



THE FIGHT AGAINST FOOD WASTE

What We Can Learn from 10 Leaders
Tackling Food Waste Along the Supply Chain



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Executive Summary

Food waste is an environmental tragedy. Wasted food is not only a waste of natural resources, but it is also a source of avoidable pollution. Furthermore, the race to generate increasingly excessive quantities of food leads to the use of environmentally harmful farming practices that could be replaced with better practices if crop yield goals were better aligned with actual demand. To make matters worse, global food waste accounts for eight percent of human-caused greenhouse gas emissions globally, making it a major, wholly unnecessary contributor to climate change.¹

Yet while 161 to 335 billion pounds² of food are wasted in the U.S. annually, about 13.8 million households were food insecure in both 2019 and 2020.³ The absurd fact of hunger amidst abundant food presents a clear opportunity to solve a significant social problem as part of efforts to drive down the environmental impact of food waste.

Food waste is not just a threat to the environment and public wellbeing. Wasted food is wasted money and resources for the businesses and consumers that contribute to it. Annually, the cost of food loss and waste amounts to an estimated \$408 billion in the U.S. alone, which is money that could go to productive uses for companies and households.⁴ As such, it is in the best interests of the public and entities within the food supply chain to cut down on food waste.

Although the task of eliminating billions of pounds of food waste while simultaneously ensuring millions more mouths are fed may seem daunting, many entities all along the supply chain have spearheaded initiatives to tackle the problem. In this report, we look at some of these leaders—from farms and grocery stores to restaurants, schools, and hospitals—that have taken action to fight food waste. From these examples, we highlight food waste reduction best practices and draw takeaway tips that can guide any person or organization looking to combat food waste. While there are many entities that are taking critical steps to fight food waste, the ten we highlight in this report have been particularly effective in combining tactics to achieve greater food waste reduction outcomes and adhering to the Environmental Protection Agency's (EPA) hierarchy for food recovery, which emphasizes preventing food waste in the most sustainable and socially responsible manner possible. The ten entities are:

- 1) Boundless Farmstead
- 2) Pace Family Farms
- 3) HelloFresh
- 4) Hannaford Supermarkets
- 5) The Kroger Company
- 6) Sprouts Farmers Market
- 7) Beth Israel Deaconess Medical Center
- 8) Equinox Restaurant
- 9) LaSalle Language Academy
- 10) The University of Texas at Arlington

Following these ten, we will also briefly identify other leaders in food waste reduction. These entities show that fighting food waste can happen at every point in the food supply chain. Despite the differences between these companies and institutions, it is clear that tracking food waste, planning production and inventory around demand, reimagining new uses for conventionally discarded items, embedding food donation in everyday practices, adopting multiple mechanisms to divert food waste, emphasizing food waste education and stakeholder support, and exploring innovations

are key methods to meaningfully reduce food waste.

From glean teams at family farms to Stop Food Waste Day at college dining halls, the food waste reduction practices of all of these entities demonstrate ways we can combat food waste, and their results show that significantly reducing food waste is achievable. Armed with the knowledge of what is possible, we hope that other entities along the food supply chain will use the examples of these ten businesses and institutions as a catalyst to fight against food waste.

Introduction

The environmental and social problem of food waste plagues the United States. The EPA estimates that 35% of America's total food supply — approximately 161 to 335 billion pounds annually — is wasted.⁵ The environmental impacts of food waste are two-fold. Firstly, food production takes a toll on the environment and requires significant resources. When food is wasted, these limited resources are consumed and environmental degradation occurs without cause. Wasted food alone uses 140 million acres of agricultural land. This land usage contributes to the loss of biodiversity and ecosystem services. Wasted food also uses 5.9 trillion gallons of freshwater from surface and ground water each year and 664 billion kilowatt-hours of energy which is enough to meet the general fresh water and energy needs of 50 million American homes.⁶ Furthermore, the annual greenhouse gas (GHG) emissions from the production of wasted food in the U.S. is equal to the greenhouse gas emissions of 32.6 million cars.⁷ Wasted food is the source of a multitude of unnecessary and preventable environmental costs.

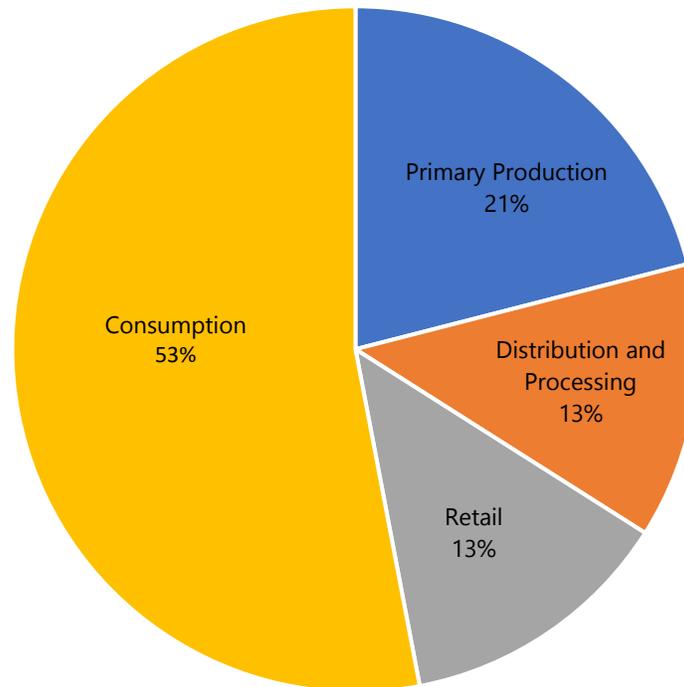
Secondly, food waste itself has significant consequences. Food comprises the greatest portion of trash in the United States, accounting for 24% of landfilled municipal solid waste.⁸ Landfills are the third largest source of human-related methane emissions in America, and methane emissions are one of the biggest contributors to global warming.⁹ Food that ends up in landfills worsens global warming by releasing methane as it degrades. Given the

environmental impacts of food waste and its significant contribution to greenhouse gas emissions, dramatically decreasing food waste is a crucial element of combating climate change.

Beyond the environmental benefits of reducing food waste, effectively allocating food is an opportunity to ensure that no one goes hungry when we have the ability to produce enough food to meet global nutritional needs.¹⁰ Despite the striking amount of food waste generated annually, more than one in ten American households were food insecure in 2020.¹¹ America's food waste is a problem of overproduction and improper distribution. Decreasing food waste is both a key to fighting climate change and other environmental pollution as well as a way to improve social conditions by reorganizing our food supply chain to take advantage of all the abundance we have produced.

Meaningfully reducing food waste in the United States requires preventing the unnecessary production of food and diverting food waste from landfills. According to the EPA, the food supply chain in the U.S. consists of four main parts: primary production, distribution and processing, retail, and consumption.¹² The prevention and diversion of food waste can, and must, occur at every step of the supply chain from farms to family dinner tables.

