UC Davis Study Finds Significant Flaws with UN's Livestock Report

Setting the Record Straight: Many of UN findings are inaccurate, yet still influencing public opinion

KEY FINDINGS:

In *Clearing the Air: Livestock's Contribution to Climate Change*, University of California, Davis Associate Professor Frank Mitloehner, an expert on livestock and greenhouse gases (GHG), and his colleagues demonstrate that many conclusions from an oft-quoted United Nations report are inaccurate.

The study discredits claims in the UN's Food and Agriculture Organization report *Livestock's Long Shadow: Environmental Issues and Options* (LLS), saying they are not relevant to livestock production in developed countries such as the United States and cannot be applied on a regional basis. The UN study has been widely cited in media reports, giving an inaccurate impression of the impact livestock production may have on global warming and putting us on a wrong path toward solutions.

Specific key findings include:

1. The LLS statement that livestock production is responsible for 18 percent of global greenhouse gas emissions – more than the global transportation sector – ***is a flawed and inaccurate comparison*** that did not use equivalent methods of analysis. This claim, said Mitloehner, is "based on inappropriate or inaccurate scaling of predictions."

2. In the United States, ***2.8 percent of all greenhouse gas emissions can be attributed to livestock production, compared to 26 percent from transportation***, according to an U.S. Environmental Protection Agency study cited by Mitloehner *("Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007").*

STUDY SUMMARY:

In a report published in the peer-reviewed journal *Advances in Agronomy*, University of California, Davis researchers take a critical look at the 2006 United Nations report *Livestock's Long Shadow: Environmental Issues and Options* (LLS) and clarify its application to United States livestock production systems. Principal investigator, Frank Mitloehner, PhD, Air Quality Extension Specialist with the University of California, Davis, collaborated with fellow UC Davis researchers Maurice Pitesky, DVM and Kimberly Stackhouse, MS to compile the report.

***Methodology*:** The researchers compared and analyzed LLS conclusions using data from the U.S. Inventory of Greenhouse Gases and Sinks[1], a 2009 report from the United States Environmental Protection Agency (EPA), as well as results from a 2005 report from the California Energy Commission that summarizes the Inventory of California Greenhouse Gas Emissions and Sinks: 1990-2002.

***Conclusions*:** The researchers concluded the data in the United Nations report is based on inappropriate or inaccurate scaling of predictions and does not apply to U.S. production systems.

Some conclusions from LLS have been extensively quoted in the popular press and are influencing public opinion and policy; however, based on the Mitloehner's evaluation, LLS's application of these statistics to U.S. production systems is inappropriate:

[1] Carbon sink—an environmental reservoir that absorbs and stores more carbon than it releases, thereby offsetting greenhouse gas emissions. Forests are examples of carbon sinks.

1. ***Livestock GHG contribution dwarfed by industrial sectors:*** Conclusions made in LLS are based on worldwide estimates and incorporate information from both developed and developing countries. Livestock production in most countries of the developed world (such as the U.S. and Europe) has a small GHG contribution relative to transportation, energy and other industrial sectors. In contrast, livestock production in the developing world can be a dominant contributor to an individual country's GHG portfolio due to the developing country's smaller transportation and energy sectors.
    - **In the U.S., transportation accounts for at least 26 percent of total annual anthropogenic GHG emission compared to roughly 6.4 percent for all of agriculture, with less than 3 percent associated with livestock production.**

2. ***LLS comparison not apples to apples:*** LLS does not use equivalent comparison methods to evaluate the contributions of the global agriculture and transportation sectors. For example, when comparing GHG for livestock, LLS authors used a life cycle assessment but did not use an equally holistic analysis for predicting the impact of transportation.
    - **Livestock's Long Shadow produced its numbers for the livestock sector by adding up emissions from farm to table, including the gases produced by growing animal feed; animals' digestive emissions; and processing meat and milk into foods. But its transportation analysis did not similarly add up emissions from well to wheel; instead, it considered only emissions from fossil fuels burned while driving.**

3. ***Livestock production now more efficient and geographical footprint is concentrated:*** Part of the large variations in the LLS global versus U.S. national predictions is due to the significant weight that has been assigned to the category of "land use change" related to livestock production (mainly deforestation). For the U.S. and most developed nations, this application is inaccurate, as these countries have not experienced significant land-use changes centering around livestock production for several decades. In fact, in the last 25 years, forestland has actually increased in the U.S. by approximately 25 percent. Livestock production has been intensified (concentrated geographically) and is more efficient, thus reducing its geographical footprint.
    - **That increased efficiency also means that it takes fewer animals to produce a given unit of product to satisfy the nutritional needs of society. In fact, LLS specifically concludes that increased efficiency and intensification of livestock production in developing countries do *provide opportunities* for reversing climate change.**

4. ***It's unrealistic to eliminate livestock:*** LLS does not account for "default" emissions. In other words, if domesticated livestock production was simply eliminated, there is no estimate of what "substitute" GHGs would be produced in their place.
    - **The idea that, if livestock were simply eliminated, 18 percent of anthropogenic global GHGs also would be eliminated is unrealistic.**

For more information on this study or to hear the real story of livestock production, please contact Jennifer Stolp at 303-850-3381.