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From the Los Angeles Times

Killer cow emissions

Livestock are a leading source of greenhouse gases. Why isn't anyone raising a stink?

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It's a silent but deadly source of greenhouse gases that contributes more to global warming than the entire world transportation sector, yet politicians almost never discuss it, and environmental lobbyists and other green activist groups seem unaware of its existence.

That may be because it's tough to take cow flatulence seriously. But livestock emissions are no joke.

Most of the national debate about global warming centers on carbon dioxide, the world's most abundant greenhouse gas, and its major sources -- fossil fuels. Seldom mentioned is that cows and other ruminants, such as sheep and goats, are walking gas factories that take in fodder and put out methane and nitrous oxide, two greenhouse gases that are far more efficient at trapping heat than carbon dioxide. Methane, with 21 times the warming potential of CO₂, comes from both ends of a cow, but mostly the front. Frat boys have nothing on bovines, as it's estimated that a single cow can belch out anywhere from 25 to 130 gallons of methane a day.

It isn't just the gas they pass that makes livestock troublesome. A report from the United Nations Food and Agriculture Organization identified livestock as one of the two or three top contributors to the world's most serious environmental problems, including water pollution and species loss. In terms of climate change, livestock are a threat not only because of the gases coming from their stomachs and manure but because of deforestation, as land is cleared to make way for pastures, and the amount of energy needed to produce the crops that feed the animals.

All told, livestock are responsible for 18% of greenhouse-gas emissions worldwide, according to the U.N. -- more than all the planes, trains and automobiles on the planet. And it's going to get a lot worse. As living standards rise in the developing world, so does its fondness for meat and dairy. Annual per-capita meat consumption in developing countries doubled from 31 pounds in 1980 to 62 pounds in 2002, according to the Food and Agriculture Organization, which expects global meat production to more than double by 2050. That means the environmental damage of ranching would have to be cut in half just to keep emissions at their current, dangerous level.

It isn't enough to improve mileage standards or crack down on diesel truck emissions, as politicians at both the state and national levels are working to do. Eventually, the United States and other countries are going to have to clean up their agricultural practices, while consumers can do their part by cutting back on red meat.

Manure, methane and McGovern

In a Web forum for presidential candidates in September, TV talk-show host Bill Maher asked former Sen. John Edwards a snarky question: Because Edwards had suggested that people trade in their SUVs to benefit the environment, and cattle generate more greenhouse gases than SUVs, "You want to take a shot at meat?" Maher asked.

Edwards wisely dodged the question. It is extremely hazardous for politicians to take on the U.S. beef industry, a lesson learned by Sen. George McGovern in the late 1970s when his Select Committee on Nutrition dared to recommend that Americans cut down on red meat and fatty dairy products for health reasons. After a ferocious

lobbying blitz from meat and dairy interests, the committee rewrote its guidelines to suggest diners simply choose lean meats that "will reduce saturated fat intake." McGovern was voted out of office in 1980, in part because of opposition from cattlemen in his home state of South Dakota.

Beyond the dangers of taking on the beef bloc, legislating food choices is an unpopular and nearly impossible task, so it's unlikely any candidate will endorse a national vegetarian movement to fight global warming any time soon. There are other approaches, though.

Cows and other ruminants have four stomachs, the first of which, called the rumen, is where the trouble lies; bacteria in the rumen produce methane. Scientists -- mostly in Australia, New Zealand and Britain, where the problem is taken a lot more seriously than it is here -- are working on a variety of technical solutions, including a kind of bovine Alka-Seltzer. Scientists are also trying to develop new varieties of feed grasses that are more energy efficient and thus generate less methane, and they are experimenting with targeted breeding to produce a less-gassy strain of cattle.

But it's not just about the belching. Livestock manure also emits methane (especially when it's stored in lagoons) and nitrous oxide, better known as laughing gas. There's nothing funny about this gas: It has 296 times the warming potential of carbon dioxide, and livestock are its leading anthropogenic (human-caused) source. The best way to reduce these gases is to better manage the manure; storage methods and temperature can make a big difference. The California Air Resources Board is studying manure-management practices as part of a sweeping effort to identify ways of cutting greenhouse-gas emissions, work that by the end of next year might lead to regulation of the state's ranches and dairies. Other states should do the same.

