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Food Procurement: An Essential Ingredient to Mitigating Climate Change and Enhancing Public Health

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Food Procurement: An Essential Ingredient to Mitigating Climate Change and Enhancing Public Health

BY CHLOË WATERMAN, RACHEL CLARK, AND STEVEN L. SCHOONER

Addressing climate change is increasingly urgent and demands our serious and sustained attention.

The Fifth National Climate Assessment touted significant progress: "Across the country, efforts to adapt to climate change and reduce emissions have expanded since 2018, and U.S. emissions have fallen since peaking in 2007."[1] Unfortunately, that progress is not enough, nor is the pace of change sufficient. Rather, the report's overarching message is, despite that progress, "to reach net-zero emissions, [a wide range of] additional mitigation options need to be explored...."

One of climate change's most daunting realities, and arguably one of the toughest pills to swallow, is that no single solution, and surely no yet-to-be-invented silver-bullet technological innovation (such as carbon capture), is available to do what needs to be done quickly enough.

But plentiful opportunities are available, such as dramatic increases in wind and solar energy generation and replacing fossil fuel burning vehicles with hybrid and electric vehicles and electric (and human-powered) cargo bikes.

There are also evolving practices in construction and infrastructure including Leadership in Energy and Environmental Design (LEED) building standards, integration of embodied carbon, and deploying planted roofs.[2] More holistic approaches include reimagining urban centers around public transportation and walkability.

What We Eat (and Buy) Matters

Ultimately, experts agree that "[w]e need all hands on deck. Cutting greenhouse gas emissions to net zero by 2050, and halving them by 2030, requires nothing less than a complete transformation of how we produce, consume, and move about."[3]

One critical, but often underappreciated, aspect of that transformation is food. Our food and agriculture system accounts for at least a quarter of global greenhouse gas (GHG) emissions and more methane emissions than any other sector.[4]

Globally, livestock emissions alone exceed the entire transportation sector.[5] While emissions from most sectors are decreasing in the United States, the agriculture sector's emissions increased by 16% between 1990 and 2021 and continue to rise.[6] For these and other reasons, our food and agriculture system represents a key lever to reduce greenhouse gas emissions and sequester carbon in soil.

In a first for a U.S. government publication, the Fifth National Climate Assessment recommended reducing demand for emissions-intensive meat, pointing out that "vegetarian, vegan, Mediterranean or 'flexitarian' diets can reduce land-related GHG emissions while providing direct health benefits."[7]

Buying (and, of course, eating) different foods could spur a more resilient and just food system, enhance public health (another high-priority government objective) and help achieve other beneficial social objectives. Accordingly, government leadership in sustainable food procurement makes sense as a key strategy to mitigate climate change.

