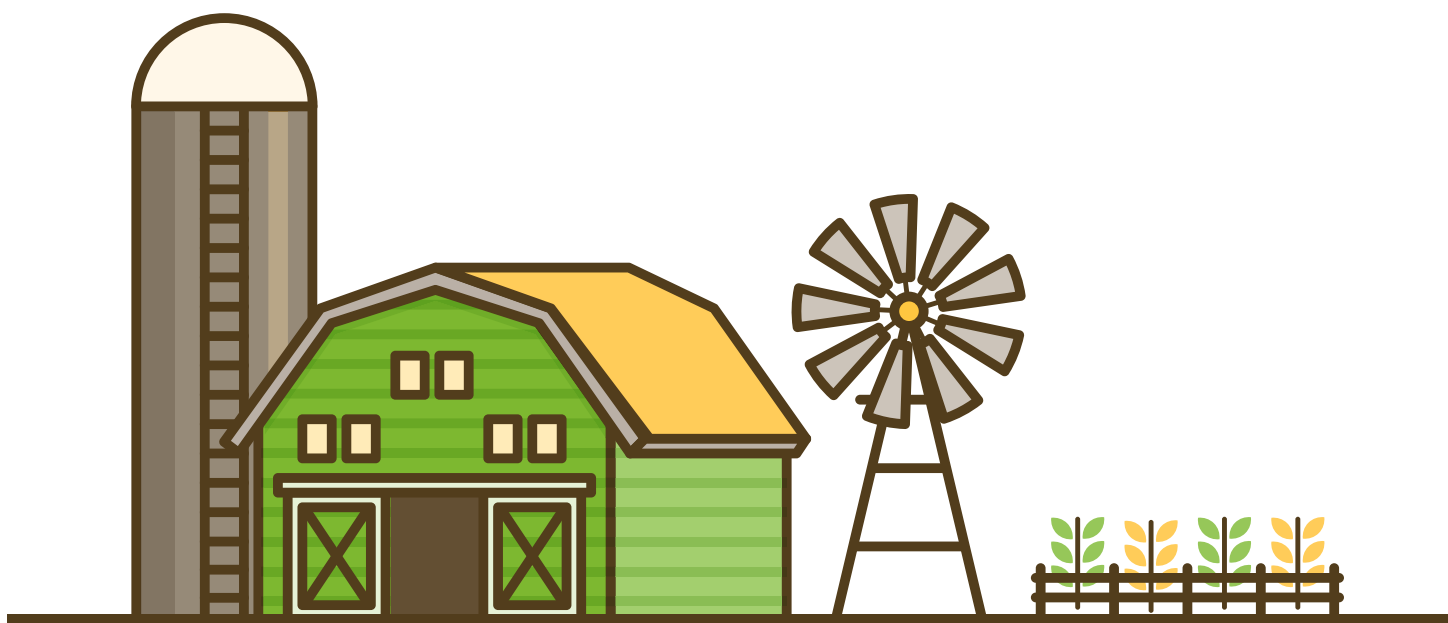


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# OPPORTUNITIES TO REDUCE FOOD WASTE IN THE 2018 FARM BILL

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**Prevention**



**Recovery**



**Recycling**



**Coordination**

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## ABOUT THE HARVARD LAW SCHOOL FOOD LAW AND POLICY CLINIC

The Harvard Law School Food Law and Policy Clinic, a division of the Center for Health Law and Policy Innovation, is an experiential teaching program at Harvard Law School that links law students with opportunities to work with clients and communities on various food law and policy issues. The clinic strives to increase access to healthy foods, assist small and sustainable farmers in breaking into new commercial markets, and reduce waste of healthy, wholesome food, while educating law students about ways to use law and policy to positively impact the food system. For more information, visit <http://www.chlpi.org/flpc>.

# TABLE OF CONTENTS

**EXECUTIVE SUMMARY.....i**

**INTRODUCTION.....1**

**FOOD WASTE PREVENTION.....2**

    Recommendation: Standardize and clarify date labels.....3

    Recommendation: Provide funding to K-12 schools to incorporate food waste prevention practices and food recovery education in their programs.....3

    Recommendation: Launch a national food waste education and awareness campaign.....5

    Recommendation: Provide grant funding for new technologies to slow spoilage.....6

    Recommendation: Implement a certification system for businesses that demonstrate food waste reduction practices.....7

    Recommendation: Conduct comprehensive national research on food waste to quantify the amount of food wasted, identify the types of food wasted, and determine the points in the supply chain at which food tends to be wasted.....8

**FOOD RECOVERY: INCREASING DONATIONS BY FARMS, FOOD MANUFACTURERS, RETAILERS AND RESTAURANTS.....9**

    Recommendation: Strengthen the Bill Emerson Good Samaritan Food Donation Act.....9

    Recommendation: Provide grant resources to support infrastructure investments for food recovery organizations.....11

    Recommendation: Provide grants to innovative food recovery models.....12

    Recommendation: Encourage USDA grant recipients to donate surplus food by incentivizing food donation through grant selection criteria.....13

    Recommendation: Expand federal tax incentives for food donations.....14

    Recommendation: Require USDA to conduct a study on ways to reduce food waste and support food recovery from farms.....15

**FOOD WASTE RECYCLING: COMPOSTING AND ANAEROBIC DIGESTION.....17**

    Recommendation: Provide grants to support state and municipal organic waste bans, zero waste goals, and food waste prevention plans.....17

    Recommendation: Provide grants and loans for the development of composting and anaerobic digestion infrastructure.....18

    Recommendation: Provide research and development funding to expand the range of compostable and digestible materials and explore additional applications for compost and digestate.....20

**FOOD WASTE REDUCTION COORDINATION.....21**

    Recommendation: Create an Office of Food Waste Reduction or a Food Waste Coordinator Position within the USDA.....21

    Recommendation: Establish an interagency task force and an external advisory council on food recovery.....22

**CONCLUSION.....23**

**TABLE OF RECOMMENDATIONS.....24**

# EXECUTIVE SUMMARY

The United States produces an abundance of food each year, but approximately 40% of it never makes it to people's plates. Each year, 62.5 million tons of food winds up in landfills, costing the U.S. about \$218 billion each year to grow, process, transport and dispose of food that is never eaten. This waste carries with it enormous economic, environmental and social costs, but also represents great opportunity. It is estimated that recovering just 30% of the food that goes to waste in the U.S. could feed all the food insecure Americans their total diet. ReFED, a collaboration of business, nonprofit, foundation and government leaders committed to reducing food waste, analyzed 27 food waste solutions and found that their implementation has the potential to generate 15,000 new jobs and \$1.9 billion in annual business profit potential, to double the amount of food donations to nonprofits, and to save 1.6 trillion gallons of water and avoid 18 million tons of greenhouse gas emissions annually.

The federal government has an important role to play in the continued effort to reduce food waste. In 2015, the U.S. Department of Agriculture (USDA) and the U.S. Environmental Protection Agency (EPA) jointly announced the nation's first-ever food waste reduction goal, aiming to cut our food waste by 50% by the year 2030. However, in order to meet our waste reduction goals, the federal government must make food waste reduction a legislative priority in upcoming years. As the 2018 Farm Bill will be the first U.S. Farm Bill authorized since the announcement of our national goal, now is the time to make a commitment to progress in this area. The Farm Bill authorizes \$500 billion over 5 years across the entire food system, but until now, none of that money has been spent on food waste reduction.

Opportunities to Reduce Food Waste in the 2018 Farm Bill details how Congress can take action to reduce food waste, highlighting opportunities for inclusion in the 2018 Farm Bill. Given the strong bipartisan support for measures to reduce food waste, the next Farm Bill provides an exciting opportunity to invest in food waste reduction in order to support the social, economic, and environmental benefits that can come along with reducing food waste. This report breaks food waste recommendations into categories based on whether they are intended to reduce food waste, recover more food for donation, or recycle food scraps through composting or anaerobic digestion.



## FOOD WASTE PREVENTION

Waste prevention efforts aim for early intervention at the root causes of food waste – they locate and address inefficiencies in our food system before excess food is produced or transported to places that cannot utilize that food. Waste prevention efforts keep millions of tons of food out of the landfill, and altogether, the waste prevention policies discussed in this section have the potential to divert nearly 1.5 million tons of food waste annually from landfills, while producing more than \$4.5 billion each year in economic value.

### Top Food Waste Prevention Solutions for the 2018 Farm Bill:

#### Standardize and clarify date labels

There is no federal system regulating the “sell by,” “best by,” “use by,” and other date labels used on food. Instead, each state decides whether and how to regulate date labels, leading to a patchwork of inconsistent regulations. Manufacturers have broad discretion over how expiration dates on foods are selected, and these dates typically reflect quality and taste rather than safety. Yet businesses, individuals, and even state regulators frequently misunderstand the dates and interpret them to be indicators of safety, leading to the unnecessary waste of wholesome food. Some states even restrict or forbid the sale or donation of past-date foods. These inconsistent and misguided state laws lead to wholesome foods unnecessarily being discarded rather than donated. In order to reduce consumer confusion and the resulting food waste the 2018 Farm Bill should standardize date labels through the Miscellaneous Title or a new Food Waste Reduction Title.

## **Provide funding to K-12 schools to incorporate food waste prevention and food recovery education in their programs**

Schools are not immune to the national food waste rates and elementary and secondary schools waste about two pounds of food per student each month. A multitude of factors contribute to food waste in schools. For instance, students generally have too little time to eat, and rushed students eat less and throw away more. Yet schools offer opportunities to both reduce waste and educate the next generation about the value of food. The 2018 Farm Bill should set aside grant funding to support K-12 schools in implementing food waste reduction practices in cafeterias onsite and integrating food recovery education into school curricula. Congress could achieve this by creating a new grant program through the Miscellaneous Title or a Food Waste Reduction Title, or by adjusting authorizing language of the Food and Agriculture Service Learning Program (Nutrition Title) to explicitly include food waste reduction education.

