

Winter 2017

## THE ISSUE: FOOD WASTE

By:

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*Food waste is an issue that largely goes unnoticed by the public. Many Americans do not realize how much their seemingly innocuous actions contribute to the increasing poundage of food scraps and compostable materials thrown into landfills each year, nor the impacts that this waste has on the environment. Wasteful habits are so rooted in the daily lives of many Americans that it can be difficult to adopt new behaviors. One underlying cause of the increasing food waste in America is that it is easy to ignore. Landfills are largely out-of-sight and out-of-mind, and the economic toll per person, although not insignificant, is typically overlooked. However, when examining the national or even global impacts of food waste, the effects are significantly amplified.*

### Overview

While little attention has traditionally been given to the issue, food waste in the U.S. is becoming a pressing environmental and economic problem. Each year Americans waste over 160 billion pounds of food, amounting to 40 percent of all food produced in the United States.<sup>1</sup> The average American throws away 25 pounds of food every month,<sup>2</sup> a yearly average that has risen over 50 percent since the 1970s.<sup>3</sup> That waste eventually finds its way into landfills, comprising about 21 percent of all waste. The majority of food waste occurs on the consumer and retail end of production due to various ingrained habits. Some of these habits include when homes dispose of unused produce or over portion meals, or when grocery stores discard safe, edible food to keep their displays attractive. Such practices result in an annual loss of approximately \$161 billion to both businesses and consumers.<sup>4</sup>

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<sup>1</sup>Harvard Food Law and Policy Clinic, *Harvard Law School*, February 12, 2016, [today.law.harvard.edu/](http://today.law.harvard.edu/).

<sup>2</sup>Peter Lehner, "A Recipe for Cutting Food Waste," *Tedx Manhattan*. <http://tedxtalks.ted.com/>.

<sup>3</sup>Dana Gunders, "Wasted: How America Is Losing up to 40 Percent of Its Food from Farm to Fork to Landfill," *Natural Resources Defense Council*, 2012, [www.nrdc.org/](http://www.nrdc.org/).

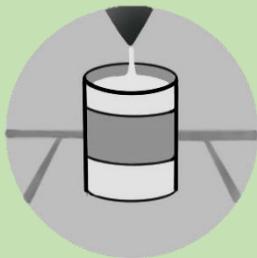
<sup>4</sup>Office of the Chief Economist, *United States Department of Agriculture*, [www.usda.gov/](http://www.usda.gov/).

# Why Does Food Waste Occur?



Food loss starts at the production level. Low market prices and high labor costs often make it uneconomical for farmers to harvest all that they produce. Strict cosmetic standards result in insufficient

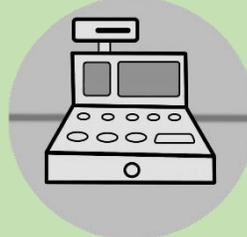
demand for imperfect-looking produce (i.e. oversized zucchinis or bent carrots). Despite gleaning and farm-to-food-bank efforts to recover this unharvested food, the vast majority is left in the fields to be tilled under.



While current recycling levels are highest among food processors and manufacturers, customers demand for a wide variety of products continues to cause inefficiencies. Each time a production line is changed it must be emptied and cleaned. Products can require

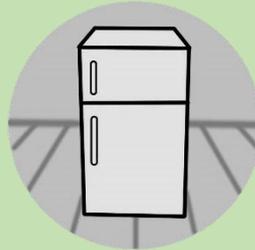
trimming for use in end products, leading to edible parts going unused.

*Infographic obtained from Buzby, Jean C., et al. The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States. Economic Research Service, Feb. 2014. United States Department of Agriculture.*



Customers demand a variety and consistency of food availability that strains inventory management and food purchasing. Businesses are reluctant to change stocking practices or product sizes if those practices are intricately tied to their brand identities.

Also, high consumer standards for freshness lead businesses to dispose of safe, edible food when it is perceived to be past its prime.



