TESTIMONY OF

DANA GUNDERS, EXECUTIVE DIRECTOR of ReFED

HEARING ENTITLED "CLIMATE SMART FROM FIELD TO FORK: BUILDING AN AFFORDABLE AND RESILIENT FOOD SUPPLY CHAIN"

BEFORE THE HOUSE SELECT COMMITTEE ON THE CLIMATE CRISIS

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Good afternoon, Chairwoman Castor, Ranking Member Graves, and Members of the Committee. Thank you for inviting me to testify today. My name is Dana Gunders, and I am the Executive Director of ReFED, a national nonprofit whose mission is to end U.S. food loss and waste by advancing data-driven solutions. I'm also the author of a widely-quoted report on food waste, *Wasted: How America is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill* and the *Waste-Free Kitchen Handbook*, a consumer guide to wasting less food. Pertinent to this conversation, my organization has researched the impact of U.S. food, and wasting it, on the U.S. greenhouse gas footprint.

I'm also the mother of two children who last summer, living in the Lake Tahoe area, had five weeks of canceled camp and the start of elementary school postponed, all due to wildfires and smoke. My seven-year-old daughter sometimes has trouble sleeping because she's afraid a fire will come during the night. Climate change is real and present in our lives, and thus I truly appreciate that you're taking intentional action on this issue.

I was asked to present a larger look at the climate impacts of the food system in addition to touching on food waste. That's a bit like asking someone to cover all of energy, and then cover energy efficiency as well, all in five minutes. So, if there's one thing I'd like you to take away from my testimony, it's that **food and agriculture is a massive, yet often overlooked, factor in the climate crisis**. Each of the aspects you'll learn about today merit their own hearing if you're to walk away with a true sense of the legislative possibilities. Please consider this very much an overview.

Food has a complex relationship to the climate crisis with four distinct aspects to consider:

- First, it is a driver by producing greenhouse gasses. The most recent report from the United Nations Intergovernmental Panel on Climate Change (IPCC) published this February estimated our food system is responsible for 23%-42% of total greenhouse gas emissions globally.[1] In the U.S, food system emissions are about 1.15-1.5 Gt/year, or about 22% of total emissions.[2] And that's without including the methane emissions from landfills, which are the third largest source of methane. Just the greenhouse gas footprint of *uneaten* food is more than that of the entire aviation industry (commercial, military, and private).
- Second, agriculture is a solution, as soils on farms offer more potential to absorb carbon than almost any other mitigation strategy.
- Third, it is a risk, as growing food demand is one of the main drivers of deforestation and other land conversion. If we do not deploy interventions to mitigate greenhouse gas emissions from agriculture and the food system, they are projected to increase 30-40% by 2050 in order to feed our growing population.[3]
- Lastly, it is extremely vulnerable to the effects of climate change. Agricultural productivity has been estimated to already have declined 21% due to changes in climate.[4] Crop failures, droughts, and other natural disasters are, at this point, inevitable. They will impact the livelihoods of farmers and food workers and lead to less available and more expensive food. Indigenous communities, communities of color, low-income communities, and the elderly will continue to be disproportionately affected by climate change. Today, more than 820 million people suffer from undernourishment worldwide—that number will only grow as global warming further raises temperatures.

The timing of solutions is critical. We often talk about emission goals for 2030 or 2050, but that discussion ignores the fact that **greenhouse gasses are cumulative**. A change that will save one ton of greenhouse gasses annually is ten times more valuable if it can start next year than if it starts ten years from now. **Food and agriculture solutions are available now.** In contrast to other sectors, many food and agriculture solutions do not need five years of research and development (R&D) followed by another five years of scaling and deployment, making them an extremely important lever for us to deploy now. In addition, they are **fundamental to addressing methane**, which is critical to address in the short term because of its higher intensity short term impacts.

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[1] IPCC Sixth Assessment Report, pdf page 152 https://www.ipcc.ch/report/ar6/wg3/
[2] Crippa et al, https://www.nature.com/articles/s43016-021-00225-9
[3] IPCC 2019 Special Report on Climate Change and Land, Chapter 5, https://www.ipcc.ch/srccl/chapter/chapter-5/#:~:text=emissions%20from%20crop%20and%20livestock%20are,
[4] Lobell, et al, https://www.nature.com/articles/s41558-021-01000-1

Put more simply by Dr. Jonathan Foley, Executive Director of the well-known climate mitigation organization Project Drawdown, **"Time is more important than tech, new is good but now is better."**

And beyond just climate, improving our food system offers opportunities to address food insecurity, biodiversity loss, and water scarcity.

Considered together, this makes investing in comprehensive and aggressive mitigation and adaptation efforts for food and agriculture an enormous opportunity within the climate action puzzle. At the end of this document, I have included a key chart from the most recent IPCC report that illustrates the greenhouse gas mitigation opportunities associated with some of these solutions, as well as how they compare with mitigation strategies in other sectors. Within that, there are four solution areas to consider.