## **Launch a national food waste education and awareness campaign**

American consumers alone are responsible for 43% of all U.S. food waste. Research shows that while consumers understand the importance of food waste reduction in the U.S., they do not recognize their own role in reducing food waste. The federal government can use the upcoming 2018 Farm Bill to support a national food waste education and awareness campaign to address and correct wasteful practices in the Miscellaneous Title or a Food Waste Reduction Title. Congress could also modify the Expanded Nutrition Education Program (Research Title) or the Supplemental Nutrition Access Program Education (Nutrition Title), which teach strategies for purchasing and preparing healthy food on a budget, to include consumer food waste prevention tactics.

### **Additional Waste Prevention Solutions:**

- Provide grant funding for new technologies to slow spoilage
- Implement a certification system for businesses that demonstrate food waste reduction practices
- Conduct comprehensive national research on food waste to quantify the amount of food wasted, identify the types of food wasted, and determine the points in the supply chain at which food tends to be wasted



## **FOOD RECOVERY: INCREASING DONATIONS BY FARMS, FOOD MANUFACTURERS, RETAILERS AND RESTAURANTS**

Food recovery solutions aim to recover surplus food and redistribute it to those in need. Potential exists to recover surplus food from all levels of the food chain, and reducing barriers to food donation could result in the recovery of roughly 5.8 million additional tons of food each year. Nearly half of this new food recovery potential comes from farms, more than a third from restaurants, and the rest from grocers and retailers.

## **Top Food Recovery Solutions for the 2018 Farm Bill:**

### **Strengthen the Bill Emerson Good Samaritan Food Donation Act**

The Bill Emerson Good Samaritan Food Donation Act (Emerson Act) provides a federal baseline of civil and criminal liability protections for food donors and the nonprofits that distribute food donations. The protections afforded by the Emerson Act are significant and have enabled many food donations; yet, numerous existing and prospective donors remain unaware of these protections and several provisions in the Act could be broadened to better align with the current food recovery landscape. The 2018 Farm Bill should delegate to USDA or another federal agency the responsibility to provide guidance related to the Emerson Act. Furthermore, Congress should modify several provisions in the Act to better align with the current food recovery landscape. These changes could be incorporated into the Miscellaneous Title or a Food Waste Reduction Title.



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## Provide grant support for infrastructure investments to food recovery organizations

The facilities needed to successfully recover and process surplus food can make donation costly for donors and food recovery organizations, which in turn limits the scope of their operations. The 2018 Farm Bill should provide grant support to food recovery organizations to enable them to purchase necessary equipment and infrastructure, such as refrigerated vehicles, kitchen equipment, and storage space, as well as to pay for labor needed to prepare and transport donated food. Congress could do this by expanding eligibility for the Farmers Market and Local Food Promotion Program (Horticulture and Organic Agriculture Title) to food recovery organizations, and create a food recovery set aside for that program and the Community Food Project grants (Nutrition Title). Or it could create an entirely new grant program under the Miscellaneous Title or a Food Waste Reduction Title.

## Provide grant support to innovative food recovery models

Innovative approaches to food recovery have the potential to enhance food donations and reduce food waste in ways not yet imagined. Innovators are currently testing technologies to connect donors and recovery organizations, converting nonconforming fruits and vegetables into new products, like juices and soups, or applying retail models to provide surplus food at a low cost. The 2018 Farm Bill should provide support to all kinds of innovative organizations testing entrepreneurial approaches to food recovery by expanding funding for the Farmers Market and Local Food Promotion Program (Horticulture and Organic Agriculture Title), Community Food Project grants (Nutrition Title), and the Value Added Producer Grant (Rural Development Title) and setting aside a portion of funding for innovative food recovery models, or by creating a new grant program for such organizations under the Miscellaneous Title, or a new Food Waste Reduction Title. These models offer transformative potential for food recovery while providing jobs and economic development potential, all because they utilize surplus food as a resource rather than letting it go to waste.

### **Additional Food Recovery Solutions:**

- Encourage USDA grant recipients to donate surplus food by incentivizing food donation through grant selection criteria
- Expand federal tax incentives for food donations
- Require USDA to conduct a study on ways to reduce food waste and support food recovery from farms



## FOOD WASTE RECYCLING: COMPOSTING AND ANAEROBIC DIGESTION

Food waste is the largest component of landfills nationwide, and it produces 113 million tons of greenhouse gases each year. In 2008, the EPA reported the cost of disposing of food waste in landfills was approximately \$1.3 billion. Despite improvements in food waste prevention and recovery initiatives, there will inevitably be some food that must be discarded. The farm bill should support methods of food disposal that are sustainable, economically beneficial, and that limit the use of landfill space.

## Top Food Recycling Solutions for the 2018 Farm Bill:

### **Provide federal grants to support state and municipal organic waste bans, zero waste goals, and food waste prevention plans**

Organic waste bans prevent entities that generate specified amounts of food waste from sending this waste to landfills. By limiting the amount of organic waste those entities can dispose of in landfills, these bans compel food waste generators to reduce their food waste. Zero food waste goals or food waste prevention plans can also help municipalities address their specific food waste challenges from multiple directions. However, they are difficult to get off the ground because of high start-up costs, but have shown great promise in terms of food waste diversion, increased food donation, and positive economic impacts. In order to incentivize states to implement organic waste bans, the 2018 Farm Bill should provide federal grant funding to states for planning

and implementation of waste bans, zero waste goals, or waste diversion requirements. These grants could be incorporated into the farm bill under the Miscellaneous Title or a Food Waste Reduction Title.

### **Provide grants for the development of composting and anaerobic digestion (AD) infrastructure**

Cost poses a significant barrier to expanding composting and AD. States have tight budgets and often do not have the funds to support creation of this needed infrastructure. To defray the steep upfront cost, the federal government should provide financial assistance in the 2018 Farm Bill to help build these facilities. Congress could modify the language in several existing programs located in the Rural Development and Energy Titles to preference applicants with a food waste recycling focus. Congress could also increase funding for the Environmental Quality Incentives Program (EQIP) in the Conservation Title, which provides support for conservation practices, while setting aside a portion of funding for composting and AD. A new grant program also could be created through the Miscellaneous Title or a new Food Waste Reduction Title to support composting and AD infrastructure in urban and peri-urban areas.

#### **Additional Food Recycling Solutions:**

- Provide research and development funding to expand the range of compostable and digestible materials and explore additional applications for compost and digestate



## **FOOD WASTE REDUCTION COORDINATION**

At present there is no government office or agency responsible for overseeing food waste reduction or recovery efforts. As a result, national food policies are developed without food waste and food recovery in mind, opportunities to raise awareness about food waste are missed, and policy solutions that could represent major strides towards reducing food waste never make their way into law. Designating an office to support food waste efforts could streamline efforts to reduce food waste.

### **Top Food Waste Reduction Coordination Solution for the 2018 Farm Bill:**

#### **Create an Office of Food Waste Reduction or a Food Waste Coordinator Position within the USDA**

The federal government can support food waste reduction by establishing an Office for Food Waste Reduction within the USDA. The Office of Food Waste Reduction could implement new programs to reduce food waste and increase food recovery, identify and recommend feasible ways to amend pre-existing federal programs to better support a national effort against food waste, and support businesses in their efforts to reduce food waste by providing them guidance and resources. In the alternative, Congress could create a singular Food Waste Coordinator position within the USDA Office of the Secretary. Congress could create the Office of Food Waste Reduction or the Food Waste Coordinator Position through the Miscellaneous Title or a new Food Waste Reduction Title.

#### **Additional Food Waste Reduction Coordination Solution:**

- Establish an interagency task force and an external advisory council on food recovery



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**Opportunities to Reduce Food Waste in the 2018 Farm Bill**



# INTRODUCTION

The amount of food wasted in the United States poses a serious and seemingly overwhelming problem. Even though an abundance of food is produced in the U.S. each year, about 40% of it goes uneaten.<sup>1</sup> Each year, a colossal 62.5 million tons of wasted food ends up in businesses' dumpsters and consumers' trash cans, making its way to landfills instead of our plates.<sup>2</sup> Yet solutions exist that offer great potential to mitigate this senseless waste.

Food waste is a critical issue because uneaten food carries enormous economic, social, and environmental costs. The U.S. spends \$218 billion each year to grow, process, transport, and dispose of food that is never eaten.<sup>3</sup> Roughly 20% of the U.S.'s agricultural water, cropland, and fertilizers are used to produce food that ends up in landfills.<sup>4</sup> As it decomposes, this food emits methane, a greenhouse gas 25 times more potent than carbon dioxide.<sup>5</sup> The biggest tragedy is that while millions of tons of food needlessly go to waste, one in seven Americans is food insecure, meaning that they lack access to a sufficient amount of food to lead an active, healthy lifestyle.<sup>6</sup>

Reducing food waste has unique bipartisan appeal because it can simultaneously increase profits and efficiencies across the food system, help people in need access wholesome food, and protect our planet from the harmful environmental consequences associated with wasted food. In 2016, ReFED, a collaboration of business, nonprofit, foundation, and government leaders committed to reducing food waste, identified 27 key solutions that could reduce food waste by 20% while providing \$10 billion of annual societal economic value.<sup>7</sup> If implemented nationally, ReFED estimates that these solutions could create more than 15,000 new jobs.<sup>8</sup> In Massachusetts alone, implementation of an organic waste ban that restricted the amount of food waste sent to the landfill created more than 500 jobs in two years.<sup>9</sup> At the same time, distributing just 30% of our surplus food in the United States could feed all 42.2 million food insecure Americans their total diet.<sup>10</sup> Adding to these economic and social benefits, food waste solutions also have the potential to save 1.6 trillion gallons of water and avoid 18 million tons of greenhouse gas emissions annually, among other environmental benefits.<sup>11</sup>

