

Food Waste in the United States

A Mounting Issue

Felicia Hall
10/19/2016

Introduction

Every human has a relationship with food, yet one rarely thinks about its production, consumption, and disposal. According to the Natural Resource Defense Council, “Getting food to our tables eats up 10 percent of the total United States energy budget, uses 50 percent of United States land, and 80 percent of freshwater consumed in the United States. Yet, 40 percent of food in the United States today goes uneaten.”¹ Furthermore, nearly 13 percent of Americans face food insecurity each year, creating an ever-more critical need to address the issue. Considering the vast amount of resources that go into food production and distribution, one cannot help but ask: Why is so much food wasted, and what is being done to prevent this excessive waste?

This paper aims to explore the evolution of food waste in the United States. First, it will discuss the history and current reality of food waste in the United States, including the environmental impacts of food waste. It will then outline current government-sponsored prevention and reconciliation efforts to combat food waste. Finally, it will outline international efforts that have been successful in combatting food waste, specifically in the United Kingdom.

A Brief History

According to the United Nations Environmental Program (UNEP), the United States has the most abundant and productive food supply chain on earth. The United States is also the largest producer of food waste.² This largely dates back to the 1800s when the industrialization of

¹ Feeding America, “Hunger Facts & Poverty Statistics,” Accessed May 29, 2017, <http://www.feedingamerica.org/hunger-in-america/impact-of-hunger/hunger-and-poverty/hunger-and-poverty-fact-sheet.html>.

² C. Nellmann et. al., “The environmental food crisis – The environment’s role in averting future food crises,”

agriculture and commodity products turned production, consumption, and disposal into key profit making industries. Since then, the commodification of products has encouraged a waste-based consumer lifestyle. Increased consumption warranted larger disposal facilities. Landfills became the new waste destination because they were large and affordable to maintain. Since landfills were strategically located away from population centers, it became easier for Americans to dispose their waste into trash bins without cognizance of where their waste may end up. Since World War II, annual total food waste in the United States has nearly tripled, from an average of 12.2 million tons per year in the 1960s, to 36 million tons in 2012.³ This lack of waste consciousness persists today in many homes, businesses, public spaces, and private institutions.

Food Waste in the United States Today

According to food journalist and activist Jonathan Bloom, food waste spans racial, economic, and social strata. Simply put, wasting food is something that nearly every American individual and business is guilty of.⁴ Despite recycling basic items, such as paper, plastics, metal, and glass, most Americans embody a single-use, throwaway mentality. The Environmental Protection Agency (EPA) estimates that more food reaches landfills and incinerators than any other single material of household trash, contributing to 21 percent of all discarded municipal solid waste.⁵ Interestingly, data also shows that household waste is slowly declining. Household

United Nations Environment Programm, GRID-Arendal 32 (2009), accessed October 1, 2015, http://www.grida.no/files/publications/FoodCrisis_lores.pdf.

³Jean C. Buzby, Hodan F. Wells, and Jeffrey Hyman, "The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States," *Economic Information Bulletin-121, US Department of Agriculture, Economic Research Service* 16 (2014), accessed September 13, 2015, https://www.ers.usda.gov/webdocs/publications/eib121/43680_eib121.pdf.

⁴Jonathan Bloom, *American Wasteland: How America Throws Away Nearly Half of Its Food* (Philadelphia: Da Capo Press, 2010), 20.

⁵US Environmental Protection Agency, "Advancing Sustainable Materials Management: 2014 Fact Sheet," *United States Environmental Protection Agency Office of Land and Emergency Management* 2 (2016), accessed January 18, 2017, https://www.epa.gov/sites/production/files/2016-11/documents/2014_smmfactsheet_508.pdf.

waste production peaked in 2000 at an average of 4.7 pounds per person per day, and has since decreased to an average of 4.4 pounds per person per day.⁶ This is likely due to new state regulations that require families to compost and recycle a certain amount annually. In 2013, 64.7 million tons of material solid waste (MSW) was recovered through recycling (1.2 pounds/person/day), and over 22 million tons of MSW was recovered through composting (0.39lbs/person/day).⁷ Although the EPA increasingly focuses on waste reduction, only 5 percent of national food waste is being diverted from landfills and incinerators for composting.⁸

