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## Food & Ag Tip Sheet

### **We need climate solutions for our dinner table**

The agriculture and land use sector is responsible for one-third of global greenhouse gas (GHG) emissions. Let's break that number down – if we classified [cows](#) as their own country, they would emit more GHGs than any country except China.

Current food systems fuel the climate crisis but do not adequately provide nourishment for a rapidly growing and warming world, as 44 countries currently have [serious or alarming hunger levels](#). Agriculture is also the primary source of livelihood for many of the 3.4 billion people around the world who live in rural areas.

Millions of people work in the sector, often under difficult conditions, and three billion others [cannot afford a nutritious diet](#).

And climate change is not helping. Climate impacts on our food systems disproportionately affect children in low-income households, Black, Indigenous, and People of Color, small-scale farmers, and fishing communities.

But we know that sustainable food and agriculture systems are possible. Backed by increased investment, these will strengthen our global economy and global equity. A [just transition](#) to a climate-friendly food system can save \$6 trillion a year in health and environmental costs, benefit food workers, and help eradicate hunger.

### **A shift to sustainable systems**

More than half of all [food system emissions](#) come from protein production, and this figure may skyrocket by 2050. Yet changing personal behaviors such as diets through government policy is notoriously hard.

So, what are some efficient and equitable ways to transform our food and agriculture systems?

Farmers grow the food that keeps our communities strong, but right now, the fertilizers they can access contribute to our climate, food, and energy crises. One remedy is a more circular agriculture system. Food by-products can safely be returned to the soil as [organic fertilizer](#) or provide additional value by creating new food products and bioenergy.

We can dramatically reduce methane outputs from agriculture based on the type and quantity of fertilizer used. Plus, [regenerative agriculture](#) practices enhance soil diversity, increase carbon sequestration, and restore biodiversity in the ecosystem.

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Small-scale farms owned by locals and urban farming are two remedies to [social injustices](#), like systemic discrimination that long denied ranchers of color access to land tenure or food deserts that still exist in most major cities today.

President Biden's order on biotechnology includes a spotlight on [food innovation](#) that mirrors innovation in the Middle East and Asia—and the final frontier. The world's first [lab-grown meat factory](#) can produce around 5,000 burgers per day, and astronauts are growing meat cells aboard the International Space Station to test their feasibility for [space food](#).

Food solutions still face severe [underinvestment](#) and need ten to thirty times more funding to reach their potential. This large funding gap offers large payoffs, as realizing these solutions could generate \$5 trillion every year in [inclusive new business opportunities](#).

### **How has agriculture changed our planet?**

The effects of a warmer, more extreme climate on agriculture are no longer hypothetical — they are here.

Far-reaching pollution from fertilizer is one. Forest or fertile lands degraded by agriculture to the point of no return is another. High methane emissions from livestock and rice farming are a third. From farm to fork to landfill, food systems generate 60 percent of [global methane emissions](#).

Our changing climate has decreased yields and slowed [agricultural productivity](#) growth by 21 percent globally.

In Canada, we saw a 5 percent decline in [fresh fruit and vegetables](#) over the past year. Supply chain issues impacted the crop, while price increases from expensive fuel and fertilizers were passed on to consumers for lower-quality food at a higher price.

Consuming more protein without altering how we produce it carries profound negative impacts on the health of animals within it and our health, too. Factory farms are [breeding grounds for deadly diseases](#), including [pathogens that can spark pandemics](#).

The story of deforestation from cattle grazing in the Amazon is nothing new, but the fact that [food systems](#) account for 90 percent of all land use change is. Learning from work in the energy and transport sectors, we need to back food technologies that are clean, healthy, and reach economies of scale.

A better food system protects and preserves our natural resources. Investing in sustainable agriculture bolsters food security and ensures the livelihood of farmers and food sector workers. Efforts to expand access to healthy nutrition in food deserts, farm-to-school programs, and other local food sovereignty initiatives benefit communities. Sustainable agriculture can support biodiversity, protect Indigenous land, and uplift the millions living in harmony with the Earth.

## Story ideas

### Climate

- Food is responsible for [34% of global emissions](#), but most projections do not expect 34% of [mitigation](#) to come from food. Why is this perspective not aligned?
  - Who are the leaders and laggards in change? What potential does your country have to shift the projections?
- What are the most vital issues for the United Nations to include in their [plan on the impact of food and agriculture systems](#), set to be released at COP28?
  - What should this [global roadmap](#) look like for your country?

### Economy

- Global innovators are developing technologies to make the food system clean, resilient, and healthier. What are the prospects for an Inflation Reduction Act-style approach in food and agriculture?
- Two [major barriers](#) to a better agriculture system are connectivity and access to electricity. How can these infrastructure barriers add to the economy and improve food production?
- Is your country one of the many who received a [grant for protein research](#)?
  - Have you spoken to the research scientist or university sponsoring the project?

### Justice

- Three billion people [work in food and agriculture](#). How are governments supporting these essential workers?
  - What opportunities and challenges will workers face during a food systems transition?
- A [just transition](#) to a climate-friendly food system would save \$6 trillion a year in health and environmental costs. In what ways is your country supporting the transition at a local and national level?
- What investment and changes must we make to halve the number of people who cannot [afford a nutritious diet](#) by 2030?
  - The current number is two billion, which will only worsen with the impacts of climate change.
- How can new techniques [alleviate food insecurity](#) in areas affected by conflict or natural disasters, such as Yemen, Syria, and Haiti?

## Reporting resources

### National — United States

- [Agriculture statistics](#), updated hourly from the U.S. Department of Agriculture.
- [A to Z agriculture topics](#) from the U.S. Environmental Protection Agency.
- More [agriculture statistics](#), this time specific to California, though many states have a similar website (here is [one for Massachusetts](#), for example).

### *Global*

- The ins and outs of [sustainable agriculture](#) from a global perspective.
- The current [state of agriculture](#), published by the United Nations.
- Learn about investment in food systems transformation in this [Climate Financing report](#).
- An [interactive website](#) details methane emissions in the food sector – and ways to reduce this harmful greenhouse gas.
- [Solutions for alternative proteins](#) to gain market parity.
- A report aptly named [Food for Thought](#) on protein and production.