The amount of food waste in the U.S. has been on the rise for the past several decades,<sup>12</sup> but only recently has the federal government begun to tackle the issue. In 2013 the U.S. Department of Agriculture (USDA) and the U.S. Environmental Protection Agency (EPA) launched a Food Waste Challenge to encourage

farms, agricultural processors, food manufacturers, grocery stores, restaurants, universities, schools, and local governments to reduce and recover surplus food and recycle food waste.<sup>13</sup> Expanding on this, in 2015 the USDA and EPA jointly announced the nation's first-ever food waste reduction goal, aiming to halve our food waste by the year 2030.<sup>14</sup> That same year, to better facilitate food donations, Congress permanently expanded the enhanced tax deduction for food donations so that it is now available to all businesses nationally.<sup>15</sup> In 2016, the House Committee on Agriculture held the first federal hearing on food waste, entitled Food Waste from Field to Table,<sup>16</sup> and various pieces of legislation on the topic have been introduced in 2015, 2016 and 2017.<sup>17</sup>

The private sector has also taken action to support food waste reduction. In 2016, the Ad Council and the Natural Resources Defense Council (NRDC) launched "Save the Food," a public awareness campaign that encourages and teaches Americans to reduce waste.<sup>18</sup> Fifteen major companies—including Campbell Soup Company, Kellogg, PepsiCo, and Wal-Mart—joined USDA and EPA's U.S. Food Loss and Waste 2030 Champions group, pledging to take concrete steps to cut food loss in their operations in half by the year 2030.<sup>19</sup> Further, in February 2017, the Grocery Manufacturers Association (GMA) and the Food Marketing Institute (FMI), the two largest trade groups for the grocery and manufacturing industries, launched a voluntary initiative to standardize date labels on food packages.<sup>20</sup> The voluntary initiative encourages retailers and manufacturers to use only one of two standard phrases on consumer-facing food packaging, one for quality and one for safety, to help consumers avoid discarding past-date food that is still safe to consume.<sup>21</sup> While these federal government and private sector initiatives are important first steps, a larger, more concerted effort is needed to meet our national food waste reduction goal and reap the related health, environmental, and economic benefits.

This paper details how Congress can take action to reduce food waste, with a focus on opportunities to make such changes in the next farm bill. Passed every five years, the farm bill is the largest piece of food and agriculture-related legislation in the United States, and provides a predictable and visible opportunity to address food waste on a national scale. Although food waste reduction has not been a focus of previous farm bills, this legislation offers one of the few opportunities to address multiple sectors of the food and agricultural system at once, and is thus the perfect vehicle through which to effect system-wide



change. The farm bill authorizes nearly \$500 billion to be spent over five years on implementing programs that support our food system;<sup>22</sup> yet not a penny is spent to ensure that the food produced actually makes it to the table instead of the landfill.

The farm bill's priorities and structure change with each authorization, according to the current needs of the food system. As the first farm bill to be written since the adoption of the national food waste reduction goal, the 2018 Farm Bill represents a critical opportunity for the federal government to take effective and wide-ranging action to reduce food waste. Food waste could be included in the farm bill through a dedicated Food Waste Reduction Title or by modifying existing programs and provisions to add a food waste reduction lens. Some solutions presented in this paper go beyond the farm bill and could be implemented through standalone federal legislation.

The recommendations presented in this paper are organized to reflect the priorities outlined in the

EPA's Food Recovery Hierarchy.<sup>23</sup> Similar to the Food Recovery Hierarchy, we highlight food waste prevention as the most important goal and begin by proposing legislative changes to prevent waste at its source. Next, the report provides policy changes to facilitate diversion of wholesome<sup>24</sup> surplus food to people in need by connecting farmers, retailers, or food service establishments with food banks, food recovery organizations,<sup>25</sup> and other avenues for channeling surplus food to those in need. Finally, the report outlines recommendations for supporting recycling of food scraps through composting or anaerobic digestion, rather than discarding of it to landfills. This paper concludes with recommendations to coordinate and streamline food waste reduction efforts and ensure that food waste reduction remains a federal priority. Taken together, the recommendations presented in this report can strengthen the economy, preserve the environment, and improve the lives of millions of Americans, all by reducing the unnecessary waste of healthy, wholesome food.

# FOOD WASTE PREVENTION

## Top Three Food Waste Prevention Asks for the 2018 Farm Bill

1. **Standardize and clarify date labels**
2. **Provide funding to K-12 schools to incorporate food waste prevention practices and food recovery education in their programs**
3. **Launch a national food waste education and awareness campaign**

Waste prevention efforts aim for early intervention at the root causes of food waste—they locate and address inefficiencies in our food system before excess food is produced or transported to places where it will not be used. Waste prevention is a high priority on the Food Recovery Hierarchy and among food waste experts because it can have several times the environmental impact of food recovery and recycling solutions.<sup>26</sup> Altogether, the waste prevention policies discussed in this section

have the potential to divert nearly 1.5 million tons of food waste annually from landfills,<sup>27</sup> while producing more than \$4.5 billion each year in economic value.<sup>28</sup>

Due to a lack of awareness and coordinated effort, many federal programs were developed without food waste reduction in mind. Public institutions, private companies, and even schools frequently do not take part in food waste prevention efforts because they are unaware of cost-effective ways to reduce food waste and are not sufficiently incentivized to do so. Consumers are often similarly unaware of the role they play in the problem of food waste and the opportunities to contribute to waste reduction.

The farm bill provides an opportunity for Congress to mitigate these problems by encouraging food waste prevention in federal programs and policy, rewarding better business practices, and funding food waste education and waste prevention technology. This section identifies these opportunities and ties them to specific programs or provisions of the farm bill or other federal legislation. If adopted, these measures could make strides toward preventing the generation of surplus food reducing food waste overall.

## RECOMMENDATION:

### Standardize and clarify date labels

There is currently no federal system regulating “sell by,” “best by,” “use by,” and other date labels used on food products, leaving room for each state to decide individually whether and how to regulate them. Manufacturers generally have broad discretion over how the dates on foods are selected, and these dates typically reflect quality and taste rather than safety. Yet businesses, individuals, and even state regulators frequently misunderstand the dates and interpret them to be indicators of safety, leading to the unnecessary waste of wholesome, past-date food. Despite the fact that most date labels are not safety indicators, some states even restrict or forbid the sale or donation of past-date foods, creating unnecessary barriers to the donation of safe food.

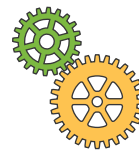
Internationally, most date label regulations, including the standards in place throughout the European Union, utilize a dual label system that requires a standard quality label on foods where freshness is a concern and a standard safety label on foods that carry a safety risk past the date.<sup>29</sup> In its *Roadmap to Reduce U.S. Food Waste by 20 Percent*, ReFED found that standardizing date labels was the most cost-effective of 27 potential solutions analyzed, and has the capacity to divert 398,000 tons of food waste per year and provide \$1.8 billion per year in economic value.<sup>30</sup>

Congress can standardize and clarify date labels by establishing a system that applies to all food products nationally and limits date labeling language to two options: a quality date and a safety date. Under this standard, all food products should bear only one of the two labels. Dates printed on packages to signify peak quality—the large majority of date labels on food products—should be required to use the language “BEST If Used By.” For a small number of foods that the U.S. Food and Drug Administration (FDA) and the USDA find to have increased food safety risk past the date, manufacturers should be required to use a safety date, indicated by the language “USE By.” This language is ideal for communicating effectively with consumers: a national consumer survey found that “best if used by” was the language best understood by consumers to indicate quality, while “use by” was one of two phrases that best communicated food safety.<sup>31</sup>

The two options, “BEST If Used By” and “USE By,” mirror the language selected in a recent voluntary industry initiative to standardize date labels, launched by the Food Marketing Institute (FMI) and the Grocery Manufacturers Association (GMA).<sup>32</sup> In

late 2016, the USDA Food Safety Inspection Service (FSIS) updated its guidance for food manufacturers and retailers, and also encouraged use of a “Best if Used By” date label to indicate quality.<sup>33</sup> These initiatives represent important steps toward eliminating date label confusion and helping consumers to avoid wasting food. However, without achieving full participation by manufacturers and retailers across the country, there will still be a variety of date labels on different types of food, resulting in ongoing confusion. Further, more than half of states have existing date label laws that conflict with the FMI/GMA voluntary standards and FSIS guidance for at least one food item, and such state laws would trump any voluntary guidance. Therefore, to ensure complete participation and reduce conflicts with state laws, federal reform is needed.

Federal action is also needed to prevent state restrictions on the donation or sale of food that is past its quality date. Since only past-date foods bearing the “USE By” date label involve any safety risk, sale and donation of foods past the “BEST If Used By” date should be permitted. Current state rules often bar or restrict donation of past-date foods, even when the dates on those food have no bearing on safety, leading to unnecessary waste. Standardized date labels should be accompanied by an educational campaign, spearheaded by the key federal food safety agencies, to inform consumers about the meaning of the new labeling language.



#### IMPLEMENTATION OPPORTUNITY:

The next farm bill should take the easy and cost-effective step to reduce food waste by standardizing and clarifying date labels across the nation and on all food products. The farm bill has been used in the past to address food labeling concerns,<sup>34</sup> and could be an appropriate vehicle for standardizing date labels through a new Food Waste Reduction Title or in the Miscellaneous Title. Alternatively, Congress could pass standalone legislation outside the farm bill to implement this.

## RECOMMENDATION:

### Provide funding to K-12 schools to incorporate food waste prevention practices and food recovery education in their programs

Food waste in schools has long been a serious issue, with rates mirroring larger trends in consumer food waste. Elementary and secondary schools

waste about two pounds of food per student each month.<sup>35</sup> With more than 30 million school children enrolled in federal meal programs,<sup>36</sup> this could add up to more than 360,000 tons of food wasted each year in U.S. elementary and secondary schools that participate in federal meal programs. Because household-level food waste comprises a whopping 43% of all food waste in the U.S.,<sup>37</sup> schools also represent an important venue for change, as the training grounds for a new generation of consumers.

