

Commercialization and Consumption: Food Waste in America

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Commercialization and Consumption: Food Waste in America

The USDA estimates that 30 to 40 percent of edible food in the United States is wasted, which, in 2010, would have cost over 100 billion dollars (USDA, n.d.b). According to an estimation performed by the USDA's Economic Research Service, around ten percent of American households had insufficient food access in 2018 (USDA ERS, 2019). The quantity of wasted food in the United States appears to be ample to offset insufficient food access many times over, and the substantial cost of waste indicates that reduction should be a priority.

A simplified version of the U.S. food system would consist of farmers and manufacturers, or producers; stores and food service establishments; and consumers. The system is subject to policies, regulations, and innovations in technology (Committee, 2015). A logical first step in seeking waste reduction would be to analyze the source of food, the producers. According to the USDA's Economic Research Service, however, a substantial portion of waste occurs "at the retail and consumer levels" (USDA, n.d.b). One could argue that this waste may misguide producers when determining their demand; therefore, a better understanding of food waste may come from looking at consumers and the businesses and organizations they interact with: food service establishments, advocacies, charities, and food retailers. Many of these businesses and organizations recognize their abilities to influence food waste; however, the strategies they use to reduce food waste are limited by their agendas, which often prioritize satisfying the interests of consumers or supporters.

Review of Research

Researchers agree that social and economic factors can contribute to food waste. Thyberg and Tonjes (2016) contend that attitudes toward food waste can differ across countries. Hertel and Lopez Barrera (2020) found that countries' food waste may be a product of their economies. Abiad et al. (2018) suggest that people who live in rural areas waste less than those that don't. Other researchers are exploring food waste's economic and social impacts. Rowney (2014) contends that a better use of resources could increase businesses profits and create jobs. Drabik et al. (2019) found that consumers' waste can change their purchasing patterns and that these changes can affect other parts of the food industry.

Food waste is often attributed to producers. The Union of Concerned Scientists (2016) contends that federal policies influence pollution and monetary waste in the farm system and that these policies have created pressure for farms to increase production to large scales. Carmen Ruiz et al. (2020) suggest that applying data analytics and machine learning can help producers reduce their food waste and save money. Franke et al. (2018) looked to create a system to quantify food wasted in production in Nordic countries. Finding the source of waste is important in understanding how it comes about, but it is equally important to consider that food is likely being produced to keep up with some perception of demand. Barthel et al. (2010) found that "post-consumer food waste" is much higher than other types of waste in wealthier countries.

Consumer facing businesses have also been found to produce significant waste. Heikkila et al. (2015) found that 20 percent of food "handled and prepared" in Finland's food service industry is wasted and that buffet services are major contributors to the waste. Alexieva et al. (2019) call for training in restaurants to help them identify waste. Cicatiello and Franco (2020)

claim that waste in food retail is often underestimated due to misclassification of wasted items. Blasi et al. (2017) also claim that retail food waste is underestimated and contend that a substantial portion of retail waste is edible.

Researchers argue that consumers' contributions to food waste can fluctuate due to a wide variety of factors. Buzby et al. (2014) attribute waste in food retail to buyers' visual standards and to shelf overstocking. Ho et al. (2016) and Davenport et al. (2019) agree that unclear food labels can lead to waste. Davenport et al. (2019) also found that time spent shopping and food nutritional value can affect consumer food use. Liu and McCarthy (2017) correlated food waste with consumers' age and waste awareness. Dobernig et al. (2018) state that many people who are wary of their food waste are more worried about the personal implications of it rather than the societal ones. Banchelli et al. (2018) related consumers' buying decisions with their waste and found that these decisions can be influenced by their surroundings. The causes of consumers' food waste are well documented; further analysis can be done on how certain businesses and organizations are looking to influence it.

