



WHERE'S THE BEEF?

Why ignoring industrial livestock by the world's largest economies puts the Global Methane Pledge at risk



MIGHTY EARTH

EXECUTIVE SUMMARY

The Global Methane Pledge risks failure as the world's largest economies continue to overlook the largest single-source of methane emissions: livestock.¹ This report finds that neither the EU, US, Brazil, China nor India, which are home to the world's largest cattle herds, have adopted specific methane reduction targets, developed large scale mitigation strategies, or introduced strong binding regulation to curb industrial livestock emissions. Without decisive action to address methane from meat and dairy production, the Global Methane Pledge will not be able to achieve its goal of reducing methane emissions by 30% in 2030.

Methane is a potent greenhouse gas and, according to the latest report of the Intergovernmental Panel on Climate Change (IPCC), accounts for approximately half of the 1.0 °C net rise in global average temperature since the pre-industrial era.² Rapidly reducing methane emissions is regarded as the single most effective strategy to reduce global warming in the near term and keep the goal of limiting warming to 1.5° C within reach.³

With this urgent need to rapidly and significantly reduce methane emissions, the Global Methane Pledge (GMP) was launched in 2021 during COP26 in Glasgow, co-sponsored by the European Union and the United States. The GMP set a global goal of reducing man-made methane emissions by 30% in 2030 based on a 2020 baseline. Since then, 160 countries have signed up to the Pledge.⁴



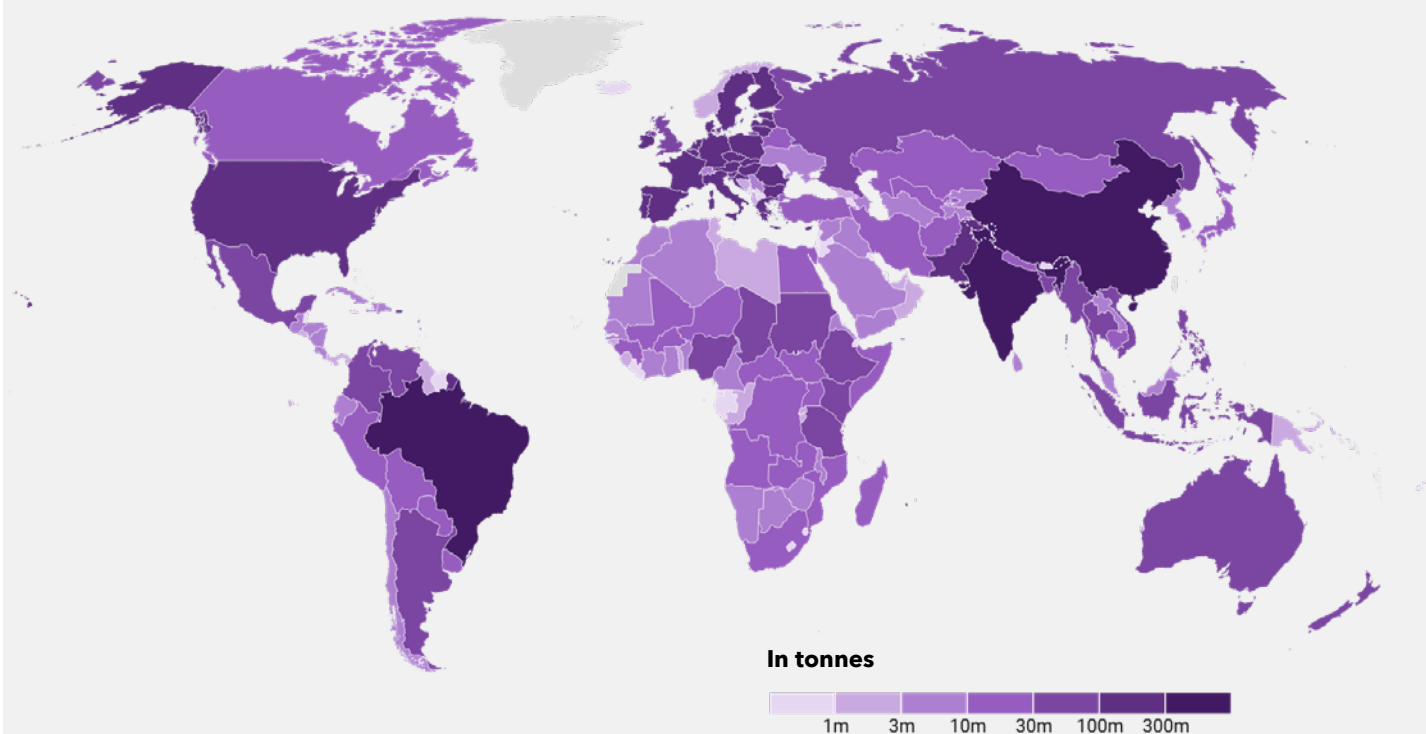
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For this report Mighty Earth has analysed the policies of the five economies with the largest cattle herds.⁵ These are: the EU, the US, and COP30 host Brazil, all of them signatories to the GMP, and China and India who have, so far, not committed to the GMP. Our findings highlight a big blind spot in the countries' COP action plans, known as Nationally Determined Contributions (NDC), regarding reductions in agricultural emissions in general, and industrial livestock methane in particular.