The demand for variety and abundance of food creates waste at home. For example, consumers may want a different kind of cuisine each night but lack the knowledge of how to repurpose ingredients and store food properly. As much as 55% of

food purchases are unplanned, which leads to over purchasing and food spoilage. Many families are tempted into bulk purchases of food that they will never consume to get a good deal on per-unit costs. A lack of standardization of date labels often leads consumers to throw away food before it's spoiled, causing an estimated 20% of at-home food waste. Consumers also have limited access to municipal organics food waste recycling programs in most cities and perceive several barriers to composting at home.

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Any one of these causes can result in serious economic impacts. The U.S. spends \$218 billion<sup>5</sup> and 10 percent of the national energy budget each year on growing, processing, transporting and disposing of food that is never consumed.<sup>6</sup> According to a report by the National Resources Defense Council, "Reducing food losses by just 15 percent would be enough food to feed more than 25 million Americans every year at a time when one-in-six Americans lack a secure supply of food."<sup>7</sup> To put this in perspective, the average American family of four wastes approximately \$1,500 worth of perfectly edible food every year.<sup>8</sup>

There are also environmental consequences to wasting and improperly disposing of food. Food waste is responsible for over 7 percent of the world's greenhouse gas emissions,<sup>9</sup> and consumes 18 percent of all croplands, 21 percent of all fresh water, and 19 percent of all fertilizer.<sup>10</sup> Many are unaware of the air pollution and emissions that come from cattle production and methane expulsion, as well as from farm equipment and the commercial vehicles used in shipping. There are impacts from pesticides and herbicides, as well as farm runoff. Furthermore, the incineration of

<sup>5</sup> ReFED, [www.refed.com/](http://www.refed.com/).

<sup>6</sup> Gunders, *op. cit.*

<sup>7</sup> *Ibid.*

<sup>8</sup> Pennsylvania General Assembly, House of Representatives, *House Bill 1641*, 2015-16, [www.legis.state.pa.us/](http://www.legis.state.pa.us/).

<sup>9</sup> United Nations Environment Programme, *United Nations Regional Office North America*, [www.rona.unep.org/](http://www.rona.unep.org/).

<sup>10</sup> ReFED, *op. cit.*

post-consumer food waste releases greenhouse gases, and leaving the waste to decompose in a landfill produces methane gas.<sup>11</sup> Many of these environmental externalities could be mitigated by reducing the amount of food that is thrown away or otherwise wasted.

## Existing Laws & Policies

Congress, the U.S. Department of Agriculture, and the Environmental Protection Agency have all expressed concern regarding the amount of food waste generated in the US, and some laws and regulations have been adopted to combat this issue. Congress, for example, enacted the Bill Emerson Good Samaritan Food Donation Act in 1996 to encourage donations to non-profits by providing liability protection to food donors.

Additionally, a provision of the IRS tax code provides tax deductions for businesses to encourage donations of quality, wholesome food to nonprofit organizations serving disadvantaged populations. The U.S. Federal Food Donation Act of 2008, meanwhile, encourages federal agencies and government contractors to donate excess food to eligible nonprofit organizations.<sup>12</sup>

Several states have also signed food waste-related initiatives into law. One notable example is Massachusetts, where legislators have placed a statewide ban on the combustion and landfill disposal of commercial organic waste. To achieve their goal of reducing food waste 35 percent by 2020, the Massachusetts Department of Environmental Protection collaborated with RecyclingWorks to help monitor compliance from participating organizations.<sup>13</sup> There are also states that offer food donation tax incentives. States such as Iowa, Colorado, Oregon, Arizona and California currently grant tax credits to farmers who donate leftover food to charity.<sup>14</sup>

## Proposed Legislation

The growing impacts of food waste have spurred legislative activity at the state level in recent years. For example, a bill introduced in Maryland would establish a Yard Waste and Food Residuals Diversion and Infrastructure Task Force to reduce organic food waste disposed of in the state's landfills.<sup>15</sup> This first step in assessing the severity of Maryland's food waste could be a sign of more proactive legislation in the future.

Similarly, New Jersey introduced legislation that would require large food waste generators to separate and recycle organic waste if they (1) are located within a reasonable distance of a facility that can accommodate large amounts of waste and (2) generate more 51 tons of organic waste per year.<sup>16</sup> This legislation attempts to balance two competing interests by requiring organic composting while keeping transportation expenses to a minimum for impacted businesses.