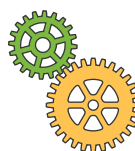
School food waste is caused by a multitude of factors. Students generally have too little time to eat,<sup>38</sup> and rushed students eat less and throw away more.<sup>39</sup> Additionally, widespread misunderstanding of school food regulations contribute to waste. The federal government regulates school foods through the National School Lunch Program (NSLP)<sup>40</sup> and the School Breakfast Program (SBP),<sup>41</sup> and reimburses schools for all or a portion of the cost of children's meals during the school day.<sup>42</sup> Schools must comply with federal rules regarding the nutrition and the use of food procured through these programs,<sup>43</sup> as well as other a la carte items sold in schools that take part in NSLP.<sup>44</sup> Confusion regarding these rules can cause waste. For example, many schools erroneously believe that these regulations require children to take milk with their lunch,<sup>45</sup> which is one of the reasons one-quarter of milk in school cafeterias winds up in the trash.<sup>46</sup> Further, many school administrators mistakenly believe the federal government prohibits school food donation, and therefore throw away wholesome food that could otherwise be donated to those in need.<sup>47</sup>

A number of proven strategies can reduce food waste in schools. For example, a food waste audits can help schools track and determine how much food they waste, and at what point in the chain.<sup>48</sup> This kind of study can allow them to identify areas for improvement and adjust procurement and other practices to minimize future waste. Schools can adopt "Offer Versus Serve" (OVS), which allows students to decline up to two of five required components of NSLP,<sup>49</sup> as long as they take a fruit or a vegetable.<sup>50</sup> This practice is required in high schools, but is currently optional for other grade levels;<sup>51</sup> more widespread adoption could reduce food waste in schools by allowing students to take only what they will eat. States and school districts can mandate longer lunch periods, in order to give students enough time to select and eat their meals.<sup>52</sup> USDA encourages schools to offer at least thirty minutes of lunchtime, which could reduce plate waste by nearly one-third.<sup>53</sup> Additionally, states or school districts could pass laws or put out guidance encouraging lunch after recess, since this structure has also been shown to reduce food waste by nearly one-third.<sup>54</sup> Schools can also utilize "share tables," where students can put uneaten

food still in its original wrapper or peel.<sup>55</sup> Once food reaches the "share table," another student can take the food for free, or the school can resell or donate the food.<sup>56</sup> Lastly, schools can donate excess food if they cannot utilize it. Federal law offers liability protection specific to school food donation to encourage this practice.<sup>57</sup>

Schools are often hesitant to adopt these and other strategies either due to cost, or because schools need better guidance on how to implement such changes. Because of this, the federal government can play an important role in supporting schools undertaking food waste reduction efforts. The federal government has taken preliminary steps to encourage schools to adopt food waste reduction measures. USDA created a series of webinars to educate schools about decreasing school food waste<sup>58</sup> and published a guide to help schools avoid food waste.<sup>59</sup> Through the USDA and EPA U.S. Food Waste Challenge, schools can register to publicly declare food waste goals and achievements.<sup>60</sup> And as part of the EPA Food Recovery Challenge, schools can commit to reduce, reuse, and recycle food waste, while receiving guidance and support.<sup>61</sup> However, the federal government can go a step further.

In order to make progress on reducing school food waste and maximize the opportunity to educate our youth about the importance of making better food waste decisions, Congress should provide the resources to support state and local efforts to prevent school food waste and educate students. Grant funding should be used for waste reduction practices in school cafeterias, as well as food waste reduction education initiatives.



#### IMPLEMENTATION OPPORTUNITY:

In the next farm bill, Congress should create a dedicated grant program to support food waste reduction practices in K-12 school cafeterias. These grants should be available to public schools for implementation of the waste reduction practices described above. For example, funds could support schools in conducting food waste audits, implementing food donation programs, and developing onsite composting facilities. This program could be established in the Miscellaneous Title or a new Food Waste Reduction Title. Providing even \$10-15 million for mini-grants to schools could go a long way towards raising the profile of this issue and changing cafeteria practices to reduce waste.

Another way the next farm bill can address school food waste is by reauthorizing and modifying the language in The Food and Agriculture Service

Learning Program (FASLP), located in the Nutrition Title of the 2014 Farm Bill, to explicitly provide funding for education about food waste and food recovery in K-12 schools.<sup>62</sup> FASLP aims to increase schools' capacity for food, garden, and nutrition education, to foster community engagement, and to advance schoolchildren's health and nutritional education.<sup>63</sup> In order to support food waste reduction education, the program should explicitly add skills related to food waste, for example awareness of appropriate portion sizes, education about proper storage for perishable foods, and new ways to utilize surplus food, to this list of program priorities.<sup>64</sup> Congress should also direct USDA to give bonus points to grant applications for programs proposing to include food waste reduction in their efforts. By modifying the language of this program to explicitly include education about food waste prevention, food donation, and composting, the next farm bill can ensure that schools competing for these grants have an incentive to include instruction about food waste reduction and recovery in their programs.

#### ADMINISTRATIVE OPPORTUNITY

Without legislative change, USDA could strengthen food waste reduction in schools by awarding bonus points to FASLP grant applicants that focus on food waste reduction in their education programs.

### RECOMMENDATION: Launch a national food waste education and awareness campaign

American consumers and consumer-facing businesses, such as supermarkets and restaurants, waste 52 million tons of food each year and together are the source of about 80% of the food that goes to waste.<sup>65</sup> Households alone are responsible for 43% of all U.S. food waste.<sup>66</sup> Research shows that while consumers understand the importance of food waste reduction in the U.S., they generally do not recognize their own role in reducing food waste. At the household level, consumers throw away about 25% of the food and beverages they purchase.<sup>67</sup> While almost two-thirds of surveyed grocery shoppers "show concern for the amount of food wasted in the U.S.," only about a third showed the same concern about food wasted in their own households.<sup>68</sup> American consumers also "perceive themselves as wasting little, with nearly three-quarters reporting that they discard less food than the average American."<sup>69</sup>

Because consumers unknowingly contribute a

massive amount to our food waste problem, a national food waste campaign could effectively raise awareness about the issue and change behavior across all sectors of the food chain. This campaign could illustrate how much food goes to waste in households and across the country, highlight methods for preserving and storing foods, clarify the meaning of date labels, provide consumers with tips to identify whether food is still safe and edible, and teach them how to compost food scraps.<sup>70</sup> ReFED reports that a national consumer awareness campaign is one of the most cost effective solutions to reduce food waste, with the potential to divert 584,000 tons of food annually and create \$2.65 billion of economic value.<sup>71</sup>

National education campaigns have effectively changed U.S. consumer behaviors in other areas, and consumer food waste practices in other countries. Domestically, the Center for Disease Control's nine-week, national anti-smoking education campaign, "Tips From Former Smokers," motivated almost 2 million Americans to attempt to quit smoking.<sup>72</sup> In the United Kingdom, the Waste and Resources Action Programme's (WRAP) "Love Food Hate Waste" nationwide campaign reduced consumer food waste by 21% in five years.<sup>73</sup> The program cost £26 million over five years to implement, but was responsible for £6.5 billion in savings to households in avoided food costs, as well as £86 million in savings to U.K. government authorities in avoided waste disposal costs.<sup>74</sup> Altogether, the initiative reaped a total benefit-cost ratio of 250:1.<sup>75</sup> In addition, the U.K. avoided 3.4 million tons of greenhouse gases and saved 1 billion cubic meters of water (about 400,000 Olympic-sized swimming pools) each year after launching campaign.<sup>76</sup>

A national food waste education campaign in the U.S. could similarly cultivate a cultural movement against food waste. In 2016, the Ad Council and the Natural Resources Defense Council (NRDC) launched "Save the Food," a public awareness campaign that encourages Americans to reduce food waste.<sup>77</sup> "Save the Food" has been featured on television, radio, billboards, and waste trucks in several large cities across the country, including Chicago and New York City.<sup>78</sup> In its first six months, more than \$25 million of media space was donated, and survey results demonstrated that those aware of "Save the Food" ads were more than twice as likely to say that they sought information about wasting less food, compared to those not aware of the ads.<sup>79</sup> Despite the early success of this campaign, much more consumer education on food waste reduction is still needed. The federal government can help extend the reach of "Save the Food" by streamlining the messaging across both the public and private sectors and ensuring that it reaches all parts of the country, including rural America and



different consumer markets.



#### IMPLEMENTATION OPPORTUNITY:

The farm bill should help support a national food waste education and awareness campaign. A widespread consumer education campaign would best be supported with funds appropriated through a Food Waste Reduction Title or through the Miscellaneous Title. As mentioned above, the WRAP Campaign cost approximately £26 million over five years; Congress should appropriate an equivalent sum, about \$32.5 million over five years, for a U.S. consumer education campaign.

In addition to launching a broad-reaching consumer education campaign, there are opportunities to utilize existing farm bill food education programs to support food waste education for households. The next farm bill should renew support for the Expanded Nutrition Education Program (ENEP) in the Research Title of the 2014 Farm Bill, and modify the authorizing language to include food waste prevention. ENEP is a federally funded grant program that aims to enable low-income Americans to “engage in nutritionally sound food purchasing and preparation practices,” by providing funding to land grant universities to deliver nutrition and physical education programs in each state.<sup>80</sup> Yet, while the program teaches strategies for shopping for healthy food on a budget, none of the authorizing language mentions food waste reduction as a strategy to support household food budgets. One of the four stated core areas includes “food resource management,” or increasing the ability of low-income participants to buy, prepare, and store nutritional food, but even here there is not an explicit mention of food waste reduction.<sup>81</sup> Education about food waste reduction could help to extend the budgets of low-income Americans, while helping to solve the nation’s food waste problem. Including an explicit focus on food waste reduction as a program goal in the authorizing language can ensure ENEP providers include food waste reduction in their programs.