Together, these five nations emitted an estimated 1.8 billion tonnes of CO₂ equivalent of agricultural methane in 2022, accounting for 45 percent of global agricultural methane emissions.⁶ Yet none of their NDCs acknowledge the scale of industrial livestock methane or present credible plans to reduce it. The much-needed attention to methane reductions from the energy sector has overshadowed the urgency of tackling emissions from industrial livestock, with policymakers largely neglecting this highly polluting source. According to the FAO, livestock alone is responsible for 32% of global methane emissions.⁷ If this blind spot is not addressed immediately, the GMP will fail and with it one of our best chances to keep global heating under control.

Methane emissions from agriculture, 2022

Methane (CH₄) emissions are measured in tonnes of carbon dioxide-equivalents.



Data source: Climate Watch (2025)

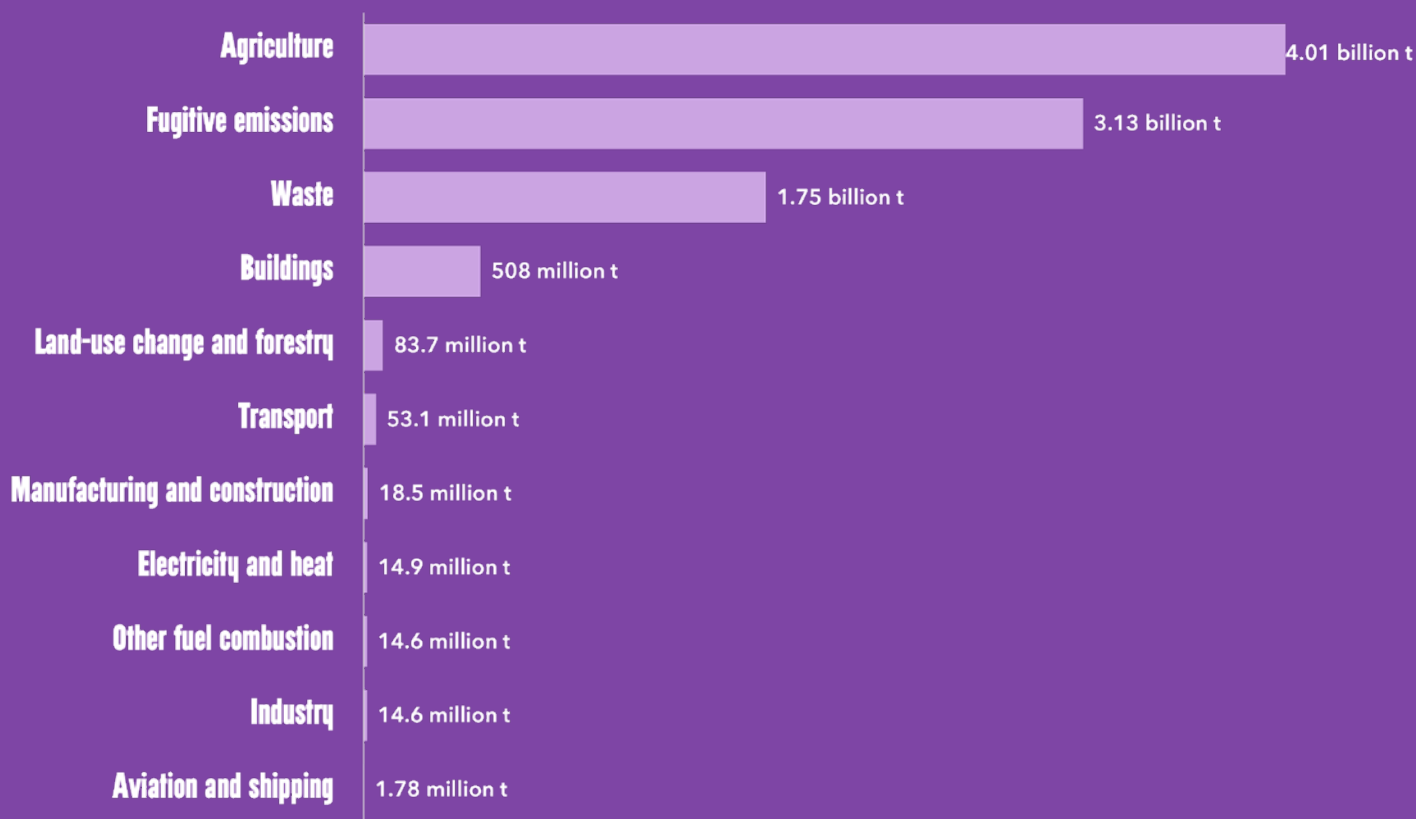
Why methane matters

Methane is a “superheater” greenhouse gas; responsible for 30% of the world’s warming since the industrial revolution.⁸ Although the warming effect of methane is 86 times greater than that of carbon dioxide over a 20-year period, it only stays in the atmosphere for approximately 12 years.⁹

Without ambitious action on methane, global temperatures risk increases in the short term, pushing planetary systems beyond irreversible tipping points such as the melting of the ice caps of Greenland or the dieback of the Amazon rainforest.