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Demand for meat has become a global threat



Meat is murder: rising output is threatening health and emission levels

Largely hidden from the debate about man-made greenhouse gas emissions and the contribution of different sectors of human activity to climate change is one of the biggest culprits: agriculture — and meat production in particular.

Estimates vary somewhat, depending on what is included, but papers from the Intergovernmental Panel on Climate Change suggest that farming and associated changes in land use account currently for 20 to 25 per cent of global warming.

The most important contribution comes from the livestock sector which is responsible for 14.6 per cent of global greenhouse gas emissions, according to research published this week by Chatham House, the London-based policy institute. That is equivalent to emissions from all the road vehicles in the world.

Chatham House argues that a worldwide shift to “healthier diets” with less meat must play a part in the battle against global warming. “There is a compelling case

for . . . addressing meat consumption,” its report says. “However, governments are trapped in a cycle of inertia. They fear the repercussions of intervention, while low public awareness means they feel no pressure to intervene.”

Farmers are discussed far more as potential victims of climate change than as direct contributors to the problem. “Our study shows that livestock farming is off the radar for most people as a big source of greenhouse gases,” says Laura Wellesley, co-author of the Chatham House report.

Not one national emissions reduction plan submitted ahead of the Paris climate summit featured a cut in meat consumption, she adds: “Governments are afraid to interfere in lifestyle choices for fear of public backlash.”

The big difference between agriculture and the other sectors responsible for global warming is the chemical nature of its emissions. The energy industry, transport, manufacturing and construction sectors contribute mainly by emitting carbon dioxide derived ultimately from fossil fuels, which is the most important greenhouse gas overall.

Dietary change should be on the menu of strategies for cutting emissions

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Agriculture and food production also emit substantial amounts of carbon dioxide. A new report by Lux Research of Boston estimates that producing 1kg of beef protein requires 380 megajoules of primary energy, the equivalent of three gallons of petrol.

But the most damaging aspect of agriculture is its generation of two other greenhouse gases, methane and nitrous oxide, both of which have a much more powerful atmospheric warming effect, when measured molecule for molecule, than carbon dioxide.

The biggest single emitter is the bovine digestive system. The grass and other plants eaten by cattle and, to a lesser extent, other livestock undergo a process known as enteric fermentation. This produces large amounts of methane, about 100kg per year for an average cow, which is burped, belched and farted out of the animal. That amounts to a lot of methane from the world’s 1.5bn cattle; the [US Environmental Protection Agency](#) says it accounts for almost a third of agriculture’s greenhouse gas emissions.

Smaller ruminant animals, such as sheep and goats, are somewhat less emission-intensive than cattle. Pigs and chickens are much less harmful as meat sources than beef because their digestion releases relatively little methane.

In addition to methane directly emitted by animals, manure is a significant source of methane and nitrous oxide as it decomposes. Arable farming also emits these gases, for example through the breakdown of nitrogenous fertilisers and the activity of some crop roots and associated microbes in the soil — particularly in rice paddies — but the quantities are less than those from livestock.

There are technical ways to cut such emissions, the EPA says. Feeding practices and other livestock management changes can reduce the amount of methane produced by

live animals, for instance by improving pasture quality and breeding more productive cattle. Manure can be processed in ways that control decomposition; the resulting methane can even be captured and burnt as a source of renewable energy.

Chatham House authors welcome such moves, but they say the main requirement is action by governments to cut meat consumption — a campaign that would chime with evidence that a diet containing more plant-based protein sources would be beneficial for health too. Last month a report by the World Health Organisation identified red meat as a probable and processed meat a definite cause of cancer.

In the developed world meat consumption per capita has reached a plateau, though at excessive levels, Chatham House says. The average inhabitant of an industrialised country eats twice as much meat as experts deem healthy; in the US the multiple is nearly three times.

But the real threat for the future comes from the “protein transition” playing out across the developing world and especially in China, where rising incomes are leading people to eat more meat. “Reducing meat consumption is a real win-win for health and for the climate,” says Ms Wellesley. “As governments look for strategies to close the Paris emissions gap quickly and cheaply, dietary change should be high on the list.”