



# Analysis of U.S. Food Waste Among Food Manufacturers, Retailers, and Restaurants

Prepared for the Food Waste Reduction Alliance

2014



## About This Report

This is the second report of the Food Waste Reduction Alliance (FWRA), a collaborative effort between the Food Marketing Institute (FMI), Grocery Manufacturers Association (GMA), and National Restaurant Association (NRA) to assess, analyze, and reduce food waste both collectively and individually for food retailers, wholesalers, manufacturers, and restaurants. Recognizing the opportunity to help address the lack of publicly available data on commercial and industrial food waste in the United States, FWRA sought BSR's support to analyze food waste data gathered from FMI, GMA, and NRA members. This effort was undertaken in order to better understand the scale and nature of food waste generation and disposal and to spur knowledge, innovation, and action to reduce food waste in the food industry supply chain.

This report analyzes survey data on food waste donation, reuse and recycling, and disposal by respondents in the food manufacturing, wholesale, retail, and restaurant sectors. It also characterizes barriers to higher rates of donation, reuse, and recycling in these sectors. We focus on the aspects of the food supply chain that are directly managed by manufacturers, wholesalers, retailers, and restaurants and do not address food waste generated during agricultural production or by consumers at home. We target food waste reduction efforts and do not address other sustainability aspects of the food system. We cite the volume of food waste generation but do not analyze it in depth, given the difficulties of assessing source reduction efforts via a quantitative survey. BSR recognizes that food waste generation is an important part of the overall puzzle and would recommend that future research examine this area in more detail.

This data was collected through a survey developed by the FWRA and sent to manufacturing, wholesale, retail, and restaurant companies by the FMI, GMA, and NRA. Although BSR did not design the survey, we led the interpretation and analysis of the results. Related assumptions and extrapolations are detailed in Appendix A.

This survey and report will help food manufacturers, wholesalers, retailers, and restaurants understand the current state of food waste diversion in their industry, improve internal measurement and management of food waste, develop individual and collective solutions to shared barriers, and track progress over time.

Please direct comments or questions to Corinna Kester at [ckester@bsr.org](mailto:ckester@bsr.org).

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Food Marketing Institute proudly advocates on behalf of the food retail industry. FMI's U.S. members operate nearly 40,000 retail food stores and 25,000 pharmacies, representing a combined annual sales volume of almost US\$770 billion. Through programs in public affairs, food safety, research, education, and industry relations, FMI offers resources and provides valuable benefits to more than 1,225 food retail and wholesale member companies in the United States and around the world. FMI membership covers the spectrum of diverse venues where food is sold, including single-owner grocery stores, large multistore supermarket chains, and mixed retail stores. For more information, visit [www.fmi.org](http://www.fmi.org), and for information regarding the FMI Foundation, visit [www.fmifoundation.org](http://www.fmifoundation.org).

### **ABOUT GMA**

The Grocery Manufacturers Association is the voice of more than 300 leading food, beverage, and consumer product companies that sustain and enhance the quality of life for hundreds of millions of people in the United States and around the globe. Based in Washington, D.C., GMA's member organizations include internationally recognized brands as well as steadily growing, localized brands. Founded in 1908, GMA is an active, vocal advocate for its member companies and a trusted source of information about the industry and the products consumers rely on and enjoy every day. The association and its member companies are committed to meeting the needs of consumers through product innovation, responsible business practices, and effective public policy solutions developed through a genuine partnership with policymakers and other stakeholders. For more information, visit [www.gmaonline.org](http://www.gmaonline.org).

### **ABOUT NRA**

The National Restaurant Association is the largest food-service trade association in the world—supporting nearly 536,000 restaurant businesses. In partnership with state restaurant associations (SRAs), the NRA works every day to empower all restaurant owners and operators to achieve more than they thought possible. The National Restaurant Association represents and advocates for food-service industry interests with state, local, and national policymakers—taking on financial and regulatory obstacles before they hit members' bottom line. The NRA provides tools and systems that help members of all sizes get significantly better operating results. And the association offers the kinds of networking, education, and research resources that are only possible because of a vast and active membership base. For more information, visit [www.restaurant.org](http://www.restaurant.org).



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## Introduction

If we hope to be able to feed the projected world population of 9 billion by 2050, changes need to occur throughout the current food system, including agricultural production, food processing, distribution, and consumption. Reducing the amount of food that is wasted is a crucial step.<sup>1</sup>



While estimates of the scale of global food waste vary, there is broad consensus among experts that significant opportunities to reduce food waste exist.<sup>2</sup> For example, it has been estimated that as much as 30 percent of all food grown worldwide may be lost or wasted.<sup>3</sup>

The issue of food waste has implications for food security, environmental sustainability, and global hunger. Globally, we will need to feed 8 billion people by 2030 and 9 billion by 2050.<sup>4</sup> The UN Food and Agriculture Organization (FAO) projects that, under current production and consumption trends, global food production must increase 60 percent by 2050 in order to meet the demands of the growing world population.<sup>5</sup> Also according to the FAO, without accounting for greenhouse gas (GHG) emissions from land use change, the carbon footprint of food produced and not eaten is approximately 3.3 gigatons of CO<sub>2</sub> equivalent, and the water footprint is estimated to be about 250 cubic kilometers of water.<sup>6</sup>

This analysis, commissioned by the Food Waste Reduction Alliance, estimates food waste from food manufacturers, wholesalers, retailers, and restaurants in

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<sup>1</sup> U.K. Government Office for Science, "The Future of Food and Farming: Challenges and Choices for Global Sustainability," January 2011.

<sup>2</sup> For example, UN Food and Agriculture Organization, "Global Food Losses and Food Waste," and U.S. Environmental Protection Agency, "2012 Municipal Solid Waste Characterization Report."

<sup>3</sup> U.K. Government Office for Science, "The Future of Food and Farming: Challenges and Choices for Global Sustainability," January 2011.

<sup>4</sup> Ibid.

<sup>5</sup> UN Food and Agriculture Organization, "Food Wastage Footprint: Impacts on Natural Resources," 2013.

<sup>6</sup> Ibid.

the United States, in an effort to gather better data on the amount of food waste generated in their sectors and how this volume can be reduced.

The Food Waste Reduction Alliance (FWRA) is an industry-wide effort to reduce food waste among food manufacturers, grocery wholesalers and retailers, and restaurants. Founded in 2011, it is led by the Food Marketing Institute (FMI), Grocery Manufacturers Association (GMA), and National Restaurant Association (NRA), with active leadership and participation by its more than 30 corporate members.

Seeking to reduce food waste throughout the supply chain, FWRA's goals are threefold:

1. To avoid and reduce food waste wherever possible within members' operations and supply chains.
2. To increase the donation of safe and healthy foods that would have gone to waste and to send food to food banks to help address hunger issues.
3. To divert unavoidable food waste away from landfills toward higher value uses, such as animal feed, composting, and conversion from waste to energy.

To meet these goals, the FWRA has four established working groups, on best practices and emerging solutions, food waste assessment, communication, and public policy. Earlier in 2014, the FWRA released the ["Best Practices & Emerging Solutions Toolkit,"](#) to highlight successful case studies and provide guidance for companies on how to reduce food waste.

This analysis is based on survey data collected directly from companies in the food manufacturing, food retail, and restaurant sectors. Data gathering is a priority for the FWRA as it allows members to assess the current state of food waste diversion, improve the measurement and management of food waste, and track progress over time. This is FWRA's second survey and assessment of food waste.

## Survey Methodology

To better understand the food waste reduction efforts of food manufacturers, wholesalers, grocery retailers, and restaurants in the United States, FMI, GMA, and NRA sent a paper-based survey to a cross-section of their respective members in 2014.<sup>7</sup> (Copies of the surveys are included in Appendixes B and C.)