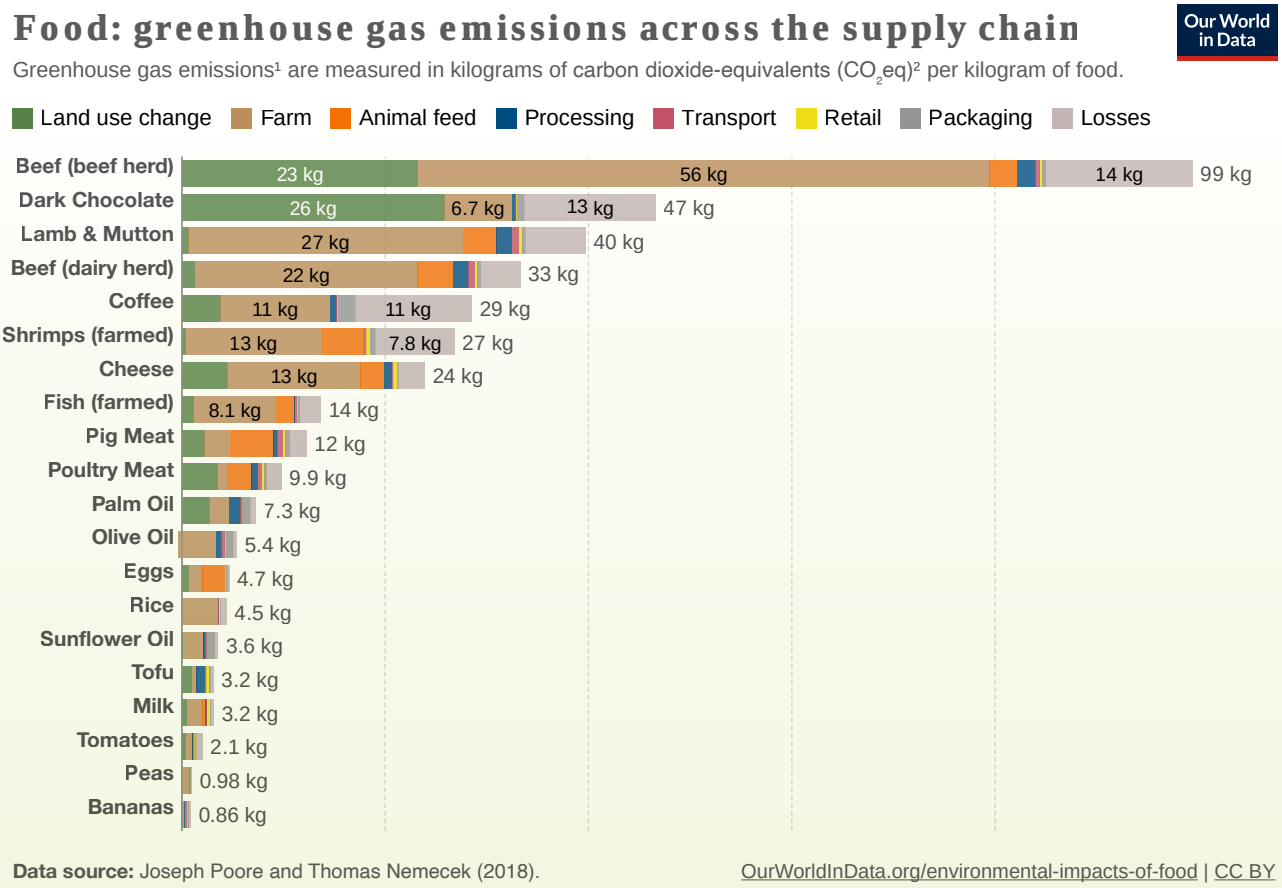
Incrementalism: Small Differences, Big Impact

It's impossible to study sustainable food procurement without being struck by the potential benefits – to individuals, governments, and, more broadly, the global community – associated with shifting away from (primarily red) meats[8] to a more plant-based or plant-forward diet.

The science is as clear as it is dramatic: "[M]eat ... generally produces more emissions per calorie than plant-based foods because energy is lost at each trophic level." Innumerable versions of the chart shown in Figure 1 demonstrate the point that animal products – and especially grazing animals – generate far more emissions per pound, calorie, and gram of protein than plant-based foods. As Figure 1 indicates, producing a pound of beef emits more than 50 times the quantity of emissions that growing a pound of peas would generate.[9]

While few consumers will substitute peas for a steak as their

FIGURE 1



1. Greenhouse gas emissions: A greenhouse gas (GHG) is a gas that causes the atmosphere to warm by absorbing and emitting radiant energy. Greenhouse gases absorb radiation that is radiated by Earth, preventing this heat from escaping to space. Carbon dioxide (CO_2) is the most well-known greenhouse gas, but there are others including methane, nitrous oxide, and in fact, water vapor. Human-made emissions of greenhouse gases from fossil fuels, industry, and agriculture are the leading cause of global climate change. Greenhouse gas emissions measure the total amount of all greenhouse gases that are emitted. These are often quantified in carbon dioxide equivalents (CO_2eq) that take account of the amount of warming that each molecule of different gases creates.

2. Carbon dioxide equivalents (CO_2eq): Carbon dioxide is the most important greenhouse gas, but not the only one. To capture all greenhouse gas emissions, researchers express them in "carbon dioxide equivalents" (CO_2eq). This takes all greenhouse gases into account, not just CO_2. To express all greenhouse gases in carbon dioxide equivalents (CO_2eq), each one is weighted by its global warming potential (GWP) value. GWP measures the amount of warming a gas creates compared to CO_2. CO_2 is given a GWP value of one. If a gas had a GWP of 10 then one kilogram of that gas would generate 10 times the warming effect as one kilogram of CO_2. Carbon dioxide equivalents are calculated for each gas by multiplying the mass of emissions of a specific greenhouse gas by its GWP factor. This warming can be stated over different timescales. To calculate CO_2eq over 100 years, we'd multiply each gas by its GWP over a 100-year timescale (GWP100). Total greenhouse gas emissions – measured in CO_2eq – are then calculated by summing each gas' CO_2eq value.

entrée at dinner, the case for smaller and less frequent servings of beef and more plant-based proteins, fruits, vegetables, and grains is compelling in terms of GHG emissions, as shown in Figure 2. Indeed, most plant-based foods generate as little as one-tenth of the emissions that serving beef requires.

