Headline: Methane: The other gas warming the planet

Byline: Rodel D. Lasco

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If Batman has Robin, greenhouse gases (GHGs) have carbon dioxide (CO_2) and its partner in crime, methane (CH_4). Rising GHGs levels in the atmosphere are causing a warming planet with all its dire impacts.

The lion's share of attention is focused on carbon dioxide, and rightly so because it is most responsible for rising planetary temperature. But methane is not too far behind. According to the 2021 IPCC AR6 Working Group 1 report, CO_2 has caused about 0.8 degrees Celsius of warming since the start of the industrial revolution. In comparison, CH_4 has caused 0.5 degree C of warming during the same period. From around 700 parts per billion (ppb) during the industrial revolution, there is now almost 1,900 ppb of methane in the atmosphere.

While natural ecosystems emit methane, its increase in the atmosphere can be attributed primarily to human activities. Its chief sources are agriculture, especially livestock production, and oil and gas production, which combine for about half of global emissions. The rest comes from landfills, coal mines, rice paddies, and water treatment plants.

Methane is significant for at least a couple of reasons. Each molecule of CH_4 is about 30 times more potent in warming the planet than one molecule of CO_2 in 100 years. However, in the first 20 years after its release, methane causes about 80 times more warming than a carbon dioxide molecule. The other fascinating thing about methane is that it dissipates more quickly in the atmosphere. Carbon dioxide molecules can stay in the atmosphere for more than a century, but methane molecules are gone after just 10 years.

Reducing methane emissions should therefore be an essential plank in the global efforts to combat global warming. Because of its high global warming potential, each molecule reduced translates to a higher effect in mitigating climate change. In addition, the impact of such reductions will be felt sooner because of the shorter lifetime of methane molecules.

According to an article in the journal Nature (2021), global methane emissions can be more than halved by 2030 using current technologies, and almost a quarter of these emissions can be avoided at no net cost. In the Philippines, we can reduce methane emissions by proper management of landfills and by adopting appropriate water management in paddy fields. In our everyday lives, we can all contribute in mitigating methane emissions by reducing household wastes such as through recycling and composting. Eating less meat especially from ruminant animals — beef, etc. — will also lead to lower methane emissions (not to mention healthier bodies). Refraining from burning biomass and wastes will likewise prevent methane from escaping to the atmosphere.

Winning the battle against climate change will require nothing less than addressing the dynamic duo of greenhouse gases: CO_2 and CH_4.

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Dr. Rodel D. Lasco is an academician of the National Academy of Science and Technology of the Philippines. He is the executive director of the OML Center, a foundation devoted to discovering climate change adaptation solutions. (https://www.omlopezcenter.org/)

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