Similarly, Congress should add language about food waste education in the program goals of SNAP-Ed, a federally-funded grant program that seeks to improve the likelihood that the Supplemental Nutrition Assistance Program (SNAP) recipients will make healthy food choices within a limited budget.<sup>82</sup> Similar to ENEP, SNAP-Ed focuses on promoting nutrition and healthy choices, while stipulating that program providers “must consider the financial constraints of the SNAP-Ed target population in their efforts.”<sup>83</sup> States receive funding allocations for SNAP-Ed and must submit a nutrition education plan to USDA as to how they will utilize the funding

to provide program services. However, neither the authorizing language in the farm bill nor the USDA SNAP-Ed Guidance document mentions for the inclusion of education related to increasing the efficiency of food usage or reducing food waste.<sup>84</sup> By adjusting the SNAP-Ed and ENEP program goals and priorities, Congress can ensure that low-income Americans are provided with the necessary tools to stretch their dollars when making food purchases, by properly storing perishable items, reusing and repurposing leftovers, being more conscious about their food, and ultimately reducing food waste.<sup>85</sup>

#### ADMINISTRATIVE OPPORTUNITY

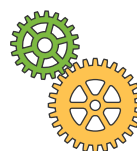
Without legislative change, the USDA can independently modify the program guidance for SNAP-Ed and the program goals for ENEP by including food waste reduction education as one of the approaches that can be included in state level SNAP-Ed and ENEP programs.

#### RECOMMENDATION:

#### Provide grant funding for new technologies to slow spoilage

The use of packaging technologies that prolong freshness and slow spoilage rates could help reduce waste throughout the food chain by prolonging the shelf life of produce, meat, poultry, fish, and other perishable products. Some examples of innovative packaging technologies that address this issue include: It’s Fresh!,<sup>86</sup> which removes ethylene from produce to extend shelf life; BluWrap,<sup>87</sup> which works to reduce and monitor oxygen levels in meat, poultry, and fish packaging; and Fenugreen FreshPaper,<sup>88</sup> which uses spice-rubbed paper to better preserve produce. However, these products remain largely in pilot phases, and food manufacturers may be unwilling to bear the cost of utilizing such packaging if the savings (in terms of longer shelf life) only accrue to consumers.<sup>89</sup>

The next farm bill should facilitate the development of new technologies and lower the cost of commercialization of these and other packaging technologies by providing support for innovations that delay spoilage. According to ReFED, the use of such innovative products has the potential to divert 72,000 tons of food waste from the landfill, while creating \$167 million in economic value.<sup>90</sup>



#### IMPLEMENTATION OPPORTUNITY:

The next farm bill should support pilot studies of spoilage-inhibiting

technologies and attempts to scale-up their use. One avenue to support these technologies is through targeted funding within the Specialty Crop Research Initiative (SCRI), part of the Research Title of the 2014 Farm Bill.<sup>91</sup> SCRI provides grants to support research and extension initiatives addressing the needs of the specialty crop industry at the national, regional, and multi-state level.<sup>92</sup> In 2017, funding will be comparable to previous years, approximately \$48 million for grants.<sup>93</sup> Land grant institutions, private universities, nonprofits, for-profit institutions (including small businesses), and state agricultural experiment stations are eligible to receive SCRI grants.<sup>94</sup> Each project must address at least one of five focus areas, one of which is “new innovations and technology, including improved mechanization and technologies that delay or inhibit ripening.”<sup>95</sup> Thus, SCRI is already structured in such a way as to support projects aiming to develop innovative technologies to prevent spoilage.

However, it can be difficult to receive funding under SCRI because the program is very competitive—only 20% of applications receive funding.<sup>96</sup> In 2015, 12 of 15 funded projects focused on new methods of improving production of various specialty crops, especially via novel disease and pest management techniques, climate change adaptation tactics, and higher-efficiency use of inputs.<sup>97</sup> The remaining three projects sought to increase production and consumption of specific specialty crops.<sup>98</sup> None of the funded projects addressed the issues of crop preservation or post-harvest loss. In line with our national food waste reduction goal, and in order to increase support for innovations to reduce food loss, Congress should direct USDA to preference such projects during the selection process. According to USDA’s Request for Applications, SCRI also requires 1:1 cost-matching,<sup>99</sup> which may represent a burden to small companies and organizations, since the average award amount is just under \$2 million.<sup>100</sup> More research should be done to determine whether this is an issue for food preservation projects, and whether to consider reducing the cost-matching requirement for small organizations or early-stage research projects.

Beyond SCRI, other support for new packaging technologies is needed. SCRI does not cover research on products other than specialty crops; yet, similar research is needed to extend the shelf-life and reduce waste of dairy, meat, poultry, and fish. Since animal products are generally more expensive for consumers and more resource-intensive to produce,<sup>101</sup> preventing their waste should be a high priority. Congress should create a program similar to SCRI focusing on providing support for new technologies to prevent spoilage of dairy, meat, poultry and fish. This program could be located in the Research or Miscellaneous Titles, or in a new Food Waste Reduction Title.

## ADMINISTRATIVE OPPORTUNITY

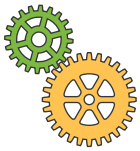
Without legislative change, USDA could adjust the SCRI grant selection process to award bonus points to applicants that focus on preservation and delayed-ripening technologies. USDA could also include a question about the burden of cost-matching requirements in the application to gauge the extent to which this condition burdens applicants.

## RECOMMENDATION: Implement a certification system for businesses that demonstrate food waste reduction practices

Certification programs have effectively changed corporate and consumer behavior in other sectors and could prove similarly successful in reducing food waste. For example, in 1993, the EPA launched the Energy Star Certification program to formally recognize energy-efficient products.<sup>102</sup> The EPA worked with technical experts from computer and appliance companies to establish criteria that would qualify consumer electronics for Energy Star Certification.<sup>103</sup> Now, the Energy Star Certification exists for more than 60 categories of products, and consumers purchase roughly 300 million Energy Star-Certified items each year.<sup>104</sup> As a result, the EPA estimates that Energy Star Certification has prevented more than 150 million metric tons of greenhouse gas emissions annually, and has offset the need for more than 185 additional power plants.<sup>105</sup>

In 2012, a zero waste certification program for businesses was created<sup>106</sup> by the U.S. Zero Waste Business Council (USZWBC), an organization aiming to educate, inform, and document the performance of zero waste businesses in order to help businesses and communities become more healthy and sustainable.<sup>107</sup> The certification is available to businesses that have a zero waste policy in place and achieve 90% diversion of all waste away from landfills.<sup>108</sup> A similarly-structured certification program focusing on food waste would help consumers to identify businesses with good food waste reduction practices and could inform their purchasing choices, thereby reducing overall food waste. This program should include consumer education that raises awareness about the meaning of the certification and the importance of reducing food waste.<sup>109</sup>





## IMPLEMENTATION OPPORTUNITY:

The next farm bill should create a food waste reduction certification program, under the Miscellaneous Title or a new Food Waste Reduction Title, to encourage businesses to prevent or otherwise reduce food waste. The certification program can be administered by an Office for Food Waste Reduction within the USDA, if created (see: Food Waste Reduction Coordination), or by a division of USDA. The Office for Food Waste Reduction, or whatever office or agency is tasked with overseeing this program, should work with technical experts to establish criteria that would qualify certain businesses for the food waste reduction certification, and should create consumer education materials to maximize the program's impacts.

## RECOMMENDATION:

**Conduct comprehensive national research on food waste to quantify the amount of food wasted, identify the types of food wasted, and determine the points in the supply chain at which food tends to be wasted**

Comprehensive research on food waste in the U.S. is very limited. In 1997, the USDA Economic Research Service (ERS) conducted a comprehensive study of food loss across the system, estimating loss at each stage based on published data and input from commodities experts.<sup>110</sup> The study was intended to be preliminary, since it relied heavily on outdated data from the 1970s that would not reflect significant innovations in food processing technologies, nor growth in the food service sector.<sup>111</sup> More recently, ERS has conducted follow-up studies, and has updated the results to include specific information about the amount and value lost by type of food, and a special study into fruits and vegetables.<sup>112</sup> However, even in its most recent report in 2014, ERS continued to consider its food loss data “preliminary,” and noted the importance of ongoing efforts “to improve the underlying food loss assumptions and documentation.”<sup>113</sup>

Congress should provide the ERS and other relevant agencies within USDA with funding to modernize and expand their research on food waste. The federal government can also encourage the collection of food waste data by private retailers and food establishments, as this information could be useful in compiling a more accurate picture of

food waste. Many food retailers already track the food they discard,<sup>114</sup> but that data is not currently collected in one place. In conducting this research, USDA should work together with EPA, which has already begun to collect food waste data through the Food Recovery Challenge.<sup>115</sup>

To achieve these goals, Congress should provide funding to conduct comprehensive research on the amount of food wasted, types of food most commonly wasted, and points in the food chain where food is wasted and lost, in order to determine the best strategies to decrease waste and better track progress over time.

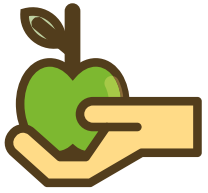


## IMPLEMENTATION OPPORTUNITY:

There are several opportunities for the farm bill to support food waste reduction research through the Research title or a new Food Waste Reduction Title. First, through the Research Title, Congress could provide grants to universities working on food waste tracking and reduction. The 2014 Farm Bill reauthorized the Agricultural and Food Policy Research Center grants.<sup>116</sup> Through these grants, the National Institute of Food and Agriculture (NIFA), an agency within USDA, provides competitive grants to policy research centers seeking to conduct agricultural research, education, and extension activities in certain priority areas that mainly focus on health, nutrition and the environment.<sup>117</sup> In the next farm bill, Congress could require USDA to modify the existing program priorities areas to include “food waste reduction research.” This change could incentivize researchers and academics to get involved in food waste issues and facilitate broader engagement in reduction initiatives. Second, Congress could also allocate money directly to ERS to research and report on food waste. This would build on the agency’s existing body of food waste research, and allow for ongoing food waste tracking and reporting.

## ADMINISTRATIVE OPPORTUNITY

Without legislative change, USDA could adjust the Food Policy Research Center grants to allow for food waste reduction research. By modifying the language of its Requests for Applications, USDA can specify that food waste reduction research is included within existing program priorities areas relating to health, nutrition and the environment.