The evolving sustainable procurement literature makes clear that shifting even a portion of animal product purchases from meat and dairy to plant-based sources of protein would reduce GHG emissions (mitigating climate change), conserve resources, reduce animal suffering, improve health, and save taxpayer money, all of which creates a win-win for the federal government customer.

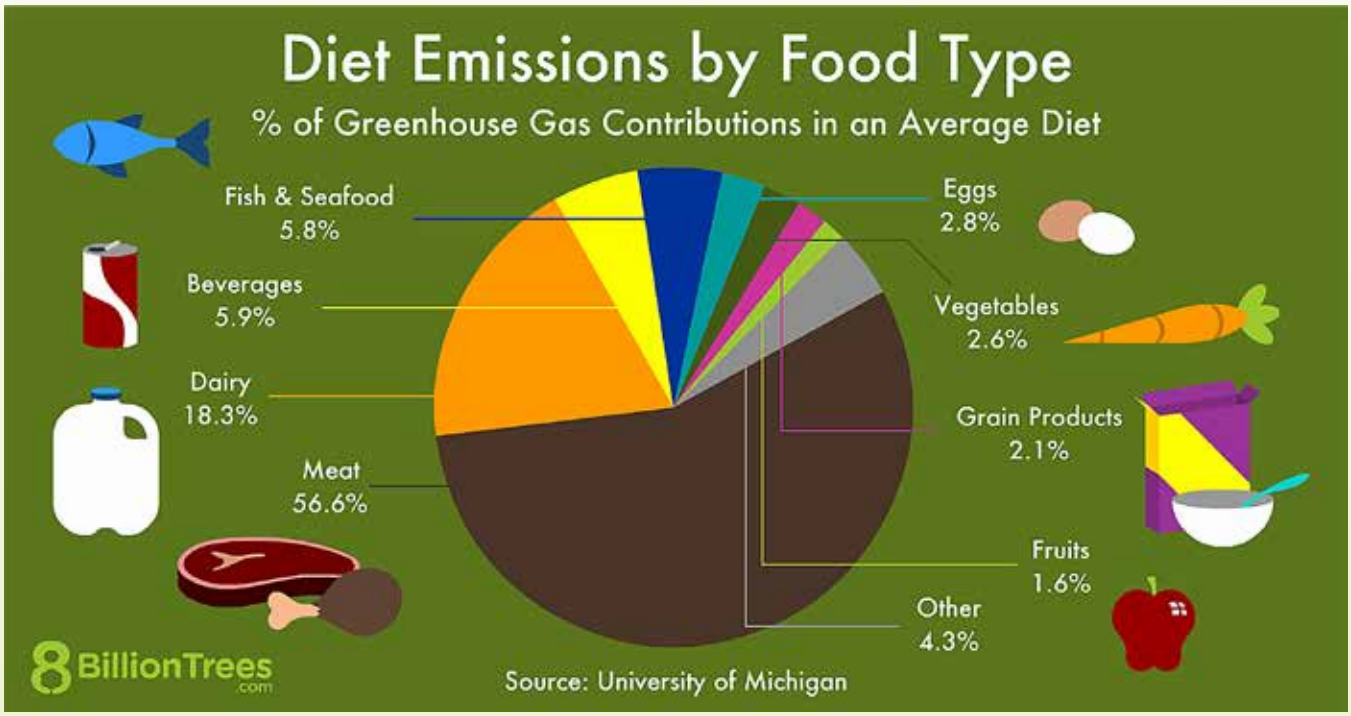
A November 2023 analysis from the Federal Good Food Purchasing Coalition, a group of non-governmental organizations (NGOs) working to "spur a more just, healthy, resilient, and sustainable food system through values-aligned food purchasing and food service at the federal level," quantified these potential benefits.[10] A model in which the federal government replaced half of its $1 billion in beef purchases[11] with plant-based sources of protein projected that the shift would generate significant reductions in greenhouse gas emissions (15%) and land use (16%), as well as modest reductions in water use (5%) and federal food spending (2%, saving $183 million in food costs).