Dietary Shifts

Livestock-related emissions represent about 42% of U.S. agricultural emissions,[5] and that doesn't even include the emissions from feed, to which approximately half of U.S. cropland is devoted. Direct livestock emissions come from two main drivers, both of which mainly produce methane, and **when considered together, are the largest source of U.S. methane**.[6]

The first driver is enteric fermentation, a result of the way cattle digest food, and is due to beef and dairy production. The second driver is emissions from manure – while a much smaller component than enteric fermentation, it is interesting to note that methane from manure management has increased by 70% since 1990, primarily due to the increasing use of liquid systems in manure management.[7]

A comprehensive report by the EAT-Lancet Commission estimates that in North America, **we need to cut our beef consumption in the U.S. to one-sixth of what it is today in order to stay within the climate goals set forth in the Paris Agreement**.[8] While there is some work being done to impact cattle digestion with feed additives, the main solution to these livestock-related emissions is a transition to menus and diets with a larger percentage of grains, legumes, and vegetables, and a lower percentage of meat, especially beef. **This is a mitigation strategy that is available to us immediately and is projected to have a larger mitigation potential than shifts to electric vehicles, public transportation, and efficiency in aviation – *combined*.**

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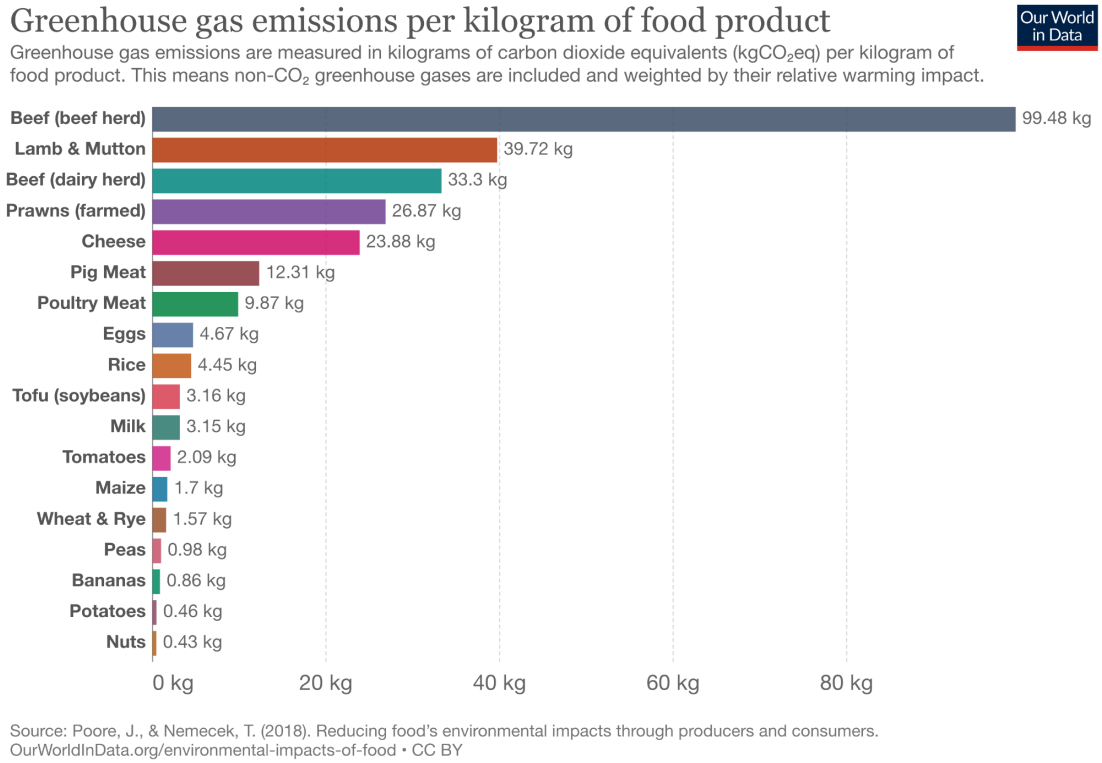
[5] EPA, Chapter 5, https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2020
[6] EPA, https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane
[7] EPA, Chapter 5, https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2020
[8] EAT-Lancet Commission, https://eatforum.org/eat-lancet-commission/eat-lancet-commission-summary-report/

Ultimately, the climate footprint of beef is far larger than that of any other food, as illustrated by this chart:



Some key policy initiatives that have been suggested include:

- **Support for plant-based meat alternatives.** These alternatives are proving successful with consumers and food businesses alike, as evidenced by nearly every fast-food chain now offering a plant-based option. Policy support includes funding for alternative protein R&D and facilitating the entry of plant-based meat alternatives to the market via allowing for labeling that consumers recognize. In its Fiscal Year 2022 budget, Congress dedicated $4.5 million in appropriations to alternative protein research through U.S. Department of Agriculture's (USDA) Agricultural Research Service. This offers a program that could be built up further.
- **Support for regenerative grazing.** There is initial evidence that regenerative grazing operations create potential to sequester carbon in grasslands. Funding more extensive research on this may identify new potential to lower the beef footprint.
- **Research for feed additives**. Funding research can help identify feed additives that can lower emissions related to cattle's digestion. While this will not offset the need to lower overall meat consumption, it is nevertheless an important component for the meat production that will continue.

Climate-Friendly Agricultural Practices

Agricultural soil management represents 53% of U.S. agricultural emissions. The largest source is synthetic fertilizer application, but this category also includes application of crop residues, organic fertilizer such as compost, and land application of sludge. Nitrogen – one of the main nutrients in fertilizer – can interact with the soil to produce nitrous oxide, a greenhouse gas more than 300 times more potent in its warming potential than CO2.

