

Local vs. Less

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The local (or locavore) food movement focuses on the concept of “**food miles**” as a barometer of environmental impact and sustainability. Foods that travel less between producer and consumer are overwhelmingly perceived as more eco-friendly.

Thus, despite the inherently [resource-intensive nature of raising animals for food](#), many advocates for environmentally responsible eating promote local animal agriculture as part of a sustainable food system.

But while there are many good reasons to source our food closer to home, prioritizing local foods is not inherently the most eco-friendly food choice.

This is because a food's environmental impact isn't just based on food miles. The full carbon footprint of a given food is based on a measure known as **Life Cycle Assessment (LCA)**.

Factors that affect a food's LCA are energy use, water use, land use, greenhouse gas emissions, harvesting methods, packaging materials, storage and preparation techniques, and other production and post production-related activities.

An authoritative [study](#) published in *Environmental Science & Technology* found that even though food is generally transported long distances, food-related greenhouse gas (GHG) emissions primarily derive from the production phase, accounting for 83% of the average U.S. household's food carbon footprint.

Transportation or **food miles represent only 11%** of the LCA carbon “foodprint.”

Because animal foods require [vastly more energy and resources](#) to produce than plant foods, a dietary shift away from animal products can be far **more effective than simply buying local** as a means of lowering one's food-related environmental impact.¹

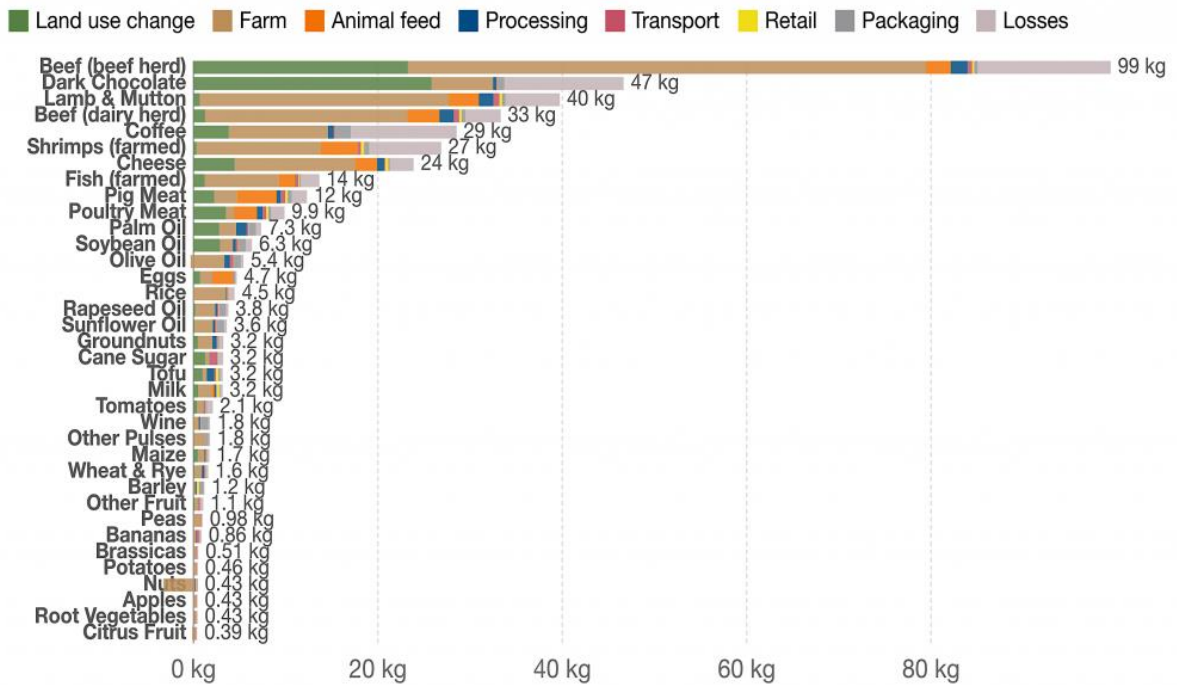


A food's carbon footprint isn't just based on food miles.