The research further suggested that shifting a portion of purchases away from animal-based foods toward plant-based alternatives yielded quantifiable benefits not only for GHG reduction but also in terms of every measure evaluated: land use, water use, animal lives spared, and cost. ... [In addition,] there would be a clear directional benefit to public health from replacing red and processed meats in particular with minimally processed plant-based sources of protein.[12] Figure 3 illustrates these metrics.

To be clear, embracing a *more* climate-friendly (and, yes, healthy) food procurement regime does not require the elimination of all meat and other animal products. Rather, it emphasizes a shift toward more plant-forward menus. And while that shift can be dramatic, even gradual substitution – starting a trend – would be an important step in the right direction. As in most things in life, incremental progress is better than no progress.

This should be familiar territory to experienced procurement professionals. The sustainable procurement literature routinely encourages embracing lifecycle thinking (LCT)[13] when faced with resistance derived from "the tyranny of low prices." A

FIGURE 2



skilled procurement professional should understand that one way to think about value for money is in terms of a food's environmental and public health impacts.

Thus, it's no surprise to hear sophisticated experts explain that, when comparing different dietary choices, purchasers should consider energy inputs per unit of production or, in other words, the volume of emissions necessary to generate similar volumes of high-quality calories.[14]

The Value Proposition: Reduced Emissions *and* Better Public Health

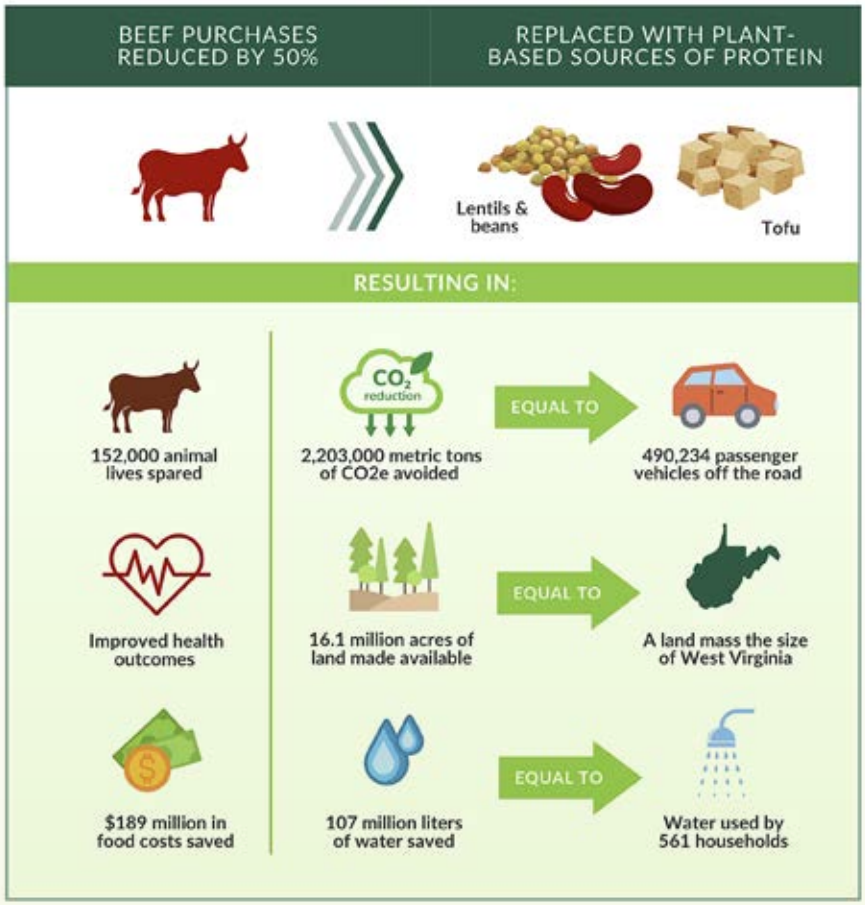
It's difficult not to belabor this point: Buying and consuming less emissions-intensive food, particularly beef, and increasingly adopting pescatarian, vegetarian, vegan, Mediterranean, or "flexitarian" (less meat consumption but not strictly vegetarian) diets can reduce GHG emissions while simultaneously resulting in direct health benefits.