Separately, **soil offers enormous potential as a carbon sequestration sink**. Finding ways to both reduce the emissions and promote sequestration in agriculture has great potential. However, changing agricultural practices and building soil carbon is not a fast process. **We must begin now if we are to truly see the benefits.**

With the Farm Bill around the corner, we have a key opportunity to integrate policies that enlist farmers as a key part of the climate solution. Some of the main aspects to consider include:

- **Amending conservation compliance requirements and expanding them to all recipients of Farm Bill commodity support programs.** With about 400 million acres enrolled in crop insurance programs, expanding conservation compliance requirements to go beyond Title I commodities and include Title XI crop insurance premium subsidies is a key opportunity with great potential for quick and widespread adoption of climate-focused practices on farms. Increasing both technical assistance and enforcement mechanisms would also be critical to success.
- **Promoting perennial crops.** Providing funding for breeding research and technical assistance to promote perennial crops in grain and oilseeds can help to transition to cropping systems that are more drought tolerant, use less fertilizer, and store more carbon.
- **Supporting a broad transition to proven agroforestry practices.** Experts estimate that a nationwide transition to proven practices such as silvopasture and alley cropping could offset 33% of domestic fuel emissions. These practices can be promoted by providing technical assistance, adding a specific funding pool to the Environmental Quality Incentives Program (EQIP), and creating tailored agroforestry crop insurance and microloan programs.

<u>Prevent Grassland Conversion</u>

Like forests, grasslands play a critical role in sequestering and storing carbon, and similar to global deforestation, destruction of grasslands can also have devastating climate impacts. During each year over the last decade, we've seen the grasslands of the Great Plains being replaced by croplands at comparable rates to the clearing of the Brazilian Amazon. **When grasslands are tilled, soil organic carbon stocks are reduced by 30% on average, releasing vast amounts of carbon into the atmosphere.** Restoring the full amount of carbon to croplands can take 350

years.[9] Thus, protecting these native ecosystems in the first place is the most effective climate strategy.

Across the U.S. and Canadian Great Plains, approximately 2.6 million acres of intact grassland – an area larger than Yellowstone National Park – were plowed up in 2019 to make room for row-crop production, primarily wheat, corn, and soy. Nearly 600,000 acres were lost to the plow in the Northern Great Plains region alone – one of the world's only remaining intact grassland habitats and home to important wildlife including the black footed ferret, plains bison, and several species of birds not found anywhere else.[10]

Preventing conversion to cropland is key at this moment, as rising food and fuel prices create additional incentives for farmers to expand into new land. Some key policy opportunities to preserve these critical native ecosystems include:

- **Support the proposed North American Grasslands Conservation Act**. Modeled after the North American Wetland Conservation Act, this legislation will help to kickstart the voluntary protection and restoration of our grasslands.
- **Expand Sodsaver nationwide**. Expansion of this program will greatly reduce the negative impacts of crop insurance.
- **Rethink renewable fuel standards and policies**. Discourage the conversion of grasslands to row crops for biofuel production and incentivize the planting of perennial grasslands on marginal cropland.

Food Loss and Waste

Reducing food loss and waste is an immediate mitigation strategy that inherently addresses all of the above-mentioned impacts by reducing overproduction, and all of the impacts that are associated with it. In addition, it reduces unnecessary methane in disposal. As this is my primary area of expertise, I will spend the remainder of my testimony focused on it.

Imagine walking out of the grocery store with three bags, dropping one in the parking lot, and not bothering to pick it up. Seems crazy, but that is essentially what is happening across the country today – **35% of food in the United States today goes uneaten**.

We are leaving entire fields unharvested, eliminating produce solely for its cosmetics, throwing out food just because it's past or even close to its "sell-by" date even though it's perfectly safe to

[9] World Wildlife Fund, https://www.worldwildlife.org/projects/plowprint-report
[10] Ibid.

eat, inundating restaurant patrons with massive portions, and eating out instead of using what's in our fridge.

As a country, **our food waste amounts to over $400 billion, or nearly 2% of GDP,**[11] spent each year on wasted food. The average family of four spent over $1,900 in 2019 on food they never ate, a number that is sure to be higher with today's food prices.

Beyond money, we are missing an opportunity to provide sustenance and nutrition – **just one third of the country's wasted food could provide the caloric equivalent of the entire diet for the 38 million food insecure Americans,**[12] if only it could be distributed properly.

Furthermore, we are investing tremendous amounts of resources in this uneaten food. **If all of our country's wasted food was grown in one place, this mega-farm would cover more land than Nebraska, Missouri, and Oklahoma combined, use as much water as more than 50 million American homes, and enough fertilizer to grow all the plant-based foods in the country.** The farm would harvest enough food to fill a 40-ton tractor trailer every 20 seconds. Many of those trailers would travel thousands of miles, distributing food to be kept cold in refrigerators and grocery stores for weeks. But instead of being purchased, prepared, and eaten, this perfectly good food would be loaded onto another line of trucks and hauled to a landfill, where it would emit methane as it decomposed.