Sources of Food Waste along the Food Supply Chain in the U.S.



Source: ReFed 2021 via EPA *From Farm to Kitchen: The Environmental Impacts of U.S. Food Waste* report

Primary Production

Primary production includes the “farming and harvesting of plants and animals, resulting in raw food materials.”¹³ Although estimates for what percentage of food waste occurs at each step of the supply chain vary, analysis by ReFED in 2021 suggests that primary production accounts for 21% of food loss and waste.¹⁴ Drivers of food waste include weather and disease that harm crops and livestock, market conditions that make the cost-benefit balance of bringing food to market uneconomical, cosmetic buyer standards and real or perceived food safety concerns, labor shortages that prevent full harvesting, order changes and demand shifts and the incidental capture of undesired species while fishing.¹⁵

Distribution and Processing

Distribution and processing encompass “packaging, processing, manufacturing, transporting, distributing, and wholesale vending of food and food products.”¹⁶ By ReFED’s estimates, 13% of food waste is generated by distribution and processing.¹⁷ In some cases, a retailer’s operations may encompass distribution and processing, so these retailers are responsible for food waste generated in this stage of the supply chain. In other cases, separate companies handle distribution and processing. Causes of food waste in distribution and processing include trimming produce and food products, “processing inefficiencies,” “equipment, packaging and forecasting errors,” “improper handling” and “rejected shipments.”¹⁸

Retail

The retail category includes “selling food and food products to the public at supermarkets or other stores.”¹⁹ Retail is responsible for approximately 13% of food waste according to ReFED.²⁰ Possible sources of retail food waste are poor inventory management, unsold perishable prepared foods, improper or unclear date labels that cause edible food to be removed from shelves, and packaging that does not optimize shelf life.²¹

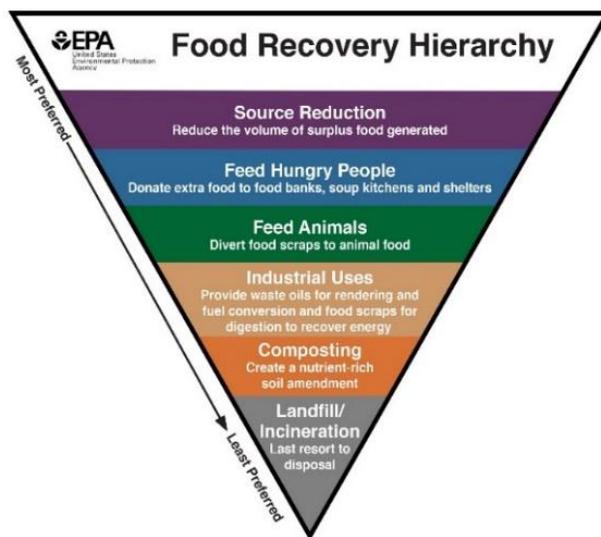
Consumption

The consumption stage of the food supply chain encompasses a wide range of actors. Consumption includes “receiving food at home or away from home, such as at restaurants, cafeterias, institutions, or other locations, regardless of whether the food is ultimately eaten or wasted.”²² The consumption category accounts for the greatest proportion of food waste in all food waste studies reviewed during the writing of this report. ReFED estimates that consumption is the source of 53% of America’s food waste.²³ In the food service industry, improper portions, demand fluctuations, and poor kitchen practices can all lead to food waste. In people’s homes, lack of awareness and knowledge of food waste, untimely food expiration due to poor storage, confusion over date labels, inadequate planning, impulse buying, and purchasing bulk quantities contribute to food waste.²⁴

Combating Food Waste

The top priority in reducing food waste is preventing the existence of unnecessary food in

the first place. In the EPA hierarchy of food recovery, “source reduction” is the most preferred method. Although farmers and other primary producers of food bear the chief responsibility for preventing the production of excess food, distributors, retailers, and consumers all shape the market for food, and therefore affect how much food is produced. Once food exists, food waste can be reduced by diverting food from landfills, which requires finding other uses for food that would otherwise become waste. The EPA’s hierarchy prioritizes “feed[ing] hungry people,” then “feed[ing] animals,” followed by “industrial uses,” “composting,” and finally “landfill/incineration.”²⁵ All entities along the supply chain have the ability to divert food waste from landfills.



Best practices to prevent and reduce food waste may look different at different stages of the supply chain. However, our analysis of food waste management practices from entities across the supply chain revealed seven key ways to fight food waste:

- 1) Track food waste;

- 2) Plan production and inventory around demand;
- 3) Reimagine new uses for conventionally discarded items;
- 4) Embed food donation in everyday practices;
- 5) Adopt multiple mechanisms to divert food waste;
- 6) Emphasize food waste education and stakeholder support;
- 7) Explore innovations.

This report highlights entities at each stage of the supply chain that have adopted best practices for preventing and diverting food

waste. Although the entities featured in this report are not an exhaustive list of companies and organizations combating food waste, they provide examples of effective food waste reduction techniques and the impact these efforts can have. The following examples demonstrate that at any point along the food supply chain, organizations large and small can meaningfully fight food waste. From this report, farms, grocery stores, businesses, and other institutions can draw inspiration for food waste reduction methods and the confidence that these practices are feasible and effective.

Primary Production

Boundless Farmstead

Background

Boundless Farmstead is a twenty-acre mixed vegetable farm outside of Bend, Oregon. It includes ten acres of vegetables and rotational cover crops, five acres of pastures and hay, and five acres of orchards.²⁶

Boundless Farmstead sells and distributes food wholesale to restaurants and grocery stores and through a local farmers market and a community sponsored agriculture (CSA) program.²⁷ Through the CSA, community members purchase a share of the farm each season so that the ownership and risk of the farmstead's production are distributed through the community and demand is more predictable.²⁸ In exchange, participants receive a portion of the Boundless Farmstead's production each week during the growing season.²⁹

Boundless Farmstead views itself as a "steward of the Earth," prioritizing "sustainability in all facets of life" and waste reduction.³⁰

Food Waste Reduction Practices

Boundless Farmstead first minimizes food waste through "extensive crop planning."³¹ Before planting each season, farmers at Boundless discuss product needs for the upcoming year with chefs and other wholesale buyers. Boundless Farmstead also reviews data from the previous year's farmers market and

CSA participation. After adding a "safety factor" to account for unpredictable weather and circumstances, they use this information to precisely plant the quantity of food they will need in the future.³² This method allows Boundless Farmstead to conserve precious resources and prevent food waste before it exists. During the growing season, farmers complete "whole field walks to determine how all crops look and how best to utilize them in the coming weeks" twice a week.³³ Emphasizing planning enables Boundless Farmstead to head off food waste before it becomes a problem by finding uses for the products they have.