¹⁰ But, despite 160 countries signing up to the GMP, global methane emissions continue to rise, rather than fall, even as we reach the halfway point to the 2030 deadline by which countries pledged to achieve the 30% reduction.¹¹ The Global Carbon Project reported record high methane emission levels in 2024, with concentration levels rising faster during the last five years than at any time since data recording began.¹² And as huge multinational meat companies like Cargill, JBS and WH Group (formerly Shuanghui Group, the world’s largest pork producer) are scaling up their industrial livestock operations under the auspice of ‘feeding the growing world,’ agricultural emissions from livestock seem poised to increase.¹³

Methane emissions by sector, worldwide, 2022

Methane (CH₄) emissions are measured in tonnes of carbon dioxide-equivalents.



Source: Climate Watch (2025)

Industrial livestock: the missing piece in methane action

Industrial livestock for meat and dairy is the single greatest source of anthropogenic methane emissions, responsible for 32% of global man-made emissions.¹⁴

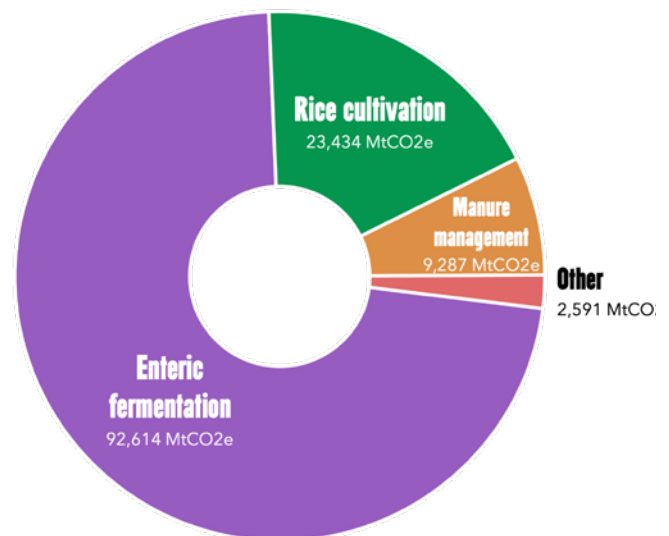
The negative impact of industrial livestock on the planet is hard to overstate. Nearly half of all growing crops, such as soy, are used as animal feed.¹⁵ In total, meat and dairy production uses more land than all crops for human consumption combined yet provides less than one-fifth of global calories and just over one third of protein.¹⁶ Intensive livestock farming drives deforestation, biodiversity loss, and climate emissions far out of proportion to its nutritional contribution.