In fact, food is the number one contributor to landfills today, more than any other material. And landfills are the third largest source of methane in the U.S. Furthermore, food decomposing in those landfills is one of the biggest sources of that landfill methane.

Globally, if food waste were a country, it would use more water than any other country on the planet and rank third in its greenhouse gas footprint after China and the U.S. In America alone, the greenhouse gas footprint of uneaten food is estimated to be equivalent to 58 million cars annually.[13] This is because we are both creating huge impacts through overproduction, but also through emissions once food decomposes in landfills. The IPCC shows that the mitigation potential of addressing it would be equivalent to that of a shift to public transportation.

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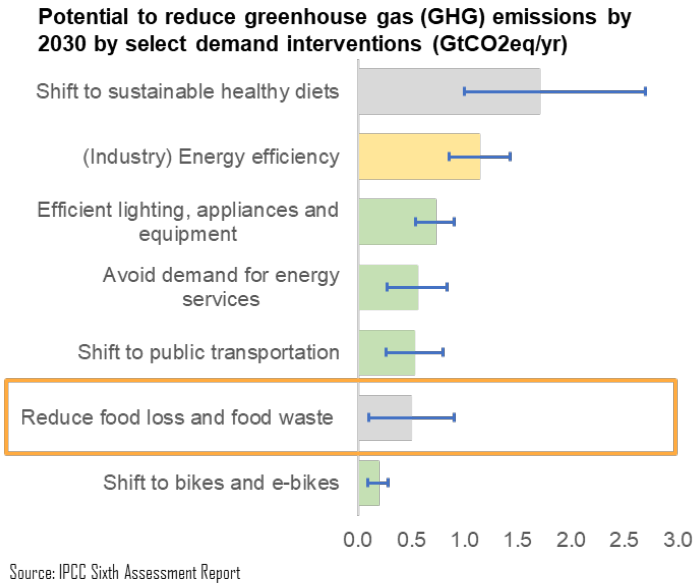
[11] ReFED Insights Engine, https://insights-engine.refed.org/food-waste-monitor?break_by=destination&indicator=us-dollars-surplus&view=detail&year=2019

[12] USDA, https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/key-statistics-graphics/#:~:text=In%202020%3A,with%20adults%2C%20were%20food%20insecure.

[13] ReFED Insights Engine, https://insights-engine.refed.org/food-waste-monitor?break_by=sector&indicator=total-mtco2e-footprint&view=detail&year=2019



Source: IPCC Sixth Assessment Report

Much climate discussion has focused around energy, and there's a clear parallel between wasting less food and energy efficiency. Both food and energy are resource intensive industries that face increasing global demand as a result of population growth and increasing standards of living. At some point, we realized the easiest, cheapest way to meet growing demand for energy was to reduce it in the first place. We are only now starting to realize the same approach is merited for food. **Without taking waste reduction into account, the United Nations Food and Agriculture Organization projects that food production will grow 60 percent by 2050 in order to match projected demand.[14] It's estimated almost a quarter of that projected demand could be offset through halving the amount of food that goes to waste.**[15]

We have not always been so wasteful. In the U.S., we waste 50% more food per capita than we did in the 1970s.[16] This means that there was once a time when we wasted far less, and that therefore gives me hope we could waste less today.

To help evaluate solutions, the EPA has established a "food recovery hierarchy." It essentially echoes the traditional "reduce, reuse, recycle" ethic that says first and foremost we should prevent waste from happening in the first place. **In fact, preventing food waste is at least twice as effective than composting it from a climate mitigation perspective, and some estimates**

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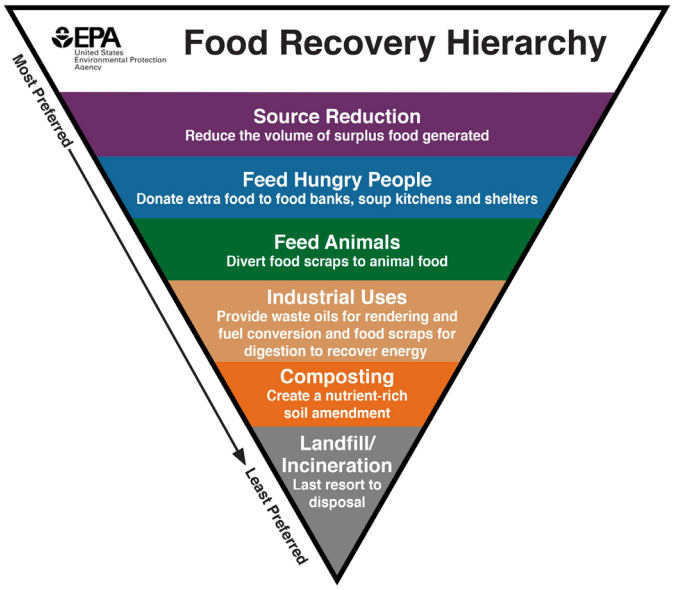
[14] United Nations Food and Agriculture Organization, "World Agriculture Towards 2030/2050, The 2012 Revision." 2012. http://www.fao.org/docrep/016/ap106e/ap106e.pdf

[15] Lipinski, B. et al. "Reducing Food Loss and Waste" World Resources Institute. 2013. http://www.wri.org/sites/default/files/reducing_food_loss_and_waste.pdf . Estimate is 22% of projected demand could be offset through halving the amount of food lost or wasted.