# FOOD RECOVERY: INCREASING DONATIONS BY FARMS, FOOD MANUFACTURERS, RETAILERS AND RESTAURANTS

## Top Three Food Recovery Asks for the 2018 Farm Bill

1. **Strengthen the Bill Emerson Good Samaritan Food Donation Act**
2. **Provide resources to support infrastructure investments for food recovery organizations**
3. **Provide grants to innovative food recovery models**

Food recovery and anti-hunger organizations across the U.S. currently recover and redistribute nearly 1.7 million tons of food each year, yet barriers to food donation still prevent millions more from being recovered.<sup>118</sup> On farms, ReFED estimates that less than 5% of wholesome, surplus produce is recovered.<sup>119</sup> According to a report jointly sponsored by three leading industry trade groups (GMA, FMI, and the National Restaurant Association), only 1.5% of food deemed unsalable by food manufacturers was recovered for human consumption;<sup>120</sup> among retailers and wholesalers 18.1% was recovered;<sup>121</sup> while among restaurants 2% was recovered.<sup>122</sup> Potential exists to recover surplus food from all levels of the food chain, and reducing barriers to food donation could result in the recovery of roughly 5.8 million additional tons of food each year.<sup>123</sup> Nearly half of this new food recovery potential comes from farms, more than a third from restaurants, and the rest from grocers and retailers.<sup>124</sup>

Donors and potential donors face significant barriers when donating food. One example is the cost farms, retailers, restaurants and other food service operations typically incur when preparing food for donation. Such costs can include harvesting, washing, and sorting surplus produce on farms,

processing or preparing food for donation, storing and transporting donations and, when necessary, reconditioning the food to ensure it complies with federal, state, and local quality and labeling laws.<sup>125</sup> These costs are borne by food donors, as well as by the food recovery organizations collecting and distributing these foods, yet little support exists to help offset these costs.

In recent years, organizations and individuals have also begun to test innovative approaches to food recovery. For example, entrepreneurs are testing technologies to connect donors and recovery organizations, converting nonconforming fruits and vegetables into new products, like juices and soups, and applying retail models to provide surplus food at a reduced cost. Such innovations could help reduce the amount of food that goes to waste, increase the efficiency of food recovery, and protect the well-being of our environment. However, additional support is necessary to seed these innovative models and find new solutions to rescue food. This section explores opportunities in the farm bill and other legislation to increase the donation of healthy, wholesome food from farms, retailers, restaurants, and food service, by both reducing barriers to food recovery and supporting innovation in this arena.

## RECOMMENDATION: Strengthen the Bill Emerson Good Samaritan Food Donation Act

Many businesses fail to donate food because they do not know about the liability protections available to food donors under the Bill Emerson Good Samaritan Food Donation Act (Emerson Act). Passed by Congress in 1996, the Emerson Act aims to encourage food donation by providing comprehensive civil and criminal liability protection to food donors and nonprofit organizations that distribute donations to those in need.<sup>126</sup> The protections afforded by the Emerson Act are significant and have enabled many food donations;

The Emerson Act provides a federal baseline of liability protection to a broad range of food donors and nonprofit food recovery organizations that receive and distribute donations to those in need as long as the following four requirements are met:

1. The food must be donated to a nonprofit organization in good faith, which means the food must be donated with the honest belief that the food is safe to eat;
2. The food must meet all federal, state, and local quality and labeling requirements, even if it is not “readily marketable due to appearance, age, freshness, grade, size, surplus, or other conditions;”
3. The nonprofit organization that receives the donated food must distribute it to needy individuals; and
4. The ultimate recipient must not pay anything of monetary value for the donated food.

Source: 42 U.S.C § 1791; *Food Recovery: A Legal Guide*, UNIV. OF ARK. 7 (2013), <https://law.uark.edu/documents/2013/06/Legal-Guide-To-Food-Recovery.pdf>.

yet, a number of current and prospective donors remain unaware of these protections. A 2016 survey conducted by the Food Waste Reduction Alliance (FWRA), a joint industry task force comprised of leading companies and trade associations in the food, beverage, food service, and food retail industries, found that 50% of food manufacturers and 25% of retailers and wholesalers cite liability concerns as one of the main barriers to food donation.<sup>127</sup> Because such concerns remain a significant barrier to food donation, clarifying the Emerson Act’s coverage and enhancing its protections are key avenues to increase the amount of healthy, wholesome food that is donated.

In order to clarify the scope of the Emerson Act and promote public awareness, Congress should delegate to a federal agency, most likely the USDA, the authority necessary to oversee and interpret the Act. This agency should be tasked with providing guidance to clarify the meaning of ambiguous terms in the Emerson Act and raising awareness about the Act’s protections. According to ReFED, educating potential food donors on liability laws has the potential to divert 57,000 tons of food waste from the landfill yearly.<sup>128</sup>

In addition, Congress should modify several provisions in the Act to better align with the

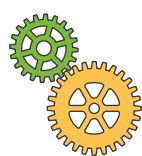
current food recovery landscape. First, Congress should amend the Emerson Act to provide liability protections to nonprofit organizations that charge recipients a reduced fee for donated food. Currently, food donations are only protected by the Act if the food is given away for free.<sup>129</sup> Yet allowing nonprofit organizations to experiment with new models, such as social supermarkets that charge a reduced fee for their food, can promote food recovery. Such models can help to offset operating expenses and other costs associated with donating and distributing surplus food. They can also provide an alternative for low-income customers who cannot or do not utilize food pantries, or are looking for ways to supplement their pantry use. ReFED estimates that these types of innovative retail models and secondary resellers have the potential to divert 167,000 tons of food waste from landfills per year and provide \$37 million per year in economic value.<sup>130</sup>

Second, Congress should broaden the Emerson Act to provide liability protection for food donated directly to individuals in need by food producers and licensed food service establishments. Providing farmers and licensed food establishments with liability protection when they distribute food directly can help ensure that surplus food reaches people more quickly, reducing the costs of food recovery, increasing the amount of food available for donation, and making it easier to donate perishable foods. Such businesses either donate low-risk foods, like surplus produce, or are already licensed and required to undergo food safety training, meaning that they know how to safely handle food for donation. Even if the Emerson Act were extended to cover direct donations, most businesses would likely choose the convenience of working with a food recovery organization instead of donating directly to individuals. However, this protection would allow donors increased flexibility for smaller batches of food or perishable items that need quicker distribution.

Finally, Congress should clarify labeling requirements for the protection of donated food. Much food goes to waste due to the lack of clarity regarding liability protection for mislabeled or past-date foods. In order to ensure that safe, wholesome food is donated rather than discarded, Congress should amend the Emerson Act to specify that donated foods must only comply with (or be reconditioned to comply with) food safety standards or safety-related labeling standards. Often food is thrown away because of an error in its labeling, but if that error is not relevant to safety, donation of the food should still be protected. Removing the requirement that donated food comply with *all* quality and labeling standards can increase the amount of food donated and decrease the cost of donation. Relatedly, the

Emerson Act should explicitly provide liability protection for the donation of past-date food. Such dates are generally indicators of quality, not safety. Although legislative documents demonstrate an intent to protect donation of past-date foods,<sup>131</sup> a clear provision should be added to the Emerson Act in order to make explicit that the donation and distribution of past-date foods are protected.

More detailed information about these recommendations can be found in the Food Law and Policy Clinic of Harvard Law School and the Natural Resources Defense Council's report *Don't Waste, Donate: Enhancing Food Donations through Federal Policy*, which presents actions the federal government should take to better align federal laws and policies with the goal of increasing the donation of safe surplus food.<sup>132</sup>



#### IMPLEMENTATION OPPORTUNITY:

The next farm bill should task USDA or another federal agency with responsibility for overseeing and providing guidance related to the Emerson Act. The farm bill should also modify the language of the Act in accordance with the above recommendations. Congress can do so in a new Food Waste Reduction Title or through the Miscellaneous Title. The modifications to the Act and the designation of an overseeing agency could alternatively be passed in separate legislation.

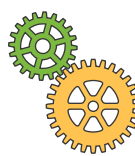
### RECOMMENDATION:

#### Provide grant resources to support infrastructure investments for food recovery organizations

The costs and logistical challenges of preparing, processing, and transporting food for donation make it financially difficult for many food producers and vendors to donate surplus food.<sup>133</sup> Most food donors are not willing to spend additional money in order to donate food that they would otherwise send to the landfill. Many food recovery organizations bear these costs, especially transportation costs, in order to facilitate food donation and make it more cost-effective for donors. However, as a result, many food recovery organizations do not have the capacity to accept all food donations, or to expand operations to new donors or areas. Processing food, through strategies like canning and freezing, is another crucial component of successful food recovery, and allows organizations to handle large volumes of perishable produce. However, such

processing requires access to sufficient facilities, appropriate equipment, and trained staff.

The next farm bill should provide grant support to food recovery organizations to enable them to purchase infrastructure needed to recover and process surplus food, such as refrigerated vehicles, kitchen equipment, and storage space, as well as to pay for labor needed to prepare and transport donated food. Providing federal assistance to food recovery organizations would allow them to sustain and increase the scale of their operations, making it possible for more organizations and businesses to donate surplus food instead of letting it go to waste. Scaling up food recovery operations would contribute to local economies by generating new jobs in logistics and transportation, while also increasing access to wholesome foods and reducing food waste.<sup>134</sup>



#### IMPLEMENTATION OPPORTUNITY:

The next farm bill can support food recovery organizations through the Horticulture and Organic Agriculture Title, Nutrition Title, and Miscellaneous Title, or through a new Food Waste Reduction Title. Congress can take two distinct approaches: first, expand eligibility for existing grant programs to include food recovery organizations; second, create new grant programs that target food recovery organizations and aim to maximize the use of surplus food.