In its most recent report, the EAT Lancet Commission reaffirms that reducing red meat consumption is essential not only for planetary health but also for public health. The updated “planetary health diet” calls for limiting red meat to below 98 grams (a piece of meat roughly the size of a deck of playing cards or a small chicken breast) per week, and increasing the share of plant-based foods, legumes, whole grains, fruits, and vegetables.¹⁷ The report estimates that such a shift could prevent up to 15 million premature deaths each year by lowering the risks of cardiovascular disease, type 2 diabetes, and certain cancers associated with red meat, while also reducing greenhouse gas emissions by approximately half by 2050.¹⁸ The biggest proportion of these emissions come from livestock (especially cattle but also sheep and goats) that emit methane through their digestion process, known as enteric fermentation as well as from manure. In many countries, livestock accounts for more than half of national methane emissions.¹⁹

However, the consumption of meat and dairy is politically sensitive, economically entrenched, and culturally significant, making it an unpopular topic for corporates and governments to publicly address the disproportionate health and climate impacts of these products. Recent research by Sentient Media, for example, shows that less than 4% of climate news stories mention intensive animal agriculture as a source of emissions, despite the enormous climate footprint of meat production.²⁰ This report finds a similar blind spot in the countries and regions assessed.

Agricultural methane emissions by sector

In kilotonnes, average from 1990-2019



Source: FAO

METHODOLOGY

The countries and regions selected for this report have been assessed through analysis on their published NDCs, as well as existing domestic/regional commitments, legislation and regulation focused on all-sector methane emissions, with a focus on agricultural and livestock emissions.

For this report we have selected the countries / regions with the largest herds worldwide. On top it is relevant to know that:

- **The EU** and **the US** were the original co-sponsors of the GMP in 2021 and are two of the largest producers and consumers of animal protein globally.
- **Brazil**, a signatory of the GMP, has the second largest herd size of any country and is the host of COP30 in the city of Belém in the Amazon in November 2025.

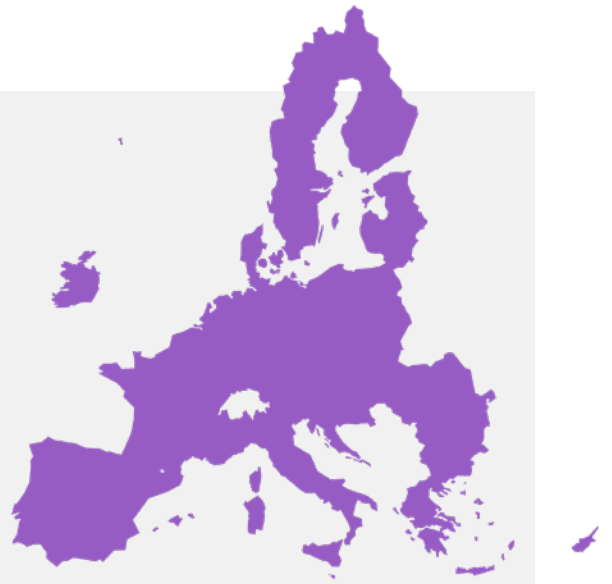
Finally, this report also takes a brief look at **China** and **India**, which have not signed onto the GMP so far, but are the second and third largest economies in the world and complete the top 5 countries with the largest herds in the world.



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Methane Briefing:

European Union



Status and commitments

The European Union is a founding sponsor and signatory of the GMP,²¹ launched together with the United States in 2021. The publication of the EU's updated NDC was delayed until November 5, 2025, due to prolonged discussions amongst Member States over the bloc's 2040, and by extension 2035 climate goals.²² The latest NDC specifically mentions the need to reduce non-carbon-dioxide emissions, particularly methane emissions.²³ However, it mostly focuses on methane emissions from fossil fuels. On agriculture, it only states that methane reductions are addressed under the Effort Sharing Regulation (ESR), yet the EEA reports the ESR has been highly ineffective as agricultural emissions fell only 5% from 2005–2022, with just 7% expected by 2030.²⁴ Despite the fact that agriculture is the single largest source of methane in the EU, accounting for around 56% of total emissions,²⁵ the bloc has not set binding methane reduction objectives for intensive livestock or manure management.