The survey's objective was to collect data on:

- » Donations of unsaleable food for human consumption
- » Food waste reuse and recycling
- » Food waste disposal
- » Barriers to higher rates of donation, reuse, and recycling

Because a subset of companies in each sector opted to participate, the survey represents a snapshot of practices within the industry. In the manufacturing

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<sup>7</sup> FMI, GMA, and NRA sought broad participation in the survey; it was sent to more than 200 individuals. We targeted outreach to our largest members to help ensure that the companies generating the most food waste were included in the findings.

sector, there were 16 survey respondents representing US\$137 billion in annual U.S. sales (accounting for 17 percent of total projected sales for U.S. food manufacturers<sup>8</sup>). In the retail and wholesale sectors, there were 13 survey respondents representing US\$279 billion in annual U.S. sales (accounting for 31.8 percent of total projected sales for U.S. retailers and wholesalers<sup>9</sup>). In the restaurant sector, there were 27 survey respondents (14 companies with more than 10 locations each) representing US\$74 billion in annual U.S. sales (accounting for 15.2 percent of total projected sales for the industry segments represented by the respondents<sup>10</sup>).<sup>11</sup>

All participating companies submitted data for their U.S. operations for the 2013 calendar year. Where relevant, this is compared with 2011 data collected in a similar previous survey. However, because only a portion of the industry is represented in the survey, extrapolations should be made with caution.

## Definitions

These terms are used throughout this report and align with FWRA's definitions of food waste:

- » **Food waste:** Any solid or liquid food substance, raw or cooked, which is discarded, or intended or required to be discarded. Food waste includes the organic residues (such as carrot or potato peels) generated by the processing, handling, storage, sale, preparation, cooking, and serving of food.
- » **Food waste diversion:** Pertains to all food that is not sold or consumed, which could be diverted to a higher value use than landfill or incineration. This includes:
  - **Unsaleable food donation** given to food banks and other organizations that serve people in need; and
  - **Food waste reuse and recycling**, e.g., composting, conversion to animal feed, reuse of waste oils to produce fuel, etc.
- » **Food waste disposal:** Food or food scraps that are transported to traditional disposal facilities, such as landfills, municipal waste incinerators, and wastewater treatment plants.
- » **Food waste generation:** The sum of food waste diversion and food waste disposal.
- » **Unsaleable food:** Consumer products that are removed from the primary channel of distribution for any reason and that may or may not be processed through product reclamation centers. Unsaleable food may be generated throughout the manufacturing and retail value chain, as described in the following examples. Mistakes during production may result in food that is perfectly safe and edible, but unable to be sold because of quality, overproduction, or labeling issues. Product ingredients and semifinished

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<sup>8</sup> Based on 2011 U.S. food and beverage manufacturing revenue of US\$805 billion (source: U.S. Census Bureau's Annual Survey of Manufacturers, North American Industry Classification System Codes 311 and 3121).

<sup>9</sup> Based on 2013 U.S. grocery retail revenue of US\$740 billion (source: Progressive Grocer) and 2013 U.S. grocery wholesale revenue of US\$137 billion (source: IBIS World). Grocery retail excludes convenience stores.

<sup>10</sup> Based on 2013 U.S. commercial restaurant and managed services revenue of US\$486 billion (source: National Restaurant Association 2014 Restaurant Industry Forecast). This excludes bars and taverns, restaurants within hotels and retail outlets, and recreation and sports facilities, as there were no survey respondents from those segments.

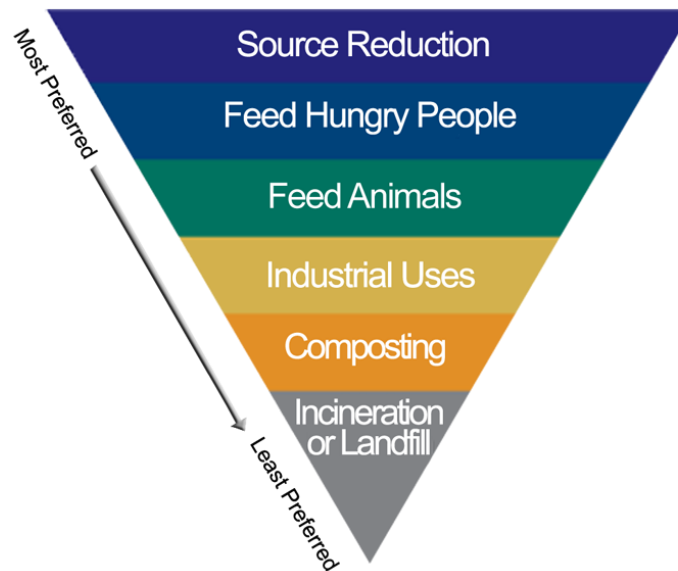
<sup>11</sup> The data in this report includes only the results from the respondents to this survey.



products that are unsuitable for retail but are safe for human consumption may also be donated. The outer packaging of grocery items may become damaged during distribution and retail operations, thus making them unsuitable for sale but still perfectly safe to eat. Fresh food such as day-old bread, produce with blemishes, prepared foods, and other perishable items that are near sell-by dates may also be unsuitable for sale, but safe for consumption.<sup>12</sup>

The U.S. Environmental Protection Agency (EPA) has developed a hierarchy of recovery options for mitigating food waste to landfills, as shown in Figure 1.<sup>13</sup> In the figure, reducing food waste is preferred, and the food recovery methods are listed in order of preference from top to bottom. The hierarchy serves as an aspirational guide for efforts to minimize waste; not all waste diversion methods will be appropriate in every situation.

**Figure 1. U.S. EPA Food Recovery Hierarchy**



### Structure of Findings

The survey findings are outlined in separate sections for each sector: manufacturing, retail and wholesale, and restaurant (following the food supply chain). Each section outlines the amount of food waste generated, donated, recycled, and disposed of in each sector, how food waste is being diverted from landfills, challenges to gathering data on food waste, and barriers that must be overcome to decrease the amount of food that is thrown away. The report concludes with recommendations and considerations for additional data collection.

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<sup>12</sup> Not all companies track their saleable and unsaleable food donations as separate figures, so the amount of donated food cited in this report does include some saleable food. Where possible, only unsaleable food is included.

<sup>13</sup> U.S. Environmental Protection Agency, Food Recovery Hierarchy, available at [www.epa.gov/smm/foodrecovery/](http://www.epa.gov/smm/foodrecovery/).

## Summary of Survey Findings

The food waste profiles of the food manufacturing, retail and wholesale, and restaurant sectors differ significantly, which reflects their different operating environments. Differences include the number of locations, type and amount of food disposed of, and average distance from food recycling facilities, as well as many other considerations. As a result, the performance of the sectors should be compared with strong caution—different business models mean significantly different constraints and possibilities for food waste diversion.

Though the survey respondents represent only a portion of each industry, their responses give insight into food waste trends. In the 2013 survey:

- » **Manufacturing respondents** reported donating or recycling 94.9 percent of food waste; of this, more than 85 percent is repurposed for animal feed.
- » **Retail and wholesale respondents** reported donating or recycling 42.4 percent of food waste; composting and donation are the most common diversion methods.
- » **Restaurant respondents** reported donating or recycling 15.7 percent of food waste; of this, more than 70 percent is cooking oil recycling.
- » Retail and wholesale respondents generated **the smallest volume of food waste** (0.010 pounds per dollar of company revenue, compared to 0.033 pounds per dollar for restaurant respondents and 0.053 pounds per dollar for manufacturing respondents).

Based on the survey results, companies have opportunities to continue to reduce the amount of food waste they generate within the supply chain, as well as to identify options for directing it toward higher uses, as outlined in the EPA's Food Recovery Hierarchy.

- » **Food manufacturers** have an opportunity to reduce the amount of food waste they generate and to move up the food waste hierarchy to increase the percentage of food that is donated (1.5 percent in 2013).
- » **Food retailers and wholesalers** have an opportunity to divert more waste from landfills to higher uses.
- » **Restaurants** have an opportunity to divert more waste from landfills to higher uses and to reduce the amount of food waste they generate.

Efforts to reduce and divert food waste will need to address a number of barriers. Transportation constraints, liability concerns, and insufficient storage space were the most commonly cited barriers to food donation. The most frequently cited obstacles to food recycling were transportation constraints and an insufficient number of recycling options. The FWRA's efforts to help companies share best practices and address common challenges will be useful in overcoming a number of key barriers.

