatamento na Amazônia, mas lavou as mãos. *Apoie o nosso jornalismo ambiental*, 18 November 2020.
[ONLINE] Available at: <https://oeco.org.br/reportagens/bndes-poderia-ter-mudado-o-curso-do-desmatamento-na-amazonia-mas-lavou-as-maos/>

1472

MarketScreener (2024) *JBS S.A. Business Summary*
[ONLINE] Available at: <https://uk.marketscreener.com/quote/stock/JBS-S-A-6499588/company/>

1473

Hofmeister, N., Campos, A., Harari, I. and Jordan, L. (2022) JBS admits to buying almost 9,000 cattle from ‘one of Brazil’s biggest deforesters’.

1474

White, K. (2024) Scandal-hit Batista brothers back at helm at JBS after board reinstatement. *The Grocer*, 29 April
[ONLINE] Available at: <https://www.thegrocer.co.uk/meat/scandal-hit-batista-brothers-back-at-helm-at-jbs-after-board-reinstatement/690800.article>

1475

MarketScreener (2024) *JBS S.A. Business Summary*
[ONLINE] Available at: <https://uk.marketscreener.com/quote/stock/JBS-S-A-6499588/company/>

1476

Salles, J. (2023) Brazil’s new president faces ‘scorched earth scenario’ left behind by Bolsonaro. *Grist*, 17 January.
[ONLINE] Available at: <https://grist.org/regulation/brazils-new-president-faces-scorched-earth-scenario-left-behind-by-bolsonaro/>

1477

A couple of examples: Imazon and O Mundo que Queremos (2023) *Radar Verde*: Transparency of Beef in the Brazilian Amazon – Results 2023.
[ONLINE] Available at: https://radarverde.org.br/wp-content/uploads/2023/11/OO_RV-Relatorio-final-2023-ENGLISH_VERSION.pdf; Imazon (n.d.) *Our Attributes*
[ONLINE] Available at: <https://imazon.org.br/en/about-us/who-we-are>.

1478

European Commission (2023) EDGAR - Emissions Database for Global Atmospheric Research
[ONLINE] Available at: https://edgar.jrc.ec.europa.eu/report_2023#emissions_table

1479

Mao, F. (2021) Climate change: Why Australia refuses to give up coal. *BBC*, 22 October.
[ONLINE] Available at: <https://www.bbc.co.uk/news/world-australia-57925798>

1480

Statista (2022) *Distribution of Coal Exports Worldwide in 2022, by Country*.
[ONLINE] Available at: <https://www.statista.com/statistics/544848/distribution-of-thermal-coal-exporting-countries-worldwide>

1481

Our World in Data (2023) *Greenhouse gas emissions by sector, Australia, 2020*.
[ONLINE] Available at: <https://ourworldindata.org/grapher/ghg-emissions-by-sector?time=latest&country=-AUS>

1482

Our World in Data (2023) *Greenhouse gas emissions by sector, Australia, 2020*.

1483

Timperley, J. (2019) The Carbon Brief Profile: Australia. *Carbon Brief*, 5 April.
[ONLINE] Available at : <https://www.carbonbrief.org/the-carbon-brief-profile-australia>

1484

Cattle Corporation (2024) *Homepage*.
[ONLINE] Available at: <https://cattlecorporation.com.au>

1485

Meat and Livestock Australia (2022) *State of the industry report: The Australian red meat and livestock industry*.
[ONLINE] Available at: https://www.mla.com.au/globalassets/mla-corporate/prices--markets/documents/trends--analysis/soti-report/2879-mla-state-of-industry-report-2022_d6_low-res_spreads.pdf?utm_campaign=352222_Australia%e2%80%99s+red+meat+and+livestock+industry+well+placed+to+capitalise+on+exceptional+conditions&utm_medium=email&utm_source=Meat+%26+Livestock+Australia&dm_i=4PKB,7JRY,26TNFB,TEMV,1

1486

Australia Competition & Consumer Commission (n.d.) Submission on ACCC Issues Paper on its inquiry into the Diary Industry.
[ONLINE] Available at: https://www.accc.gov.au/system/files/Farmer%2520Power_0.pdf

1487

Beef Central (2019) Beef herd trends ‘significantly lower’ as industry weathers tough start to 2019, 30 April
[ONLINE] Available at: <https://www.beefcentral.com/news/beef-herd-trends-significantly-lower-as-industry-weather-tough-start-to-2019>