Boundless Farmstead uses a "fast and clean" harvest to get products out of the field as quickly as possible which decreases food waste by increasing the shelf life of products. A fast and clean harvest means that produce is harvested from the fields as soon as it is ready for harvest so that it is fresh for as long as possible. Moreover, careful harvesting techniques are used so that food is not damaged in the process and no part of the produce is left behind.

Boundless Farmstead also partners with local nonprofits to reduce food waste. When Boundless Farmstead is transitioning fields of crops, "glean teams" from nonprofits such as [High Desert Food & Farm Alliance](#) (HDFFA) and [Bend Food Project](#) help recover any usable produce from the fields before the farmers clear

them. Gleaning extra produce from these fields prior to transition is too labor-intensive to be sustainable for Boundless Farmstead farmers, but with the help of nonprofits, this produce is recovered and donated. Boundless Farmstead also works with these nonprofits and others to donate food to people in need.³⁴

Beyond their primary efforts to reduce sources of food waste and donate food, Boundless Farmstead farmers find secondary uses for food and food scraps. The farmers work with chefs to transform supposedly “imperfect” produce into items like pesto and purees. The farmers and farm workers also use unwanted food items for personal fermentation and preservation projects.³⁵ Boundless Farmstead also composts unusable food scraps from their farm and uses compost from nearby restaurants.³⁶

Results

The entire business of Boundless Farmstead is “focused on the reduction of food waste for environmental, economical, and social reasons.”³⁷ The results of their efforts to curb food waste are borne out in their farm’s continued economic viability: preventing overproduction and the associated food waste helps them reduce input costs and maintain narrow profit margins. Additionally, in 2018 and 2019, by working with HDEFA glean teams, Boundless Farmstead recovered and donated over 100 pounds of produce that would have gone to waste when they transitioned crops.³⁸

Takeaway Tips

- **Analyze demand:** Using any available tools to forecast demand, including communicating with buyers and retailers and reviewing data on previous demand and waste, before planting can reduce the production of surplus food.
- **Start gleaning:** Collecting leftover crops from fields is an effective way to reduce waste and get food to those who need it most. If the labor required for gleaning is unfeasible, look for nonprofits and community organizations who support gleaning efforts.
- **Partner with nonprofit organizations:** Working with nonprofit organizations can make food waste reduction practices easier and more realistic. Many nonprofit organizations can facilitate food donations and ensure the resources reach those who need them. The work of volunteers can also make practices like gleaning crops more feasible for farms.
- **Find secondary uses for products:** Produce that may not be traditionally desirable is still edible and useful. Working with chefs and other food manufacturers to use these items by creating new products, such as sauces, or converting unwanted produce and other food scraps into desirable goods through on-farm fermentation and preservation generates new value and prevents waste.

Pace Family Farms

Background

Pace Family Farms is a fifteen-acre family-owned and operated farm that grows a variety of fresh fruit and vegetable produce in Clayton, North Carolina.³⁹ Pace Family Farms sells produce directly to consumers and has a CSA program. The farmers “strive to cultivate a relationship between the community and the farm” through initiatives such as their on-farm concession stand and by hosting community events.⁴⁰ Pace Family Farms commits to methods of sustainable agriculture through integrated pest management and minimizing pesticide use.⁴¹

Food Waste Reduction Practices

Operating a CSA program gives Pace Family Farms an idea of demand for their produce and helps them reduce food waste at the production stage. Once they have grown their crops, Pace Family Farms employs a variety of tactics to prevent produce from going to waste. When there is excess produce, Pace Family Farms uses price reductions to sell it. As owner Michelle Pace Davis said, “we’d rather it be sold for less than wasted.”⁴² The farm uses social media platforms like Facebook to advertise when they have extras and are giving discounts to make sure they distribute the food.⁴³ When the farm is unable to sell produce, they donate it to local food banks.⁴⁴

Pace Family Farms also takes advantage of agritourism practices to sell food and reduce waste. When they had full fields of strawberries,

they hosted a “99-cent u-pick day,” where people could pick their own strawberries.⁴⁵

With imperfect produce items that do not sell as well, Pace Family Farms crafts “value-added products.” They currently sell salad dressings and jams to make use of berries that would have otherwise gone to waste. If food or food scraps are unsuitable for human consumption, they are fed to animals on the farm like cows and chickens.⁴⁶ Pace Family Farm’s agility in using a variety of food waste reduction techniques to fit the resources and products they have enables them to cut down on many potential sources of food waste.

Results

Through their food waste reduction and prevention efforts, Pace Family Farms has been able to decrease the amount of food waste they produce. Changing the quantity of produce they plant based on recorded demand has led to them having almost no excess produce. Furthermore, they send no food waste to the landfill; it is all devoted to other uses on the farm, such as feeding their animals.⁴⁷ They have also connected with surrounding communities through their donation initiatives and various product sales and discount events.⁴⁸

Takeaway Tips

- **Engage directly with consumers:** Engaging with consumers to gauge demand through initiatives like CSA can help manage production quantities. Selling directly to consumers, such as at

an on-farm concession stand or at farmers markets, helps build brand recognition and relationships that make it easier to use up excess inventory through discounts and agritourism activities.

- **Invest in value-added products:** Creating value-added products like dressings and jams is a way to earn revenue from previously unusable produce and cut down on food waste.

- **Feed animals with food scraps:**

Imperfect produce and unusable food scraps are often still nutritious feed for a variety of animals. Even for farms without livestock, food waste from produce can often be saved and given to neighbors and community members with animals.

Distribution and Processing

HelloFresh

Background

HelloFresh is a meal kit company that delivers boxes with all of the necessary ingredients and instructions to make meals right to customers' doors. As of April 2022, eleven years after its founding, HelloFresh had 8.52 million active customers worldwide and reached about 6.6 billion dollars in revenue.⁴⁹ HelloFresh's business model addresses consumers' food waste by providing the proper portions of food and eliminating potential errors in meal planning and shopping. Additionally, HelloFresh has set food waste reduction goals, specifically to "reduce the amount of food waste sent to landfill or incineration from all [...] facilities by 50% per euro of revenue by the end of 2022 (from a 2019 baseline)."⁵⁰

Food Waste Reduction Practices

HelloFresh uses a subscription model which allows the company to know approximately how many customers it will have in advance of purchasing inventory items. The company can minimize excess food purchases by buying only what is necessary for existing orders. Taking advantage of machine learning technology to track food waste and surplus inventory helps HelloFresh better forecast demand and product needs.⁵¹ HelloFresh uses food waste prevention technology from [Spoiler Alert](#) to manage inventory.⁵² Spoiler Alert uses inventory data to sell food that will not be used

to other companies and to tag unused inventory for donation before it is too late. The software makes donations part of the company workflow.⁵³ HelloFresh's donation practices ensure that food doesn't go to waste while there are hungry people who would eat it.