[16] K.D. Hall, J. Guo, M. Dore, C.C. Chow, National Institute of Diabetes and Digestive and Kidney Diseases, "The Progressive Increase of Food Waste in America and Its Environmental Impact," *PLoS ONE* 4(11):e7940, 2009.

are far greater.[17] When that's not possible, we should aim to use surplus to feed those in need. After that animal feed is preferred, and then uses such as composting and anaerobic digestion.



EPA's Food Recovery Hierarchy

Causes of Food Waste

Food waste is a complex problem with losses occurring throughout the supply chain from "farm to fork." There are far too many reasons to cover in a few short minutes. But I expect that over the course of the next week, as you go about your lives, you will notice a few yourselves. Nevertheless, I will try to give you a sense of a few:

- Crops are sometimes left unharvested because their appearance does not meet strict quality standards imposed by supermarkets, or because of damage caused by pests, disease, labor shortages, or weather. When market prices are too low, growers may leave some crops in the field if the price will not cover their costs to harvest, wash, sort, package, and transport the product.

[17] This varies by food type. On average, ReFED greenhouse has factors show source reduction to be more than 4 times as effective, but EPA's WARM tool shows a value for source reduction that is 30 times better than composting.

- In catching seafood, there is enough bycatch discarded to provide total yearly protein for 1.6 to 2 million people.[18]
- Grocery stores are in the challenging position of having to carry a vast array of products at every hour of the day. This high level of inventory – the cost of consumer convenience – inevitably leads to waste.
- At restaurants, large portions, large menus, and poor training for food handlers contribute to food waste. All-you-can-eat settings have a particularly egregious amount of waste between consumers taking too much and the challenge of donating excess product that's been left out.
- Lastly, consumers represent the largest portion of food waste of any segment of the supply chain. Poor food management, lack of kitchen knowledge, and larger portions are key contributors there.

A detailed description of many drivers at each stage of the supply chain can be found in the report *Wasted*.[19]

Promising Examples

The good news is, unlike many of the thorny issues I'm sure you deal with, this one is solvable. No one wants to waste food. And somehow, people strangely love diving into this topic. I've been amazed at how much energy and enthusiasm people have for telling me about the new way they found to use up wrinkled tomatoes, or the effort they made to wrap up the leftovers from their office lunch.

And because there are direct savings to be had, this enthusiasm has extended to the business and entrepreneurial communities as well. At ReFED, we have analyzed over 40 solutions to food waste, and most of them net positive in both the financial and climate lens. A list of the top twenty solutions from a climate perspective is at the end of this testimony, and a full list can be seen on our site.[20] Some key examples to cite include:

- More than 200 global food companies have committed to reducing food loss and waste via a handful of platforms that encourage these commitments.
- Companies including Kroger, Campbell's, General Mills, and Compass Group are successfully reducing their food waste, reporting reductions of 19-33% over just the past few years.
- Entrepreneurs abound with all sorts of solutions to food waste leading to successful businesses. At ReFED, we have more than 1,000 for-profit and non-profit organizations

[18] D.C. Love, et al. "Wasted Seafood in the United States: From Net to Plate". Global Environmental Change 35 (2015) 116–124

[19] NRDC, https://www.nrdc.org/resources/wasted-how-america-losing-40-percent-its-food-farm-fork-landfill

[20] ReFED Solutions Database, https://insights-engine.refed.org/solution-database

in our "solution provider" directory. And many of them are receiving significant investment from various types of funders. We have documented huge growth in private investment, including $2 billion in 2021 alone – more than double the previous year.[21]

- The United Kingdom **achieved a 27% reduction in food waste from 2007-2018** with a longstanding consumer campaign and a large public-private partnership as two strategies vital to this success.

Policy Solutions

In the U.S., there are a range of policy solutions that can help reduce food loss and waste. More than 50 signatories including Kroger, Unilever, Marriott, and Google, supported the U.S. Food Loss and Waste Policy Action Plan which includes a range of policy recommendations.[22] In addition, ReFED and other key nonprofits in the space recently published recommendations specific to the Farm Bill.[23]

It should also be noted that in 2015, the USDA, Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA) signed on to a national goal of reducing food waste by 50% by 2030. While I appreciate the sentiment, none of the agencies have put a concerted effort or budget into addressing the issue in the seven years since those goals have been in effect. For instance, it took inclusion in the last Farm Bill to create just one position in all of USDA focused on the topic. Of the $4 billion in American Rescue Plan Act funding that went to USDA to improve food supply chains, none has been committed to this issue. In fact, our models show that the amount of uneaten food in the U.S. rose until 2016 and has stayed constant since. Even per capita, we have only declined by 2% since that 2016 peak. Thus, a much more concerted effort is needed if we are to come anywhere near the U.S. national goals.