Most of us already know that experts and leading public health authorities recommend plant-forward dietary patterns, which emphasize pulses (e.g., beans, lentils), nuts and seeds, whole grains, and fruits and vegetables and limit animal proteins, highly processed foods, alcohol, and sugar.[15] And we've increasingly heard that "the Mediterranean diet has become the bedrock of heart-healthy eating, with well-studied health benefits including lower blood pressure and cholesterol, and a reduced risk of Type 2 diabetes...."[16]

This is consistent with a recent study finding that "eating fewer animal-based foods — especially processed meats — and replacing them with whole grains, legumes and nuts is linked to a reduced risk of cardiovascular disease and Type 2 diabetes."[17] These conditions kill millions of Americans and cost our healthcare system hundreds of billions of dollars each year. Targeting procurement to reduce the incidence of diet-related disease for schoolchildren, military personnel, veterans, federal employees, and others reliant on public food purchasing should be a major goal, and climate-friendly food purchasing should be a key strategy.

FIGURE 3

BENEFITS OF REPLACING 50% OF BEEF PURCHASES WITH PLANT-BASED PROTEINS



Source: Federal Good Food Purchasing Coalition, Impact Analysis (www.fedgoodfoodpurchasing.org) and www.fedgoodfoodpurchasing.org/resources/impact-analysis-full-report

Follow the Sustainable Food Leaders

One of the common themes emphasized by NCMA's Sustainable Procurement Community of Practice (SP-COP) is that neither individual procurement professionals nor the federal procurement system needs to reinvent the wheel on these issues. There's a wealth of information already in the public domain to guide procurement professionals (and the government) to make more sustainable decisions[18] and promising success stories from around the country.[19]

For example, New York City pledged to reduce its emissions from food procurement by 33% by 2030, inclusive of the 230 million meals and snacks the city annually serves. The city partnered with Greener by Default to serve plant-forward meals as the default option in public hospitals,[20] implemented Meatless Mondays and Plant Powered Fridays in New York City public schools, and updated its nutrition standards – and food contracts – to require plant-based meal offerings and limit servings of red and processed meat.

The Veterans Health Administration (VHA) is also leveraging procurement to support health and climate goals. A Federal Good Food Purchasing Coalition case study highlighted the VHA's climate-friendly foodservice pilot program for in-patient meals, finding that if just two meat-based entrees per week were replaced with plant-forward entrees, the VHA could reduce its GHG emissions by 40,218 metric tons per year (equivalent to 103 million fewer miles driven) and save between $168,000 and $691,000 on food costs.[21]

The VHA's progress aligns with the Federal Sustainability Plan's commitment to achieve "net-zero procurement" by 2050 – a goal inclusive of food, though the federal government has yet to focus on food's potential to contribute to this target.

The current administration also pledged to "make the healthy choice the easy choice" and implement the Food Service Guidelines for Federal Facilities, which support healthy, climate-friendly food purchasing, across the federal government. Beyond these whole-of-government approaches, there are ample opportunities for agencies, procurement officers, and other acquisition stakeholders to embrace climate-friendly food purchasing by shifting menus, updating specifications, requests for proposals, and contracts, and experimenting with similar pilots.

Making a Difference Makes Sense

Most readers probably did not need this article to intuit that "if you want to reduce the climate impact of your diet, but aren't prepared to go full-blown vegan, eat less beef, waste less food, and eat more grains, legumes, tubers and tree crops."[22]

At the same time, there's a wealth of clear science-based signals pounding out the same message: for a more sustainable future, enhanced by better health now, governments and individuals should purchase (and consume) fewer animal products (especially beef) and embrace a more plant-forward or plant-based diet. In other words, buying (and eating) healthier foods that generate less harmful emissions is the kind of common-sense behavioral transition that government leaders and procurement professionals should pursue.

Public food procurement can – and should – be leveraged to generate a wide range of cascading social benefits beyond mitigating climate change and improving public health, including worker well-being, racial justice and equity, and animal welfare.[23]

On that score, as is the case with most issues related to sustainable procurement, we don't need to wait for Congress to legislate or for the FAR Council to promulgate regulations or craft and publish guidance (though we do eagerly anticipate the promised proposed rule to incorporate climate risk into federal purchasing, including food purchases). FAR 1.102(d) reminds us that nothing in the *FAR* today prohibits the acquisition community from learning, thinking about, experimenting with, and sharing experiences related to more sustainable procurement practices throughout the entirety of the acquisition life cycle. **CM**

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11 The authors concede that, compared to many other governments and other public institutions, the federal government devotes a relatively small percentage of its total expenditures or, in this context, its procurement budget, to direct purchases of food. But billions of dollars of purchasing power matter in the food system, compounded by the impact of federal government leadership and market signaling intended to shift state, local, and consumer food purchasing and consumption practices.

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