1488

Australian Government Department of Agriculture, Fisheries, and Forestry (2024) *Snapshot of Australian Agriculture 2024*
[ONLINE] Available at: <https://www.agriculture.gov.au/abares/products/insights/snapshot-of-australian-agriculture#long-term-climate-trends-are-impacting-farm-profit>

1489

Turnbull, T. (2023) Has Australia cleaned up its act on climate? *BBC* 7 September
[ONLINE] Available at: <https://www.bbc.co.uk/news/world-australia-65606208>

1490

Cave, D. (2022) Australia’s ‘Climate Election’ Finally Arrived. Will It Be Enough?. *The New York Times*. 22 May 2022.
[ONLINE] Available at: <https://www.nytimes.com/2022/05/22/world/australia/election-albanese-climate.html>

1491

Morton, A. and Murphy, K. (2022) Climate concern the main reason voters swung to independents at federal election, study finds. *The Guardian* 27 November
[ONLINE] Available at: <https://www.theguardian.com/australia-news/2022/nov/28/climate-concern-the-main-reason-voters-swung-to-independents-at-federal-election-study-finds>

1492

Turnbull, T. (2023) Has Australia cleaned up its act on climate?

1493

Climate Action Tracker (2023) *Australia*
[ONLINE] Available at: <https://climateactiontracker.org/countries/australia>

1494

Environmental Protection Agency (2019) *Global Non-CO2 Greenhouse Gas Emission Projections & Mitigation Potential: 2015-2050*.
[ONLINE] Available at: <https://www.epa.gov/global-mitigation-non-co2-greenhouse-gases/global-non-co2-greenhouse-gas-emission-projections>

1495

Tan, S. (2023). World Food Day: What are Australia’s major dietary preferences – and most favourite cuisines? *YouGov* 13 October
[ONLINE] Available at: <https://au.yougov.com/consumer/articles/47583-world-food-day-australia-major-dietary-preferences-most-favourite-cuisines-2023>

1496

McGrath, M. (2021). COP26: US and EU announce global pledge to slash methane. *BBC* 2 November
[ONLINE] Available at: <https://www.bbc.co.uk/news/world-59137828>

1497

Ainger, J. and Douhly, J. (2021). Brazil Says It Will Sign Global Pledge to Cut Methane Emissions. *Bloomberg UK* 1 November
[ONLINE] Available at: <https://www.bloomberg.com/news/articles/2021-11-01/methane-super-emitter-brazil-signs-pledge-to-cut-emissions>

1498

Paul, S. and Menon, P. (2021). Australia rejects global methane pledge, but New Zealand might say yes. *Reuters* 28 October
[ONLINE] Available at: <https://www.reuters.com/business/cop/australia-will-not-back-eu-us-led-pledge-cut-methane-emissions-2021-10-27>

1499

Higgins, I. (2021) Australia refuses to join global pledge led by US and EU to cut methane emissions. *ABC News* 2 November
[ONLINE] Available at: <https://www.abc.net.au/news/2021-11-03/australia-refuses-to-join-global-pledge-to-cut-methane-emissions/100589510>

1500

Howden, M. (2021) Australia’s refusal to sign a global methane pledge exposes flaws in the term ‘net-zero’. *The Conversation* 3 November
[ONLINE] Available at: <https://theconversation.com/australias-refusal-to-sign-a-global-methane-pledge-exposes-flaws-in-the-term-net-zero-170944>

1501

Chan, G. (2021) Farmers split on Australia's refusal to sign up to global methane pledge at Cop26. *The Guardian* 4 November
[ONLINE] Available at: <https://www.theguardian.com/australia-news/2021/nov/04/farmers-split-on-australias-refusal-to-sign-up-to-global-methane-pledge-at-cop26>

1502

Chan, G (2021) Farmers split on Australia's refusal to sign up to global methane pledge at Cop26.

1503

Farmers for Climate Action (2022) *Farmers welcome methane pledge*, 22 October <https://farmersforclimateaction.org.au/blog/2022/10/25/farmers-welcome-methane-pledge>

1504

Chan, G. (2021) Farmers split on Australia's refusal to sign up to global methane pledge at Cop26.