Despite being one of the largest culprits of food waste production, the United States is certainly not alone. The Food and Agriculture Organization reports that 1.3 billion tons of food, or one third of the total food produced globally, is lost or wasted each year, amounting to an economic loss of \$750 billion.⁹ In developed countries, food is typically wasted at farms, processing facilities, grocery stores, distribution and storage facilities, and in consumer and foodservice industries.¹⁰ Food waste in these contexts occurs for many reasons, including: spoilage; overestimated sales on behalf of farmers; post-harvest and transportation problems during drying, milling, transporting, or processing; problems caused by insects, rodents, molds, and bacteria; issues with processing equipment; culling of aesthetically distasteful food; and overestimated distributor and consumer purchases.¹¹

There are many theories for why food waste has not been addressed as a more prominent issue in the United States. According to the Natural Resources Defense Council (NRDC), there are two central reasons, both of which revolve around the economics of food production. First,

⁶ Ibid., 6.

⁷ Ibid., 7.

⁸ Ibid., 4.

⁹ FAO, "Food waste harms climate, water, land and biodiversity – new FAO report," *Food and Agriculture Organization*. September, 2011, accessed January 18, 2017, <http://www.fao.org/news/story/en/item/196220/icode/>.

¹⁰ Dana Gunders, *Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill* (NRDC Issue Paper, August 2012), 7. <https://www.nrdc.org/sites/default/files/wasted-food-IP.pdf>.

¹¹ Ibid., 7.

the NRDC contends that the food-secure citizen of the United States does not consider food to be a “scarcity” since it only accounts for a small portion of their budget. This then causes food to be more easily wasted. Second, the NRDC says that food waste implies more food is being purchased, which results in more sales for the food industry; and more sales for the food industry allows a capitalist economy to flourish. Essentially, the NRDC cites that food producers lack motivations to address the food waste issue as long as there is profit to be made.¹²

The Environmental Consequences of Food Waste in the United States

Globally, food waste results in more greenhouse gas emissions than any country in the world except for China and the United States.¹³ Most of the greenhouse gas emissions released through food waste are a result of the production and shipment processes. According to the NRDC, the average American meal includes food that has been imported from at least five different countries.¹⁴ Throughout an ingredient’s life cycle, it utilizes an extraordinary amount of water, pesticide, fertilizer, and fuel, which leads to a staggering environmental footprint, especially through greenhouse gas emissions. In 2005 alone, the importing of nuts, fruits, and vegetables into California by airplane released more than 70,000 tons of CO₂ into the atmosphere—an equivalent of what is produced by more than 12,000 cars on the road.¹⁵ The use of these energy resources in production and disposal processes can also cause methane gas emissions, which are twenty-one times more powerful than carbon dioxide

¹² Ibid., 15.

¹³ FAO, “Food Wastage Footprint: Impacts on Natural Resources,” accessed May 29, 2017 <http://www.fao.org/docrep/018/i3347e/i3347e.pdf>.

¹⁴ Natural Resources Defense Council, “Food Miles: How far your food travels has serious consequences for your health and the environment,” *Food Hub 2* (2007), accessed October 24, 2015, <https://food-hub.org/files/resources/Food%20Miles.pdf>.

