

The critical discussion about the role that animal agriculture plays in greenhouse gas (GHG) emissions has been undermined by serious inaccuracies which have been repeated by the media and conveyed by some anti-agriculture advocacy groups. These errors have been repeated until they have been accepted as standard orthodoxy by some. To facilitate the rational and realistic public policy discussion, however, the facts must be separated from the fallacies.

**Fallacy Number One: “A new report from FAO [Food and Agriculture Organization of the United Nations] says livestock production is one of the major causes of the world’s most pressing environmental problems, including global warming, land degradation, air and water pollution, and loss of biodiversity. Using a methodology that considers the entire commodity chain, it estimates that livestock are responsible for 18 percent of greenhouse gas emissions, a bigger share than that of transport.” Source: (FAO, Agriculture and Consumer Protection Department, “Livestock Impacts on the Environment,” 2006.**

There are several major flaws with this often-cited quote that have been widely acknowledged in the scientific community.

**Fact:** The comparison of livestock to transport GHG emissions was an “apples to oranges” comparison. Dr. Frank Mitloehner, Ph.D., of the University of California Davis, Animal Science Department, examined the FAO claim and found that their calculation was based on an unequal application of lifecycle assessments. Mitloehner looked at three different Life Cycle Assessments (LCAs) that are commonly used to analyze the GHG footprint. In a nutshell, in its lifecycle analysis and comparison of transportation to livestock, FAO used an LCA-1 model (which only uses direct emissions) to assess the footprint of transportation but used the much more encompassing LCA-3 model (which uses direct and indirect emissions from livestock and crop-based indirect emissions) to quantify the footprint of livestock.

Dr. Mitloehner’s critique of the comparison has been acknowledged by Pierre Gerber, livestock officer at the FAO, and the comparison is under review.

**Fact:** The 18 percent value used in “Livestock’s Long Shadow,” evaluates production sectors on a global basis and therefore cannot be extrapolated to

the U.S. alone. In the highly efficient U.S. production system, livestock account for less than 3 percent of total emissions according to the U.S. Environmental Protection Agency (EPA). Emissions from animal agriculture come from a process called enteric fermentation (the digestion of feed by ruminant animals like cattle and sheep) and through manure management. Inefficient transportation systems coupled with massive deforestation in developing countries are key factors behind why their livestock footprint is significantly greater than that of the U.S. These efficiencies can make quite a difference. Since 1990, animal agriculture’s contribution to national GHG emissions has remained nearly constant in the U.S. This is impressive considering the U.S. has increased its meat production by almost 50 percent, milk production by 16 percent, and egg production by almost 33 percent.

**Fact:** The FAO’s 18 percent global estimate has been widely discredited as well and is under review. In March 2010 Dr. Mitloehner challenged FAO’s calculations and the FAO took heed. FAO is expected to revisit their calculations and expected to release a more detailed and hopefully more accurate calculation by the end of the year.

**Fallacy Number Two: When looking at the overall GHG footprint in agriculture, modern production is bad while traditional production is less environmentally impactful.**

**Fact:** Livestock production in the U.S. is a model for the rest of the world due to its efficiencies. In developed countries on a per head basis, livestock have a relatively small GHG contribution which is dwarfed primarily by the transportation and energy sectors. In developing countries, livestock’s contributions to a country’s total GHG emissions can be significant due to a less productive animal protein industry, massive deforestation, and inefficient transportation and energy sectors.

**Fact:** Modern systems of agricultural production are more efficient and produce far more food than traditional models of production. A study out of the Department of Environmental Earth System Science at Stanford University concludes that the “climatic impacts of historical agricultural intensification [modern] were preferable to those of a system with lower inputs [traditional] that instead expanded

cropland to meet global demand for food. The study noted that “careful and efficient management of nutrients and water by precision farming, incorporation of crop residues and less intensive tillage are critical practices in pursuit of sustainable and increased agricultural output.” In short, intensification of agriculture with the focus on increasing crop yields, as practiced by modern agriculture, is a far more sustainable and environmentally friendly approach to feeding the world.

**Fallacy Number Three: It is better for the environment to grass-feed cattle than to supplement their diets with corn.**

**Fact:** Cattle raised on diets supplemented with grain produce significantly fewer GHG emissions than grass-fed-only cattle. Researchers from Washington State University, University of California-Davis, University of New South Wales (Australia), and the Hudson Institute Center for Global Food Issues found that pound-for-pound, beef produced with grain emit significantly less GHG than grass-fed beef. A grain diet, researchers point out, is more easily digestible than the cellulose fibers of grass, producing less methane. Furthermore, grass-fed cattle take longer to reach slaughter weights and in that time produce more methane than grain-fed cattle in

feedlots.

In addition, grass-fed cattle require more than five acres to produce a pound of beef, while less than 1.7 acres are needed in a grain-fed feedlot system, conserving a significant amount of land.

## Helpful Links

**AMI Fact Sheet on Animal Agriculture and GHG Emissions**

<http://bit.ly/cfkzjw>

**Clearing the Air: Livestock’s Contributions to Climate Change, by Frank Mitloehner, Ph.D.**

<http://bit.ly/aGXnic>

**USDA Livestock, Dairy and Poultry Outlook:**

<http://bit.ly/aQmaEM>

**EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1190-2008**

<http://bit.ly/aqNEfc>