1505

Meat and Livestock Australia (2023) Agriculture part of the solution, not the problem.
[ONLINE] Available at: <https://www.mla.com.au/news-and-events/from-the-mds-desk/agriculture-part-of-the-solution-not-the-problem/>

1506

Meat and Livestock Australia (n.d.) *Delivering CN30*.
[ONLINE] Available at: <https://www.mla.com.au/research-and-development/Environment-sustainability/carbon-neutral-2030-rd/delivering-cn30>

1507

ADPF (2022) *Time for an era of reciprocity*
[ONLINE] Available at: <https://adpf.org.au/time-for-an-era-of-reciprocity>

1508

Australian Dairy Farmers (2022) *ADF warns that signing methane pledge is ill-timed, ill-informed*
[ONLINE] Available at: <https://australiandairyfarmers.com.au/mediareleasespost/adf-warns-that-signing-methane-pledge-is-ill-timed-ill-informed>

1509

Higgins, I. (2021) Australia refuses to join global pledge led by US and EU to cut methane emissions.

1510

Howden, M. (2021) Australia's refusal to sign a global methane pledge exposes flaws in the term 'net-zero'.

1511

Department of Climate Change, Energy, the Environment and Water (2022) *Australia joins Global Methane Pledge*
[ONLINE] Available at: <https://minister.dccew.gov.au/bowen/media-releases/australia-joins-global-methane-pledge>

1512

Department of Climate Change, Energy, the Environment and Water (2022) *Australia joins Global Methane Pledge*

1513

Murphy, K. (2022) Australian farmers warn PM not to rush into Biden's global methane pledge. *The Guardian* 23 June
[ONLINE] Available at: <https://www.theguardian.com/australia-news/2022/jun/23/australian-farmers-warn-pm-not-to-rush-into-bidens-global-methane-pledge>

1514

Clarke, T. (2022) Coalition warns Labor will legislate methane pledge and 'destroy' Australian farming jobs amid concerns of 'burp tax'. *Sky News* 13 October
[ONLINE] Available at: <https://www.skynews.com.au/australia-news/politics/coalition-warns-labor-will-legislate-methane-pledge-and-destroy-australian-farming-jobs-amid-concerns-of-burp-tax/news-story/24dbb3c5146bcf5415dec422cc79cde7>

1515

Clarke, T. (2022) Coalition warns Labor will legislate methane pledge and 'destroy' Australian farming jobs amid concerns of 'burp tax'.

1516

Clarke, T. (2022) Coalition warns Labor will legislate methane pledge and 'destroy' Australian farming jobs amid concerns of 'burp tax'.

1517

Department of Agriculture, Fisheries and Forestry (2022) *Methane pledge to keep trade door open for ag sector*
[ONLINE] Available at: <https://minister.agriculture.gov.au/watt/media-releases/global-methane-pledge-signing>

1518

Clarke, T. (2022) Coalition warns Labor will legislate methane pledge and 'destroy' Australian farming jobs amid concerns of 'burp tax'.

1519

Department of Climate Change, Energy, the Environment and Water (2022) *Australia joins Global Methane Pledge*

1520

Department of Climate Change, Energy, the Environment and Water (2022) *Australia joins Global Methane Pledge*

1521

National Farmers Federation (2022) *Statement on Australia signing the Methane Pledge*
[ONLINE] Available at: <https://nff.org.au/media-release/statement-on-australia-signing-the-methane-pledge>

1522

Meat and Livestock Australia (2023) *Agriculture part of the solution, not the problem*.

1523

AgForce (2022) *AgForce urges Government to listen to farmers on Global Methane Pledge*
[ONLINE] Available at: <https://www.agforceqld.org.au/knowledgebase/article/AGF-01644>

1524

Meat and Livestock Australia (2023) *Agriculture part of the solution, not the problem*.