¹⁵ Ibid., 2.

emissions.¹⁶ Furthermore, once food has been discarded, the decomposition of organic materials in landfills contributes to the release of methane gasses into the atmosphere. According to the EPA, landfills are the third largest source of methane emissions in the United States, producing 18 percent of total emissions.¹⁷

To truly understand the impact of food waste on the environment, the production, consumption, and waste of meat cannot be ignored. Meat production is the most resource intensive food product, resulting in the largest environmental impact. In the production and processing of one pound of hamburger beef alone, 1,840 gallons of water are used.¹⁸ According to the NRDC, if every American eliminated one quarter-pound serving of beef per week, the reduction in global warming gas emissions would be equal to removing four to six million cars off the road.¹⁹ In the documentary *Cowspiracy*, Demosthenes Maratos of the Sustainability Institute of Molloy College, says that animal agriculture is “the single largest contributor to every known environmental ill known to humankind; deforestation, land use, water scarcity, the destabilization of communities, world hunger.”²⁰ Meat accounts for 22 percent of all food wasted in the United States, with 12 percent of meat loss occurring at the consumer level.²¹ According to the United States Department of Agriculture (USDA), the average American consumed 71.2 pounds of red meat and 54.1 pounds of poultry in 2012, meaning that an average of 27.56 pounds

¹⁶ Anastasia L Scotto, “Combating Waste: Defeating the Paradox of Food Waste,” *Barilla Center for Food and Nutrition Magazine*, June 2013, accessed May 29, 2017, <http://www.barillacfn.com/en/position-paper/pp-combating-waste/>.

¹⁷ US Environmental Protection Agency, “Methane and Nitrous Oxide Emissions from Natural Sources,” *US Environmental Protection Agency Office of Atmospheric Programs* 6 (2010), accessed October 1, 2015, <https://www.epa.gov/nscep>.

¹⁸ US Geological Survey, “How Much Water Is in Common Foods and Products: USGS Water Science School,” *The USGS Water Science School* (2016), accessed October 3, 2016, <https://water.usgs.gov/edu/activity-watercontent.php>.

¹⁹ NRDC, “Food Facts: Eat Green: Our everyday food choices affect global warming and the environment,” *NRDC Food Facts* 1 (2010), accessed October 5, 2015, https://www.nrdc.org/sites/default/files/eatgreenfs_feb2010.pdf.

²⁰ Kip Andersen and Keegan Kuhn, 2014. *Cowspiracy: The Sustainability Secret*. Documentary film.

²¹ Gunders, “Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill.”

of meat is wasted per person in the United States each year.²² While the U.S. has made efforts to address food waste, these statistics are a staggering example of how the nation must do more to combat the issue.

What is happening in the United States?

There have been efforts made both at the federal and state levels to address food waste in the United States in recent years. In 1996, the Bill Emerson Good Samaritan Food Donation Act was signed into law to address food waste in the post-production and retail phases of the food chain. The Bill Emerson Good Samaritan Food Donation Act also provides protection for nonprofits from liability, specifically if they distribute donated food and grocery products to individuals in need. Also, under code 170(e)(3) of the Internal Revenue Service (IRS), donations of food waste from eligible businesses are tax deductible. Under the code, businesses can deduct the cost of food production and half of the difference between the cost and full fair market value of the donated food. Additionally, the United States Federal Food Donation Act was signed into law in 2008, which allows federal agencies and contractors to donate extra food to eligible nonprofit organizations that provide assistance to individuals facing food insecurity.²³ In 2015, the Good Samaritan Hunger Relief Tax Incentive Act made this tax deduction permanent.

On a state level, regulations have been implemented to curb waste such as optional residential compost pick-ups and mandatory business composting. Massachusetts stands out as a state ahead of the rest for waste diversion and recycling. For example, in 2014 Massachusetts passed a ban on the disposal of commercial organic wastes by businesses and institutions that

²² USDA, "Profiling Food Consumption in America," Agriculture Fact Book, 2001-2002, accessed May 29, 2017, <http://www.usda.gov/factbook/chapter2.pdf>.

²³ US Department of Agriculture, "USDA's Activities: Recovery/Donation: Federal Laws," *USDA Office of the Chief Economist*, (1996), accessed September 4, 2016, <http://www.usda.gov/oce/foodwaste/resources/donations.htm>.

dispose one ton or more of organic materials per week.²⁴ As a part of the ban, businesses are required to identify an opportunity to reuse the organic materials and then act on it—either in the form of donating it to organizations in need, or directing it to compost or anaerobic digestion facilities.