Where possible, food that does not meet donation standards and inedible food scraps are sent to facilities that use food scraps for composting to create nutrient rich soil and anaerobic digestion plants that produce biogas for energy.⁵⁴

Because HelloFresh is a direct-to-consumer company, it also employs consumer education strategies to cut down on food waste outside of its facilities.⁵⁵ HelloFresh produces consumer education materials, such as videos on using leftovers, to help customers take advantage of all food that HelloFresh delivers.

Results

According to the EPA, in 2020, HelloFresh U.S. distribution centers diverted 2,355 tons of surplus food from landfills.⁵⁶ In 2021, HelloFresh donated 68% of the food waste diverted from landfills to people facing food insecurity through charities. Additionally, one international study suggests that HelloFresh customers produced 21% less food waste preparing HelloFresh meals because they already had the appropriate quantities of ingredients and they produced fewer unusable

food scraps.⁵⁷ The EPA recognized HelloFresh as a winner of the 2021 Food Recovery Challenge because HelloFresh's practices to mitigate food waste are driving quantifiable reductions in the company's food waste.⁵⁸

Takeaway Tips

- **Use technology to order and manage inventory:** Taking advantage of innovative technology that integrates data into demand forecasting and inventory management can increase a business's efficiency and reduce food waste by eliminating excess inventory and identifying surplus food before it becomes unusable. Spoiler Alert is just one example of a new technology that can substantially reduce food waste for companies that adopt it.
- **Streamline donation processes:** When HelloFresh cannot sell or use food items, it has made donating those items a part of its business practices. For companies that consistently generate some surplus food, developing partnerships with organizations that serve the food insecure and making food donations a routine practice ensures that surplus food consistently does not go to waste.
- **Invest in consumer education:** Companies like HelloFresh that have a direct line of communication to customers have the ability to influence consumer behavior and share information. Providing consumer education on food waste and giving customers ways to reduce their own food waste helps decrease food waste along multiple points of the supply chain.

Retail

Hannaford Supermarkets

Background

Hannaford Supermarkets is a Maine-based grocery retailer with over 180 locations across New England.⁵⁹ The company employs approximately 26,000 people.⁶⁰ The chain has prioritized sustainability and has set—and achieved—an impressive zero food waste goal at all of its stores.

Food Waste Reduction Practices

Hannaford Supermarkets adheres to the EPA's food recovery hierarchy by combating food waste beginning with store level "strategic product ordering and management" to prevent excess food in the first place.⁶¹ Then, to handle food waste in stores, the company donates food to people who are food insecure. Hannaford Supermarkets partners with the national nonprofit, [Feeding America](#), which has branches across the country. Feeding America connects stores to local food banks and pantries.⁶²

Hannaford Supermarkets continues to follow the EPA's recovery recommendations with food that is not suitable for donation. Hannaford Supermarkets gives local farmers food for animal feed. One New York farmer remarked, "I feed 90 percent of my pigs from what I get from Hannaford."⁶³

Hannaford also partners with [Agri-Cycle](#) to convert inedible food to energy. Agri-Cycle separates expired or damaged food from its packaging and puts the food in anaerobic

digesters to generate electricity. This electricity is then sold back onto the grid while the by-products of this process create liquid fertilizer and materials that can be used as bedding for livestock.⁶⁴

By combining a variety of food waste management techniques and following the EPA's food recovery hierarchy, Hannaford Supermarkets has been able to eliminate food waste and optimize the uses of its surplus products.

Results

In 2021, Hannaford Supermarkets reported achieving zero food waste at all of its stores in 2020. Through its food waste management practices, Hannaford Supermarkets prevented 65 million pounds of food waste from ending up in landfills in 2020. Hannaford Supermarkets also donated 25 million pounds of food in 2020 as a part of its food waste reduction efforts which provided millions of meals for those in need. Hannaford Supermarkets is the first large-scale grocery retailer in the New England region to achieve zero food waste at every store.⁶⁵

Takeaway Tips

- **Diversify diversion strategies:** Hannaford Supermarkets achieved the landmark goal of zero food waste through combining a diverse set of

practices to divert all food waste from landfills. One approach will not eliminate all of the various forms of edible and inedible food waste, so combining many tactics, including food donation, providing animal feed, anaerobic digestion, and composting is necessary to significantly decrease—and ideally eliminate—food waste.

- **Consider industrial uses:** After a decade of work, Hannaford Supermarkets finally reached zero food waste after partnering with Agri-Cycle because Agri-Cycle was able to make full use of Hannaford's inedible food. Food to energy conversion through anaerobic digestion is becoming increasingly prevalent, with more

companies providing services like Agri-Cycle's. Participating in this food waste diversion tactic converts food waste to biogas that can be used for power. Anaerobic digestion ensures that the greenhouse gasses that result from food decomposition have a productive use instead of just contributing to global warming, and it reduces reliance on more environmentally damaging sources of methane and other gasses.⁶⁶ However, biogas power has safety and environmental drawbacks and should therefore be treated as a last resort option for diverting inedible food scraps from landfills.⁶⁷

The Kroger Company

Background

The Kroger Co. is a U.S. based grocery retail chain that operates 2,742 retail supermarkets and multi-department stores across 35 states and the District of Columbia.⁶⁸ Based on 2022 revenue, Kroger is the largest supermarket chain in the United States, and is estimated to serve 60 million households per year.⁶⁹ Kroger also operates 45 distribution centers.⁷⁰ Kroger is invested in reducing food waste and combating food insecurity and has “committed to achieve zero food waste to landfill company-wide by 2025.”⁷¹

Food Waste Reduction Practices

The foundation of Kroger’s approach to reducing food waste is its practice of measuring and tracking annual food waste using the [World Resource Institute’s Food Loss & Waste protocol](#).⁷² Measuring food waste has allowed Kroger to set quantifiable goals to reduce food waste while tracking its progress and measuring the efficacy of its reduction techniques.

Kroger prioritizes using surplus food to reduce food insecurity. Like Hannaford Supermarkets, Kroger partners with Feeding America.⁷³ Individual Kroger stores work with local food banks and pantries to reach people facing food insecurity in their communities.⁷⁴ Kroger also uses a variety of other tactics to divert food waste from landfills. Stores with food-waste recycling programs turn inedible food waste into animal feed and give it to local partners such as animal shelters.⁷⁵ Kroger also

sends unusable food scraps to composting and anaerobic digestion services.⁷⁶

In addition to traditional strategies for reducing food waste, Kroger has invested in new technology to extend the shelf life of produce to prevent waste. In 2019, Kroger introduced Apeel-treated avocados to the majority of its stores.⁷⁷ [Apeel Sciences](#) makes an “invisible, edible coating”⁷⁸ that “slows down the rate of water evaporating that causes produce to degrade, but allows the natural exchange of gas[s]es” which improves the preservation of produce.⁷⁹ This coating is being added to new produce, such as limes, as well.⁸⁰

Kroger’s techniques for food waste reduction align with the EPA’s recommendations for food waste diversion, beginning with prioritizing giving surplus food to people in need, and then using potential food waste for animal feed and other purposes.