Thus, it's clear that Congressional action is essential. The two documents I mentioned above are much more thorough, but some key opportunities to highlight include:

Fund State and Local Efforts

Because waste is legislated at the state and local level, federal funding can be directed to encourage and support their transition to lower waste economies. To accelerate the widespread adoption of prevention, measurement, rescue, and recycling strategies and build the nation's organic waste recycling infrastructure, the Administration and Congress should **provide annual funding for states and cities that adopt targets in line with the national target** to reduce food loss and waste by 50% by 2030 and outline strategies that include prevention and measurement along with infrastructure for rescue and composting. The **Zero Food Waste Act introduced in**

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[21] ReFED Capital Tracker, https://insights-engine.refed.org/capital-tracker

[22] Food Waste Action Plan, https://foodwasteactionplan.org/

[23] Opportunities to Reduce Food Waste in the 2023 Farm Bill, https://chlpi.org/wp-content/uploads/2022/04/2023-Farm-Bill-Food-Waste.pdf

the 117th Congress and sponsored by Representatives Brownley (D-California), Kuster (D-New Hampshire), and Pingree (D-Maine) as well as Senator Booker (D-New Jersey) would provide funding to states, tribes, and municipalities for food waste prevention, reduction, and measurement.

Addressing Consumer Waste

Engaging the public is critical because 1) much of the waste occurs in households and by consumers in restaurants, and addressing it will require a change in consumer behavior; 2) consumer expectations drive many of the business practices that lead to waste, so changing those expectations could allow social license for businesses to change those practices; and 3) engaging the public can also channel individuals to impact change through their work or other spheres of influence, be they restaurant workers or college educators. Efforts in the U.K. to address this have been quite successful, showing a 31% reduction in consumer food waste, and actions in Denmark have shown similar success. The most successful model seems to be national-scale campaigns that create a core library of assets that can then be customized and used by the food industry, local and national governments, and community organizations. **Funding should be provided for a national scale consumer education campaign.**

In addition, a range of opportunities exist to both educate and address waste in K-12 settings. The **bipartisan School Food Recovery Act**, introduced by Representatives Chellie Pingree (D-Maine) and Dan Newhouse (R-Washington) in the 117th Congress, would direct the USDA to provide funding for schools to engage in food loss and waste reduction efforts – enlisting teachers and students to turn cafeterias into classrooms by measuring and reducing their waste, publicly aggregating and reporting waste data, and driving greater awareness of food loss and waste solutions across our communities. This model has already been piloted, demonstrating possibilities in decreasing student plate waste, increasing students' fruit and vegetable consumption, and cutting down on cafeteria plastic and packaging waste.

Fund a National Public-Private Partnership

Public-private sector partnerships can accelerate food waste reduction, with an estimated 80:1 return. In the U.K., the Courtauld Commitment has engaged almost every major food company in the country in reducing food loss and waste. It is now in its fourth iteration due to continued success.

In the U.S., the Pacific Coast Food Waste Commitment has now engaged seven key retailers including Albertsons, Kroger, and Walmart in its efforts to show how cities, states, and businesses can work together pre-competitively to share best practices, discuss common-sense policymaking, and address shared sustainability challenges around food loss and waste. Expanding this program nationally offers the best way for the government to directly engage

with the food industry to understand helpful policy drivers and encourage business action. The current United States Food Loss and Waste 2030 Champions program, co-hosted by the USDA and EPA, has tripled since it began in 2016 and has a strong group of companies.[24] However, it lacks the aspects that have made public-private partnership programs successful in other countries. **Congress could direct the agencies and provide funding to create a platinum tier of the U.S. Food Loss and Waste 2030 Champions program** in a way that requires companies to measure and report their waste levels, provides more assistance and dialogue around policy, and enables pre-competitive collaboration.

Standardizing Food Date Labels

Refining and standardizing the system of date labeling on food offers one of the most concrete steps to quickly reducing the amount of edible food being thrown out both in households and businesses. Date label confusion is a key cause of consumer food waste, estimated to drive nearly 85% of Americans to, at times, prematurely toss food that is still safe to eat.[25] Perhaps you may not even be aware that those dates you see on food are not federally regulated and typically do not indicate the safety of food, but rather when it's at its freshest. Food can often safely be consumed weeks or even months after those dates.

Instead of federal regulation, each state decides whether and how to regulate date labels, leading to a patchwork of inconsistent regulations and myriad date labeling terms such as "sell by," "best by," "expires on," and "use by." Manufacturers have broad discretion over what dates to affix to their food products, often using dates that typically reflect food quality and taste rather than food safety. Yet businesses, individuals, and even state regulators frequently misunderstand date labels and interpret them to be indicators of safety, leading to the unnecessary waste of wholesome food. Some states – currently about 20 – even restrict or forbid the sale or donation of past-date foods that are still safe to donate and eat. These inconsistent and misguided state laws lead to wholesome foods unnecessarily being discarded rather than donated.

The **bipartisan Food Date Labeling Act**, introduced in the 117th Congress by Representatives Chellie Pingree (D-Maine) and Dan Newhouse (R-Washington) and Senator Richard Blumenthal (D-Connecticut), which establishes a nationwide standard for these two types of dates. The bill also critically requires FDA and USDA to educate consumers about the meaning of these date-label terms. Effective implementation of consumer education is essential for date label reform to result in meaningful change in consumer behavior.

Enable Surplus Food Donation

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[24] See either USDA site, https://www.usda.gov/foodlossandwaste/champions, or EPA site, https://www.epa.gov/sustainable-management-food/united-states-food-loss-and-waste-2030-champions

[25] Johns Hopkins University, https://publichealth.jhu.edu/2019/survey-misunderstanding-food-date-labels-linked-with-higher-food-discards

Nationally, less than 10% of food is donated rather than wasted. A handful of key legislations could help increase the amount of rescued food significantly.

