

**TESTIMONY OF  
DANA GUNDERS  
SENIOR SCIENTIST, FOOD AND AGRICULTURE PROGRAM  
NATURAL RESOURCES DEFENSE COUNCIL**

**HEARING ENTITLED  
“FOOD WASTE FROM FIELD TABLE”  
BEFORE THE  
COMMITTEE ON AGRICULTURE  
MAY 25, 2016**

Good morning Chairman Conaway, Ranking Member Peterson, and members of the Committee. Thank you for inviting me to testify today. My name is Dana Gunders, and I am a Senior Scientist at the Natural Resources Defense Council where I lead our work on reducing the amount of food that goes to waste across the country. I'm also the author of the widely-quoted report on food waste, *Wasted: How America is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill* as well as the *Waste Free Kitchen Handbook*, a consumer guide to wasting less food.

Imagine walking out of the grocery store with five bags, dropping two in the parking lot, and not bothering to pick them up. Seems crazy, but that is essentially what is happening across the country today--40 percent of food in the United States today goes uneaten.<sup>1</sup>

We are leaving entire fields unharvested, eliminating produce solely for its cosmetics, throwing out food just because its past or even close to its "sell-by" date, inundating restaurant patrons with massive portions, and eating out instead of using what's in our fridge.

Per capita, America wastes more than 1,250 calories every day and 35 pounds of food every month.<sup>2</sup> As a country, this amounts to up to \$218 billion, or 1.3% of GDP<sup>3</sup>, spent each year on wasted food. For a family of four, this means at least \$1500 spent annually on food they never eat.<sup>4</sup>

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 48 million food insecure Americans, if only it could be distributed properly.<sup>5</sup>

Furthermore, we are investing tremendous amounts of resources on this uneaten food. If all of our country's wasted food was grown in one place, this mega-farm would cover roughly 80 million acres, over three-quarters of the state of California. Growing the food on this wasteful farm would consume all the water used in California, Texas, and Ohio combined. 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 a harmful stream of greenhouse gases as it decomposes.<sup>6</sup>

In fact, food is the number one contributor to landfills today, more than any other material.

Globally, if food waste were a country, it would use more water than any other country on the planet and rank third in greenhouse gas footprint after China and the U.S.<sup>7</sup> In America alone, the greenhouse gas footprint is estimated to be equivalent to 33 million cars annually.

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.<sup>8</sup> It's estimated almost a quarter of that projected demand could be offset through halving the amount of food that goes to waste.<sup>9</sup>

We have not always been so wasteful. In the U.S., we waste 50 percent more food per capita than we did in the 1970s.<sup>10</sup> This means that there was once a time when we wasted far less, and 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 first and foremost, we should prevent waste from happening in the first place. 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.

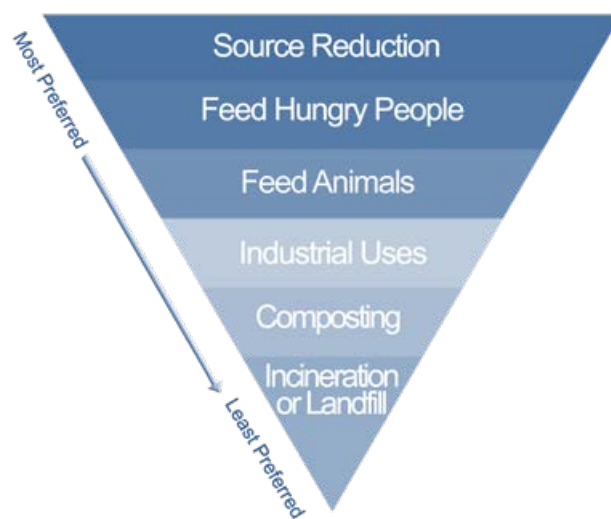


Figure 1: EPA's Food Recovery Hierarchy

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.

In catching seafood, there is enough bycatch discarded to provide total yearly protein for 1.6 to 2 million people.<sup>11</sup>

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, from the limited data we have, it appears 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 is included in the report *Wasted* that is being submitted with this testimony.