Across the country, businesses have worked to establish government partnerships to reduce food waste. For example, Albertsons Safeway follows the EPA food waste hierarchy, a triangle-tiered graphic measurement tool that prioritizes locations and products which produce the largest environmental and economic impacts. Albertsons Safeway also tries to reduce food waste by designating some of its distribution centers as “zero waste,” meaning that 90 percent of facility waste at these locations is diverted to recycling, food banks, animal feed operations, or compost facilities.²⁷ There have also been efforts across the federal government, namely through the USDA and the EPA, to expand education on food waste. For example, the USDA releases an annual toolkit—“Let’s Glean, United We Serve”—and sponsors the annual Feds Feed Families Food Drive to raise awareness on the impact of food waste, and the importance of supporting families in need of hunger and nutrition assistance.²⁵

The USDA also created the “Food: Too Good to Waste” toolkit, and the “Reducing Food Waste: What Schools Can Do Today” and “Let’s Talk Trash” infographics to expand education on food waste in public schools. In 2013, the USDA and EPA initiated a program called the United States Food Waste Challenge, which brought together food producers, consumers, nonprofits, government agencies, and retailers to develop solutions on reducing food waste.²⁶

²⁴ MassDEP, Energy and Environmental Affairs, “Commercial Food Waste Disposal Ban,” accessed May 29, 2017, <http://www.mass.gov/eea/agencies/massdep/recycle/reduce/food-waste-ban.html>.

²⁵ US Department of Agriculture, “Let’s Glean, United We Serve,” *USDA Toolkit*, *USDA Office of the Chief Economist*, accessed September 22, 2015, <https://www.usda.gov/oce/foodwaste/resources/donations.htm>.

²⁶ US Department of Agriculture, “USDA: OEC: US Food Waste Challenge,” *USDA Office of the Chief Economist*, accessed October 4, 2015, <http://www.usda.gov/oce/foodwaste/>.

The challenge created a cross-sector arena for leaders and organizations to share best practices on ways to reduce, recover, and recycle food loss and waste.

In September 2015, the USDA and the EPA announced their first official national goal for decreasing food waste. In partnership with state and local governments, private sector companies, and charitable organizations, the ambitious goal aims to reduce food waste by 50 percent by 2030. In his announcement of the initiative, then Secretary of Agriculture Tom Vilsack said: “Our new reduction goal demonstrates America’s leadership on a global level in getting wholesome food to people who need it, protecting our natural resources, cutting environmental pollution and promoting innovative approaches for reducing food loss and waste.”²⁷ In his announcement, Secretary Vilsack discussed two new efforts: the launching of a new food waste consumer education campaign by the USDA’s Center for Nutrition Policy, and the addition of a new section of the ChooseMyPlate.gov website that would be dedicated to educating consumers about food waste reduction in order to help save money. While ambitious, the federal government continues to lack substantial policies to fully combat food waste, and as a result has drawn substantial doubt from food waste prevention campaigns such as Ugly Fruit and Veg that this goal will be achieved within the next 15 years.²⁸

A European Model to Consider

Within the global community, the United Kingdom has become a leader in the movement to reduce food waste, especially since it ranks number five on the list of developed nations in

²⁷ US Environmental Protection Agency, “EPA and USDA Join Private Sector, Charitable Organizations to Set Nation’s First Goals to Reduce Wasted Food,” *US EPA* (2015), accessed on September 16, 2015, <https://www.epa.gov/newsreleases/epa-and-usda-join-private-sector-charitable-organizations-set-nations-first-goals>.