56%

of the EU's methane emissions come from agriculture

Policies and incentives

The EU adopted its *Methane Regulation* in 2024,²⁶ which introduces monitoring, reporting, and mitigation obligations, but only for the energy sector. Agriculture, despite being the main methane source, was omitted from these binding requirements. Instead, the EU relies on softer instruments: the *EU Methane Strategy* (2020),²⁷ Common Agricultural Policy (CAP) funding for manure management and anaerobic digestion, and the approval of feed additives such as 3-nitrooxypropanol (Bovaer) to reduce enteric fermentation and thereby methane emissions from cattle.^{28,29} Large cattle farms were originally part of the new *Industrial Emissions Directive* (IED) but were excluded at the last moment by the European Parliament.³⁰ Their inclusion would have required large operations (over 300 livestock units) to monitor and report their emissions, and to apply the best available techniques in manure management, feeding, and housing to reduce methane pollution. Conversely, the CAP still allocates most subsidies to emissions-intensive livestock

sectors, with more than 80% of EU farm subsidies linked to animal products. Approximately 70% of Coupled Income Supports (a subsidy paid directly to farmers) is directed specifically to ruminants (cows, sheep, goats), meaning that especially livestock farmers that raise animals that produce a lot of methane receive these subsidies.³¹ These payments risk locking in methane-intensive production systems, prop up the livestock industry artificially and undermine incentives to cut emissions.

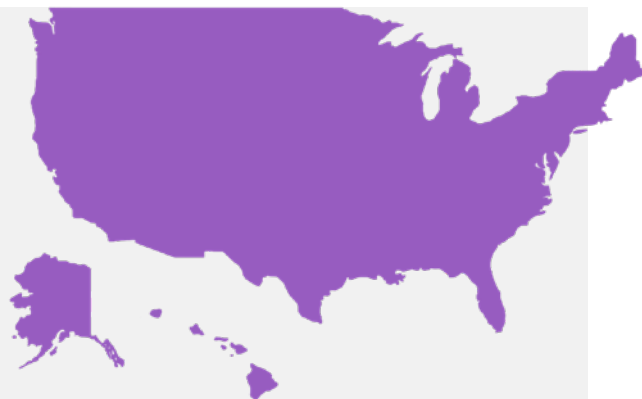
Implications & call to action

As a co-lead and champion of the GMP, the EU has a special responsibility to demonstrate leadership in methane reduction. While it has taken important steps across the energy sector, the absence of binding measures for agriculture, responsible for over half of the EU's methane emissions, creates a major gap for its methane reduction strategy. To honour its climate commitments, meet its targets and maintain credibility as a global methane champion, the EU must urgently introduce specific, enforceable agricultural methane reduction targets and phase out subsidies that drive industrial livestock expansion. The EU should use the 2026 review of the Industrial Emissions Directive to push for the inclusion of industrial cattle farms as in the original proposal. On top of that it should significantly reform the CAP for the 2028-2034 renewal by linking subsidies given to farmers directly to methane reductions and support a protein transition towards plant-based alternatives.



Methane Briefing:

United States



Status and commitments

According to the 2024 US GHG Inventory, the US released 702.4 MMT of methane in CO₂e in 2022, which constitutes 11.1% of the country's total emission footprint.³² Animal agriculture is the greatest source of methane emissions (192.6 MMT in CO₂e from enteric fermentation, 64.7 MMT in CO₂e from manure, equal to the emissions from 53.6 million homes' electricity use for a year), followed by natural gas systems (173.1 MMT in CO₂e, equal to 36 million homes' electricity use) and landfills (119.8 MMT in CO₂e, equal to 24.9 million homes' electricity use per year).³³ Under the Biden Administration, the US helped lead the GMP and subsequently published a methane reduction action plan, which primarily targeted reductions from the oil and gas sector.³⁴ Chiming with its' anti-climate agenda, the Trump Administration has revoked methane reduction regulations and the White House's focus has turned to undermining the Environmental Protection Agency finding that provides a legal basis for regulating methane.³⁵



257.3 million MT
of methane are emitted by the US each year.