# Survey Findings: Manufacturing Sector

## Sector Context

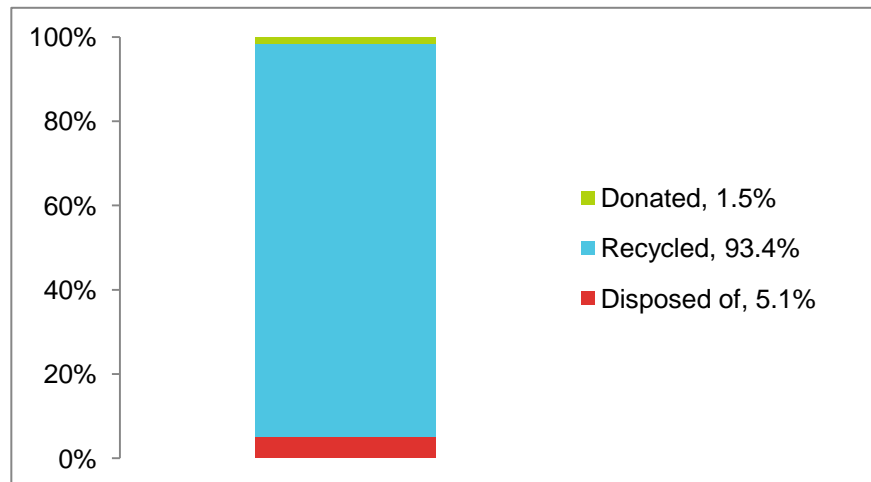
The food waste profile of the manufacturing sector reflects the industry's unique operating conditions. Manufacturers have large volumes of food and ingredients and a relatively limited number of manufacturing locations. Higher food waste volumes per location allows for greater economies of scale when recycling food products, leading to a focus on recycling as the primary diversion method.

In addition, manufacturers have a significant amount of semifinished products, such as ingredients or sauces, and unavoidable waste, such as trimmings and peels. For example, if a company changes the vegetables in a frozen entrée or discontinues a particular variety of yogurt, a manufacturing facility can find itself with tens of thousands of pounds of unneeded vegetables, fruit, or similar ingredients, which may be challenging to donate due to regulatory or food bank requirements. Similarly, since vegetable and fruit trimmings and peels cannot be donated, adding them to animal feed may be the best use of that organic material.

## Food Waste Diversion

The vast majority (94.9 percent) of food waste generated by manufacturing survey respondents in 2013 was donated or recycled, as shown in Figure 2. On average, survey respondents generated 53 pounds of food waste per thousand dollars of company revenue. As an illustrative example, for a large company with \$1 billion in revenues, average food waste generation (based on survey results) would be 53 million pounds. The total food waste generated, for the 15 manufacturers that submitted full survey results, was 7.1 billion pounds.

**Figure 2. Destination of Food Waste, Manufacturing Sector Respondents**



These results are consistent with the food waste diversion results reported in 2011 (1.6 percent of respondent food waste was donated, 93 percent was recycled, and 5.4 percent was disposed of). Indeed, the results do not show any statistically significant change from 2011 to 2013; any small changes are likely a

result of different companies responding to the survey<sup>14</sup> and do not necessarily reflect changes in industry performance overall.

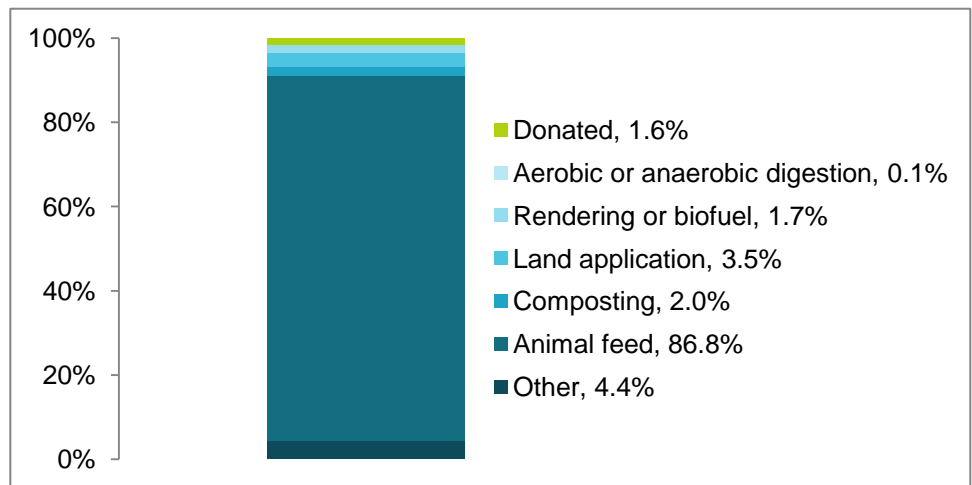
Food waste diversion rates commonly vary from company to company; for manufacturing sector respondents, anywhere between 65 and 100 percent of food waste is typically donated or recycled. This diversity in approaches to managing food waste is partially due to different company business models (for example, beverage producers have different diversion options than do food producers) and partially due to different levels of expertise and emphasis on food waste diversion.

### METHODS

Figure 3 below provides additional details about the methods that manufacturing respondents use to divert food waste to higher uses. In 2013, animal feed was the main method for diverting food waste, with 86.8 percent percent of all diverted food being converted into animal feed. Land application was the second most common diversion method, with 3.5 percent of diverted food waste recycled in this manner. This is consistent with the 2011 survey results, in which animal feed was also the primary method of diverting food waste.

The FWRA has highlighted a number of best practices and successful case studies for the manufacturing industry, including partnerships with donation organizations like Feeding America and Food Donation Connection. Some specific examples can be found in the [FWRA “Best Practices & Emerging Solutions Toolkit.”](#)<sup>15</sup>

**Figure 3. Destination of Diverted Food Waste, Manufacturing Sector Respondents** (as a percentage of the amount of food waste diverted)



<sup>14</sup> Six companies (37.5 percent) were first-time respondents in 2013. Ten companies participated in both the 2011 and 2013 surveys. Three companies that participated in 2011 did not participate in 2013.

<sup>15</sup> Food Waste Reduction Alliance, “Best Practices & Emerging Solutions Toolkit,” 2014, [www.foodwastealliance.org/wp-content/uploads/2014/04/FWRA\\_Toolkit\\_FINAL\\_0415141.pdf](http://www.foodwastealliance.org/wp-content/uploads/2014/04/FWRA_Toolkit_FINAL_0415141.pdf).

## Barriers to Decreasing Food Waste

Sixty percent of manufacturing respondents indicated that there are barriers to food donation, and 63 percent indicated that there are barriers to food waste recycling. For those companies that identified barriers, Tables 1 and 2 outline the major barriers they face. Each group's top barriers are in bold.

**Table 1. Barriers to Donating Food, Manufacturing Sector**

Manufacturing Sector	
Transportation constraints	<b>67%</b>
Liability concerns	<b>67%</b>
Regulatory constraints	<b>67%</b>
Insufficient storage and refrigeration at food banks	44%
Insufficient storage and refrigeration on site	33%

**Table 2. Barriers to Recycling Food Waste, Manufacturing Sector**

Manufacturing Sector	
Insufficient recycling options	<b>70%</b>
Transportation constraints	<b>70%</b>
Liability concerns	50%
Concerns about collection and storage related to food safety	50%

The top barriers to donation are transportation constraints, liability concerns, and regulatory constraints, while the top barriers to recycling are insufficient recycling options and transportation constraints.

Specific barriers mentioned for food donation include an inability to donate mislabeled or misformulated food, a lack of refrigerated storage for donations, limited employee awareness of donation programs, and a lack of organizations or resources to accept the donated food.

Specific barriers mentioned for food recycling include the limited availability of recycling facilities, transportation costs associated with long travel distances, strict internal requirements for food waste handling, liability concerns, and regulatory requirements that limit the reuse of certain types of food waste.

# Survey Findings: Retail and Wholesale Sectors

## Sector Context

The food waste profile of the retail and wholesale sectors reflects the industry's unique operating conditions. Retailers, for example, have numerous locations and a very diverse range of products. As a result, food waste diversion is a significant management and logistical challenge. In addition, each department within a store has its own food diversion requirements, adding further complexity.