1525

National Farmers Federation (2022) *NFF calls on Government to listen to farmers on Methane Pledge*
[ONLINE] Available at: <https://nff.org.au/media-release/nff-calls-on-government-to-listen-to-farmers-on-methane-pledge>

1526

Australian Dairy Farmers (2022) *ADF warns that signing methane pledge is ill-timed, ill-informed*. [ONLINE] Available at: <https://australiandairyfarmers.com.au/mediareleasespost/adf-warns-that-signing-methane-pledge-is-ill-timed-ill-informed>

1527

AgForce (2022) *Global Methane Pledge: Blowing the trumpet for agriculture*
[ONLINE] Available at: <https://www.agforceqld.org.au/knowledgebase/article/AGF-01649>

1528

Carbon Brief (2023) *COP28: Key outcomes agreed at the UN climate talks in Dubai*
[ONLINE] Available at: <https://www.carbonbrief.org/cop28-key-outcomes-agreed-at-the-un-climate-talks-in-dubai>

1529

Krishnamurthy, R. (2023) COP28 president urges nations to update NDCs to cover methane, other non-CO2 greenhouse gases. *Down to Earth* 3 December
[ONLINE] Available at: <https://www.downtoearth.org.in/news/climate-change/cop28-president-urges-nations-to-update-ndcs-to-cover-methane-other-non-co2-greenhouse-gases-93134>

1530

GOV.UK (2022) *United Kingdom Methane Memorandum*.
[ONLINE] Available at: <https://www.gov.uk/government/publications/united-kingdom-methane-memorandum/united-kingdom-methane-memorandum#forward-look>

1531

GOV.UK (2022) *United Kingdom Methane Memorandum*.

1532

GOV.UK (2022) *United Kingdom Methane Memorandum*.

1533

Department for Environment, Food & Rural Affairs (2022) Government seeks views on reducing livestock methane production.
[ONLINE] Available at: <https://www.gov.uk/government/news/government-seeks-views-on-reducing-livestock-methane-production>

1534

GOV.UK (2022) United Kingdom Methane Memorandum.

1535

Department for Environment, Food & Rural Affairs (2022) Call for evidence on methane suppressing feed products.
[ONLINE] Available at: <https://consult.defra.gov.uk/agriclimate/methane-supressing-feed-products>

1536

DSM (2023) DSM-Firmenich receives UK approval for its methane-reducing feed additive Bovaer®.
[ONLINE] Available at: <https://www.dsm.com/anh/news/press-releases/2023/dsm-firmenich-receives-uk-approval-for-its-methane-reducing-feed.html>

1537

Green Alliance (2023) *Securing Our Future*.
[ONLINE] Available at: <https://green-alliance.org.uk/wp-content/uploads/2023/09/Securing-our-future.pdf>

1538

Green Alliance (2023) *Securing Our Future*.

1539

NFU (2023) Defra consultation on methane-suppressing feed products.
[ONLINE] Available at: <https://www.nfuonline.com/updates-and-information/defra-consultation-on-methane-suppressing-feed-products/>

1540

NFU (n.d.) NFU's bitter disappointment at European emissions vote.
[ONLINE] Available at: <https://www.nfuonline.com/archive?treid=49327>

1541

Committee on Climate Change (n.d.) Available online:
[ONLINE] Available at: <https://www.theccc.org.uk/>

1542

Committee on Climate Change (2020b) The Sixth Carbon Budget: The UK's path to Net-Zero.
[ONLINE] Available at: <https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf>

1543

Committee on Climate Change (2020b) *The Sixth Carbon Budget: The UKs path to Net-Zero*, p. 208

1544

National Food Strategy (2021) National Food Strategy.
[ONLINE] Available at: www.nationalfoodstrategy.org

1545

Climate Change Committee (n.d.) A legal duty to act.
[ONLINE] Available at: <https://www.theccc.org.uk/what-is-climate-change/a-legal-duty-to-act>

1546

GOV.UK (2019) UK becomes first major economy to pass net zero emissions law.
[ONLINE] Available at: <https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law>

1547

Horton, H. (2024) Sunak stands with net zero and climate conspiracy group at farming protest.
[ONLINE] Available at: *The Guardian*, 25 February. <https://www.theguardian.com/politics/2024/feb/25/sunak-stands-with-net-zero-and-climate-conspiracy-group-at-farming-protest>

1548

No Farms No Food. (2024). Ireland “Now 200,000 cows must be culled to hit climate targets.” Farming is being sacrificed on the altar of net zero. [Tweet] Archived at <https://archive.ph/OEe8n>

1549

GOV.UK (2024) PM to announce major innovation boost for farmers feeding the nation.
[ONLINE] Available at: <https://www.gov.uk/government/news/pm-to-announce-major-innovation-boost-for-farmers-feeding-the-nation-20-february-2024>