Policies and incentives

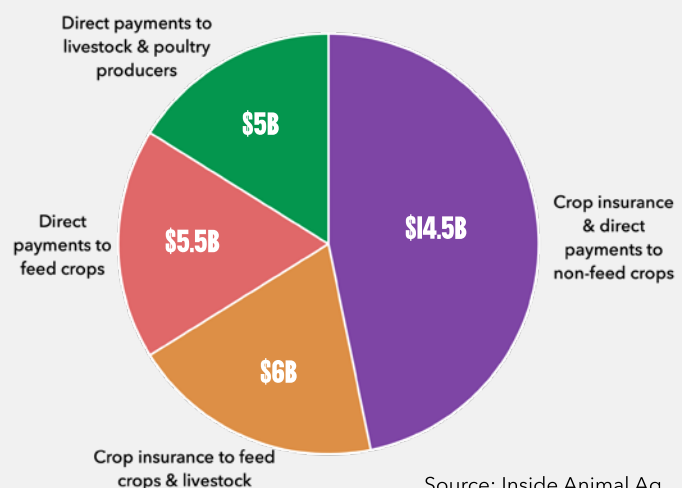
Policies to reduce methane emissions passed during the Biden Administration have largely been rescinded, including a fee on oil and gas producers that would have reduced 1.2 MMT of methane emissions by 2035.³⁶ Yet even under the Biden administration, agricultural methane emissions were primarily targeted via "incentive-based and voluntary partnership efforts" to reduce agricultural emissions, which included incentives for anaerobic digesters, investment into feed additive research, manure management strategies, and more.³⁷

The United States heavily subsidises the livestock industry through programs in the Farm Bill, a packet of legislation updated every five years. The current Farm Bill, however, has been active for seven years due to partisan funding disagreements about the Supplemental Nutrition Assistance Program, policy riders, spending to benefit commodity programs, and conservation initiatives.³⁸ Disaster assistance,

commodity payments, research grants, and many other subsidies in the Farm Bill disproportionately benefit industrialised livestock operations.³⁹ Between 1995 and 2023, \$72 billion of subsidies were directed to the US livestock industry – most of which went to large companies.⁴⁰ For example, between 1995 and 2024, King Ranch Inc., one of the largest ranches in the United States, received more than \$11 million in subsidies, and the owners of VVV Ranch, a 750,000-acre ranch received nearly \$20 million.⁴¹ The US livestock

industry is indirectly subsidised as well. Most US Farm Bill subsidies are funnelled to commodity crops like corn and soy, which are converted into cheap livestock feed. In 2024, \$3.2 billion of subsidies were directed to corn production, and \$1.9 billion to soy.⁴² Of the \$31 billion of annual agricultural subsidies paid in the US, about \$16.5 billion is directed to animal agriculture, either directly to the meat and dairy industry, or to farmers of feed crops like soy and corn. As a result, the cost of meat production in the US is artificially deflated, allowing multi-billion-dollar corporations like JBS, Tyson, National Beef, and Cargill, which control 85% of the US beef market, to benefit from higher profit margins.⁴³

Annual subsidies to animal agriculture in the US



Implications and call to action

Historically, the US government has failed to establish and implement stringent environmental regulations for the livestock industry. Some of the country's landmark environmental laws, such as the Clean Air Act, include specific carve-outs for agriculture designed to protect family farmers from regulatory burdens.⁴⁴ Yet today, the US livestock industry is industrialised and consolidated and is the greatest source of domestic methane emissions.⁴⁵ Regulatory exemptions meant to support independent farmers now allow billion-dollar corporations to avoid culpability for polluting the air and water. This creates a positive feedback loop that harms US farmers, as US domestic supply of cattle is decreasing due to climate-change induced droughts throughout much of the west.⁴⁶ Ultimately, the US must take urgent action to reduce methane emissions, including from the livestock industry.

Methane Briefing:

Brazil



Status and commitments

Brazil is a signatory of the GMP, committing to reduce methane emissions by 30% by 2030. As of 2023, Brazil's methane emissions were 20.75 Mt CH₄, with agriculture and livestock accounting for 75.61% of this amount (15.69 Mt CH₄).⁴⁷ As the world's largest exporter of beef (23% of global exports) and the second largest producer, Brazil is a crucial country globally to mitigate agricultural methane emissions.⁴⁸ Brazil's meat industry is also one of the leading drivers of deforestation, especially in the Amazon and the Cerrado. Cattle ranching alone is responsible for 65% of Amazon deforestation⁴⁹.

