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Methane emissions from cattle get attention because methane is 28 times more potent at trapping heat in the atmosphere than carbon dioxide over a 100-year time frame. Additionally, methane from cattle represents nearly half of the carbon footprint of U.S. beef when emissions over the entire life cycle, from feed production to the consumer, are considered. However, methane also can be viewed as the necessary tradeoff for the upcycling services that cattle provide.

A key misconception about methane emissions from cattle is how the animal's diet can affect emissions. When cattle eat more forage, or whole plants, that contain a lot of fiber (think grass and hay), they tend to emit more methane gas. Cattle diets that include more grains, like those of most feedlot cattle in the United States, produce fewer methane emissions. In the United States, beef production is a combination of cattle spending about two-thirds of their life grazing and eating mostly forage, followed by the finishing period where cattle are typically housed in a feedlot and fed a grain-based diet (50-85 percent grain).

Direct emissions from beef cattle represent 2 percent of total U.S. greenhouse gas emissions according to the latest Environmental Protection Agency inventory of greenhouse gas emissions. The percentage of greenhouse gas emissions attributed to beef varies from nation-to-nation due to differences in the number of cattle relative to the human population and the amount of fossil fuel-dependent energy consumed within a nation.

For example, in Brazil, a country with more cattle than people and the second largest beef producing nation in the world, methane emissions from beef cattle accounted for 21 percent and transportation represented 20 percent of that nation's greenhouse gas emissions in 2014, according to calculations using the UN FAO's FAOSTAT database and WRI's CAIT Climate Data Explorer tool. Globally, the UN FAO has estimated that beef production accounts for 6 percent of global emissions when feed production and land use change impacts are included. When discussing the relative climate impact of beef production, or any other economic activity, it is key to be specific as to what region of the world is being referenced.

By the way, there are about the same number of cattle now, as when the great Bison herds roamed the country. So methane gas from livestock has not changed that much