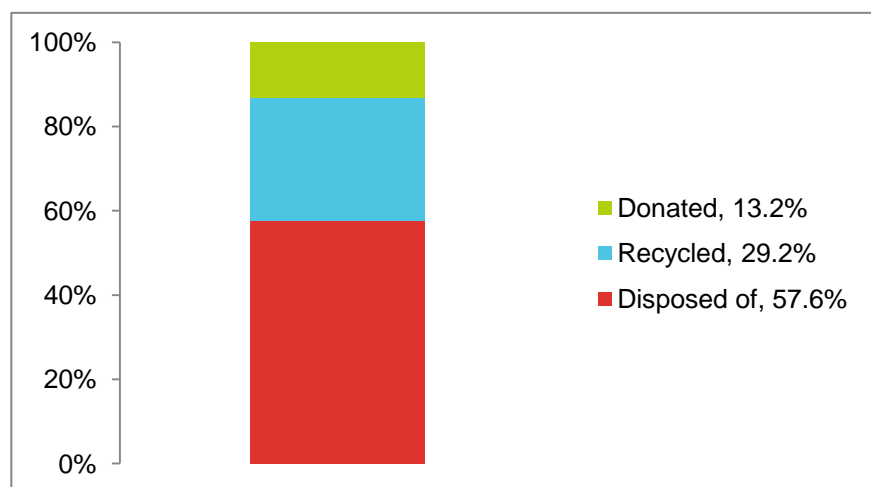
In addition, retailers primarily handle finished food products, which are often packaged. Packaged products are more suitable for donation and are often harder to recycle, because most recyclers require that the packaging be removed. The predominance of finished food products is one of the factors contributing to retailers' and wholesalers' higher donation rate (13.2 percent of food waste generated, as shown in Figure 4).

Because many retailers also have wholesale and food distribution operations, the retail and wholesale sectors are grouped together for the purposes of this analysis. In addition, a number of retailers also own manufacturing facilities for food produced under the company's private label.

## Food Waste Diversion

Approximately 42.4 percent of the food waste generated by retail and wholesale survey respondents in 2013 was donated or recycled, as shown in Figure 4. On average, survey respondents generated 10 pounds of food waste per thousand dollars of company revenue. As an illustrative example, for a large company with US\$1 billion in revenues, average food waste generation (based on survey results) would be 10 million pounds. The total food waste generated, for the 10 retailers and wholesalers that submitted full survey results, was 1.4 billion pounds.

**Figure 4. Destination of Food Waste, Retail and Wholesale Sector Respondents<sup>16</sup>**



<sup>16</sup> Note: Because there were significant differences in the companies responding to the 2011 and 2013 surveys, the results in Figure 4 cannot be directly compared with the published 2011 survey findings. For year-to-year comparisons, please see Table 3.

To begin tracking year-to-year results, we identified the companies providing complete responses in both 2011 and 2013. The food waste diversion of these firms (which represent 7 percent of total projected sales for U.S. retailers and wholesalers) is shown in Table 3.<sup>17</sup>

**Table 3. Destination of Food Waste, 2011 and 2013**

	2011	2013
Donated	13%	14%
Recycled	30%	36%
Disposed of	57%	50%

Though the data in Table 3 do not represent the performance of the entire industry, it can be seen that, for these several companies, the percentage of food waste going to landfills has decreased from 57 percent of total food waste in 2011 to 50 percent in 2013.

Food waste diversion rates commonly vary from company to company; for retail and wholesale respondents, anywhere between 10 and 80 percent of food waste is donated or recycled. This diversity in approaches to managing food waste is partially due to different company business models (for example, whether retailers also manufacture their own-brand foods) and partially due to different levels of expertise and emphasis on food waste diversion.

## METHODS

Figure 5 below provides additional details about the methods that retail and wholesale respondents use to divert food waste to higher uses. In 2013, composting was a common diversion method, representing 24.6 percent of food waste diversion, closely followed by donation at 23.3 percent.

The study “Decades of Donations: The 2012 Survey of the Food Retail Industry’s Support of Food Banks” reports that of 74 retail respondents, 99 percent support their local food bank by donating a variety of goods and services. More than three-quarters (76 percent) of retailers indicated they had donated food items to food banks. In total in 2012, retailers were responsible for more than 800 million pounds of food contributed to food banks. According to Feeding America, the nation’s leading domestic hunger-relief charity, this figure makes food retail contributions the largest donation stream within the food bank network.<sup>18</sup>

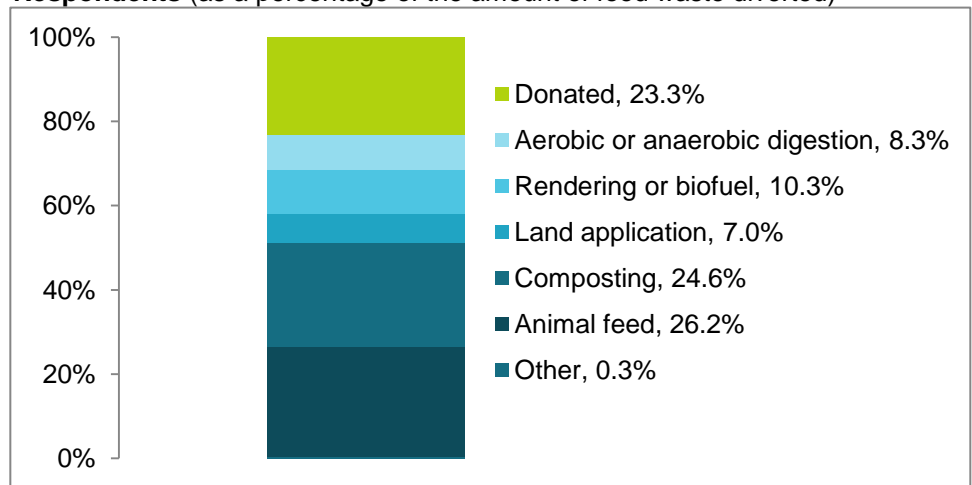
The FWRA has highlighted a number of best practices and successful case studies for the wholesale and retail sectors. For more information, please see the [“Best Practices & Emerging Solutions Toolkit.”](#)<sup>19</sup>

<sup>17</sup> Four companies (30.8 percent) were first-time respondents in 2013. Nine companies participated in both the 2011 and 2013 surveys. Four companies that participated in 2011 did not participate in 2013.

<sup>18</sup> Food Marketing Institute, “Decades of Donations: The 2012 Survey of the Food Retail Industry’s Support of Food Banks,” 2012, available at [www.fmi.org/forms/store/ProductFormPublic/search?action=1&Product\\_productNumber=2394](http://www.fmi.org/forms/store/ProductFormPublic/search?action=1&Product_productNumber=2394).

<sup>19</sup> Food Waste Reduction Alliance, “Best Practices & Emerging Solutions Toolkit,” 2014, [www.foodwastealliance.org/wp-content/uploads/2014/04/FWRA\\_Toolkit\\_FINAL\\_0415141.pdf](http://www.foodwastealliance.org/wp-content/uploads/2014/04/FWRA_Toolkit_FINAL_0415141.pdf).

**Figure 5. Destination of Diverted Food Waste, Retail and Wholesale Sector Respondents** (as a percentage of the amount of food waste diverted)



### Barriers to Decreasing Food Waste

All retail and wholesale respondents indicated that there are barriers to food donation, and 92 percent indicated that there are barriers to food waste recycling. For those companies that identified barriers, Tables 4 and 5 outline the major barriers to decreasing food waste as identified by retailer and wholesaler survey respondents. Each group's top two barriers are in bold.

**Table 4. Barriers to Donating Food, Retail and Wholesale Sectors**

Retail and Wholesale Sectors	
Transportation constraints	<b>69%</b>
Insufficient storage and refrigeration at food banks	<b>69%</b>
Liability concerns	54%
Insufficient storage and refrigeration on site	46%
Regulatory constraints	15%

**Table 5. Barriers to Recycling Food Waste, Retail and Wholesale Sectors**

Retail and Wholesale Sectors	
Insufficient recycling options	<b>92%</b>
Transportation constraints	<b>58%</b>
Concerns about collection and storage related to food safety	50%
Liability concerns	41%

The top barriers to donation are transportation constraints and insufficient storage and refrigeration at food banks, while the top barriers to recycling are insufficient recycling options and transportation constraints.

Specific barriers mentioned for food donation include regulatory mandates to destroy returned products, space limitations at retail stores and at food banks,



inability to keep food cold throughout the donation process, food safety concerns, lack of internal understanding of the benefits of donating food, insufficient food volumes to justify pickup by the food bank, inconsistent rules across food banks regarding what food they will accept, and labor costs to sort donated food.

Specific barriers mentioned for food recycling include the limited availability of organic recycling facilities, difficulty making the business case for cost effectiveness when compared to disposal (especially with low landfill tipping fees in certain areas of the country), distance between stores and recycling facilities (leading to a high cost of transport), sanitation and space constraints related to food storage, and the high cost of on-site solutions like digesters.