Deforestation linked to cattle ranching is Brazil's single biggest source of carbon emissions. In fact, land-use change (mainly deforestation and the conversion of native vegetation for pasture) accounted for 48% of the country's total greenhouse gas emissions in 2022, according to SEEG.⁵⁰



75.61% of Brazil's methane emissions
come from agriculture and livestock

Policies and incentives

Brazil has no binding national methane target beyond the GMP pledge, and its strategy is fragmented. *The Programa Nacional Metano Zero*, launched in 2022 during the Bolsonaro government, focuses on reducing methane emissions from organic waste through the promotion of biogas and biomethane technologies.⁵¹ It contains no concrete measures to reduce methane from agriculture or intensive livestock production. This programme remains formally in place under the current federal government and is still referenced in recent materials from the Ministry of the Environment and Climate Change (MMA).⁵² However, there is no recent public information on its implementation, progress toward targets, or new investments to support reductions since 2023. According to a report by Climate Bonds published in March 2025, "this programme [...] does not target efforts to reduce methane emissions from agriculture and the results so far do not seem to be conducive to achieving Brazil's reduction commitment. No data was found reporting progress in its implementation [...]".⁵³

Alongside the *Programa Nacional Metano Zero*, there is the *Plano Clima*,⁵⁴ developed in 2023 under President Lula's administration, acknowledging that Brazil's greenhouse gas emissions are mainly driven by deforestation, followed by agriculture and livestock (particularly enteric fermentation), and then fossil fuel use.⁵⁵ Forests are cleared mainly to create pastureland, releasing large amounts of CO₂ as stored carbon in trees and soils is oxidised. Once converted to pasture, cattle digestion and manure produce methane (CH₄). Together, deforestation and livestock production form a major source of Brazil's greenhouse gas emissions. Even though there are strategies for methane reduction in the *Plano Clima*, especially in the sectorial plan devoted to agriculture,⁵⁶ no binding targets or clear measures to reduce enteric fermentation and emissions from deforestation are documented. In one section of the sectorial plan, the emphasis is placed on increasing livestock productivity without necessarily expanding herd size. The proposed mitigation strategy focuses not on dietary changes among consumers, but on altering livestock feed composition to reduce methane emissions.

There is no mention on the *Programa Nacional Metano Zero* in the *Plano Clima* - demonstrating a lack of alignment between the two frameworks, revealing a major policy gap. According to a recent study by Observatório do Clima, Brazilian methane emissions increased by 6% between 2020 and 2023, the year in which Brazil reached the second-highest level of CH₄ released into the atmosphere - 21.1 million tonnes. SEEG projections show methane emissions rising by 7% by 2030 (from a 2020 baseline Brazil does not appear to be on track to meet its GMP target).

Implications & call to action

Brazil is at the epicentre of the global methane challenge, with livestock emissions as *the* dominant driver. Yet current policies largely sidestep this reality. Without urgent corrective action, Brazil risks failing to meet its methane reduction commitment under the GMP, which could undermine its international credibility.

In order to position itself as a global climate leader on methane reduction, Brazil should develop a comprehensive national strategy for reducing industrial livestock methane, setting clear targets and establishing robust monitoring systems. This should be accompanied by greater investment in methane abatement, including the creation of a clear pathway to support alternatives to animal protein. Transparency must be improved through the launch of a public methane tracking platform, while existing plans and programmes, such as the *Plano Clima* and *Programa Nacional Metano Zero*, should offer one single, coherent methane policy framework in order to guide the government effectively in making sure the framework and guidelines are being implemented.

China



China has not yet signed the GMP but has recently begun to outline a more comprehensive approach to tackling methane emissions. China published its updated NDC November 3rd, 2025.⁵⁷ China commits to reducing economy-wide net greenhouse gas emissions by 7-10% from their peak by 2035. The target covers all greenhouse gases, with the peak emissions year serving as the baseline, however the NDC does not specify what these are. On methane, China pledges to control emissions across energy, agriculture, and waste; improve coal mine gas recovery; expand biogas and manure reuse; and better manage enteric fermentation. The Chinese government has announced plans to expand climate targets to cover all greenhouse gases.⁵⁸

Methane emissions in China reached 56 million tonnes in 2022, accounting for 15.7% of the world's total, with agriculture contributing roughly 30% of national emissions.⁵⁹ In November 2023, China released its first *National Methane Action Plan*,⁶⁰ which sets objectives across the energy, agriculture, and waste sectors, emphasising improved monitoring, reporting, and utilisation of methane. For livestock, the plan targets a comprehensive manure utilisation rate above 80% by 2025 and 85% by 2030, which aims not to reduce, but re-use manure for other purposes. In its updated NDC however, this goal is set for 2035, which could be interpreted as a lowering of ambition for this goal. The plan does not set specific targets on methane emissions from enteric fermentation. For rice, another important source of agricultural methane emissions, the plan seeks to strengthen water and fertilisation management in major rice-producing areas by promoting water-saving irrigation, compost use, high-yield and drought-resistant varieties, and low-emission cultivation techniques to reduce methane emissions per unit of rice.