### **Promising Examples**

The good news is, unlike many of the thorny issues I’m sure you deal with, this one feels 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. I know subsequent witnesses will cite several examples, but here are a few to consider:

- Still in its relatively early stages, a program by Compass Group called Imperfectly Delicious Produce has sourced almost a million pounds of off-grade product for use in over 24 states.<sup>12</sup>
- Founded in 1994, Alaska-based non-profit SeaShare, redistributes bycatch and donations of first rate seafood to food banks. The group had donated more than 200 million seafood servings as of 2015.<sup>13</sup>
- LeanPath software helps cafeteria kitchen managers track waste and regularly sees reductions of over 50 percent in kitchen waste in the first 6 to 12 months of use.<sup>14</sup>
- In 2014, Walmart changed its method of addressing egg cartons with single broken eggs and as a result saved over 37 million eggs in the first 8 months after the change.<sup>15</sup>
- In England, a five year public campaign from 2007-2012 to reduce food waste saw a 21 percent reduction in avoidable household food waste.<sup>16</sup> While this coincided with the recession, they estimate about 60 percent of the reduction was due to the campaign itself.<sup>17</sup>

## **Addressing Data Needs**

Right now, we can't answer some basic questions around food waste because we simply don't have the information. While we can infer, we don't have concrete answers to questions such as:

- How much food goes to waste on farms?
- How much food goes to waste in restaurants, particularly on people's plates?
- What is the biggest reason people waste food in their homes?

In fact, I can't even give you a pie chart that accurately breaks down the portions of food waste caused by each sector within the food industry. People have taken stabs at this – most notably, the ReFED report you'll hear about later and, for portions of the supply chain, the USDA – but there is no comprehensive study from farm to fork, and certainly not at the level of detail necessary to really highlight solutions.

There is a particular dearth of data at the farm level, where only a handful of small studies have been conducted, none of which are comprehensive or statistically significant. And yet, anecdotally, those studies are finding that anywhere from 1 to 30 percent of fresh produce

is not leaving the farm or packing shed.

Other areas that are poorly understood are homes and restaurants. USDA conflates these two categories into one, which makes the data so broad that it is helpful in identifying solutions.

You can't manage what you don't measure. Good data enables baselines to be set, measures progress, and informs where programs and projects should be directed in order to have greatest impact. At the business level, data can inform specific changes that lead to less waste.

A key first step in addressing the issue, therefore, is to conduct further study and drive more data collection. Three methods to get started include:

- Direct research or target existing grant funds towards this type of research.
- Encourage measurement and reporting at the municipal levels by establishing a standard protocol for municipalities to follow and then aggregate municipal information at the federal level. This will help identify the most appropriate federal legislative solutions.
- A final method to improve data around food waste is to encourage corporate reporting of food waste. Establishing a culture of measurement and reporting among companies will facilitate benchmarking, encourage best practice, and allow leaders to be rewarded.

### **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.

The Ad Council and NRDC recently launched the Save the Food national public service campaign with a TV spot, out of home materials (billboards, bus shelters, etc), printing, digital, and a website. However, additional funds could extend the reach of the campaign significantly – to children, to those who speak other languages, and to those who suffer from food insecurity, to name just a few examples. Providing this funding would truly catalyze a shift in the cultural paradigm around food waste. As noted above, a similar campaign in the UK saw avoidable household food waste reduced by 21% in just five years.

Educating children is another critical step in creating an engaged public. This can be done through cafeteria programs, curriculum materials, and farm-to-school and school garden programs. In addition, teaching basic cooking skills in schools (K-12 and university) would provide the critical kitchen skills necessary for wasting less food in one's home.

Standardizing food date labels is another opportunity to address consumer household waste.

### **Standardizing Food Date Labels**

Up to 86 percent of consumers at least occasionally discard food prematurely because they misinterpret dates to mean the food is unsafe to eat.<sup>18</sup> This confusion extends to businesses who also wind up discarding perfectly edible food. 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.

The recent Food Date Labeling Act introduced by Rep. Chellie Pingree (H.R. 5298) does just this. It establishes a nationwide standard for two types of dates – one to indicate the date relates to a product's quality and the other to indicate consuming food after the date may create a risk related to people's safety. Standard phrases and definitions should be established for both. Once created, sale of products after the quality date should be allowed without repercussion.

After this new system is established, a widespread consumer campaign should be conducted to educate consumers on the new standardized system/meaning.

### **Reducing farm losses**

For fruits and vegetables, farms merit particular attention because they represent a significant portion of food losses and also an opportunity to provide more healthy food. A key step in this is supporting transportation and value-added processing of imperfect produce, surplus #1 product, and byproducts. This can be done through grant set asides, financing, or federal loan guarantees for equipment.

### **Encourage innovation**

Encouraging creativity in the entrepreneurial space could add a suite of new solutions to

reducing food waste. As this is a relatively new area of focus for the food sector, the timing is opportune. There is now a wonderful amount of energy and excitement to improve upon the current situation. Creating set asides for projects that target food waste reduction in current grant programs, such as USDA's Conservation Innovation Grants or Specialty Crop Block Grants, could help identify new, scalable solutions for the issue. Furthermore, technical assistance and low interest financing could help solutions scale.