²⁸ Ugly Fruit & Veg Campaign, <http://www.endfoodwaste.org/ugly-fruit---veg.html>; see also interview on ThinkProgress.com: <https://thinkprogress.org/the-u-s-government-wants-to-cut-food-waste-in-half-bbea65df8d>, accessed, June 6, 2017.

food waste. Since 2007, the United Kingdom has been involved in a massive food waste awareness campaign called “*Love Food Hate Waste*.” This campaign was launched by the Waste and Resources Action Program (WRAP), a registered charity that works with businesses, individuals, and communities to achieve a sustainable, resource efficient economy by helping reduce waste, develop sustainable products, and use resources efficiently.²⁹ WRAP receives funding from various government programs to develop a global food waste guidance document as a part of the international UNEP Think.Eat.Save initiative. This hybrid of public charity and government support has proven to be an excellent model for reaching the public to enact grassroots change in consumer habits.

The “*Love Food Hate Waste*” campaign has been effective throughout the United Kingdom, providing an international model for food waste reduction campaigns across the world. It achieved its success by catering its message to individual consumers and businesses by publicly presenting statistics and facts (local, regional, national, and international) on the realities of food waste. The consumer awareness campaign brought clarity to citizens about nebulous “use by” dates, advertised potential financial savings from reducing food waste, and provided resources for the elimination of food waste in the home, such as food storage and saving tips, recipes with pre-planned grocery lists, and portion planners. For example, the West London Bureau’s campaign showed a 14 percent reduction in avoidable food waste within the first six months of the campaign, an incredible success for such a young campaign.³⁰ The “*Love Food Hate Waste*” campaign has also sparked more food waste awareness movements across the United Kingdom, such as Feedback, a United Kingdom-based food waste organization. Feedback

²⁹ WRAP, “West London Love Food Hate Waste Impact Case Study,” *Love Food Hate Waste Campaign: 1* (2013), accessed September 17, 2015, http://www.wrap.org.uk/sites/files/wrap/West%20London%20LFHW%20Impact%20case%20study_0.pdf.

³⁰ *Ibid.*, 1.

started a now international recovered-food festival called “Feeding the 5000.” It also started a gleaning network that has expanded throughout the United Kingdom and the European Union. These efforts have influenced how individuals manage food waste, which has spurred a larger conversation on waste, food production and processing across the Europe.

Conclusion

Despite significant efforts across the world, food waste remains a critical global issue. The United States disproportionately stands out among other developed nations as having one of the most significant food waste epidemics with a staggering 40 percent of food wasted each year. The environmental impacts from food waste are devastating, particularly with regards to the carbon and methane footprint that food waste generates. Given that global population is expected to rise and the threats of climate change are not waning, food waste must be addressed head-on. It is critical for policymakers, businesses, citizens, and organizations to do more to address food waste and specifically change the “out of sight, out of mind” mentality that often surrounds food consumption among affluent populations. As we all know, food is an absolute necessity for all human beings, and therefore, this waste must end.