Results

Since 2017, Kroger has decreased total food waste in its retail stores by 19% and increased the percentage of food diverted from landfills by 21%. As of 2021, 48% of total potential food waste from Kroger stores is diverted from landfills. According to Kroger’s self-assessment, the 129,434 tons of food waste diverted from landfills in 2020 prevented the creation of approximately 32,400 metric tons of greenhouse gasses equivalent to carbon dioxide. Through its diversion tactics, Kroger donated 90 million pounds of surplus food in 2020, creating both environmental and social benefits.⁸¹

Takeaway Tips

- **What's measured matters:** Tracking food waste is the first step to reducing food waste. Collecting data about food waste also allows companies to determine which diversion practices are efficient and should be invested in. Measuring food waste creates an awareness of the problem and can increase buy-in to implement solutions from a range of stakeholders from executives to store employees.
- **Use national partnerships to create local impact:** Working with Feeding America allows the Kroger Corporation to have a national level partnership while still ensuring that surplus food benefits the local communities where each store is

based. Creating high level partnerships with national nonprofits that have dispersed branches and affiliates can ingrain food donation practices in a large company while keeping donations convenient and rooted in local communities.

- **Be open to niche technologies that can produce meaningful results:** While Apeel coatings currently only increase the edible timeframe of a few produce items, Kroger stores that added the products saw a decrease in wasted produce.⁸² Investing in and implementing new technologies that combat food waste reduces it in the short term and creates the possibility of bigger food waste reductions long term as the technology develops.

Sprouts Farmers Market

Background

Sprouts Farmers Market is a national grocery retail chain that focuses on organic and natural food. Headquartered in Arizona, Sprouts Farmers Market has 374 stores in the United States and approximately 31,000 employees. In 2021, Sprouts Farmers Market's net sales were about 6.1 billion dollars.⁸³ As a part of the EPA's U.S. Food Loss and Waste 2030 Champions program, Sprouts Farmers Market has committed to reducing food loss and waste by 50% by 2030.⁸⁴

Food Waste Reduction Practices

First and foremost, Sprouts Farmers Market is committed to donating edible food that is not suitable for retail to "local hunger relief agencies."⁸⁵ Stores and distribution centers both donate food. Sprouts Farmers Markets frequently works with hunger relief organizations that are affiliated with Feeding America as well as with over 400 different organizations across the country. Sprouts sends food that cannot be donated to local cattle farms or compost facilities depending on where it can be used.⁸⁶ Sprouts works with meat rendering programs to convert waste from meat and seafood as well as grease from chicken roasting into productive materials such as animal feed and products for industrial uses.⁸⁷

Since 2020, Sprouts has tracked food waste through "zero waste score cards" that are customized to each store location.⁸⁸ Based on the data collected, Sprouts presents opportunities for improvement to stores. Sprouts also trains

all employees in food waste recovery and prevention to generate widespread engagement and ensure all locations follow food waste reduction best practices.⁸⁹

Results

In 2021, Sprouts Farmers Market had an overall landfill diversion rate of 60% and a food waste recovery rate of 78%, diverting 30,750 tons of food from its waste stream in just that year.⁹⁰

Sprouts Farmer Markets' nationwide efforts to train employees to track and reduce food waste have paid uniquely large dividends in some locations. A Sprouts Farmers Market store in Overland Park, Kansas was a 2021 Food Recovery Challenge National Award Winner because it increased its total food donations by 1273% from 2019 to 2020 after implementing zero waste scorecards.⁹¹

Takeaway Tips

- **Establish employee awareness and buy-in:** Involving employees in tracking food waste, identifying areas for improvement, and implementing solutions increases buy-in. Training all employees in food waste reduction tactics empowers everyone to take ownership of the issue. Through engaging a variety of stakeholders, businesses can increase the likelihood that food waste reduction best practices will be followed consistently and that employees will be invested in reducing food waste. The success of

initiatives that create employee awareness of food waste through tracking and providing solutions is

evident in the dramatic decrease in food waste at Sprouts' Kansas store.

Consumption

Beth Israel Deaconess Medical Center

Background

Beth Israel Deaconess Medical Center is the teaching-hospital of Harvard Medical School and is located in downtown Boston. Beth Israel Deaconess Medical Center is a part of the Beth Israel Lahey Health care system that encompasses 4,000 physicians and 35,000 employees.⁹² The medical center has 673 patient beds and operates several eateries for patients, staff, and visitors.⁹³ By 2030, Beth Israel Deaconess Medical Center is attempting to reach zero waste for all forms of waste, including food waste, which means diverting over 80% of its non-hazardous, solid waste from landfills.⁹⁴

Food Waste Reduction Practices

Beth Israel Deaconess Medical Center's approach to reducing food waste begins with tracking food waste on "daily production sheets."⁹⁵ The culinary team and retail manager use this data to find trends and address them to reduce waste. The production team also uses historical data and information from patient meal ordering software to purchase appropriate quantities of food. To successfully track food waste, Beth Israel Deaconess Medical Center continuously educates all culinary staff to ensure accurate reporting.⁹⁶ Collectively, these efforts help prevent food waste by decreasing the existence of surplus food at the medical center.

In addition to its prevention efforts, Beth Israel Deaconess Medical Center diverts food waste from landfills. Food waste is sent to an anaerobic digester in Massachusetts to be converted into energy. In order to divert waste, staff are trained to recognize and separate waste that can be sent to the anaerobic digester, and they "capture pre-consumer and post-consumer waste along the patient tray line."⁹⁷ The cafeteria has separate collection bins for organic waste. Beth Israel Deaconess Medical Center also captures and recycles oil and grease.⁹⁸

Results

In 2019, Beth Israel Deaconess Medical Center diverted 136.2 tons of food from landfills. The majority of this food was sent for anaerobic digestion, but some was donated and recycled as well. The EPA recognized Beth Israel Deaconess Medical Center as a 2020 Food Recovery Challenge National Award winner.⁹⁹

Takeaway Tips

- **Prioritize training staff:** Investing in training kitchen and culinary staff increases the impact of other food waste reduction efforts. Beth Israel Deaconess Medical Center ensures that its food waste and recovery data is accurate by training employees on proper ways to collect it. Having accurate data allows the management team to make valuable

changes to ordering quantities and have a real understanding of what strategies are working. Furthermore, prioritizing training staff to properly process food

waste helps guarantee that as much food waste as possible is being diverted and not slipping through the cracks to the landfill.