Within the Horticulture and Organic Agriculture Title of the 2014 Farm Bill, the Farmers Market and Local Food Promotion Program (FMLFPP) provides grant funding to improve the markets for locally and regionally grown foods.<sup>135</sup> Currently, two broad types of grants are awarded: Farmers Market Promotion Program (FMPP) grants that promote direct-to-consumer activities and Local Food Promotion Program (LFPP) grants that support intermediary supply chain activities.<sup>136</sup> The 2014 Farm Bill appropriated \$30 million for the FMLFPP program as a whole, split evenly between the two grant types.<sup>137</sup> LFPP grants, in particular, can be restructured to better support the goal of reducing food waste. LFPP funding is typically distributed to organizations or businesses that connect producers and consumers via one or more intermediate step, for example, aggregating, storing, processing, and distributing, rather than through a direct market.<sup>138</sup> While food recovery organizations play this role by creating distribution channels for surplus produce that would otherwise go to waste, they are not among the eligible applicants for LFPP grants. Congress should amend the language authorizing LFPP grants<sup>139</sup> to include "food-recovery related businesses or nonprofits" as listed entities eligible



for the program. As it expands eligibility for LFPP grants, Congress should also increase funding to ensure that the program can adequately meet the needs of applicants.

Within the Nutrition Title of the 2014 Farm Bill, the Community Food Project (CFP) grants provide one-time federal assistance to projects aiming to improve access to healthy, local foods, including projects designed to facilitate the distribution of food to those in need.<sup>140</sup> Awards are capped at \$125,000 per single year or \$400,000 over four years,<sup>141</sup> and organizations with innovative models for reducing food insecurity are given preference.<sup>142</sup> The 2014 Farm Bill amended CFP grants to explicitly include gleaners, defined as “an entity that collects edible, surplus food that would be thrown away and distributes the food to agencies or nonprofit organizations that feed the hungry; or harvests for free distribution to the needy, or for donation to agencies or nonprofit organizations for ultimate distribution to the needy,” as eligible recipients.<sup>143</sup> Despite this positive step, there remains room for improvement. Congress should clarify that other food recovery organizations besides gleaners are also eligible for CFP grants. The 2014 Farm Bill provided \$9 million annually in mandatory funding for CFP,<sup>144</sup> nearly double the previous funding level of \$5 million per year established in the 2008 Farm Bill.<sup>145</sup> Yet, CFP grants are still very competitive; in 2016, only 18% of applicants received funding.<sup>146</sup> Congress should increase funding for CFP to \$15 million per year and set aside some portion of this funding to specifically support gleaners and other food recovery organizations.

In addition to providing support under the above-mentioned programs, a new grant program for food recovery infrastructure, operational costs, and labor could be created in the Miscellaneous Title or a new Food Waste Reduction Title. Investing in food recovery infrastructure could support economic development while decreasing hunger and environmental harms; it is a smart investment.

#### ADMINISTRATIVE OPPORTUNITY

Without legislative change, the USDA Agricultural Marketing Service (AMS) could modify the Project Evaluation Criteria for FMLFPP and CFP to preference food recovery organizations in the grant selection process. A simple change in stated criteria could significantly increase federal support for such organizations and their critical contributions in gathering and distributing millions of tons of surplus food each year.

## RECOMMENDATION:

### Provide grants to innovative food recovery models

Innovative approaches to food recovery have the potential to enhance food donations and reduce food waste in ways not yet imagined. According to a recent food waste innovator map launched by ReFED, there are now more than 400 different organizations around the country working to introduce innovative new models to reduce the amount of food that winds up in the landfill.<sup>147</sup>

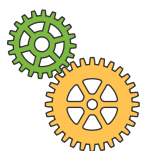
Some organizations have revolutionized the food recovery space by creating innovative technological models that connect food donors and food recovery organizations or end recipients in real time. For example, Spoiler Alert, located in Boston, Massachusetts, provides a platform for food businesses, farms, and food recovery organizations, to connect in order to donate or claim surplus food or to sell otherwise unsalable produce at a reduced price through a secondary market.<sup>148</sup> Recipients receive a notification when nearby surplus food becomes available and can coordinate with the donor to claim the food.<sup>149</sup>

Other innovative recovery models target extending the life of perishable foods by turning donated produce into soups, sauces, juices, or other products.<sup>150</sup> For example, La Soupe, in Cincinnati, Ohio, uses produce that would otherwise go to waste to make and sell healthy meals to customers.<sup>151</sup> By using funds raised from such sales, La Soupe is able to offset a portion of its operational costs, thereby allowing it to provide meals to food insecure individuals for free.<sup>152</sup> Last year, the organization was able to divert 125,000 pounds of food from the landfill and to donate more than 95,000 meals to food insecure individuals.<sup>153</sup> Similarly, Misfit Juicery, which operates in New York City and Washington D.C., uses primarily produce that would otherwise go to waste to make juice.<sup>154</sup> Increasing the investment in value-added processing has the potential to divert 102,000 tons of waste from landfills, with an annual economic value of \$285 million, according to ReFED.<sup>155</sup>

Another innovative model is the “social supermarket,” popularized in Europe, which sells reduced-cost, healthy food items at nonprofit retail stores located in low-income neighborhoods.<sup>156</sup> These organizations can fill a need in communities where individuals are food insecure, but for various reasons are unable to use a food pantry or soup kitchen. At the same time, the structure offers longer-term financial sustainability to food recovery organizations because it allows organizations to utilize the funds generated by customer payments

to offset operating costs. Daily Table, in Dorchester, Massachusetts, provides a domestic model for such a social supermarket, selling healthy prepared meals produced from surplus food sourced throughout Massachusetts.<sup>157</sup>

The next farm bill should provide support to all kinds of innovative businesses testing entrepreneurial approaches to food recovery. Such models offer transformative potential for food recovery while providing jobs and economic development potential, all because they utilize surplus food as a resource.



#### IMPLEMENTATION OPPORTUNITY:

The next farm bill can utilize existing programs to provide dedicated support to innovative food recovery models. Specifically, Congress should amend Community Food Project (CFP) grants, within the Nutrition Title of the 2014 Farm Bill,<sup>158</sup> and Local Food Promotion Program (LFPP), within the Horticulture and Organic Agriculture Title.<sup>159</sup> As discussed above, CFP grants are designed to provide a one-time contribution to projects that increase access to healthy, local foods and to “support the development of entrepreneurial projects.”<sup>160</sup> As isolated investments with a special focus on innovation, CFP grants are particularly well-suited to support early-stage innovative food recovery organizations, which often need help early on to cover startup costs, but have great potential to revolutionize the food recovery landscape. Congress should set aside some portion of CFP funding for budding innovative food recovery organizations, while increasing overall program funding to avoid overwhelming an already competitive program.<sup>161</sup>

Additionally, LFPP grants are designed to support the development of local and regional food businesses and currently provide support for value-added activities and facilities, including shared and incubator kitchens, but they are highly competitive.<sup>162</sup> In keeping with the mission of LFPP, innovative food recovery models have the potential to connect consumers with food that has never before been utilized. Congress should increase funding for the program, while setting aside a portion of grants to target innovative food recovery models.

The Rural Development Title contains a grant program for value-added processing. The Value Added Producer Grant (VAPG), provides grants for planning funds (for example, to cover a feasibility study or business plan), or working capital funds (for example, to pay for marketing campaigns or employee salaries) to farms, agricultural producer groups, and farmer and rancher cooperatives seeking to establish or expand value added processing

activities.<sup>163</sup> The goals of the program are to generate new products, create and expand marketing opportunities, and increase producer income.<sup>164</sup> Food recovery organizations are currently not one of the eligible categories. Additionally, innovative food recovery organizations that donate instead of selling value added products do not qualify for this program. Mandatory funding for the program was increased from \$15 million to \$63 million per fiscal year in the 2014 Farm Bill, but the program still remains highly competitive.<sup>165</sup> Congress should increase funding for the VAPG program and amend the language authorizing the grants to specify that “food-recovery related businesses or nonprofits” are included as listed entities eligible for the program.

Because the VAPG program is located within the Rural Development Title, funding is only available for producers in rural areas. However, urban areas also experience a high demand for value-added processing of surplus food. Congress should create a program similar to VAPG, but targeted toward urban areas. This program could be established within the Miscellaneous Title or a new Food Waste Reduction Title.

The next farm bill could create a separate program under the Rural Development Title, the Miscellaneous Title, or a new Food Waste Reduction Title, to provide support directly to innovative food recovery organizations testing new models for technology, food recovery, or surplus food product development.

#### ADMINISTRATIVE OPPORTUNITY

USDA could modify the language of its Request for Applications for CFP and LFPP grants to include innovative food recovery models as eligible grant recipients. In addition, USDA can preference innovative food recovery organizations in the grant selection process. These actions could significantly increase support for such organizations without requiring legislative change.

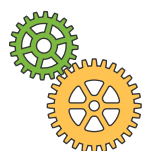
### RECOMMENDATION:

**Encourage USDA grant recipients to donate surplus food by incentivizing food donation through grant selection criteria**

Congress should demonstrate its commitment to food waste reduction by encouraging USDA grantees to donate surplus food. This could be achieved by modifying the grant selection



processes to preference applicants who have a plan to donate surplus food or pledge to create one. This measure would encourage applicants and grantees to take the necessary steps to begin donating wholesome food that cannot be sold. USDA already requires vendors that participate in the USDA farmers market, which operates outside the agency's headquarters in Washington, D.C to donate surplus food.<sup>166</sup> Specifically, the USDA Farmers Market program "requires farmers and vendors to donate surplus food and food products at the end of each market day to a local nonprofit organization identified by USDA."<sup>167</sup>



#### IMPLEMENTATION OPPORTUNITY:

In the next farm bill, Congress should direct USDA to give priority in grant selection processes to those grant applicants that have a plan in place or detail steps they will take to ensure that their excess food is donated. This could be implemented across a range of farm bill grant programs. This would make a powerful statement about the priority Congress places on recovering food waste, while providing a strong incentive for all USDA grantees to take the steps to begin donating surplus food and reducing their waste.

#### ADMINISTRATIVE OPPORTUNITY

Without legislative change, USDA could amend its grant selection processes to give priority to those grant applicants that have a plan in place or detail steps they will take to ensure that their excess food is donated.