Here in Pennsylvania, legislative activity on food waste has been limited. House Bill 164, sponsored by Representative Michael Driscoll (D-Philadelphia), which proposes a food donation tax

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<sup>11</sup> Jean C. Buzby, et al., "The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States," *Economic Research Service for the United States Department of Agriculture*, 2014, [ers.usda.gov/](http://ers.usda.gov/).

<sup>12</sup> Office of the Chief Economist, *op. cit.*

<sup>13</sup> Executive Office of Energy and Environmental Affairs, *Government of Massachusetts*, [www.mass.gov/](http://www.mass.gov/).

<sup>14</sup> Harvard Food Law and Policy Clinic, *op. cit.*

<sup>15</sup> Maryland General Assembly, House of Representatives, *House Bill 743*, 2016, <http://mgaleg.maryland.gov/>.

<sup>16</sup> New Jersey Legislature, Senate, *Senate Bill 771*, 2016, [custom.statenet.com/](http://custom.statenet.com/).

credit, was introduced during the 2015-16 Legislative Session. The bill would grant tax benefits to farmers and retailers wishing to donate excess food to charity, much like states with existing tax credit programs.<sup>17</sup>

During the same Legislative Session, in an effort to raise awareness about food waste and food donation, Senators Rich Alloway (R-Franklin) and Lisa Boscola (D-Lehigh) introduced resolutions that would designate October as “Food Pantry Donation Month.”<sup>18</sup> To inform legislative decisions on food waste in the future, it is important to understand some of the more prevalent solutions tried in other parts of the country.

## Potential Remedies

Because the potential remedies for alleviating food waste are diverse in both scope and approach, those impacted by such initiatives can span multiple sectors of the economy. Food waste legislation or regulation could affect stakeholders in both the private and public sectors. Those potentially impacted by food waste initiatives include educational institutions, consumers, farmers, non-profits, restaurants, food service providers, grocery retailers and government agencies. Building consensus among stakeholders is a difficult, but necessary step in effectively combatting food waste.

There are many strategies for reducing, preventing or diverting food waste; however, this issue brief will highlight six common strategies used to reduce food waste.

### Centralized Composting

Food waste can be significantly reduced by supporting centralized composting facilities or adding new composting facilities that are more accessible to the public, both in urban and rural communities. This has the potential to reduce greenhouse gas emissions by 2,605,000 tons per year and create up to 9,000 jobs in the industry.<sup>19</sup> Furthermore, centralized composting is expected to be successful in the Northeast due to high market values for compost and the high costs of disposal.

Challenges to implementing this strategy include the difficulty of composting to compete with the prices of alternatives, such as synthetic fertilizer. Additionally, winter conditions in the Northeast can stall composting operations by preventing productivity during colder months.

### Standardizing Expiration Date Labels

Standardizing or eliminating “Sell By” dates can reduce consumer confusion and consequently reduce the amount of food that is discarded. This has the potential to reduce food waste by approximately 398,000 tons per year and have an economic value of \$4,547 per ton.<sup>20</sup> Consumer confusion about “sell by,” “best by,” “use by,” and “best before” dates directly leads to the disposal of 20 percent of edible food each year. Nearly 90 percent of Americans throw away edible food totaling \$29 billion per year, and unstandardized date labels are responsible for approximately 5-10 percent.<sup>21</sup>

Some of the challenges to implementing this strategy include:

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<sup>17</sup> House Bill 1641, *op. cit.*

<sup>18</sup> Pennsylvania General Assembly, Senate, *Senate Resolution 486*, 2015-16, [www.legis.state.pa.us](http://www.legis.state.pa.us)

<sup>19</sup> ReFED, *op. cit.*

<sup>20</sup> *Ibid.*

<sup>21</sup> *Ibid.*

- Combatting the low incentive for manufacturers to change their practices. Date label standardization would not contribute to lower costs, increased revenue, or a reduction in liability.
- Conducting additional research on the profitability for retailers to push for standardizing date labels. In lieu of label standardization, states could ease restrictions on the sale or donation of food after the “Best By” or “Sell By” date.