While the government has introduced several policies to promote the recycling and carbon reduction of livestock and poultry waste, such as the *Implementation Plan for Agricultural and Rural Emissions Reduction and Carbon Sequestration*,⁶¹ conflicting agricultural subsidies continue to support livestock expansion under programs like *Strengthening Agriculture and Benefiting Farmers*.⁶²

India



India formally communicated its position on not joining the GMP in August 2023 through a written response to Parliament by the Minister of State for Environment, Forest and Climate Change.⁶³ The government argued that the pledge, led by the U.S. and EU, shifts the global climate focus from carbon dioxide to methane, which has a much shorter lifespan. It emphasized that most of India's methane emissions come from small and marginal farmers through rice cultivation and livestock rearing, activities essential to livelihoods and food security. While India's NDC under the Paris Agreement does not include gas-specific targets,⁶⁴ the government highlighted ongoing efforts to cut methane, including climate-resilient rice cultivation under the National Mission on Sustainable Agriculture,⁶⁵ low-emission technologies promoted by the Indian Council of Agricultural Research (ICAR),⁶⁶ improved livestock feed and breeding through the National Livestock Mission,⁶⁷ and biogas and waste-to-energy schemes such as GOBARdhan (Galvanizing Organic Bio-Agro Resources Dhan)⁶⁸ and the National Biogas and Organic Manure Programme.⁶⁹

While India's comments and concerns around smallholder farmers are valid and the country's per capita emissions are relatively low due to its large population size,⁷⁰ the country has the largest dairy herd in the world and its livestock sector has been industrialising and intensifying over the last decades.⁷¹ Instead India should develop a methane reduction strategy that continues to focus on supporting small-scale farmers to reduce and avoid increasing industrialised livestock sector, which could see emissions rise further.



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CONCLUSION

At the halfway point of the GMP, the world is falling short of its promise to cut methane emissions by 30% by 2030. Methane levels continue to rise, and an important reason is a global failure to confront methane emissions from the largest single driver - livestock. Agriculture remains the largest and most neglected source of methane, and without meaningful action in this sector, the Pledge will not be met.

The evidence presented in this report shows that while governments have introduced regulations for methane from the energy and waste sectors, they have avoided similar binding action on industrial livestock production. Policies remain fragmented, voluntary, or undermined by subsidies that continue to favour high-emission production systems. This political hesitation has left the world's largest methane source largely untouched.

To deliver on the GMP and safeguard the 1.5°C target, governments must act decisively. While countries use COP pledges to signal ambition, these commitments remain incomplete without meaningful measures to curb methane from the meat and dairy sector. The UNFCCC and its leadership must do more to hold governments accountable for addressing livestock methane within national targets and to ensure that climate ambition extends to all major emitting industries. Although Brazil, the U.S., and the EU have all signed the Global Methane Pledge, none have delivered comprehensive plans to meet it that include addressing emissions from industrial livestock. Non-signatories like China and India appear to be taking some concrete steps to curb methane emissions domestically but lack a specific reduction goal as laid out in the GMP.

Meeting the goals of the GMP requires comprehensive regulation and action to curb livestock emissions. While innovation in feed, manure management, and grazing practices can help, these alone are not enough. Governments, particularly those outlined in this report, should phase out subsidies that encourage livestock expansion and instead link support to measures that reduce emissions and support small scale farmers and sustainable food systems.

A rapid and global shift in diets and production systems is needed, especially in the global north where animal protein consumption and production are too high and intensive. Policymakers must recognize and support the transition from animal to plant-based and alternative proteins as a core strategy for climate, food security, and public health. According to the EAT-Lancet Commission food systems currently account for roughly 30% of total greenhouse gas emissions globally. Transforming food systems could cut these emissions by more than half.⁷²

Without urgent action to tackle livestock methane, the Global Methane Pledge risks becoming another broken promise. With it, the world will lose one of its fastest and most effective opportunities to slow global heating.

It is time to grab the bull by the horns.

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1701 Rhode Island Avenue NW
Suite 3-123
Washington, D.C. 20036