Equinox Restaurant

Background

Equinox is a fine dining restaurant that has served seasonal Mid-Atlantic seafood cuisine in Washington, D.C. since 1999. Equinox prides itself on developing innovative dishes while being committed to sustainability and the local community.¹⁰⁰

Food Waste Reduction Practices

Equinox began taking drastic steps to reduce food waste by hiring a firm to analyze the restaurant's waste management practices and provide a path to becoming a zero-waste restaurant. Equinox is working on implementing recommendations including developing a more robust system for sorting waste and composting.¹⁰¹ Equinox used a Food Waste Innovation Grant from the D.C. Department of Small and Local Business Development to create an onsite composting system.¹⁰² The compost the restaurant generates eventually goes to local farmers.¹⁰³

Equinox's current food waste reduction practices revolve around being creative with the food and food parts they already have. Chefs use vegetable scraps in stocks and sauces. Co-founder and owner, Chef Todd Gray employs a technique called cryoconcentration to extract "intense flavor" from typically discarded parts of plants like peels and ends.¹⁰⁴ These mixtures are then used as "cold consommés, flavorful shots in the center of a plate, and mixers for cocktails."¹⁰⁵ Unique dishes are crafted by using unconventional elements of common ingredients. On Equinox's 2022 menu, the

Tempura of Local Zucchini Blossoms dish includes pickled onions made from leftover onions, and Brandi's Vanilla Angel Cake has a strawberry compote made with leftover strawberries procured for salads.¹⁰⁶ All of these techniques keep food from ending up in a landfill.

Results

Equinox fully committed to prioritizing food waste reduction in 2019.¹⁰⁷ Since then, the restaurant has created new dishes that cut down on food waste by using previously discarded parts of food. The restaurant estimates that they have saved \$2,000-\$3,000 per year by preserving and reusing their food scraps and leftovers.¹⁰⁸ They have also eliminated the need to send most food waste to the landfill by composting organic waste onsite.¹⁰⁹ Additionally, they held a "zero waste dinner," in which they eliminated food waste and other forms of waste, demonstrating future possibilities for further decreasing waste.¹¹⁰

Takeaway Tips

- **Invest in an audit:** Adopting sustainable practices does not require restaurant management to have expertise in food waste management. Recognizing food waste reduction as a priority and investing the money to work with an outside firm to conduct an audit of waste management practices can make a big difference. Conducting an internal audit using resources from the [EPA](#) can also be

impactful. An audit can identify places to reduce food waste and help a business develop concrete, actionable solutions.

- **Get creative and inventive with food scraps:** Food scraps can be an opportunity for innovation and a means of crafting unique food that makes a restaurant stand out. Equinox's

commitment to sustainability and the novelty of its dishes draws people to the restaurant, making food waste reduction practices good for business. Testing out techniques like cryoconcentration could be a way to create something new and delicious.

LaSalle Language Academy

Background

LaSalle Language Academy is a magnet school in Chicago, IL and is a part of the Chicago Public School system. It serves a majority minority population of just over 500 students from kindergarten through eighth grade.¹¹¹

Food Waste Reduction Best Practices

With the help of the Zero Waste Schools program from [Seven Generations Ahead](#) (SGA), LaSalle Language Academy has implemented an array of strategies to fight food waste. The Zero Waste Schools Program initially provided a waste audit for the school and developed best practice recommendations based on these findings. Coupled with logistical guidance to implement food waste reduction tactics, this approach allowed LaSalle Language Academy to make efficient changes to reduce waste.¹¹²

LaSalle has a share table share table where students leave unwanted food that is later recovered for donation and an onsite composting system for food scraps and other suitable waste. Student support is critical to making those initiatives work, and student engagement is the centerpiece of LaSalle Language Academy's food waste reduction efforts. Students do the composting and are able to learn how the process works and why it is important. Additionally, LaSalle has a "zero waste ambassador program" where students get shifts throughout the week and are "in charge of monitoring the sorting station at the end of their lunch period" to make sure all possible food

waste is diverted.¹¹³ As students help reduce food waste at LaSalle, these programs simultaneously educate students and positively influence their consumption habits.

Buy-in from the entire school community has also been essential to reducing food waste at LaSalle Language Academy. Parents have made the project a priority for the school's Health and Wellness Committee, while investment from food and facilities staff has made the food waste reduction efforts possible. For example, the school's head custodian created a portable system for sorting classroom food waste when students eat in the classroom by creating different compartments in a wheeled waste collection cart. Teachers have also been critical contributors to the efforts.¹¹⁴

Results

Since the implementation of its food waste reduction program, LaSalle Language Academy has reduced landfill waste from the lunchroom by 50% by weight. In the first week of the program, the volume of trash in the cafeteria decreased by 40%. In that same week, 12 lunch trays worth of food were recovered for donation and 35 gallons of food scraps were composted.¹¹⁵ LaSalle Language Academy's food waste reduction tactics are making a big impact on the amount of waste the school generates, which is facilitated by a school-wide commitment to food waste reduction best practices. LaSalle Language Academy is also empowering students with an awareness of

food waste and ways to combat it, which will have larger positive ripple effects.

Takeaway Tips

- **Cultivate community support:** In most schools and organizations, implementing food waste reduction practices is only possible with support from a variety of stakeholders. Gathering and harnessing community support helps enact food waste reduction strategies. Innovative ideas for minimizing food waste may also emerge from the variety of voices that have a role in different parts of the process. Additionally, once food waste management practices are in place, they are only effective if people participate in them, so having community investment is critical.
- **Provide hands-on education:** Providing classroom education and hands-on opportunities to learn about food waste management techniques and their impacts are meaningful for students. These lessons can change students' behavior, as evidenced by LaSalle Language Academy students' enthusiastic participation in food waste reduction efforts.

The University of Texas at Arlington

Background

The University of Texas at Arlington (UTA) is a public university with an undergraduate population of approximately 35,064 as of fall 2020.¹¹⁶ The university offers two primary dining halls as well as a variety of cafes and other eateries.¹¹⁷

Food Waste Reduction Practices

To address food waste resulting from food production, Dining Services at UTA has a Waste Not program designed to reduce production waste, overproduction, and unused or expired inventory. The Waste Not program tracks waste in all of these categories to increase the accuracy of inventory purchasing and menu planning. This data collection holds staff accountable to using food waste reduction best practices when preparing food because they can see the results of their efforts. All staff are trained in methods to reduce waste including efficient food preparation techniques and different ways to use food scraps.¹¹⁸

Students at UTA are involved in efforts to recover potential food waste. UTA has a chapter of the [Food Recovery Network](#), an organization that recovers and donates food from colleges across the country. At UTA, the Food Recovery Network works with the Arlington Life Shelter, a local organization, to donate food recovered from dining services.¹¹⁹ UTA also has a Stop Food Waste Day to raise awareness among the student body about the quantity of food that is wasted on campus and encourage them to play a role in preventing waste, particularly by

having multiple smaller servings of meals instead of taking large portions and wasting some of the food.¹²⁰

Beyond UTA's prevention and recovery strategies, it has a robust composting program that captures food waste from a variety of food providers in the vicinity of campus. The compost is used as mulch and fertilizer on campus and in a community garden.¹²¹ The collaboration of student and administrative efforts to reduce food waste has created a wide-ranging network of tactics to cut down on food waste.