Bibliography

- Andersen, Kip and Kuhn, Keegan. "Cowspiracy: The Sustainability Secret." *A.U.M. Films and Media*, Documentary Film. Accessed October 3, 2015. Produced 2014.
- Bloom, Jonathan. *American Wasteland: How America Throws Away Nearly Half of Its Food*. Philadelphia: Da Capo Press, 2010.
- Buzby, J., Wells, H, and Hyman, J. "The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States." *Economic Information Bulletin-121, US Department of Agriculture, Economic Research Service* 16 (2014). Accessed September 13, 2015.
https://www.ers.usda.gov/webdocs/publications/eib121/43680_eib121.pdf.
- Food and Agriculture Organization. "Food waste harms climate, water, land and biodiversity – new FAO report." *Food and Agriculture Organization*. September, 2011. Accessed January 18, 2017. <http://www.fao.org/news/story/en/item/196220/icode/>.
- Food and Agriculture Organization, "Food Wastage Footprint: Impacts on Natural Resources." *Food and Agriculture Organization*. September 2013. Accessed May 29, 2017.
<http://www.fao.org/docrep/018/i3347e/i3347e.pdf>
- Gunders, Dana. "Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill." *NRDC Issue Paper* (August 2012). Accessed August 29, 2015.
<https://www.nrdc.org/sites/default/files/wasted-food-IP.pdf>.
- Natural Resources Defense Council. "Food Facts: Eat Green: Our everyday food choices affect global warming and the environment." *NRDC Food Facts* 1 (2010). Accessed October 5, 2015. https://www.nrdc.org/sites/default/files/eatgreenfs_feb2010.pdf.
- Natural Resources Defense Council. "Food Miles: How far your food travels has serious consequences for your health and the environment." *Food Hub* 2 (2007). Accessed October 24, 2015. <https://food-hub.org/files/resources/Food%20Miles.pdf>.
- Nellemann, C., M. MacDevette, T. Manders, B. Eickhout, B. Svihus, A. G. Prins, B. P. Kaltenborn, (Eds.). "The environmental food crisis – The environment's role in averting future food crises." *United Nations Environment Programme, GRID-Arendal* 32 (2009). Accessed October 1, 2015.
http://www.pbl.nl/en/publications/2009/The_Environmental_Food_Crisis_the_environments_role_in_averting_future_food_crises
- Scotto, L. Anastasia. "Combating Waste: Defeating the Paradox of Food Waste." *Barilla Center for Food and Nutrition Magazine*, June 2013. Accessed September 12, 2015.
<http://www.barillacfn.com/en/position-paper/pp-combating-waste/>.
- Ugly Fruit & Veg Campaign, <http://www.endfoodwaste.org/ugly-fruit---veg.html>. Interview on ThinkProgress.com, September 17, 2016 sourced: <https://thinkprogress.org/the-u-s->

government-wants-to-cut-food-waste-in-half-bbea65df8d, accessed June 6, 2017

US Department of Agriculture. "Let's Glean, United We Serve." *USDA Toolkit, USDA Office of the Chief Economist*. Accessed on September 22, 2015.
<https://www.usda.gov/oce/foodwaste/resources/donations.htm>.

US Department of Agriculture. "Profiling Food Consumption in America." *Agriculture Fact Book 21* (2002). Accessed October 1, 2015. <http://www.usda.gov/factbook/chapter2.pdf>.

US Department of Agriculture. "USDA's Activities: Recovery/Donation: Federal Laws." *USDA Office of the Chief Economist*, (1996). Accessed on September 4, 2016.
<http://www.usda.gov/oce/foodwaste/resources/donations.htm>.

US Department of Agriculture. "USDA: OEC: US Food Waste Challenge: Participants: Safeway." *USDA Office of the Chief Economist*. Accessed on October 4, 2015.
<http://www.usda.gov/oce/foodwaste/commitments/safeway.html>.

US Environmental Protection Agency. "Advancing Sustainable Materials Management: 2014 Fact Sheet." *United States Environmental Protection Agency Office of Land and Emergency Management 2* (2016). Accessed January 18, 2017.
https://www.epa.gov/sites/production/files/2016-11/documents/2014_smmfactsheet_508.pdf

US Environmental Protection Agency. "EPA and USDA Join Private Sector, Charitable Organizations to Set Nation's First Goals to Reduce Wasted Food." *US EPA* (2015). Accessed on September 16, 2015. <https://www.epa.gov/newsreleases/epa-and-usda-join-private-sector-charitable-organizations-set-nations-first-goals>.

US Environmental Protection Agency. "Methane and Nitrous Oxide Emissions from Natural Sources." *US Environmental Protection Agency Office of Atmospheric Programs 6* (2010). Accessed October 1, 2015. <https://www.epa.gov/nscep>.

US Geological Survey. "How Much Water Is in Common Foods and Products: USGS Water Science School." *The USGS Water Science School* (2016). Accessed October 3, 2016.
<https://water.usgs.gov/edu/activity-watercontent.php>.

WRAP. "West London Love Food Hate Waste Impact Case Study." *Love Food Hate Waste Campaign: 1* (2013). Accessed on September 17, 2015.
http://www.wrap.org.uk/sites/files/wrap/West%20London%20LFHW%20Impact%20case%20study_0.pdf.