Food: greenhouse gas emissions across the supply chain



Emissions are measured in carbon dioxide equivalents (CO₂eq). This means non-CO₂ gases are weighted by the amount of warming they cause over a 100-year timescale.



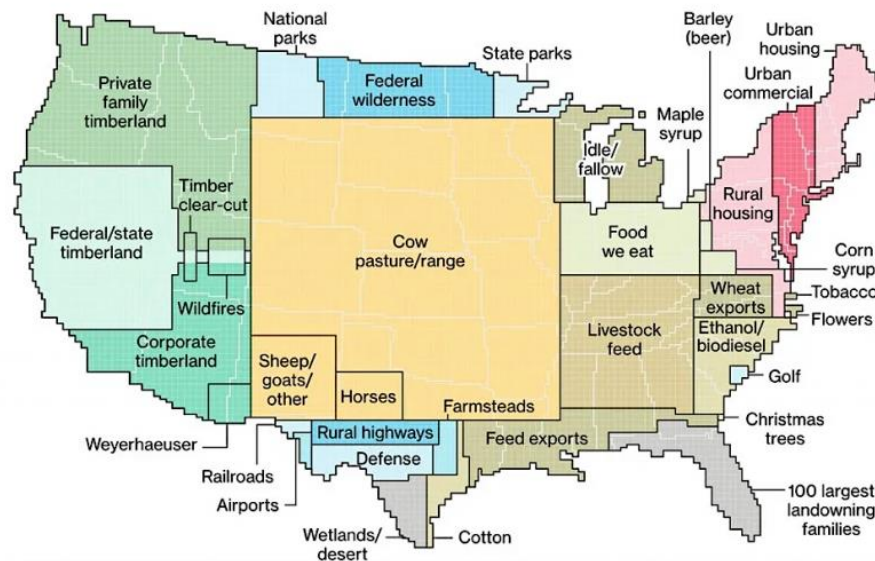
Source: Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. Science.

Pastured Organic vs. Industrial Production

Consider that even with more than 98% of all farmed animals in the U.S. currently being raised by intensive (factory farm) methods — that is, using very little space and land per animal — nearly a third of all the land in the U.S., is devoted to rangeland, pasture, or other grazing lands.^{2,3}

With 95 million cattle, we would need, by the most conservative estimates, 250 million acres to convert all U.S. dairy and beef operations to pastured systems. That's more than 10% of all the land in the country. Indeed, Harvard researchers found that shifting all U.S. beef production to pastured would require 30% more cattle and 270% more land to fulfill current levels of consumption.

And that's just cattle. Nearly all of the nine *billion* chickens used for meat and eggs in the U.S. are confined indoors. We would need astronomically more land than actually exists to pasture even half of these chickens and the millions of pigs, sheep, goats, and turkeys currently being raised in confinement operations.



At least 41% of all land in the contiguous U.S. is used to feed livestock, with the majority of that being cattle pasture and rangeland. *Source: Bloomberg*

Animal agriculture is a main driver of human-caused climate change.

The United Nations has noted that the “livestock sector” is responsible for more greenhouse gas emissions than ALL transportation combined.

Yet climate experts have critiqued the United Nations reports as conservative and conclude that farming animals is responsible for at least 37 percent of human-caused greenhouse gases.⁴

The increased land use necessary to more “humanely” farm animals often results in even higher emissions of harmful GHGs. In general, pastured or otherwise unconfined animals gain weight more slowly than confined animals because they are allowed more movement. Organically-raised animals grow even more slowly because they aren’t permitted growth-promoting hormones or antibiotics.

It’s estimated that [grass-fed cows produces up to four times more methane than grain-fed cows](#). Because cows fatten more slowly on grass than on grain, pastured cows take significantly longer to reach slaughter weight than feedlot cows, emitting more methane and nitrous-oxide along the way.