There are also smart ways of treating or converting animal waste. Manure lagoons can be covered, capturing gases that can be used to generate power or simply be burned away (burning the gases converts most of the emissions to CO₂, which is far less destructive than methane). That's the strategy being pursued by American Electric Power Co., a gigantic utility based in Columbus, Ohio, whose coal-fired power plants make it the nation's biggest emitter of carbon dioxide. This summer, the company began putting tarps on waste lagoons at farms and ranches and sending the gases they capture to flares.

American Electric is under heavy regulatory pressure. Last week, it was on the wrong end of the biggest environmental settlement in U.S. history and agreed to spend up to \$4.6 billion to clean up its smokestacks. Its work on manure is part of an experiment in carbon offsets; the company anticipates that someday Congress will cap the amount of carbon dioxide that can be emitted and allow polluters to trade pollution credits. As a previous installment of this series noted, that's a less effective way to combat global warming than carbon taxes, but the American Electric example shows that it would also direct the economic might of industrial polluters toward solving off-the-beaten-path problems such as livestock waste.

Other possible solutions include providing more aid to ranchers in places like Brazil, where forests are rapidly disappearing, to make cattle operations more efficient and thus decrease the need to cut down trees. Changes in farming practices on fields used to grow livestock feed could help capture more carbon. And U.S. agricultural policy is overdue for changes. Subsidies on crops such as corn and soybeans have traditionally kept the price of meat artificially low because these are key feedstocks.

Broccoli: It's what's for dinner

Such policy shifts and new technologies would help, but probably not enough. A recent report in the *Lancet* led by Australian National University professor Anthony J. McMichael posits that available technologies applied universally could reduce non-carbon dioxide emissions from livestock by less than 20%. The authors advocate another, fringe approach that has long been embraced by dietitians and vegans but is a long way from going mainstream in the United States: eating less meat.

Americans love beef. According to the 2000 census, the U.S. ranks No. 3 in the world in per-capita consumption of beef and veal (after Argentina and Uruguay), gorging on 100 pounds per year. We're also among the leaders in obesity, heart disease and colorectal cancer, and there is a connection -- fatty red meat has been linked to all of these conditions.

McMichael's idea isn't likely to gain much traction outside Australia; he proposes that developed countries lower their daily intake of meat from about 250 grams to 90 grams, with no more than 50 grams coming from ruminant animals -- that's less than 2 ounces, or half a McDonald's Quarter-Pounder.

Still, as evidence mounts that cutting back on beef would both improve our health and help stave off global warming, a campaign urging people to do so is clearly in order. It's understandable why political candidates are wary of bashing beef, but less understandable why environmental leaders with nothing to lose are reluctant to raise the issue. They would be more credible in targeting polluters if they were equally assertive in pointing out what all Americans can do to fight global warming, and at the very top of that list -- way ahead of more commonly mentioned approaches such as buying fluorescent lightbulbs or energy-efficient appliances -- would be eating less red meat.

A University of Chicago study examined the average American diet and found that all the various energy inputs and livestock emissions involved in its production pump an extra 1.5 tons of CO2 into the air over the course of a year, which would be avoided by a vegetarian diet. Thus, the researchers found, cutting out meat would do more to reduce greenhouse gas emissions than trading in a gas guzzler for a hybrid car.

The U.S. Department of Agriculture assesses ranchers, dairymen and producers of other commodities to pay for marketing campaigns to promote their products, raising millions of dollars a year and turning such slogans as "Got Milk?" and "Beef: It's What's for Dinner" into national catchphrases. This isn't quite tantamount to a government-mandated campaign to promote cigarette smoking, but it's close. The government should not only get out of the business of promoting unhealthful and environmentally destructive foods, it should be actively discouraging them.

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