Food Service Establishments

Restaurants

Food service establishments' means of pleasing their customers can vary widely and can entail food waste (Hawkins et al., 2014; IDEO, 2017). To fulfill customers' expectations, buffets and fast-food restaurants must waste some food, but accurate prediction of demand will limit the quantity. Fast-food restaurants may lose customers if they consistently have long wait times, but unpurchased prepared food is often wasted (Gill, 2019; Hawkins et al., 2014). McDonald's has

recognized its waste potential and is working with its restaurants and suppliers to reduce it. The company donates food to charities in the U.S. and recycles cooking oil in the U.K. (McDonald's, 2019). Chick-fil-A has adopted an approach it calls “cook less, more often” to reduce waste of prepared food; it also has created a program called “Shared Table” for franchises to donate food (Gill, 2019). Buffets keep food trays stocked to please customers, incurring waste when customers don't eat everything that is prepared. Buffets and restaurants that offer all-you-can-eat menus cause more waste and some plan to redesign their customer experiences to reduce it (IDEO, 2017; Trejos, 2019).

To attract customers, restaurants may accept high food waste. Restaurants may discard unattractive food deemed unservable, and uneaten served food, to preserve their reputations for high food quality and ample portion sizes (Barclay, 2012; Nania, 2019). If food waste reduction entails changes in the dining experience, some restaurants may forgo it to retain their customers (Hawkins et al., 2014). A reputation for excessive food waste, however, can reduce a restaurant's customer base. The National Restaurant Association (2018) found that many diners take a restaurant's waste reduction effort into account when choosing whether to eat there. Waste reduction strategies have helped restaurants target waste-aware consumers, which can lead to more business (NRA, 2018).

Some restaurants and organizations contend that high food quality need not entail substantial food waste. To bring attention to food waste, chefs in Washington, D.C., at a 2019 event, created dishes from food that is normally unused (Nania, 2019). Blue Hill Farm, a restaurant in New York boasting stellar reviews, attracted attention from celebrity chefs when it committed to a temporary menu incorporating what wastED (2020) describes as “the overlooked

byproducts of our food system” (Richman, 2014; Vines, 2017). At the 2019 NYC Food Waste Fair, chefs made dishes to compete in its “zero food waste challenge” and attended workshops about food waste reduction (NYC FWF, n.d.a; NYC FWF, n.d.b).

Schools and Universities

Student behaviors and school initiatives influence food waste. Public schools must provide meals that meet USDA nutrition standards, but students may waste foods they dislike (USDA, 2018; USDA, 2020). USDA endorses some waste reducing practices, such as “setting up a sharing table” and “self-serve and self-portion” lunches. USDA also urges schools to educate their students about food waste (USDA OCE, n.d.).

Some universities are looking to limit their food waste by establishing programs in which their restaurants and students can participate. Universities like James Madison University (JMU) and UVA require a subset of their students to purchase meal plans; their dining establishments must be ready to serve crowds of students, which means waste is likely inevitable (JMU, 2020; UVA Student Affairs, 2020). UVA is committed to composting when possible and makes bins available for students to do the same. The university also has partnerships that allow for its dining establishments to recycle their fryer oil and for these establishments to acquire produce from local farmers (UVA Dining, 2020). JMU has waste awareness events in two of its dining halls; it also donated over one thousand pounds of food in its 2018-2019 academic year (JMU Dining Services, 2020). Other major universities outside of Virginia have also set up food waste programs. For example, the University of Colorado has a “Scrape Your Plate Day” for students to compost food when returning trays (UCEC, n.d.). The University of Texas at Austin has a program called “Texas Athletics Sustainability” that is committed to reducing waste at the

university's home football games by donating, recycling, and composting (Texas Athletics, 2017). The University of California, Berkeley, has an incentive for students who don't bring uneaten food to its dish return stations (Cal Dining, n.d.). Purdue University had a campaign called "Erase The Waste" that lasted five weeks and featured events dedicated to fostering awareness of food sustainability (PUDC, n.d.).

Advocacies

Organized student groups at some universities are acting to prevent food waste on their campuses. The Texas Athletics Sustainability program enlists the help of student groups to inform game attendees of sustainability efforts (Texas Athletics, 2017). Students at the University of North Carolina have formed many organizations with concentrations including hunger reduction and sustainability improvement (Heel Life, n.d.a, n.d.b, n.d.c). At the University of Virginia, FoodAssist collects excess catered food left over after fraternity and sorority house dinners. As of late 2018, the group was planning to join the Food Recovery Network (Kelly, 2018). Founded by University of Maryland students who saw food being wasted in dining halls, the Food Recovery Network now consists of university chapters spanning the vast majority of states; the network of chapters has donated millions of pounds of food to prevent waste (FRN, 2017a, 2017b).