1550

Hardy, L. and Benton, D. (2023) Why the UK should do more to cut methane emissions. Green Alliance.
[ONLINE] Available at: <https://green-alliance.org.uk/publication/why-the-uk-should-do-more-to-cut-methane-emissions>

1551

Green Alliance (2022) Global Methane Pledge.
[ONLINE] Available at: <https://green-alliance.org.uk/wp-content/uploads/2022/10/Global-methane-pledge.pdf>

1552

Papier, K., Knuppel, A., and Syam, N., et al. (2023) Meat consumption and risk of ischemic heart disease: A systematic review and meta-analysis. *Critical Reviews in Food Science and Nutrition*, 63(3): 426-437.
[ONLINE] Available at: <https://doi.org/10.1080/10408398.2021.1949575>

1553

British Heart Foundation (2024) UK Fact Sheet.
[ONLINE] Available at: <https://www.bhf.org.uk/-/media/files/for-professionals/research/heart-statistics/bhf-cvd-statistics-uk-factsheet.pdf>

1554

Ethical Consumer (2016) Understanding the NFU: an English Agribusiness Lobby Group. *Ethical Consumer website*.
[ONLINE] Available at: <https://www.ethicalconsumer.org/sites/default/files/inline-files/nfu%20an%20english%20agribusiness%20lobby%20group.pdf>

1555

Ethical Consumer (2016) Understanding the NFU: an English Agribusiness Lobby Group.

1556

Ethical Consumer (2016) Understanding the NFU: an English Agribusiness Lobby Group.

1557

Ethical Consumer (2016) Understanding the NFU: an English Agribusiness Lobby Group.

1558

Ethical Consumer (2016) Understanding the NFU: an English Agribusiness Lobby Group.

1559

Ethical Consumer (2016) Understanding the NFU: an English Agribusiness Lobby Group.

1560

Wightman, A. (2024) Big farmer: Agricultural subsidies are too heavily concentrated in the hands of large landowners. *Holyrood Magazine*.
[ONLINE] Available at: <https://www.holyrood.com/comment/view/big-farmer-agricultural-subsidies-are-too-heavily-concentrated-in-the-hands-of-large-landowners>

1561

Carrington, D. (2019) No need to cut beef to tackle climate crisis, say farmers. *The Guardian*, 10 September.
[ONLINE] Available at: <https://www.theguardian.com/environment/2019/sep/10/no-need-to-cut-beef-to-tackle-climate-crisis-say-farmers>

1562

Carrington, D. (2019) No need to cut beef to tackle climate crisis, say farmers.

1563

Carrington, D. (2023) Hundreds of academics call for 100% plant-based meals at UK universities. *The Guardian*, 4 September.
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/sep/04/hundreds-academics-call-for-meat-free-meals-british-universities>

1564

GOV.UK (2022) United Kingdom Methane Memorandum.

1565

Nestlé (n.d.) Moving to Regenerative Agriculture.
[ONLINE] Available at: <https://www.nestle.co.uk/en-gb/sustainability/regenerative-agriculture>

1566

Resilient Dairy Landscapes (2019) Newsletter.
[ONLINE] Available at: https://6542f5d0-b28d-4d73-a54e-b9a9f880f04f.filesusr.com/ugd/6e5046_87a4d6d43a2e4eb481b0a95e1e59716d.pdf

1567

Reed, M. (2021) Resilient Dairy Landscapes: Key Findings [Slideshare presentation].
[ONLINE] Available at: <https://www.slideshare.net/MarkReed11/resilient-dairy-landscapes-key-findings>

1568

Arla (n.d.). How Dairy Farms Can Contribute to the Fight Against Climate Change and Biodiversity Loss.
[ONLINE] Available at: <https://www.arla.com/sustainability/the-land/regenerative-dairy-farming>

1569

Arla (2021). Regenerative Farming Pilot Farm Network.
[ONLINE] Available at: https://www.arla.com/4a6ee6/globalassets/sustainability/regenerative-farming/arla_regenerative-farming-pilot-farm-network-brochure_english.pdf

1570

Bord Bia (2021) Origin Green Progress Update Report 2021.
[ONLINE] Available at: <https://www.origingreen.ie/globalassets/origin-green/progress-update-report/bord-bia---origin-green-2021-progress-update-report.pdf>