Results

UTA's food waste reduction practices have been effective at decreasing food waste on campus. In September of 2020 alone, Dining Services eliminated more than 790 pounds of food waste through its accurate forecasting and improved production techniques.¹²² In just over one year, the Food Recovery Network chapter recovered and donated 3,000 pounds of food.¹²³

Other efforts to engage the student body have yielded results as well. 1,861 students participated in Stop Food Waste Day in 2018. The amount of food waste generated in a three-day period when students observed the waste they were creating was significantly below the national average for college students.¹²⁴

UTA is also using its expertise and resources to create more sustainable food practices in the North Texas region by launching a Regional Center of Expertise for Education on

Sustainable Development (RCE North Texas) and a North Texas Food Policy Council.¹²⁵

Takeaway Tips

- **Share expertise and involve others:** UTA is increasing its impact on food waste by sharing its effective practices with others and starting conversations about food waste and sustainability in the region.

Additionally, including nearby restaurants and organizations in its composting systems helps reduce food waste more broadly. For entities with effective food waste management practices, finding ways to involve other groups in those efforts will greatly increase the positive environmental and social impacts.

Other Leaders

- **Oakland Unified School District, CA:** All eighty schools in the Oakland Unified School District have “Food Share” tables to dramatically cut down on food waste.¹²⁶ The food share table is a designated table in the cafeteria where students can leave “unwanted whole fruit, packaged foods, or other meal items.”¹²⁷ Any student can take items from this table as well. As of 2018, six schools were donating food items that were not taken by students to local homeless shelters or centers for the elderly.¹²⁸ The district uses a set of standardized practices for food share tables that make the tables a focal point of lunch rooms to encourage use and promote safe practices.¹²⁹
- **Noblehurst Farms:** Located in New York, Noblehurst Farms uses food waste and scraps from local businesses and its own cheesemaking process in a biodigester that produces biogas to “fuel the 450-kilowatt electric generator that powers the 14,000-square-foot creamery, barns and houses on the property.” So far, Noblehurst Farms has diverted 20 million pounds of food from landfills with its biodigester.¹³⁰
- **Raley’s Family of Fine Stores:** Raley’s Family of Fine Stores, a grocery retailer based in California, uses [Date Check Pro](#), an expiration date management software system, to reduce food waste. This tool allows employees to identify items that are nearing expiration and rotate them so that they are more likely to be purchased. By using this tool, Raley’s Family of Fine Stores has diverted 500,000 pounds of food waste.¹³¹
- **Walmart:** Walmart’s private food label, Great Value, standardized date labels for all nonperishable goods. As of 2016, all of these goods had a “best if used by” label to reduce confusion about expiration dates and the safety of food.¹³² In addition to Walmart’s other measures to prevent food waste, this practice helps reduce food waste by stopping people from throwing away good food because unclear labels made them think it was unsafe.¹³³ A 2016 ReFed report estimated that date label confusion causes 20% of consumer food waste and that standardizing date labels through legislation at the national level would lead to 398,000 fewer tons of food waste.¹³⁴ Thus, this relatively simple change has a large impact.
- **Woodland Elementary School, Elkhart, IN:** Woodland Elementary school works with Northern Indiana nonprofit [Cultivate](#) to use leftovers from the school cafeteria to create frozen meals. Students who are food insecure can then take these meals home each weekend.¹³⁵ This initiative has decreased food waste while supporting students in need at Woodland Elementary School.

Recommendations

From the successful food waste reduction practices implemented by entities in this report, we have identified seven recommendations central to fighting food waste. The takeaway tips from the leaders in this report correspond to these recommendations and provide ideas and inspiration for how other groups can adopt similar measures. We encourage entities large and small along the supply chain to engage with these recommendations and adopt them in a manner that suits their business or institution. The resources offered in the appendix are a starting point for implementing these practices.

1) Track food waste.

Entities must measure and monitor food waste to be able to adopt effective, targeted practices to reduce waste and understand the efficacy of their efforts. Tracking food waste establishes fighting food waste as a priority and is the first step to reducing it.

Refer to Takeaway Tips:

- What's measured matters
- Invest in an audit

2) Plan production and inventory around demand.

The key to preventing food waste at all levels of the supply chain is accurately understanding demand for food products and then producing to that level. On farms, at grocery stores, and in restaurants, recognizing the amount of food that is needed and only supplying that much dramatically reduces leftovers that too often

become waste. Planning around demand requires measuring and tracking demand as well as investing in tools to forecast demand to the extent possible.

Refer to Takeaway Tips:

- Analyze demand
- Engage directly with consumers
- Use technology to order and manage inventory

3) Reimagine new uses for conventionally discarded items.

Many forms of food waste, from undesired produce to food scraps, have a use beyond the landfill. Finding new markets for produce and transforming damaged food items or food scraps into products can open new revenue streams.

Refer to Takeaway Tips:

- Find secondary uses for products
- Invest in value-added products
- Get creative and inventive with food scraps

4) Embed food donation in everyday practices.

In places where some surplus food is inevitable, incorporating practices to reduce food waste in a company or institution's practices is critical. There are many organizations whose goal is to streamline food donation so that entities with surplus food can easily and consistently donate food. Adopting food donation as standard practice in an entity can make it the most

efficient way to get rid of food waste while maximizing social good.

Refer to Takeaway Tips:

- Start gleaning
- Partner with nonprofit organizations
- Streamline donation processes
- Use national partnerships to create local impact

5) Adopt multiple mechanisms to divert food waste.

No single strategy to tackle food waste will allow a business or institution to eliminate food waste. While preventing excess production and donating surplus food are the best waste reduction practices, employing a variety of techniques from the EPA food recovery hierarchy is essential to meaningfully reducing food waste.

Refer to Takeaway Tips:

- Diversify diversion strategies
- Feed animals
- Consider industrial uses

6) Emphasize food waste education and stakeholder support.

We all contribute to food waste, so increasing awareness and understanding is a way to

reduce it everywhere. Educating staff and consumers about food waste encourages them to effect change in their realms of influence. Education also increases support for food waste reduction practices among stakeholders and communities. Additionally, for entities that are successfully fighting food waste, sharing their expertise and initiating partnerships with others greatly extends their impact.

Refer to Takeaway Tips:

- Establish employee awareness and buy-in
- Prioritize training staff
- Invest in consumer education
- Provide hands-on education
- Cultivate community support
- Share expertise and involve others

7) Explore innovation.