Under current law, the federal enhanced tax deduction for food donations can only be claimed when food is donated to a non-profit that does not charge the end recipient for the food. **Expanding the federal tax deduction to include nonprofit sales** can incentivize donations to more recipients, including social supermarkets that sell donated food at an extremely discounted price or food rescue organizations that charge recipients a minimal fee to help offset the costs of home delivery. **Adding transport services for donated food as a separate cost eligible for an enhanced tax deduction** will also help overcome one of the most expensive barriers for businesses and food rescue organizations to get excess food to those in need. Furthermore, the existing federal enhanced tax deduction for food donations is not well-suited to farmers and is not often claimed by them, as many farmers operate at low profit margins and do not make enough income to claim a tax deduction. To incentivize farmers to donate surplus crops and offset some of the costs of donation (including labor), Congress could **provide an alternative tax credit that farmers could opt to claim instead of the existing enhanced deduction**.

The bipartisan **FIND Food Act,** introduced in the 117th Congress by Representatives Shontel Brown (D-Ohio), Chellie Pingree (D-Maine), Fred Keller (R-Pennsylvania), and Troy Balderson (R-Ohio), would broaden existing tax incentives for food donation in order to cover donated food sold at a low cost, to provide a deduction for transport of donated food, and to offer a tailored tax credit that farmers can claim as an alternative to the enhanced deduction.

Congress could also appropriate additional funds to support programs – such as the Farm to Food Bank Program created within The Emergency Food Assistance Program (TEFAP) in the 2018 Farm Bill – to **help cover the harvesting, processing, packaging, and transportation costs of donating agricultural products to local food banks**.

Lastly, Congress could strengthen liability protections for food donation in a number of ways, including: 1) broadening protections to include food items sold at a low cost and "direct donations," or food donations offered directly from certain food business donors to end recipients; 2) granting administrative authority of the federal Bill Emerson Good Samaritan Food Donation Act to USDA and directing USDA to write regulations that clarify the language of the Act; and, 3) requiring USDA to implement an education campaign on donation liability protection for potential food donors and food rescue organizations.

The bipartisan **Food Donation Improvement Act**, introduced in the 117th Congress by Senators Richard Blumenthal (D-Connecticut) and Patrick Toomey (R-Pennsylvania) and Representatives James McGovern (D-Massachusetts), Chellie Pingree (D-Maine), Dan Newhouse (R-

Washington), and Jackie Walorski (R-Indiana), would expand liability protection along these lines, and would require USDA to issue regulations demystifying the liability protection.

Encourage Food Scrap Recycling, Especially to Feed

Bananas will always have peels. With even the most aggressive efforts to prevent and rescue food that's currently going to waste, there will always be food scraps. When those scraps are used for animal feed, they offset the need for dedicated feed crops. Sophisticated approaches are emerging such as start-up Do Good Foods, which pasteurizes and pelletizes food waste from grocery stores and converts it into poultry feed. Having recently received $169 million in funding, they are planning to replicate their model quickly.

State laws vary and some restrict waste to feed in some ways. To maximize the potential for food scraps diversion to animal feed, Congress should require the USDA to write guidance encouraging states to update their laws around food scrap feeding to animals, explaining why states should remove any unnecessary restrictions that do not exist within the federal-level animal feed laws. Congress should also create a tax incentive for private businesses to divert food waste to animal feed that is lesser than the enhanced tax deduction for businesses to donate surplus food to food insecure individuals in order to ensure food goes to its most beneficial use.