Many organizations advocate for donations and food waste reduction. ReFED, an organization partnered with large businesses and foundations, such as Wells Fargo, General Mills, and Walmart Foundation, suggests multiple strategies for waste prevention including: educating consumers, improving production techniques, and finding alternative uses for certain

food items (ReFED, 2020a, 2020c). ReFED organizes its food waste prevention suggestions so that tailored information is easy to access for consumers, grocery stores, restaurants, and many other potential contributors to food waste in America (ReFED, 2020d). Food Tank, hoping to reduce hunger and improve sustainability, provides a platform for stakeholders in food waste to share ideas and information (Food Tank, 2020). The World Wildlife Fund is working with businesses and organizations to help them evaluate their food waste and to help them adopt waste reducing practices because it is concerned about the substantial amount of water and land used to produce wasted food (WWF, 2020a, 2020b). Feeding America, an organization devoted to reducing hunger, points out that a substantial number of Americans are struggling to acquire meals despite how much food is wasted domestically (FA, 2020c). The organization has published research about hunger in certain demographics, advertises ways for people to help its cause, and makes it easy for people to find nearby food banks (FA, 2020a, 2020b, 2020d).

Government agencies find themselves advocating for consumer action in food waste reduction because of its wide range of impact. The EPA (2016) warns that food waste generates substantial methane emissions from landfills. The agency has published a hierarchy of its preferences for discarding food; it prefers that people look to donate their surplus food or feed it to animals before composting or discarding it (EPA, 2020). The FDA publishes guides to explain food labels to consumers and endorses techniques such as setting refrigerators to proper temperatures to extend shelf-life, not leaving perishable food out for an extended period of time, and planning meals to avoid overbuying (FDA, 2019a, 2019b). The USDA (n.d.c) points out the direct relation between food and resource waste. To fight food waste, the agency is developing innovations to prevent spoilage, publicizing food waste, and fighting waste in schools (USDA,

n.d.a). EPA, FDA, and USDA have an official agreement to cooperate to reduce food waste (Gottlieb et al., 2018).

Charities

The EPA endorses food donation as a way for people to save money in taxes and help their communities (EPA, 2019). Charities, in their efforts to reduce local hunger, allow consumers and businesses to take initiative in reducing food waste. Food kitchens provide prepared meals for their clients, who may not be able to provide them for themselves due to certain conditions (Kitchens for Good, 2019). These charities may find unconsumed food to be valuable ingredients in their meals, which can directly prevent it from being discarded, especially if it is perishable (Baldwin, 2016; Barclay, 2012; Kitchens for Good, 2019; Nania, 2019). Food kitchens find creative ways to craft meals from food donations that alone may seem useless (Srikanth, 2020). Alternatively, donors can help reduce food waste by donating their excess food to food banks rather than discarding it. Food banks work to reduce hunger by acquiring food items, such as groceries and produce, then distributing them (FA, 2016; FA, 2020e).

Large organizations with a national presence often help smaller charities operate. Feeding America enables local charities to acquire donations from sources to which they otherwise may not have access (FA, 2016, 2020e). Move for Hunger makes it easy for Americans to donate excess food when they are moving out of their homes. Its network of moving companies acquire food items their clients decide to leave behind and deliver them to charities (MFH, 2020). The Salvation Army has its own food pantries and stresses their importance in areas with poor food accessibility (Salvation Army, 2020).

Donating food to charities may not help reduce food waste as much one might think; donated food can still find its way to landfills. Charities must take great care in ensuring that they store food donations properly, and some may even work to provide their clients with meals that meet their particular dietary restrictions (FA, 2020e; MOWCA, 2016). If donations to such organizations aren't suitable to be given to clients, they could be discarded. Charities may face liability issues if they aren't careful with food they serve or distribute (Bill Emerson).