Our food supply system is constantly changing. Shifting norms and new technology are altering our food supply chain and waste management practices. Utilizing advancements in technology to help fight food waste will continue to move us forward.

Refer to Takeaway Tips:

- Be open to niche technologies that can produce meaningful results

Conclusion

All along the food supply chain, actors from family farms to elementary schools to world class medical centers have cut down on food waste. In doing so, they have reduced their environmental impact, helped others in their community, and often made their operations more efficient and cost effective. Addressing food waste is in the best interests of everyone involved in our food system and our society at large.

We urge entities along the supply chain to consider the recommendations listed in this report and to use the resources in Appendix A to adopt practices that adhere to the EPA's hierarchy for food recovery by first focusing on source reduction and donating food to people in need before resorting to other diversion tactics including feeding animals, finding industrial uses for food scraps and composting. Entities must use a combination of these tactics to address the varied forms of food waste.

Combating food waste does not occur in a vacuum. Our food system is a network, and reducing food waste also requires the interaction of a web of organizations. Most entities will need partnerships with other organizations to carry out food waste management practices from donation to anaerobic digestion. Businesses and institutions should seek resources outside of their

organizations to most efficiently and effectively combat food waste. Nonprofits that facilitate a variety of food recovery tactics can be essential partners in food waste reduction efforts. Entities that rely on these organizations, communities, and all levels of government must ensure that these organizations have the necessary support to provide vital functions to address food waste.

At all stages of the food supply chain, technology can also play a role in reducing food waste. Farms, businesses, schools, and other organizations should explore the technology available to them and find ways to implement these tools to fight food waste.

Food waste is an enormous environmental and social problem, but there are clear preventative measures. We urge all organizations to recognize their role in creating and combating food waste. When farms, supermarkets, schools, and others take action to tackle food waste, we can significantly reduce the most absurd environmental impacts of our food system, from wasted freshwater to wholly unnecessary greenhouse gas emissions, while simultaneously supporting those facing the absurd problem of food insecurity amidst abundance. Ultimately, collective efforts to reduce food waste will put us on a path toward a more sustainable future.

Appendix

Best Practices Implementation Resources

Track food waste:

- [EPA food waste tracking logs](#)
- [EPA resources for a food waste audit](#)
- [Leanpath](#): Measures food waste in kitchens in a manner that is integrated in kitchen workflow.
- [Winnow](#): Provides technology-driven mechanisms to track food waste in kitchens.
- [World Resource Institute Food Loss and Waste Protocol](#)

Plan production and inventory around demand:

- [Crisp](#): Demand forecasting software that combines historical sales data with supply chain information and signals from other factors that influence demand.
- [Date Pro Check](#): Expiration date management software that alerts retailers to products that are nearing expiration and helps ensure as much product as possible is sold through discounts and other data-driven techniques.
- [Spoiler Alert](#): Brings an automated approach to managing and liquidating inventory and provides a platform for selling excess and short-dated inventory. Helps companies navigate the retail secondary product market

Reimagine new uses for conventionally discarded items:

- Secondary Product Markets

- [Full Harvest](#): Sells excess produce directly from producers to consumers, including produce that might not meet retailers' requirements
- [Hungry Harvest](#): Purchases excess or imperfect produce from producers and sells it directly to consumers.
- [Imperfect Produce](#): Buys imperfect produce from producers and sells it to consumers through a subscription model.

Embed food donation in everyday practices:

- [AmpleHarvest.org](#): Connects home/community gardeners with food pantries across all 50 states for surplus harvest donations
- [Feeding America resource to find local food banks](#)
- [Food Rescue Locator](#)
- [Meal Connect from Feeding America](#): Connects retailers, restaurants, and other entities with local food banks and with volunteers to transport the donations.
- [Resources for gleaning](#)
- [USDA guidance on food donation](#)

Adopt multiple mechanisms to divert food waste:

- Feeding Animals

- [Legal guide to using food scraps to feed animals](#)
- [Grubtubs](#): Collects food waste from restaurants in Texas and turns it into livestock feed.
- Anaerobic Digestion
 - [List of anaerobic digestion plants in the U.S.](#) (view appendix A, pages 48-49)
 - [Agri-Cycle Energy](#): Food waste collection service in New England and the Mid-Atlantic that takes food waste to anaerobic digesters and composters.
- Composting
 - [CompostNow](#): Compost collection service.
 - [FindAComposter.com](#): Connects individuals, businesses, and organizations with local composters.
 - [EPA tips and considerations for creating an on-site compost system](#).
- [Resources](#) and [video training](#) to help staff prevent food waste.
- Resources for Schools
 - [EPA resource for school food waste audits](#)
 - [Stop Waste Guidelines for establishing a Share Table at schools](#)
 - [Tips for implementing food recovery practices in schools](#)
 - [World Wildlife Fund lessons on food waste for students](#)
- [Faith Fights Food Waste](#): Educates and enables clergy of all faiths to give food waste sermons from their own faith perspective.

Explore Innovation:

- Food Preservation Technology
 - [Apeel](#): Edible, tasteless coating technology that extends the shelf life of produce.
 - [Hazel Technologies](#): Creates technologies designed to increase the shelf life of produce.
- Expiration Date Standardization
 - [ReFED Date Labeling Standardization Tool](#)

Emphasize food waste education and stakeholder support:

- Staff Training for Reducing Food Waste

Glossary

Anaerobic Digestion: “Process through which bacteria break down organic matter,” including food waste, “in the absence of oxygen” to produce biogas which is an energy source composed of a mixture of gasses. It also produces a by-product called digestate that can be used as a fertilizer.¹³⁶

Food Loss: Food loss describes food that never reaches the consumption stage because it is not harvested, it spoils, is damaged, or is not eligible for consumption for some other reason. Food loss typically occurs at the primary production or processing and distribution stages of the food supply chain.¹³⁷

Food Insecurity: According to the United Nations Food and Agriculture Organization, food insecurity is when a person “lack[s] regular access to enough safe and nutritious food for normal growth and development and an active and healthy life.” Food insecurity can be caused by a lack of availability of food or a lack of resources to obtain food.¹³⁸

Food Waste: Food waste is a general term that can encompass any food that is lost or discarded along the food supply chain. On a technical level, food waste refers to food that is fit for consumption but is discarded at the retail or consumption stages of the supply chain.¹³⁹

Food Waste Audit: An inspection of the quantity and types of food waste an organization produces over a period of time.

Food Waste Diversion: Preventing food waste from ending up in the trash and on the pathway to landfills or garbage incineration through any means including food donation, composting, and anaerobic digestion.

Food Recovery: The EPA’s food recovery hierarchy encompasses efforts to prevent and divert wasted food.¹⁴⁰ As a specific term, food recovery can refer to collecting surplus food and redistributing it to those in need.¹⁴¹

Food Supply Chain: The process through which food moves from its place of production to consumers’ tables.

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