# Survey Findings: Restaurant Sector

## Sector Context

The restaurant sector faces unique challenges with regard to diverting and recycling food waste that should be explained to give context to the following data. The restaurant sector includes many different types of businesses—from managed-services cafeteria operations to quick-service restaurants to fine dining establishments. The options for decreasing and diverting food waste differ significantly for each of these different types of restaurants.

For example, full-service restaurants generally have more food waste generated on their premises, as customers mainly consume the food on site. Quick-service restaurants generally have less on-site-generated food waste, as customers often take their food to go, disposing of waste off the premises. Notably, retailers and manufacturers (for the most part) do not handle significant amounts of food waste generated by consumers; this is a challenge unique to the restaurant sector.

Another factor that can complicate the tracking and management of food waste diversion in a multiunit restaurant company is whether restaurant locations are franchised. Corporate and brand headquarters have limited access to and control over the activities of franchised locations, which are owned and operated by a third party. It can be more challenging for companies with a franchise-based business model to centrally track food waste and institute system-wide food waste programs, as individual franchises may use different donation, recycling, and disposal partners, depending on their location. At the same time, though single-unit restaurants are more centralized, it can also be difficult for smaller organizations to dedicate the resources and staff time necessary to manage food waste programs.

In regard to donation of prepared food, a restaurant must consider many factors, such as food safety concerns, local laws and regulations, and food storage and transportation.

Finally, for food waste recycling, the availability of composting is a major challenge; composting infrastructure is unavailable in many places in the United States. The relative lack of economic incentives for composting is a factor as well, especially compared with used cooking oil recycling (which is in demand for conversion to biodiesel).<sup>20</sup>

## Food Waste Diversion

The restaurant sector faces the unique challenge of diverting food waste that consumers themselves generate on site. Approximately 15.7 percent of food waste generated by restaurant survey respondents in 2013<sup>21</sup> was donated or recycled, as shown in Figure 6. On average, survey respondents generated 33 pounds of food waste per thousand dollars of company revenue. As an illustrative example, for a large company with \$1 billion in revenues, average food waste generation (based on survey results) would be 33 million pounds. The

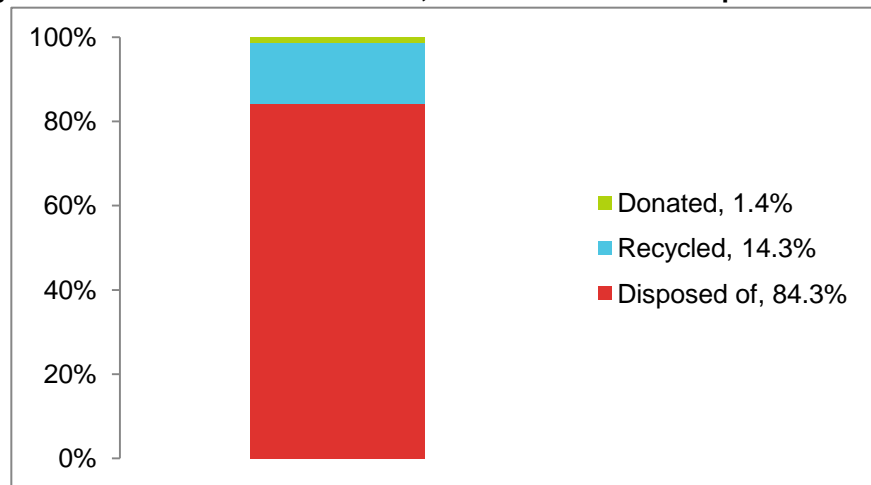
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<sup>20</sup> CNBC, "Rising Gas Prices Create Smoking Hot Demand for Used Cooking Oil," 2012, available at [www.cnbc.com/id/46607261](http://www.cnbc.com/id/46607261).

<sup>21</sup> Not all survey responses were able to be included in the survey findings; please see Appendix A for additional details.

total food waste generated, for the restaurant companies that submitted full survey results, was 2.1 billion pounds.<sup>22</sup>

**Figure 6. Destination of Food Waste, Restaurant Sector Respondents**



Food waste diversion rates commonly vary from company to company; restaurant respondents donate or recycle anywhere between 10 and 60 percent of their food waste. One explanation for this diversity is the fact, discussed above, that the restaurant sector includes many different types of businesses, including quick-service and full-service restaurants, which have very different food waste profiles. Another explanation is companies' varying levels of expertise and emphasis on food waste diversion.

## METHODS

Figure 7 below provides additional details about the methods that restaurant survey respondents use to divert food waste to higher uses. The most common method of diverting food waste was the recycling of used cooking oil, followed by composting and then food donation.

The results of the survey conducted for this report specifically addressed donation of food that would otherwise have been discarded as waste, not restaurants' overall charitable food donations. A separate, recent survey of more than 1,000 restaurant operators found that 22 percent of restaurants donate leftover food to food banks or other organizations,<sup>23</sup> and previous NRA research shows that 73 percent of restaurants—a significantly larger number—donate food as part of their community service efforts, which can consist of donation of both leftover or unsaleable food, as well as saleable food prepared for donation purposes.<sup>24</sup>

The FWRA has highlighted a number of best practices and successful case studies for the restaurant sector. For more information, please see the ["Best Practices & Emerging Solutions Toolkit."](#)<sup>25</sup>

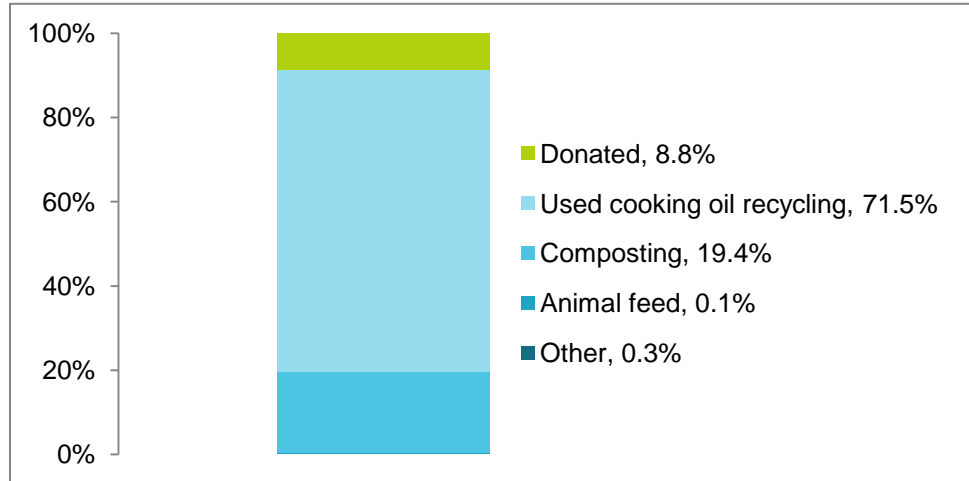
<sup>22</sup> Ten large companies and seven small companies submitted full survey results so are included in this total. For the purposes of this report, large restaurant companies are defined as having more than ten locations, and small companies are defined as having less than ten locations.

<sup>23</sup> National Restaurant Association, "Restaurant Operator Survey," 2014, unpublished research.

<sup>24</sup> National Restaurant Association, "Restaurant Industry Charitable Activities: Research Update," September 2010.

<sup>25</sup> Food Waste Reduction Alliance, "Best Practices & Emerging Solutions Toolkit," 2014. [www.foodwastealliance.org/wp-content/uploads/2014/04/FWRA\\_Toolkit\\_FINAL\\_0415141.pdf](http://www.foodwastealliance.org/wp-content/uploads/2014/04/FWRA_Toolkit_FINAL_0415141.pdf).

**Figure 7. Destination of Diverted Food Waste, Restaurant Sector Respondents** (as a percentage of the amount of food waste diverted)



### Barriers to Decreasing Food Waste

For large restaurant companies (those with more than 10 locations), 64 percent of those surveyed indicated that there are barriers to food donation, and 92 percent indicated that there are barriers to food waste recycling. For smaller restaurants, 64 percent of those surveyed also indicated that there are barriers to food donation, and 54 percent indicated that there are barriers to food waste recycling. For those companies that identified barriers, Tables 6 and 7 outline the major barriers they face. Each group's top two barriers are in bold.