Methane is one of the fastest-growing GHGs, responsible for some 40% of global warming since the Industrial Revolution. Animal agriculture is the largest human-caused source of methane in the United States, with cattle contributing the vast majority of these emissions.

The Harvard study found that if all U.S. beef production shifted to pasture, the methane footprint per unit of beef would increase by 43%, increasing the U.S.’s total methane emissions by approximately 8%. Methane traps significantly more heat than carbon dioxide; it is 86 times more potent than CO₂ over a 20-year time frame.

At the same time, it stays in the atmosphere for a much shorter period, leading experts to urge that slashing methane is now our single greatest and quickest strategy for slowing warming by 2040.

What the focus on eating local and/or so-called humane animal products overlooks is the [massive inefficiency](#) and waste of resources inherent in cycling plant proteins through animals in order to eat the animals — from whom we obtain only a small fraction of the total available protein and calories when compared to consuming plant foods directly.

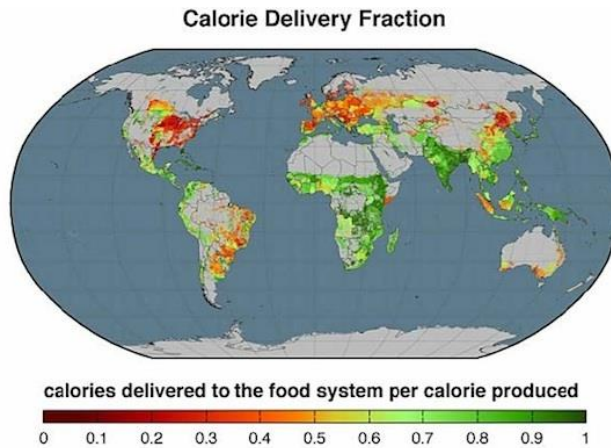
Most of the energy/calories animals consume is used to fuel their own physiological processes. Beyond that, it takes up to one hundred times more water and eleven times more fossil fuel to produce animal protein than equal amounts of plant protein.⁶

As Dave Simon writes in *Meatonomics: The Bizarre Economics of Meat and Dairy*:

“Organic cattle require 10 percent less water than inorganic but still need 2.7 million gallons each during their lives, enough to fill 130 residential swimming pools. In light of the orders-of-magnitude difference in water needed to raise plant and animal protein, does a 10 percent savings for organic cattle really matter?”

Regardless of production type, only 400-480 pounds of meat can be produced on one acre of land, compared to 20,000 pounds of plant foods that could be grown on the same plot.⁷ Currently, **75% of all agricultural land** is dedicated to raising animals for food, either through direct grazing or growing crops for animal feed.⁸

The Global Implications of Our Food Choices



With the human population soaring, and [meat consumption expected to double](#) between 2000 and 2050, if the global trend continues at current rates then we will need **two-thirds more land than the earth actually has** in order to meet demand for animal foods.

Yet [analysis of global agricultural yields](#) finds that better use of existing croplands could **feed four billion more people** simply by shifting away from growing crops for animal feed and fuel, and instead growing crops for direct human consumption.⁹

Reallocating croplands in this way could increase available global food calories by 70 percent, according to researchers above.

So when it comes to making the most sustainable food choices, the focus should not be on eating local meat, dairy, and eggs, but on eating less of these foods — or, better yet, eliminating them entirely.

As the authors of [Food-Miles and the Relative Climate Impacts of Food Choices in the United States](#) conclude:

“Shifting less than one day per week’s worth of calories from red meat and dairy products to... a vegetable-based diet achieves more GHG reduction than buying all locally sourced food.”

See our [Better Choices](#) page for tips on delicious, healthy plant-based foods. For more on the planetary costs of animal-based foods, see this [Environmental Impact Infographic](#).

References:

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