Environmental Defense Fund

Methane and Health

255,000

premature deaths would be **prevented** by reducing methane emissions according to the Global Methane Assessment.

Reducing methane emissions is the quickest, most effective way to address climate change today as we take urgent steps to **decarbonize**. Cutting methane emissions also delivers substantial near-term health benefits. As governments, businesses, and communities accelerate their efforts to **slash methane emissions**, demonstrating the health benefits of these actions can build greater support.

The climate crisis is a public health crisis

Methane is a highly potent greenhouse gas that traps more than 80 times more heat in the atmosphere than carbon dioxide during the first twenty years after its release. Methane emissions from human activities account for roughly a third of current global warming.

This intense warming is leading to significant threats to our infrastructure, livelihoods, and health. Extreme flooding, stronger hurricanes, more intense wildfires, and more prolonged drought are becoming more common. These climate phenomena are exacerbating food insecurity, increasing the risk of infectious diseases and heat-related illness and mortality, reducing access to clean water and leading to deteriorating air quality.

In addition, the ground-level smog (ozone) and soot (particulate matter) that form when methane and its co-pollutants are released, cause and exacerbate respiratory and cardiovascular diseases, cancer and stroke. Put simply: Methane is a threat to human health.

Opportunities for the climate and our health

While methane poses a significant threat, there is also tremendous opportunity to reduce emissions and their impact on the climate while improving public health and livelihoods in the process.

According to the Global Methane Assessment, reducing human-caused methane emissions is one of the most cost-effective strategies to rapidly reduce the rate of warming. Mitigation measures that are available today, along with others targeted for priority development, can help stabilize the climate by avoiding nearly 0.3°C of global warming by 2040. Additionally, efforts to reduce methane emissions can help prevent 255,000 premature deaths, 775,000 asthma-related hospital visits, 73 billion hours of lost labor from extreme heat and 26 million tons of crop losses globally.

Deploying known solutions to reduce methane emissions can help countries reach their climate goals while improving the health and livelihoods of people around the world.

Three sectors—oil and gas, agriculture, and waste—contribute to the lion's share of methane emissions from human activity annually and provide the greatest opportunities for improvements in health and livelihoods.

OIL AND GAS Methane leaks across the oil and gas supply chain account for a quarter of global methane emissions, due to fugitive emissions such as leaks, intentional venting from open storage tanks and burning of excess natural gas (flaring). Methane is the primary contributor to the formation of ground-level ozone in some locations. When it is released from oil and gas infrastructure, other toxic chemicals are also emitted contributing to poor air quality. Air pollution causes and exacerbates asthma in children and contributes to premature deaths, costing the healthcare industry an estimated $77 billion in US alone in 2016[1]. Reducing emissions from the oil and gas sector is the most impactful, cost-effective, and feasible way to reach global methane targets, and solutions exist today to meet these goals. Replacing equipment like pneumatic pumps with low-emissions alternatives, installing vapor recovery units and instituting more frequent leak detection and repair are affordable and available actions companies can take now to reduce methane emissions.

AGRICULTURE The agriculture sector produces approximately 40% of global methane emissions, the majority of which (about 32%) is from livestock emissions.

While livestock practices vary around the world, focusing on opportunities to optimize productivity through strategies that improve animal health, animal nutrition and animal resilience and adaptation to climate change can provide benefits to farmers, communities and the environment. Healthier livestock that produce greater quantities of and more nutritious milk and meat lead to improved nutrition and food security, reduction of disease transmission both between animals and between animals and people, and more secure livelihoods while also reducing the methane emissions emitted per unit of milk or meat produced.

Improving manure management reduces methane emissions and produces benefits for human health including reduction of product contamination, disease transmission, and fine particulate matter.

Interventions in other areas of agriculture including animal feed sources and rice production can provide human health and climate mitigation benefits as well.

WASTE The waste sector is responsible for a fifth of global methane emissions. Emissions from waste incineration facilities can harm respiratory and cardiovascular health, while untreated animal and human waste contributes to water- and vector- borne disease burden.

Improving waste management at landfills and sewered and non-sewered sanitation systems can both cut methane emissions and improve the environment for communities living nearby. Such actions not only decrease odors but also improve air quality and reduce diarrheal disease.

Charting a path forward

Deploying known solutions to reduce methane emissions can help countries reach their climate goals while improving the health and livelihoods of people around the world. As new technologies like MethaneSAT make global methane emissions more visible and transparent, we must turn commitments to cut methane into actions. Understanding and driving awareness of the health benefits of reducing methane emissions will further galvanize the support needed.

1. Jonathan J Buonocore et al 2023 Environ. Res.: Health 1 021006