**Table 6. Barriers to Donating Food, Restaurant Sector**

	Small companies (1–10 locations)	Large companies (more than 10 locations)
Transportation constraints	<b>78%</b>	<b>78%</b>
Insufficient storage and refrigeration on site	<b>67%</b>	<b>67%</b>
Liability concerns	<b>67%</b>	56%
Regulatory constraints	56%	56%
Insufficient storage and refrigeration at food banks	22%	44%

**Table 7. Barriers to Recycling Food Waste, Restaurant Sector**

	Small companies (1–10 locations)	Large companies (more than 10 locations)
Insufficient recycling options	<b>83%</b>	<b>100%</b>
Management or building constraints	50%	<b>83%</b>
Transportation constraints	<b>100%</b>	67%
Concerns about collection and storage related to food safety	33%	50%
Liability concerns	17%	33%

The top barriers to donation are transportation constraints, insufficient on-site storage, and liability concerns, while the top barriers to recycling are insufficient recycling options, transportation constraints, and management or building constraints.

Specific barriers mentioned for food donation include difficulties tracking data from individual locations, employee training and engagement, short product shelf life, too small an amount of food waste to justify a food bank pickup, liability for branded products, storage at food banks for large donations, high cost of transportation relative to the value of the product, and lack of control given a franchised business model.

Specific barriers mentioned for food recycling include difficulties tracking data from individual locations, employee training and engagement, extra cost relative to waste disposal, lack of available recycling options, a lack of information on how to start recycling programs, lack of space on site, food handling risks, and pest concerns.

## Next Steps

This survey represents the second time that industry-wide, corporate-level food waste data has been gathered directly from U.S. food manufacturers, wholesalers, and retailers. It is the first time that such data has been gathered from restaurants. As the FWRA evaluates these results and collects more data, there will be opportunities for collaborative action and for enhancing data collection.

### Opportunities for Taking Action

As noted earlier, one of the FWRA's goals is to identify opportunities to share best practices and collaborate to advance solutions that keep food waste out of landfills and ensures that edible food is donated. Earlier in 2014, the FWRA released the ["Best Practices & Emerging Solutions Toolkit,"](#) to provide companies guidance on how to reduce food waste, as well as successful case studies to learn from.

The following are some additional ways that companies can take action:

- » The survey highlighted significant differences in food donation and recycling rates from company to company. Companies can use the data in this report to compare their performance with peers, determine if their diversion, donation, and disposal rates are comparatively high or low, and share targeted success stories and lessons they have learned.
- » Survey participants identified many different barriers, and a myriad of collaborative opportunities could follow. For instance, a group of companies could focus on logistical solutions, such as opening a composting facility near a cluster of food manufacturing facilities. Policy change may also be achieved collaboratively; for example, changing tax policies to encourage additional food donation. In addition, shared educational platforms may help companies overcome internal barriers to change.

### Considerations for Enhancing Data Collection

Compared with 2011, a number of food manufacturing, wholesale, and retail companies have expanded their collection and reporting of food waste data, and we anticipate that this expansion will continue in future years. In addition, there are opportunities for expanding and strengthening this survey's data collection in future years, including:

- » **Number of participants:** Continuing to increase the number of FMI, GMA, and NRA members who participate in the survey will enable the FWRA to estimate the amount and destination of food waste more accurately.
- » **Measurement approaches:** Approaches to measuring food waste differ significantly from company to company, which poses a challenge for consistency of results. For example, some companies consider the conversion of food waste into energy a form of diversion rather than disposal, and some companies track saleable and unsaleable food donations as a single figure.
- » **Ease of reporting:** As the FWRA looks forward, an online food waste tracking system would speed the reporting process and enable more frequent reporting of results.

- » **Expanded assessment of food waste generation:** As outlined in the EPA Food Recovery Hierarchy, the first priority for addressing food waste is source reduction. Future surveys should include additional detail on approaches and barriers to reducing the amount of food waste generated in the manufacturing, wholesale, retail, and restaurant sectors.
- » **Measurement standards:** The World Resources Institute is coordinating the development of the [Food Loss & Waste Protocol](#), a multistakeholder effort to develop a global standard for measuring food loss and waste. FWRA members should become engaged in these standardization efforts, which will help companies better track and compare their performance.

## Appendix A: Additional Analysis Details

Below are several key assumptions and other factors that may impact the results presented in this document:

- » **Data availability:** Not all survey participants answered every survey question. In particular, the amount of food waste sent to landfills was not always available, as waste vendors do not typically track that figure separately. (They usually track overall disposal volumes, not the composition of the waste stream.) In this analysis, a company's data was excluded from a particular calculation if complete data for that calculation was unavailable. As a result, the number of companies included in these findings varies from calculation to calculation. Whenever possible, company data has been included in the results.
- » **Saleable and unsaleable donations:** Not all companies track separate figures for the amount of saleable and unsaleable food donations, so the amount of donated food cited in this report does include some saleable food. Where possible, only unsaleable food is included.
- » **Rounding:** Please note that the totals in figures may not add up to 100 percent due to rounding.
- » **Data accuracy:** There are many areas where food waste data is not fully available, and estimates and extrapolations must be made. Participants reported varying levels of confidence in the data they provided. As part of the survey, they were asked to self-report the accuracy of their responses on a scale of 1 to 10, where 10 is most confident. In addition, as for any survey, misinterpretations of the questions and inadvertent errors are possible. The reported accuracy of the data is as follows:

**Table 8. Reported Data Accuracy, Manufacturing Sector Respondents**

	2011	2013
Amount of food donated	7.96	7.33
Amount of food waste recycled	7.73	8.17
Amount of food waste disposed of	4.92	5.60
Total municipal waste disposed of	Not collected	7.67

**Table 9. Reported Data Accuracy, Retail and Wholesale Sector Respondents**

	2011	2013
Amount of food donated	6.95	7.27
Amount of food waste recycled	7.73	8.08
Amount of food waste disposed of	5.12	5.20
Total municipal waste disposed of	Not collected	7.42



**Table 10. Reported Data Accuracy, Restaurant Sector Respondents**

2013	
Amount of food donated	7.14
Amount of food waste recycled	5.50
Amount of food waste disposed of	5.22
Total municipal waste disposed of	5.33

As can be seen in Tables 8 and 9, the accuracy of reported data improved somewhat but did not change significantly between 2011 and 2013.

Notably, however, in both years survey respondents were least confident about the amount of food waste disposed of. Because food waste is typically mixed with other types of waste, waste-hauling vendors do not track it as a dedicated waste stream. Instead, it must be assessed via a separate waste audit, which involves gathering and sorting a sample of a facility's waste and determining what percentage is food, recyclables, and other materials. Guidance on conducting a waste audit can be found in the FWRA [“Best Practices & Emerging Solutions Toolkit.”](#)

Compared to the manufacturing and retail sectors, the restaurant sector reports a lower level of confidence in both food waste recycling and municipal waste disposal data; the difficulty of collecting data from a large number of locations is likely a significant factor in this difference.

# Appendix B: 2014 Food Manufacturer and Retailer Food Donation and Food Waste Survey

Every year Americans dispose of approximately 80 billion pounds of food waste and very little of that waste is recovered. This means that for the 312.7 million people in the United States, over 250 pounds of food per person is thrown out every year. Food sent to a landfill represents lost opportunities to improve management efficiencies, to reduce operating costs, to feed the hungry, to recover valuable resources, and to realize other benefits.

The Grocery Manufacturers Association (GMA) and Food Marketing Institute (FMI) are partnering with the National Restaurant Association (NRA) and other stakeholders in order to address this important issue. The GMA, FMI, and NRA Food Waste Reduction Alliance (FWRA) has two goals, which are to reduce the amount of food waste sent to landfills and increase the amount of unsaleable food donated to food banks. The purpose of this survey is to better understand how much food is being donated, how much food waste is being recycled or recovered, and how much is sent to landfills and other waste disposal facilities in the United States.

Your participation in this simple survey is critical to the success of this important initiative. To ensure confidentiality, we have engaged BSR (Business for Social Responsibility), a highly regarded sustainability organization, to handle all of the data. Results will only be presented to GMA, FMI, and NRA in the aggregate without attribution to any company. **Please send the completed survey to Corinna Kester at email: [ckester@bsr.org](mailto:ckester@bsr.org) or fax: (415) 984-3201. The survey response deadline is March 14, 2014.**

BSR will remove all identifying information before providing the aggregated data to FWRA members. If follow up is required, it will be conducted by BSR so as to maintain confidentiality.