### **Encouraging diversion of food scraps**

Directing food scraps to composting, anaerobic digestion, and other organics recycling options creates a number of environmental benefits, including reducing the amount of methane-generating material in landfills, while offering opportunities to create useful soil amendments, recycle nutrients, and extract energy. In addition to driving composting and other organics recycling, policies that dis-incentivize organics from going to landfills and incineration help drive prevention, partially because they increase awareness of just how much is being thrown out.

Massachusetts, Connecticut, Vermont, Rhode Island, and California currently have some level of ban or restriction on food scraps in landfills or incinerators. Providing infrastructure financing for composting and anaerobic digestion only to states with these types of restrictions or bans would encourage other states to follow suit, while also funding the infrastructure critical to making these bans work.

### **In Conclusion**

Reducing food waste may feel complicated because it touches every part of the food system. However, there are a number of clear steps that can be taken immediately to make a real dent.

The Food Recovery Act introduced by Rep. Chellie Pingree (H.R. 4184) tackles food waste from a variety of angles and includes solutions for many of the issues discussed above. I urge you to consider that legislation as your discussions move forward.

Wasting less food is something everyone can get behind. No one wants to see good food going to waste and, in some cases, there is even money to be saved. I expect should you pursue solutions to this problem, you'll find there is a broad base of support behind you. Furthermore, every bit saved helps, so even some action can be considered successful.



Thank you for the opportunity to discuss this issue with you today.

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<sup>1</sup> 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. The author confirmed his estimate in communication in 2015. USDA estimates 31%, but that includes only losses at retail and consumer levels. When the full supply chain is considered, the 31% number by USDA essentially corroborates the 40% estimate.

<sup>2</sup> Buzby, J. et al. "The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States" USDA Economic Research Service Economic Information Bulletin No. (EIB-121) 39 pp, February 2014 <http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib121.aspx>

<sup>3</sup> ReFED, "A Roadmap to Reduce U.S. Food Waste by 20 Percent." March 2016. [www.refed.com](http://www.refed.com) USDA estimates \$161 billion but does not include the full supply chain and uses 2010 food prices as opposed to 2015.

<sup>4</sup> Buzby, J. et al. "The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States" USDA Economic Research Service Economic Information Bulletin No. (EIB-121) 39 pp, February 2014 <http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib121.aspx> ReFED's analysis found it to be \$1800 annually for a household of four.

<sup>5</sup> A. Coleman-Jensen et al. "Household Food Security in the United States in 2013" USDA Economic Research Service, Economic Research Report No. (ERR-173) 41 pp, September 2014. This source states that just over 49 million individuals are food insecure. It would take 32% of total losses and waste reported in Hall, et al., to provide 2500 kcal/day to that many people, which would equate to a total diet. Of course, distribution challenges would and quality of nutrition are not considered in this back of envelope calculation.

<sup>6</sup> ReFED, "A Roadmap to Reduce U.S. Food Waste by 20 Percent." March 2016. [www.refed.com](http://www.refed.com)

<sup>7</sup> United Nations Food and Agriculture Organization, "Food Wastage Footprint: Impacts on Natural Resources" 2013. <http://www.fao.org/docrep/018/i3347e/i3347e.pdf>

<sup>8</sup> United Nations Food and Agriculture Organization, "World Agriculture Towards 2030/2050, The 2012 Revision." 2012. <http://www.fao.org/docrep/016/ap106e/ap106e.pdf>

<sup>9</sup> 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](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.

<sup>10</sup> 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.

<sup>11</sup> D.C. Love, et al. "Wasted Seafood in the United States: From Net to Plate". *Global Environmental Change* 35 (2015) 116–124

<sup>12</sup> Claire Cummings, Bon Appetit Management Company (Compass Subsidiary), email correspondence, January 20, 2016

<sup>13</sup> SeaShare website, About page: <https://www.seashare.org/about>

<sup>14</sup> Andrew Shakman, CEO, LeanPath, email correspondence, May 21, 2016

<sup>15</sup> Anna Vinogradova, Senior Manager of Sustainability, Walmart, email correspondence, March 17, 2016

<sup>16</sup> WRAP UK, "Household Food and Drink in the UK 2012" <http://www.wrap.org.uk/content/household-food-and-drink-waste-uk-2012>

<sup>17</sup> Parry, Andrew, "Reduction in household food & drink waste – Estimating the influence of WRAP and its partners." 2011

<sup>18</sup> Food Marketing Institute, "U.S. Grocery Shoppers Trends 2014", p. 135