The UK urgently needs to cut its methane emissions by 2030: cows and sheep hold the key to success

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Credit: AI-generated image (disclaimer)

When it comes to climate change, the focus tends to be on carbon dioxide. But hot on its heels is methane (CH_4), the second most important greenhouse gas contributing to the climate emergency.

The UK, along with more than 100 other countries, made a [pledge](#) at the [2021 COP26 meeting](#) in Glasgow to cut global [methane emissions](#) by at least 30% from their 2020 level by 2030.

If achieved, that would mean [reducing methane](#) from 51.4 million carbon dioxide-equivalent tonnes (MtCO$_2$e) in 2020 to 35.9 million tonnes in 2030. Unfortunately, the government has yet to give any indication of specific plans to meet that commitment—so it's time to suggest some.

Emitting one tonne of CH$_4$ is equivalent to emitting approximately 28 tonnes of CO$_2$ in terms of its contribution to global warming. CH$_4$ does, however, remain in the atmosphere for a [much shorter time](#) than CO$_2$, meaning it has a marked short-term effect on global warming but a much smaller long-term effect.

Reducing CO$_2$—which accounted for [79%](#) of UK emissions in 2020, and can remain in the atmosphere for between [300 to 1,000 years](#)—still has to be the main aim. But cutting methane emissions would buy some time in terms of keeping [global warming](#) within manageable limits by 2050.

Meeting the 2030 target

Methane emissions are strongly linked to agriculture. In 2020, [54%](#) of UK methane emissions were generated from agriculture, of which most came from enteric fermentation (also known as belching) by cows and sheep. And it's a similar situation [in the EU](#).

Methane emissions from UK agriculture have remained essentially constant over the past 30 years, while emissions from the other two main sources of methane—[waste management](#) and energy—have been [declining](#). Agricultural emissions have therefore become proportionately

much more important. Reducing these emissions by reducing both the number of methane-producing animals and the demand for their products will be a huge help in achieving the 2030 methane target.

Some data appears to suggest we're on the right path. The UK has seen a decline in both beef and lamb consumption between 2008-9 and 2018-9. Plus, sheep flocks were substantially reduced in 2001 thanks to the foot and mouth outbreak that year, and continued to fall until 2010, although they haven't followed any consistent pattern in the last decade. But there's still a long way to go—and "business as usual" won't help the UK reach its methane emissions target by 2030.

For agriculture, we need technical improvements in cattle feed mixtures, breeding and vaccinations. Together, these might reduce emissions from dairy and beef by 10% by 2030. On top of this, however, dairy and beef herds would each need to be reduced by 20%, and sheep flocks by one-third, to meet the target.

These reductions could be less severe—10% for dairy and beef and 20% for sheep—if 50% reductions in methane from waste management and energy could be achieved. That would mean cutting the amount of food and green waste going to landfill, sending more of it instead to anaerobic digesters to be broken down.

How to change

There have been some positive policy changes since the UK left the EU, including the introduction of schemes that prioritise sustainable farming. These changes are, however, under pressure, will take some time to become effective, and may not be spread evenly across England, Northern Ireland, Scotland and Wales.

Survey data shows us that more farmers are willing to consider changing

the way they run their farms for the sake of the climate. For example, the percentage of English farmers who believe that [greenhouse gases](#) are "not very" or "not at all" important considerations when making farm-related decisions has fallen steadily, from 48% in 2013 to 29% in 2022, although the percentage actually taking action to reduce emissions has remained constant at around 60%.

But consumers need to make changes too. It's widely recognised that consumption of red meat and [dairy products](#) in the UK, in common with all [developed countries](#), is [too high](#) both from a health and a sustainability perspective. The prices of these products should reflect the true costs of production, providing incentives for farmers to lower, say, emissions per litre of milk produced. This might also reduce the amounts of these foods that are [wasted](#).

Reducing livestock numbers could also have other environmental benefits, including devoting more land to growing food for humans rather than for animals. Currently, about [55% by weight](#) of the UK's cereal production (wheat, barley and oats) goes on animal feed, along with essentially all rapeseed and maize production.

Farming fewer livestock in favour of growing staple crops for humans could not only lower the UK's greenhouse gas emissions, but also improve the country's [food security](#) and help to shield it from price rises caused by events such as the invasion of Ukraine.

If the UK government is to meet the commitments it made to the [international community](#) on its own soil last year, cutting [methane](#) emissions by 30% before 2030 will require urgent change in the field of agriculture and food policy.