If you have any questions or require additional information regarding this survey, please contact Meghan Stasz at GMA (202-639-5935), Jeanne von Zastrow at FMI (435-259-3342), or Corinna Kester at BSR (415-984-3244).

**1. General Information:** General information regarding the size of your company is needed in order to analyze the data, and to make industry-wide assumptions after the data is aggregated. Please provide a point of contact so that we may follow up with you, if needed. All information will be kept confidential using our third-party consultant.

- a) Company name \_\_\_\_\_.
- b) Annual U.S. sales (US\$) \_\_\_\_\_ Fiscal year \_\_\_\_\_.
- c) Number of U.S. employees (rounded to the nearest thousand) \_\_\_\_\_.
- d) Primary business: is your company (please only check one):
  - \_\_\_ Primarily a food manufacturer
  - \_\_\_ Primarily a food retailer
  - \_\_\_ Primarily a food wholesaler

- e) In addition to the primary business indicated in 1d), what other business operations does your company own and operate (please check all that apply):
  - Food manufacturing
  - Food retailing
  - Food warehouse and/or distribution
- f) How many food retail locations does your company operate?
- g) How many food manufacturing locations does your company operate?
- h) How many food warehouse/distribution locations does your company operate?
- i) Point of contact information (name) \_\_\_\_\_  
 Point of contact (phone number and email): \_\_\_\_\_

**2. Unsaleable Food Donations for Human Consumption:**

Unsaleable food may be generated throughout the manufacturing and retail value chain. For instance, mistakes during production may result in food that is perfectly safe and delicious, but not saleable due to quality, overproduction, or labeling issues. Product ingredients and semifinished products that are not suitable for retail but are safe for human consumption may also be donated. The outer packaging of grocery items may become damaged during distribution and retail operations, thus making them unsuitable for sale but still perfectly safe to eat. Fresh food items such as day-old bread, produce with blemishes and prepared foods and other perishable items that are near sell-by dates, such as milk, juices, and fresh meats may also be unsuitable for sale, but safe for consumption. Please only include unsaleable food in your answer below. Do not include food that is produced expressly for donation, purchased food provided by customers or employees expressly for donation, or any food that is donated to organizations if it is still suitable for retail sale.

- a) What is the total weight in pounds of unsaleable food donated for human consumption by all of your company’s U.S. operations during calendar year 2013? If you do not know the exact amount, please provide as accurate an estimate as possible.

Donations: \_\_\_\_\_ lbs

- b) Please use the following scale to indicate the accuracy of your answer to Question 2a. Number one on the scale indicates that your answer is a best guess based on experience, not measured data. Number five indicates that your answer is based on some measured data used to extrapolate a somewhat accurate answer. Number ten means that your answer is based on actual measures that are believed to be very accurate.

Please circle one number: 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10

- c) Are there barriers, either internal or external, that prevent your company from donating more unsaleable food? For example: liability concerns, regulatory constraints, or food bank limitations (i.e., insufficient refrigeration, transportation, etc.).

Yes \_\_\_ No \_\_\_

If yes, please check all that apply, and explain in the space below or by attaching a separate page.

Liability concerns	Yes ___ No ___
Regulatory constraints	Yes ___ No ___
Insufficient refrigeration and/or storage on site	Yes ___ No ___
Insufficient refrigeration and/or storage at	

Food bank	Yes___No___
Transportation constraints (distance, cost, fleet, etc.)	Yes___No___
Other barriers (please list)	Yes___No___

Please explain here or attach a separate page:

**3. Food Waste Reuse and Recycling:** For purposes of completing this survey, food waste has been defined as: *any solid or liquid food substance, raw or cooked, which is discarded, or intended or required to be discarded. Food wastes are the organic residues generated by the processing, handling, storage, sale, preparation, cooking, and serving of foods.*

a) What is the total weight in pounds of food waste reused or recycled by all of your company’s U.S. operations during calendar year 2013? If you do not know exact amounts, please provide as accurate an estimate as possible. Please provide a total weight and breakdown by category, if possible:

Animal feed	_____ lbs.
Aerobic or anaerobic digestion	_____ lbs.
Composting	_____ lbs.
Land application	_____ lbs.
On-site energy recovery (such as fuel for a boiler that produces process steam)	_____ lbs.
Rendering or biofuel	_____ lbs.
All other (describe:_____)	_____ lbs.
<b>Total</b>	<b>_____ lbs.</b>

b) Please use the following scale to indicate the accuracy of your answers to Question 3a. Number one on the scale indicates that overall your answers are best guesses based on experience, not measured data. Number five indicates that your answers are based on some measured data used to extrapolate somewhat accurate answers. Number ten means that your answers are based on actual measures that are believed to be very accurate.  
Please circle one number: 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10

c) Are there barriers, either internal or external, that prevent your company from reusing and recycling more food waste (for example, liability concerns, limited access to organics recyclers, or food safety concerns, etc.)? Yes\_\_\_ No\_\_\_

If yes, please check all that apply, and explain in the space below or by attaching a separate page.

Liability concerns	Yes___No___
Food safety concerns regarding collection and storage	Yes___No___
Insufficient recycling options	Yes___No___
Transportation constraints (distance, cost, fleet, etc.)	Yes___No___

Please explain here or attach a separate page:

**4. Food and Solid Waste Disposal:** This includes all food wastes, as defined above, that are transported to traditional disposal facilities such as landfills, municipal waste incinerators and wastewater treatment plants. Include finished products that are disposed of due to recall. Do not include food waste listed in the question above as reused or recycled. Also, do not include organic waste disposed of through on-site sanitary sewers due to routine processes, such as cleaning and sanitation; however, do include finished food products that are disposed of by pouring down the sanitary sewer drain or disposal at a wastewater treatment plant. If you do not know the exact amount of food waste disposed of, please provide as accurate an estimate as possible.

a) What is the total weight in pounds of food waste transported to disposal facilities, such as landfills, municipal waste incinerators, and wastewater treatment plants, by all of your company's U.S. operations during calendar year 2013?

Food waste disposal: \_\_\_\_\_ lbs

b) Please use the following scale to indicate the accuracy of your answer to Question 4a. Number one on the scale indicates that your answer is a best guess based on experience, not measured data. Number five indicates that your answer is based on some measured data used to extrapolate a somewhat accurate answer. Number ten means that your answer is based on actual measures that are believed to be very accurate.

Please circle one number: 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10

c) What is the total weight in pounds of all municipal waste (i.e., all garbage, including food waste) transported to disposal facilities, such as landfills, municipal waste incinerators, and wastewater treatment plants, by all of your company's U.S. operations during calendar year 2013?

Total waste disposal: \_\_\_\_\_ lbs

d) Please use the following scale to indicate the accuracy of your answer to Question 4c. Number one on the scale indicates that your answer is a best guess based on experience, not measured data. Number five indicates that your answer is based on some measured data used to extrapolate a somewhat accurate answer. Number ten means that your answer is based on actual measures that are believed to be very accurate.

Please circle one number: 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10

Please return the completed survey by **March 14, 2014** and send to Corinna Kester at email: [ckester@bsr.org](mailto:ckester@bsr.org), tel: (415) 984-3244, and fax: (415) 984-3201.

# Appendix C: 2014 National Restaurant Association Food Donation and Food Waste Survey

Every year Americans dispose of approximately 80 billion pounds of food waste and very little of that waste is recovered. This means that for the 312.7 million people in the United States, over 250 pounds of food per person is thrown out every year. Food sent to a landfill represents lost opportunities to improve management efficiencies, to reduce operating costs, to feed the hungry, to recover valuable resources, and to realize other benefits.

The National Restaurant Association (NRA) has partnered with the Grocery Manufacturers Association (GMA) and Food Marketing Institute (FMI) in order to address this important issue. Together we formed the Food Waste Reduction Alliance (FWRA), which has two goals: reduce the amount of food waste sent to landfills and increase the amount of unsaleable food donated to food banks. The purpose of this survey is to better understand how much food is being donated, how much food waste is being recycled or recovered, and how much is sent to landfills and other waste disposal facilities in the United States.

Your participation in this simple survey is critical to the success of this important initiative. To ensure confidentiality, we have engaged BSR (Business for Social Responsibility), a highly regarded sustainability organization, to handle all of the data. Results will only be presented to NRA, GMA, and FMI in the aggregate without attribution to any company. **Please send the completed survey to Corinna Kester at email: [ckester@bsr.org](mailto:ckester@bsr.org) or fax: (415) 984-3201. The survey response deadline is March 14, 2014.**

This survey can be completed using this Word document or can be filled out online at <https://www.surveymonkey.com/s/NRAfoodsurvey>.