1571

Wang, Y., de Boer, I.J.M., and Persson, U.M., et al. (2023) Risk to rely on soil carbon sequestration to offset global ruminant emissions. *Nature Communications* 14: 7625.
[ONLINE] Available at: <https://doi.org/10.1038/s41467-023-43452-3>

1572

Source Material (2018) *Muck for Brass*.
[ONLINE] Available at: <https://www.source-material.org/muck-for-brass>

1573

Bowman, M. and Woroniecka, K. (2020) *Bad Energy*. Feedback.
[ONLINE] Available at: <https://feedbackglobal.org/wp-content/uploads/2020/09/Feedback-2020-Bad-Energy-report.pdf> p.58

1574

Source Material (2018) *Muck for Brass*.

1575

Department of Agriculture, Environment and Rural Affairs (n.d.). Ammonia emissions in Northern Ireland.
[ONLINE] Available at: <https://www.daera-ni.gov.uk/articles/ammonia-emissions-northern-ireland>

1576

National Atmospheric Emissions Inventory (n.d.) About Ammonia.
[ONLINE] Available at: https://naei.beis.gov.uk/overview/pollutants?pollutant_id=21

1577

Source Material (2018) *Muck for Brass*.

1578

Bowman, M. and Woroniecka, K. (2020) *Bad Energy*.

1579

GOV.UK (2023) *Carbon Budget Delivery Plan*.
[ONLINE] Available at: <https://www.gov.uk/government/publications/carbon-budget-delivery-plan/carbon-budget-delivery-plan>

1580

Evans, S. and Viisainen, V. (2014). Analysis: UK emissions in 2023 fell to lowest level since 1879. Carbon Brief.
[ONLINE] Available at: <https://www.carbonbrief.org/analysis-uk-emissions-in-2023-fell-to-lowest-level-since-1879>

1581

Department for Energy, Security and Net Zero. (2024). 2023 UK greenhouse gas emissions, provisional figures.
[ONLINE] Available at: <https://assets.publishing.service.gov.uk/media/6604460f91a320001a82b0fd/uk-greenhouse-gas-emissions-provisional-figures-statistical-release-2023.pdf>

1582

Committee on Climate Change (2020) Land use: Policies for a Net Zero UK.
[ONLINE] Available at: <https://www.theccc.org.uk/wp-content/uploads/2020/01/Land-use-Policies-for-a-Net-Zero-UK.pdf>

1583

Hardy, L. and Benton, D. (2022). *The Global Methane Pledge*. Green Alliance.
[ONLINE] Available at: <https://green-alliance.org.uk/wp-content/uploads/2022/10/Global-methane-pledge.pdf>

1584

Hardy, L. and Benton, D. (2022). *The Global Methane Pledge*.

1585

Clark, M. A., Domingo, N., and Colgan, K., et al. (2020) Global food system emissions could preclude achieving the 1.5°C and 2°C climate change targets. *Science* 370 (6517): 705-708.
[ONLINE] Available at: <https://www.science.org/doi/10.1126/science.aba7357>

1586

Vegetarian Society (2021) National Food Strategy Report: What You Need to Know.
[ONLINE] Available at: <https://vegsoc.org/news/national-food-strategy-report-what-you-need-to-know>

1587

Moleman, P. (2024) Plant-based food cheaper overall than meat and dairy in Dutch supermarkets. ProVeg International.
[ONLINE] Available at: <https://proveg.org/press-release/plant-based-meat-and-dairy-now-cheaper-overall-than-conventional-meat-and-dairy-in-almost-all-dutch-supermarkets>

1588

Xu, X., Sharma, P., and Shu, S., et al. (2021) Global greenhouse gas emissions from animal-based foods are twice those of plant-based foods.

1589

Hardy, L. and Benton, D. (2022) *The Global Methane Pledge*.

1590

GOV.UK (2022) *United Kingdom Methane Memorandum*.

1591

IGOV.UK (2022) *United Kingdom Methane Memorandum*.

