As More Eat Meat, a Bid to Cut Emissions
By ELISABETH ROSENTHAL 2008 ,4 .DEC

STERKSEL, the Netherlands — The cows and pigs dotting these flat green plains in the southern Netherlands create a bucolic landscape. But looked at through the lens of greenhouse gas accounting, they are living smokestacks, spewing methane emissions into the air.

That is why a group of farmers-turned-environmentalists here at a smelly but impeccably clean research farm have a new take on making a silk purse from a sow's ear: They cook manure from their 3,000 pigs to capture the methane trapped within it, and then use the gas to make electricity for the local power grid.

Rising in the fields of the environmentally conscious Netherlands, the Sterksel project is a rare example of fledgling efforts to mitigate the heavy emissions from livestock. But much more needs to be done, scientists say, as more and more people are eating more meat around the world.

What to do about farm emissions is one of the main issues being discussed this week and next, as the environment ministers from 187 nations gather in Poznan, Poland, for talks on a new treaty to combat global warming. In releasing its latest figure on emissions last month, United Nations climate officials cited agriculture and transportation as the two sectors that remained most "problematic."

"It's an area that's been largely overlooked," said Dr. Rajendra Pachauri, head of the Nobel Prize-winning United Nations Intergovernmental Panel on Climate Change. He says people should eat less meat to control their carbon footprints. "We haven't come to grips with agricultural emissions."

The trillions of farm animals around the world generate 18 percent of the emissions that are raising global temperatures, according to United Nations estimates, more even than from cars, buses and airplanes.

But unlike other industries, like cement making and power, which are facing enormous political and regulatory pressure to get greener, large-scale farming is just beginning to come under scrutiny as policy makers, farmers and scientists cast about for solutions.

High-tech fixes include those like the project here, called "methane capture," as well as inventing feed that will make cows belch less methane, which traps heat with 25 times the efficiency of carbon dioxide. California is already working on a program to encourage systems in pig and dairy farms like the one in Sterksel.

Other proposals include everything from persuading consumers to eat less meat to slapping a "sin tax" on pork and beef. Next year, Sweden will start labeling food products so that shoppers can look at how much emission can be attributed to serving steak compared with, say, chicken or turkey.

"Of course for the environment it's better to eat beans than beef, but if you want to eat beef for New Year's, you'll know which beef is best to buy," said Claes Johansson, chief of sustainability at the Swedish agricultural group Lantmannen.

But such fledgling proposals are part of a daunting game of catch-up. In large developing countries like China, India and Brazil, consumption of red meat has risen 33 percent in the last decade. It is expected to double globally between 2000 and 2050. While the global economic downturn may slow the globe's appetite for meat momentarily, it is not likely to reverse a profound trend.

Of the more than 2,000 projects supported by the United Nations' "green" financing system intended to curb emissions, only 98 are in agriculture. There is no standardized green labeling system for meat, as there is for electric appliances and even fish.

Indeed, scientists are still trying to define the practical, low-carbon version of a slab of bacon or a hamburger. Every step of producing meat creates emissions.

Flatus and manure from animals contain not only methane, but also nitrous oxide, an even more potent warming agent. And meat requires energy for refrigeration as it moves from farm to market to home.

Producing meat in this ever-more crowded world requires creating new pastures and planting more land for imported feeds, particularly soy, instead of relying on local grazing. That has contributed to the clearing of rain forests, particularly in South America, robbing the world of crucial "carbon sinks," the vast tracts of trees and vegetation that absorb carbon dioxide.

"I'm not sure that the system we have for livestock can be sustainable," said Dr. Pachauri of the United Nations. A sober scientist, he suggests that "the most attractive" near-term solution is for everyone simply to "reduce meat consumption," a change he says would have more effect than switching to a hybrid car.

The Lancet medical journal and groups like the Food Ethics Council in Britain have supported his suggestion to eat less red meat to control global emissions, noting that Westerners eat more meat than is healthy anyway.

Producing a pound of beef creates 11 times as much greenhouse gas emission as a pound of chicken and 100 times more than a pound of carrots, according to Lantmannen, the Swedish group.

But any suggestion to eat less meat may run into resistance in a world with more carnivores and a booming global livestock industry. Meat producers have taken issue with the United Nations' estimate of livestock-related emissions, saying the figure is inflated because it includes the deforestation in the Amazon, a phenomenon that the Brazilian producers say might have occurred anyway.

United Nations scientists defend their accounting. With so much demand for meat, "you do slash rain forest," said Pierre Gerber, a senior official at the United Nations Food and Agriculture Organization. Soy cultivation has doubled in Brazil during the past decade, and more than half is used for animal feed.

Laurence Wrixon, executive director of the International Meat Secretariat, said that his members were working with the Food and Agriculture Organization to reduce emissions but that the main problem was fast-rising consumption in developing countries. "So whether you like it or not, there's going to be rising demand for meat, and our job is to make it as sustainable as possible," he said.

Estimates of emissions from agriculture as a percentage of all emissions vary widely from country to country, but they are clearly over 50 percent in big agricultural and meat-producing countries like Brazil, Australia and New Zealand.

In the United States, agriculture accounted for just 7.4 percent of greenhouse gas emissions in 2006, according to the Environmental Protection Agency.

The percentage was lower because the United States produces extraordinarily high levels of emissions in other areas, like transportation and landfills, compared with other nations. The figure also did not include fuel burning and land-use changes.

Wealthy, environmentally conscious countries with large livestock sectors — the Netherlands, Denmark, Germany and New Zealand — have started experimenting with solutions.

In Denmark, by law, farmers now inject manure under the soil instead of laying it on top of the fields, a process that enhances its fertilizing effect, reduces odors and also prevents emissions from escaping. By contrast, in many parts of the developing world, manure is left in open pools and lathered on fields.

Others suggest including agriculture emissions in carbon cap-and-trade systems, which currently focus on heavy industries like cement making and power generation. Farms that produce more than their pre-set limit of emissions would have to buy permits from greener colleagues to pollute.

New Zealand recently announced that it would include agriculture in its new emissions trading scheme by 2013. To that end, the government is spending tens of millions of dollars financing research and projects like breeding cows that produce less gas and inventing feed that will make cows belch less methane, said Philip Gurnsey of the Environment Ministry.

At the electricity-from-manure project here in Sterksel, the refuse from thousands of pigs is combined with local waste materials (outdated carrot juice and crumbs from a cookie factory), and pumped into warmed tanks called digesters. There, resident bacteria release the natural gas within, which is burned to generate heat and electricity.

The farm uses 25 percent of the electricity, and the rest is sold to a local power provider. The leftover mineral slurry is an ideal fertilizer that reduces the use of chemical fertilizers, whose production releases a heavy dose of carbon dioxide.

For this farm the scheme has provided a substantial payback: By reducing its emissions, it has been able to sell carbon credits on European markets. It makes money by selling electricity. It gets free fertilizer.

And, in a small country where farmers are required to have manure trucked away, it saves $190,000 annually in disposal fees. John Horrevorts, experiment coordinator, whose family has long raised swine, said that dozens of such farms had been set up in the Netherlands, though cost still makes it impractical for

small piggeries. Indeed, one question that troubles green farmers is whether consumers will pay more for their sustainable meat.

"In the U.K., supermarkets are sometimes asking about green, but there's no global system yet," said Bent Claudi Lassen, chairman of the Danish Bacon and Meat Council, which supports green production. "We're worried that other countries not producing in a green way, like Brazil, could undercut us on price."