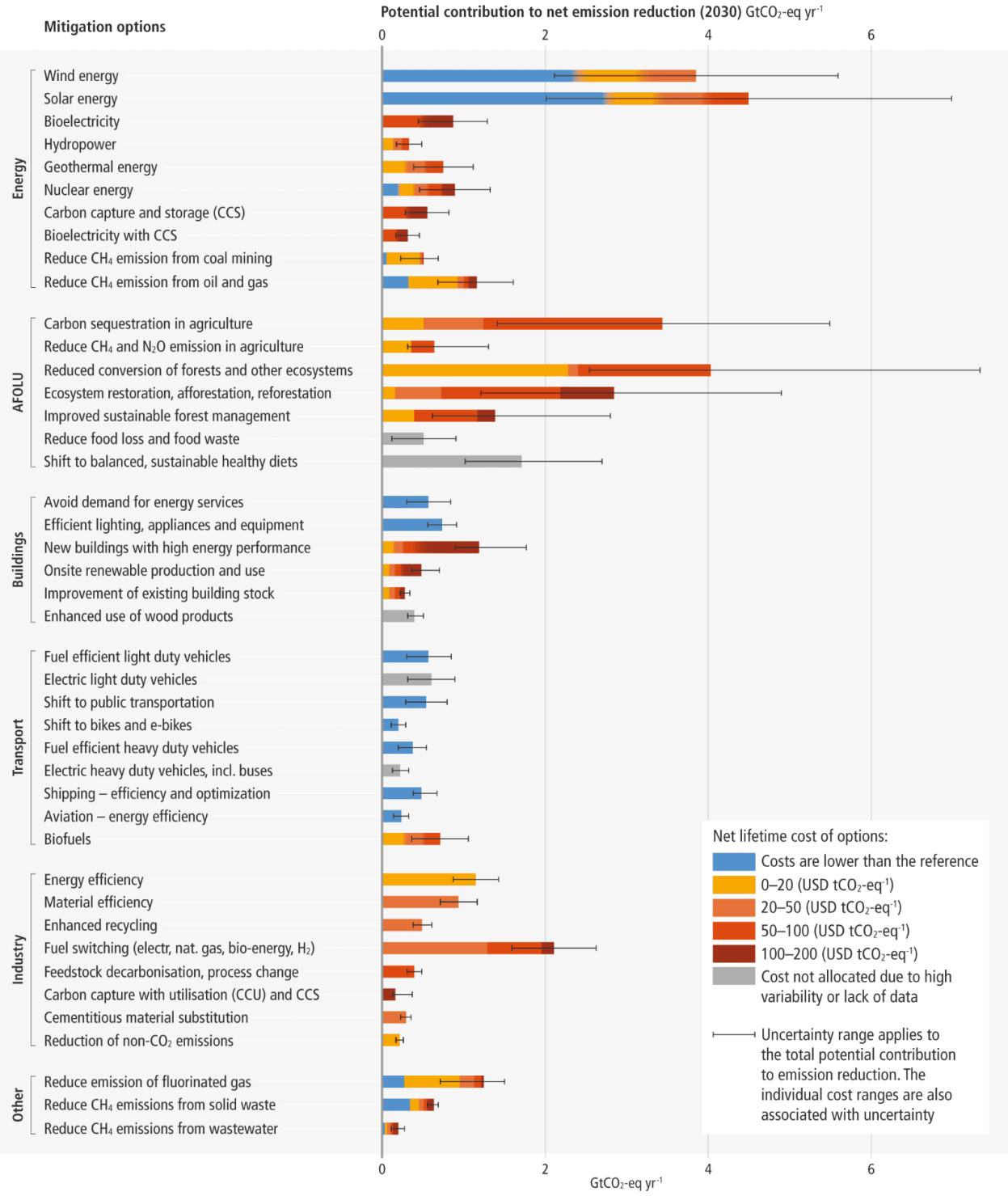
In Conclusion

Changes within food and agriculture offer an enormous opportunity to reduce our greenhouse gas emissions now, while time is of the essence, and policy has a huge role to play in doing so. I hope today will be just the beginning of your inquiries, and that you'll make space to investigate solutions to different aspects of the food system individually, as they merit.

In particular, reducing food waste entails a set of solutions that are available immediately, without any major technological advances required. It's also something everyone can get behind. No one wants to see good food going to waste and, in many cases, there is even money to be saved. Should you pursue solutions to this problem, you'll find there is a broad base of support behind you. Thank you for the opportunity to discuss these issues with you today.

Mitigation Potential of Various Options as Estimated by the IPCC

Many options available now in all sectors are estimated to offer substantial potential to reduce net emissions by 2030. Relative potentials and costs will vary across countries and in the longer term compared to 2030.



Source: IPCC Sixth Assessment, Summary for Policymakers, https://www.ipcc.ch/report/ar6/wg3/

Mitigation Potential of Food Waste Solutions as Estimated by ReFED

ACTION AREA	SOLUTION NAME	EMISSIONS REDUCTION ▼	ANNUAL INVESTMENT REQUIRED
	Portion Sizes	11.5M Metric Tons CO2e	$ 32.2M
	Meal Kits	7.53M Metric Tons CO2e	$ 727M
	Consumer Education Campaigns	7.41M Metric Tons CO2e	$ 103M
	Centralized Composting	4.94M Metric Tons CO2e	$ 1.34B
	Manufacturing Byproduct Utilization (Upcycling)	4.85M Metric Tons CO2e	$ 1.9B
	Waste Tracking (Foodservice)	4.78M Metric Tons CO2e	$ 1.09B
	Package Design	3.57M Metric Tons CO2e	$ 492M
	Markdown Alert Applications	2.85M Metric Tons CO2e	$ 1.18B
	Enhanced Demand Planning	2.78M Metric Tons CO2e	$ 275M
	Standardized Date Labels	2.73M Metric Tons CO2e	$ 8.09M
	Manufacturing Line Optimization	2.51M Metric Tons CO2e	$ 273M
	Active & Intelligent Packaging	2.43M Metric Tons CO2e	$ 257M
	Intelligent Routing	2.28M Metric Tons CO2e	$ 806M
	Decreased Transit Time	2.24M Metric Tons CO2e	$ 593M
	Assisted Distressed Sales	1.54M Metric Tons CO2e	$ 5.75M
	First Expired First Out	1.32M Metric Tons CO2e	$ 557M
	Temperature Monitoring (Pallet Transport)	1.17M Metric Tons CO2e	$ 222M
	Dynamic Pricing	1.05M Metric Tons CO2e	$ 1.04B
	Donation Transportation	1.01M Metric Tons CO2e	$ 442M
	Centralized Anaerobic Digestion	912k Metric Tons CO2e	$ 611M

Source: ReFED Insights Engine, https://insights-engine.refed.org/solution-database