1592

Horton, H. (2024). Britain's climate action plan unlawful, high court rules. *The Guardian*, 3 May.
[ONLINE] Available at: <https://www.theguardian.com/environment/article/2024/may/03/britain-climate-action-plan-unlawful-high-court>

1593

ONS (2022) Worries about climate change, Great Britain: September to October 2022.
[ONLINE] Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/worriesaboutclimatechangegreatbritain/septembertoctober2022>

1594

Bhattacharya, A., Bryant, C. and Couture, A. (2023) *Chewing it over: Public attitudes to alternative proteins and meat reduction*. Social Market Foundation.
[ONLINE] Available at: <https://www.smf.co.uk/publications/politics-of-meat-reduction>

1595

Goodier, M. and Sunnemark, V. (2023). UK meat consumption at lowest level since records began, data reveals. *The Guardian*, 24 October.
[ONLINE] Available at: <https://www.theguardian.com/environment/2023/oct/24/uk-meat-consumption-lowest-level-since-record-began-data-reveal>

Table 1.1 References

1596	SBTI (n.d.) Companies Taking Action - Dashboard [ONLINE] Available at: https://sciencebasedtargets.org/companies-taking-action#dashboard	1610	Carbon Disclosure Project (2023) FrieslandCampina [ONLINE] Available at: https://www.cdp.net/en/responses?queries%5Bname%5D=frieslandcampina
1597	Arla (2023) Consolidated Annual Report [ONLINE] Available at: https://www.arla.com/493575/globalassets/arla-global/company---overview/investor/annual-reports/2023/arla_annual-report-2023_uk_v2.pdf	1611	Itoham (2024) Itoham Yonekyu Group Integrated Report 2023 [ONLINE] Available at: https://www.itoham-yonekyu-holdings.com/Portals/0/images/csr/pdf/download/20231215IntegratedReport2023.pdf
1598	Arla (2023) Consolidated Annual Report [ONLINE] Available at: https://www.arla.com/493575/globalassets/arla-global/company---overview/investor/annual-reports/2023/arla_annual-report-2023_uk_v2.pdf.p40	1612	Carbon Disclosure Project (2023) Itoham Yonekyu Holdings - Climate Change 2023 [ONLINE] Available at: https://www.cdp.net/en/responses?queries%5Bname%5D=itoham
1599	Dairy Farmers of America (n.d.) Sustainability [ONLINE] Available at: https://dfamilk.com/sustainability	1613	Itoham (n.d.) Initiatives for TCFD recommendations [ONLINE] Available at: https://www.itoham-yonekyu-holdings.com/csr/tcf.html
1600	Dairy Farmers of America (2022) 2022 Social Responsibility Report [ONLINE] Available at: https://issuu.com/dairyfarmersofamerica/docs/sust22001_srr_fnl_053122_issuu	1614	Carbon Disclosure Project (2023) Itoham Yonekyu Holdings [ONLINE] Available at: https://www.cdp.net/en/responses?queries%5Bname%5D=itoham
1601	Danish Crown (2023) Annual Report 2022/2023 [ONLINE] Available at: https://www.danishcrown.com/media/17343/annual-report-2022-2023-en.pdf?6383623835600000000	1615	JBS (2023) 2022 JBS Sustainability Report [ONLINE] Available at: https://jbsesg.com/wp-content/uploads/2023/08/2022-JBS-SUSTAINABILITY-REPORT.pdf
1602	Danish Crown (2022) Sustainability Report 2021/22 [ONLINE] Available at: https://www.danishcrown.com/media/13185/2020-2021_sustainability-report.pdf?6383616728000000000.P74	1616	JBS USA (n.d) Energy and emissions [ONLINE] Available at: https://sustainability.jbsfoodsgroup.com/chapters/environment/energy-emissions/
1603	Danone (2024) Annual Integrated Report 2023: Danone's Sustainability Performance [ONLINE] Available at: https://www.danone.com/content/dam/corp/global/danonecom/investors/en-all-publications/2023/integratedreports/integratedannualreport2023.pdf	1617	JBS (2022) JBS Sustainability Report 2021 [ONLINE] Available at: https://jbs.com.br/wp-content/uploads/2023/10/sustainability-in-report-jbs-2021.pdf
1604	Fonterra (2023) Fonterra Sustainability Report 2023 [ONLINE] Available at: https://view.publitas.com/fonterra/2023-sustainability-report/page/1	1618	Carbon Disclosure Project (2023) JBS - Climate Change [ONLINE] Available at: https://www.cdp.net/en/responses?queries%5Bname%5D=jbs
1605	Fonterra (2023) Fonterra Sustainability Report 2023 [ONLINE] Available at: https://view.publitas.com/fonterra/2023-sustainability-report/page/1	1619	Lactalis (2023) Sustainability Report 2022 [ONLINE] Available at: https://www.lactalis.com/wp-content/uploads/2023/06/Sustainability-Report-2022_Lactalis-Group-v1.pdf
1606	Fonterra (n.d.) Sustainability [ONLINE] Available at: https://www.fonterra.com/nz/en/sustainability.html	1620	Lactalis (2023) Our Journey Towards Carbon Net Zero by 2050 [ONLINE] Available at: https://www.lactalis.com/wp-content/uploads/2023/05/Climate-Our-journey-towards-Carbon-Net-Zero-by-2050.pdf
1607	Fonterra (2023) Fonterra announces climate plans for the future [ONLINE] Available at: https://www.fonterra.com/nz/en/our-stories/media/fonterra-announces-climate-plans-for-the-future.html	1621	Carbon Disclosure Project (2023) Lactalis [ONLINE] Available at: https://www.cdp.net/en/responses?queries%5Bname%5D=lactalis
1608	Fonterra (2023) Fonterra Sustainability Report 2023 [ONLINE] Available at: https://view.publitas.com/fonterra/2023-sustainability-report/page/1	1622	Mengniu (2023) 2022 Sustainability Report: China Mengniu Dairy Company Limited [ONLINE] Available at: https://mengniuir.com/pdf/esg/esg2022_en.pdf
1609	FrieslandCampina (2024) FrieslandCampina Annual Report 2023 [ONLINE] Available at: https://www.frieslandcampina.com/about-us/financials/financial-and-sustainability-reports/	1623	Mengniu (n.d.) ESG Strategies [ONLINE] Available at: https://www.mengniuir.com/en/strategies.aspx
		1624	Mengniu (2011) Mengniu Announces "GREEN" Strategy and Sets High-Quality Dual-Carbon Goals [ONLINE] Available at: https://media-mengniu.todayir.com/202206011349081758076060_en.pdf
		1625	Nestlé (2024) Creating Shared Value and Sustainability Report 2023: Advancing regenerative food systems at scale [ONLINE] Available at: https://www.nestle.com/sites/default/files/2024-02/creating-shared-value-sustainability-report-2023-en.pdf