BSR will remove all identifying information before providing the aggregated data to FWRA members. If follow up is required, it will be conducted by BSR so as to maintain confidentiality.

If you have any questions or require additional information regarding this survey, please contact: Laura Abshire at NRA (202-973-5380) or Corinna Kester at BSR (415-984-3244).

## FOOD WASTE SURVEY:

### 1) General Information:

General information regarding the size of your company is needed in order to analyze the data, and to make industry-wide assumptions after the data is aggregated.

- a) Company name \_\_\_\_\_.
- b) Annual U.S. sales \_\_\_\_\_.
- c) Number of U.S. employees (rounded to the nearest thousand) \_\_\_\_\_.
- d) Point of contact information (name, phone number, and email)  
\_\_\_\_\_.

## 2) Restaurant Brands in the United States:

- a) Brand name: \_\_\_\_\_  
Total number of U.S. restaurant locations \_\_\_\_\_  
Restaurant concept (quick serve, casual dining, fast casual, casual, café/bistro, fine dining, or other) \_\_\_\_\_.
- b) Brand name: \_\_\_\_\_  
Total number of U.S. restaurant locations \_\_\_\_\_  
Restaurant concept (quick serve, casual dining, fast casual, casual, café/bistro, fine dining, or other) \_\_\_\_\_.
- c) Add more as needed or attach a separate page.

## 3) Percent of U.S. Locations That Are Company Owned and Franchisee Owned:

% company owned \_\_\_\_\_ % franchisee owned \_\_\_\_\_

## 4) Unsaleable Food Donations for Human Consumption:

Please only include unsaleable food in your answer below. Unsaleable food refers to food that would have been discarded but was instead donated to feed people. Do not include food that is prepared expressly for donation, for example, through a holiday program or during a disaster recovery.

- a) How much unsaleable food would you estimate your company donates for human consumption **per U.S. location per month in pounds**? If you do not know exact amounts, please provide as accurate an estimate as possible.  
\_\_\_\_\_
- b) Please use the following scale to indicate the accuracy of your answer to Question 4a. Number one indicates that your answer is a best guess based on experience, not measured data. Number five indicates that your answer is based on some measured data used to extrapolate a somewhat accurate answer. Number ten means that your answer is based on actual measures that are believed to be very accurate.  
Please circle one number: 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10
- c) What is the **total amount** of unsaleable food donated for human consumption by all of your company's U.S. operations in the **2013 calendar year in pounds**?
- d) Please use the following scale to indicate the accuracy of your answer to Question 4c. Number one indicates that your answer is a best guess based on experience, not measured data. Number five indicates that your answer is based on some measured data used to extrapolate a somewhat accurate answer. Number ten means that your answer is based on actual measures that are believed to be very accurate.  
Please circle one number: 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10
- e) Are there barriers, either internal or external, that prevent your company from donating more food? For example: liability concerns, regulatory constraints, food bank limitations (i.e., insufficient refrigeration, transportation, etc.).  
Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, please check all that apply, and explain in the space below or by attaching a separate page.

- |  |                |
|--|----------------|
| Liability concerns                                       | Yes ___ No ___ |
| Regulatory constraints                                   | Yes ___ No ___ |
| Insufficient refrigeration and/or storage on site        | Yes ___ No ___ |
| Insufficient refrigeration and/or storage at food bank   | Yes ___ No ___ |
| Transportation constraints (distance, cost, fleet, etc.) | Yes ___ No ___ |
| Other barriers (please list)                             | Yes ___ No ___ |

Please explain here or attach a separate page:

- f) Please rate your company’s interest in participating in an established food donation program.
- No interest
  - Low interest
  - Moderate interest
  - Very interested
  - Don’t know
  - N/A (already participate)

## 5) Food Waste Reuse and Recycling:

**Food waste** can be defined as any solid or liquid food substance, raw or cooked, which is discarded, or intended or required to be discarded. Food wastes are the organic residues generated by the processing, handling, storage, sale, preparation, cooking, and serving of foods. **Pre-consumer food waste** refers to waste produced in the production of a product and can often be referred to as back-of-the-house waste (scraps, etc.). **Post-consumer food waste** refers to waste produced by the end user or customer and can often be referred to as front-of-the-house food waste or plate waste.

- a) What is your average volume of food waste that is recycled **per U.S. location per month in pounds**? This includes composting, conversion to biodiesel or animal feed, etc. If you do not know exact amounts, please provide as accurate an estimate as possible. Please provide a total weight and breakdown by category, if possible:

	Pre-Consumer	Post-Consumer
Composting	_____ lbs.	_____ lbs.
Used cooking oil (e.g., for biodiesel)	_____ lbs.	_____ lbs.
Animal feed	_____ lbs.	_____ lbs.
Other (describe: _____)	_____ lbs.	_____ lbs.
<b>Total</b>	_____ <b>lbs.</b>	_____ <b>lbs.</b>

- b) Please use the following scale to indicate the accuracy of your answer to Question 5a. Number one indicates that your answer is a best guess based on experience, not measured data. Number five indicates that your answer is based on some measured data used to extrapolate a somewhat accurate answer. Number ten means that your answer is based on actual measures that are believed to be very accurate.

Please circle one number: 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10



c) What is your average recycling volume for the following types of materials **per U.S. location per month in pounds**? If you do not know exact amounts, please provide as accurate an estimate as possible. Please provide a total weight and breakdown by category, if possible:

Corrugated cardboard	_____ lbs.
Paper	_____ lbs.
Plastic	_____ lbs.
Aluminum	_____ lbs.
Glass	_____ lbs.
All other (describe: _____)	_____ lbs.
<b>Total</b>	<b>_____ lbs.</b>

d) Please use the following scale to indicate the accuracy of your answer to Question 5c. Number one indicates that your answer is a best guess based on experience, not measured data. Number five indicates that your answer is based on some measured data used to extrapolate a somewhat accurate answer. Number ten means that your answer is based on actual measures that are believed to be very accurate.

Please circle one number: 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10

## 6) Barriers and Challenges to Recycling Food Waste:

a) Are there barriers, either internal or external, that prevent your company from recycling more food waste? For example: liability concerns, limited access to organics recyclers, food safety concerns, etc. Yes\_\_\_\_ No\_\_\_\_\_

If yes, please check all that apply, and explain in the space below or by attaching a separate page.

Liability concerns	Yes____No_____
Food safety concerns regarding collection and storage	Yes____No_____
Insufficient recycling options	Yes____No_____
Transportation constraints (distance, cost, etc.)	Yes____No_____
Management or building constraints	Yes____No_____
Other (please describe: _____)	Yes____No_____

Please explain here or attach a separate page:

b) What percentage of your restaurant locations currently have organics recycling services (i.e., food waste recycling services)? \_\_\_\_\_

c) Rate your company’s interest in providing organics recycling and food waste recycling

- ( ) No interest
- ( ) Low interest
- ( ) Moderate interest
- ( ) Very interested
- ( ) Don’t know
- ( ) N/A (already participate)

## 7) Food Waste Solid Waste Disposal:

- a) What is the average volume of **food waste** that is transported to disposal facilities such as landfills, municipal waste incinerators and wastewater treatment plants **per U.S. location per month in pounds**? Please answer for both pre- and post-consumer waste to the best of your ability.

Pre-consumer waste	_____	lbs.
Post-consumer waste	_____	lbs.
<b>Total</b>	_____	<b>lbs.</b>

- b) Please use the following scale to indicate the accuracy of your answer to Question 7a. Number one indicates that your answer is a best guess based on experience, not measured data. Number five indicates that your answer is based on some measured data used to extrapolate a somewhat accurate answer. Number ten means that your answer is based on actual measures that are believed to be very accurate.

Please circle one number: 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10

- c) What is your estimated total amount of municipal **solid waste** (all garbage, including food waste) **per U.S. location per month in pounds**?

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- d) Please use the following scale to indicate the accuracy of your answer to Question 7c. Number one indicates that your answer is a best guess based on experience, not measured data. Number five indicates that your answer is based on some measured data used to extrapolate a somewhat accurate answer. Number ten means that your answer is based on actual measures that are believed to be very accurate.

Please circle one number: 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10