## Donation Tax Incentives

Implementing donation tax incentives would encourage farmers and retailers to donate excess food to charities or nonprofits. A donation tax credit could lead to the recovery of 638 million meals annually in the U.S.<sup>22</sup> It can take the form of tax credits or tax deductions and can be available to farmers, retailers, restaurants and foodservice providers.

One challenge of implementing a donation tax credit is that smaller, less established businesses and farms may have difficulty claiming the tax benefits if the law is inventory-based and requires detailed recordkeeping. Such recordkeeping requirements could increase costs for small businesses or family farms participating in the program.

## Trayless Dining Programs

Implementing trayless dining programs in schools, universities and other all-you-can-eat dining facility saves money, water and food. The purpose of such initiatives is to reduce over-portioning by consumers. Two examples of institutions that have adopted a trayless dining program include the University of Massachusetts Amherst and Dickinson College here in Pennsylvania. At UMass, dining services removed trays from all locations in 2009 and reduced post-consumer food waste by over 30 percent.<sup>23</sup> Dickinson reported a significant decrease in natural gas consumption by eliminating the need to heat water needed to wash the dining trays.<sup>24</sup>

To increase the popularity of trayless dining programs, the General Assembly could take several different approaches. Legislative strategies may include:

- Offering tax incentives to private businesses, schools and universities for going trayless.
- Requiring or encouraging public schools and universities to adopt trayless dining initiatives.
- Requiring or encouraging cafeterias in public buildings to participate in trayless programs.

## Donation Transportation

Providing municipal food transportation could help increase local food donations. This would require the provision of small-scale transportation infrastructure for local recovery as well as long-haul transport capabilities for larger loads. To help fund a transportation system for food donations, the state could provide grants or loans for the expenses of such transportation, which has the potential to save \$2,294 per ton of food waste.<sup>25</sup>

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<sup>22</sup> *Ibid.*

<sup>23</sup> *Ibid.*

<sup>24</sup> Climate Change Action Plan Working Group, “Dickinson College Climate Change Action Plan: Climate Neutral by 2020,” *Dickinson College*, 2009, [www.dickinson.edu/](http://www.dickinson.edu/).

<sup>25</sup> ReFED, *op. cit.*

Like other strategies, however, this method is not without its challenges:

- The cost of hauling small loads for shorter distances is more expensive compared to larger loads hauled over longer distances.
- Perishables need to be delivered quickly due to spoilage risks, or transported in refrigerated trailers, which can be costly.

## Educational Campaigns

The state could launch educational campaigns to inform consumers on proper disposal of food waste and to inform retailers on donation liability laws. More specifically, research has shown that it could be mutually beneficial for the environment, economy and consumers if citizens learned how to make better use of leftovers and minimize spoilage. To promote this relationship, Walmart launched a campaign in 2015 that offered tips to consumers for reducing food waste.

The biggest challenge to educational campaigns is overcoming apathy and indifference. Consumers often have difficulty envisioning how their individual actions can affect such a large issue and consequently cannot recognize their personal role in combatting food waste.<sup>26</sup>

## Conclusion

Food waste is a broad issue, affecting stakeholders in various sectors of our government and economy. The scope of the issue alone has been enough to raise red flags at the federal and state level. Here in Pennsylvania, while action has been limited, potential legislative initiatives are beginning to take shape as more light is shed on this emerging topic.

The lengthy list of the causes and sources of food waste results in a comparable list of potential remedies, ranging from grassroots initiatives to state and federal regulations. The remedies covered in this report represent a snapshot of strategies on which the state legislature has the power to act. Each strategy has its own opportunities and challenges, yet they all offer a unique approach to combatting the increasingly problematic level of food waste occurring not just in the Commonwealth, but also across the nation.

## Editor's Note

*Green Papers are issued periodically by the Joint Legislative Conservation Committee staff. As indicated by the subtitle, each Green Paper is a brief on a specific environmental issue currently being examined by the Committee. Green Papers are intended to provide a more in-depth look at specific issues than normally permitted by other Committee publications, such as the Committee's monthly newsletter, the Environmental Synopsis.*

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<sup>26</sup> *Ibid.*