1626	Tyson Sustainability Report (2023) Growing a more sustainable future: Sustainability Report 2022 [ONLINE] Available at: https://www.tysonfoods.com/sites/default/files/2023-10/Tyson%20Foods%20Sustainability%20Report%20FY2022%20%281%29.pdf
1627	Tyson Foods (2022) The Formula to Feed the Future - 2021 Sustainability Report [ONLINE] Available at: https://www.tysonfoods.com/sites/default/files/2023-04/Tyson_2021_Sustainability_Report.pdf
1628	Carbon Disclosure Project (2023) Tyson Foods - Climate Change [ONLINE] Available at: https://www.cdp.net/en/formatted_responses/responses?campaign_id=83630982&discloser_id=1036655&locale=en&organization_name=Tyson+Foods
1629	Vion (2023) CSR Report 2022 [ONLINE] Available at: https://www.vionfoodgroup.com/wp-content/uploads/2023/07/CSR-report-Vion.pdf
1630	WH Group (n.d.) Sustainability [ONLINE] Available at: https://www.wh-group.com/html/sus.php
1631	World Benchmarking Alliance (n.d.) WH Group [ONLINE] Available at: https://www.worldbenchmarkingalliance.org/publication/food-agriculture/companies/wh-group-3/
1632	WH Group (2024) 2023 Environmental and Social Governance Report [ONLINE] Available at: https://media-whgroup.todayir.com/20240415172402270611159910_en.pdf
1633	Yili [2023] Sustainability Report 2022 [ONLINE] Available at: https://www.yili.com/uploads/2023-07-19/a519427a-a419-49cd-8bc4-118e642149301689756317076.pdf
1634	Yili (2023) Yili takes the lead in completing the UN global compact CAA programme [ONLINE] Available at: https://www.yili-innovation.com/yili-takes-the-lead-in-completing-the-un-global-compact-caa-programme/
1635	World Benchmarking Alliance [2023] Yili Group [ONLINE] Available at: https://www.worldbenchmarkingalliance.org/publication/food-agriculture/companies/yili-group-3/