Federal legislation offers liability protection for food donors, but some donations may not be given or accepted because of fear of repercussions. This fear could perhaps be because of a lack of legal understanding or simply a lack of awareness (Bill Emerson; Lunsford, 2015; ReFED, 2020b; NRA, 2018). According to the National Restaurant Association's 2017 Restaurant Sustainability Survey, a substantial portion of restaurants are not aware of food donation liability protection (NRA, 2018). There are organizations, therefore, that are devoted to spreading awareness of this legislation and potentially expanding upon it. The University of Arkansas School of Law promotes change in food-related legislation and business strategies hoping to limit food waste and resource use (UA School of Law, n.d.). The Natural Resources Defense Council is also lobbying for legislation reform, specifically regarding donor liability protection and tax benefits (NDRC, 2020). RecyclingWorks in Massachusetts has published a guide that advises businesses about why and how to donate food (RWMA, 2017).

Food Retailers

Food retailers sit between producers and consumers in America's food system, which gives them substantial power to make changes to food waste (Committee, 2015; Kroger, 2019;

Walmart, 2020). Some food retailers recognize their impact on food waste and seek to limit it. Food Lion has partnered with multiple organizations to reduce hunger and lets its customers know how they can help (Food Lion, 2020). Walmart provides resources for its suppliers to reference to improve their sustainability (Walmart, 2020). Publix sends food left over after production to farms to feed animals (Publix, 2020). Kroger looks to close the gap between its supply and demand and donates what it can (Kroger, 2019). Costco repurposes edible unsold food by using it as ingredients for other foods and donates what it can to domestic food banks (Costco, 2020).

Food retailers can simultaneously create a better shopping experience for customers and limit food waste. Costco has changed the way it packages eggs to allow shoppers to more easily view them, potentially safeguarding these items from damage that would cause them to go unsold (Costco, 2020). Walmart and Kroger are working to standardize labels on items in their stores, which could limit waste due to consumer confusion (FDA, 2019a; Kroger, 2019, Yiannas, 2016). Kroger, according to its 2019 Environmental, Social & Governance Report, looks to reduce prices on items that are nearly expired (Kroger, 2019). As online grocery shopping emerges, this mark-down process could potentially become easy to implement; more retailers may employ it (Bornemann, 2015). Better meal planning, according to the FDA, can limit consumers' waste; many retailers provide aid in this process for their customers (FDA, 2019b). Wegmans aids meal planning by publishing recipes for meals that use ingredients customers can find in-store (Wegmans, 2020). Kroger helps customers find uses for nearly expired food; it has published recipes in which its customers can include food they would likely discard (Kroger,

2019; Kroger, 2020). Home Chef delivers the necessary ingredients for recipes to customers so they can prepare meals on their own (Home Chef, 2020a, 2020b).

Some retailers are limiting their produce waste as they look to foster positive reputations and generate revenue. Food retailers may find unattractive produce harder to sell; perishable produce can easily go to waste when unsold (Baldwin, 2016; Moore, 2016; Van Auker, 2018). One of Walmart's approaches to this problem, called Fresh Angle, has earned positive reviews. The stores using this approach stock less produce inventory to shorten the period of time items sit on shelves, which can preserve their quality before being purchased and extend their shelf-lives in consumers' homes (Moore, 2016). In 2016, some of Walmart's Florida stores were looking to help sell their suppliers' unattractive apples as part of their food waste reduction efforts (Baldwin, 2016). This environmentally aware act may have drawn waste aware consumers to their stores (Kuijpers et al., 2018). Wegmans uses produce its customers may find visually flawed in its "culinary operations" and seeks to compost or donate what is left over (Van Auker, 2018).

Conclusion

Businesses and organizations are generally aware of their societal impacts but do not wish to tarnish their reputations. In order to reduce food waste, food service establishments, advocacies, charities, and food retailers account for their own interests and for those of their target customers and audiences, then look to implement strategies within their means that align both of them. These strategies can manifest in ways that may not appear directly related to production or consumption. Future research can be done to explore how businesses can use

marketing as a tool to reduce waste and how the changes food retailers and restaurants make affect their suppliers.

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