### RECOMMENDATION:

#### Expand federal tax incentives for food donations

Cost is one of the main barriers preventing food businesses from donating. Fortunately, federal tax incentives encourage food recovery by helping to defray a portion of the cost of food donation. Food donors are eligible for either a general deduction (deducting the basis value of the charitable contribution)<sup>168</sup> or an enhanced deduction (based on the fair market value, and often nearly double the general deduction) for qualified food donations.<sup>169</sup>

Such tax incentives have been extraordinarily successful at incentivizing food donation. For example, when the enhanced deduction for food donations was temporarily expanded to cover more donor businesses in 2005, food donations across the country rose by 137% the following year.<sup>170</sup> Recognizing the effectiveness of tax incentives

#### How to Qualify for the Federal Enhanced Tax Deduction

In order for a donor to claim the enhanced deduction, they must satisfy the following requirements:

- The donee (food recovery organization) must be an IRC 501(c)(3) organization, and a public charity or a private operating foundation;
- The donee must use the donated property solely for the care of the ill, the needy, or infants, in a manner consistent with the purpose constituting that organization's exempt status under IRC 501(c)(3);
- The donee may not use or transfer the food in exchange for money, other property, or services;
- The donee must provide a written statement to the donor stating that all requirements of IRC 170(e)(3) have been met; and
- The donated food must be in compliance with the Food, Drug, and Cosmetic Act (FDCA) at the time the donation is made, as well as for 180 days before the contribution.

Sources: I.R.C. § 170(e)(3)(A) (2017); 26 C.F.R. §1.170A-4A(b)(4) (2017).

and the importance of food recovery, Congress permanently expanded the enhanced tax deduction for food donation to all businesses through the Protecting Americans from Tax Hikes (PATH) Act of 2015, a part of the 2016 omnibus budget.<sup>171</sup> Under this measure, a wider range of businesses, such as farms, independent restaurants, small grocery chains, delis, and bakeries, became eligible to claim the deduction.<sup>172</sup> Although this expansion is a very welcome and significant step, such incentives could be further enhanced to boost food donations, especially from farms, and support the development of innovative food recovery models.

As noted above, businesses can receive an enhanced deduction for food donations, but deductions like this are not beneficial to all businesses. A tax deduction reduces taxable income, whereas a tax credit lowers the overall amount of taxes owed.<sup>173</sup> Because the value of a deduction is contingent on the amount of taxable income, a deduction is typically a less effective incentive for businesses that operate with a low profit margin, like many small farms.<sup>174</sup> As a result, such businesses are not

adequately incentivized to donate surplus food. To better incentivize these low profit margin businesses, Congress should provide an alternative tax credit that such businesses can choose to claim instead of the enhanced deduction. Farmers in particular spend a lot of resources to raise their produce, and often have larger costs associated with preparing and transporting food to donate, so any additional support can help to offset their investments, while getting that food to those in need.

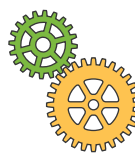
Addressing the underlying costs that donors face in donating surplus foods can increase the amount of food that is donated. The cost of transporting food from the donor to a food recovery organization is common to all donations of food but is a difficult cost to cover, particularly for smaller businesses and food recovery organizations. To address this issue, Congress should provide a tax incentive specifically tailored to offset this cost. To ensure this incentive is tailored to the organizations that most need this support, such an incentive should be limited to logistics, transportation, or trucking companies that transport donated food; farms and food businesses that deliver donated food directly to food rescue organizations; and food businesses that pay a food recovery organization to transport donations (to offset the payment to the food recovery organization). Limiting the tax incentive to these situations will encourage transportation and logistics businesses to donate transportation services and generate resources to support transportation costs of food recovery organizations, who struggle to transport such food for free.

Federal tax incentives could also be modified to reflect current food donation practices. Federal tax incentives carry the same restrictions imposed by the Emerson Act that limit the scope of liability protection: in order for a donor to claim a deduction, donations must go through a non-profit organization that does not charge the end recipient for the food<sup>175</sup> and foods must comply with all labeling requirements, even those unrelated to safety.<sup>176</sup> The “no-charge” requirement discourages donors from donating to innovative food recovery organizations, like social supermarkets, because they would be unable to claim the enhanced deduction. This requirement is unnecessary because the incentives also require the recipient food recovery organization to be a nonprofit, meaning that any money raised by selling donated food would be re-invested in their social mission to serve more individuals in need.

The requirement that foods must meet all Food, Drug, and Cosmetic Act (FDCA) in order for the donor to be able to claim the enhanced deduction is similarly limiting. Compliance with FDCA labeling

standards is necessary to accurately market food that is offered for sale,<sup>177</sup> but many labeling deficiencies are unrelated to safety. In fact, many foods are donated precisely because of minor labeling issues that would be too costly to fix. The enhanced deduction should be amended to require compliance only with safety standards and safety-related labeling standards, and not labeling standards only related to quality, so that such wholesome foods can still make it to the plates of families in need.

More detailed information about these recommendations to strengthen the enhanced tax deduction can be found in the Food Law and Policy Clinic of Harvard Law School and the Natural Resources Defense Council’s report *Don’t Waste, Donate: Enhancing Food Donations through Federal Policy*, which presents actions the federal government should take to better align federal laws and policies with the goal of increasing the donation of safe surplus food.<sup>178</sup>



#### IMPLEMENTATION OPPORTUNITY:

The next farm bill can ensure that all businesses are better incentivized to donate safe surplus foods by implementing the recommendations detailed above. While the 2014 Farm Bill has no specified tax section, the 2008 Farm Bill dedicated an entire title to tax measures: the Trade and Tax Provisions in the Farm Bill (Title XV). The title included programs to incentivize conservation and endangered species recovery, as well as several specific provisions modifying tax treatments for forests and the timber industry.<sup>179</sup> The recommended tax incentives for food donations could be included in a dedicated Tax Title or a new Food Waste Reduction Title. Alternatively, they could be incorporated into an existing title, such as Horticulture and Organic Agriculture or Miscellaneous. Outside of the farm bill, Congress could also create a new tax credit via standalone legislation that amends the Internal Revenue Code.

#### RECOMMENDATION:

### Require USDA to conduct a study on ways to reduce food waste and support food recovery from farms

Fresh produce is highly sought-after by food recovery organizations and their clients. Yet, at the same time, an estimated 10 million tons of fresh fruits and vegetables go to waste on farms each year.<sup>180</sup> Less than 5% of this surplus produce is recovered.<sup>181</sup> Surplus food on farms is wasted for

many reasons. As discussed previously, recovering excess food from farms is expensive, due to costs associated with harvesting, preparing produce for donation, and managing the logistical challenges of connecting with and transporting to a food recovery organization.<sup>182</sup> In addition, farmers report difficulty selling cosmetically imperfect produce.<sup>183</sup> One reason for this difficulty stems from purchasing specifications used by retail buyers, which are partly shaped by consumer demand, and partly a result of norms created by the USDA AMS, which sets labels and grading standards on food.<sup>184</sup>

Compounding these issues, accurate data about on-farm losses is scarce. Producers generally find it difficult to measure the amount of unsalable produce left in the field and rarely bother, since they are not required to track or report such losses. Because it is difficult and expensive to travel to farms to measure the amount of produce that goes unharvested, many studies that address food waste either do not discuss farm-based food waste, or else rely on outdated estimates.

Research on ways to recover more of this produce, or on barriers to donation from farms, is also scarce. USDA ERS's most recent report on food waste, published in 2014, explicitly analyzed the consumer and retail levels, excluding farm and farm-to-retail loss.<sup>185</sup> Without data about loss on farms and the best methods to recover unharvested produce, attempts to reduce loss of farm-level surplus will be limited. Research on farm level food waste can help clarify issues with selling cosmetically imperfect produce and other reasons behind this waste and identify solutions to ensure more of this produce is recovered for use in mainstream retail stores, food recovery organizations, and alternative markets.

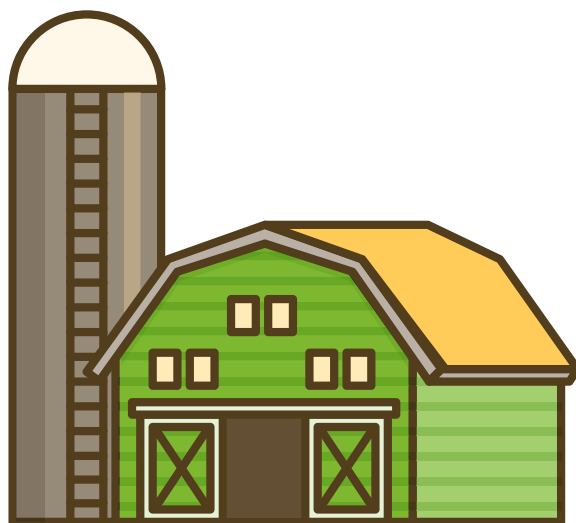
## IMPLEMENTATION OPPORTUNITY:



Congress should provide funding in the next farm bill for USDA to conduct a study to characterize the quantity and types of fruit and vegetables wasted, barriers to recovering that produce, and opportunities to increase recovery. The report should also include an analysis of losses associated with cosmetically imperfect produce, the role of U.S. Grade Standards and retail purchase specifications in this loss, the barriers to the use of such produce in mainstream markets or the creation of secondary markets to sell or donate this produce, and the economic impact on farmers of introducing cosmetically imperfect produce into retail markets. This report can be authorized in the Research Title, the Miscellaneous Title, or in a new Food Waste Reduction Title. Alternatively, Congress could allocate money directly to USDA ERS to conduct the study.

## ADMINISTRATIVE OPPORTUNITY

Without legislative change, USDA could independently commission ERS to write an economic research report on farm and farm-to-retail level surplus and loss. This report could build upon previous analysis conducted by ERS on food loss and waste; however, this study should collect new data by interviewing farmers and observing on-farm and distribution practices, rather than relying only on published estimates.





# FOOD WASTE RECYCLING: COMPOSTING AND ANAEROBIC DIGESTION

## Top Two Food Waste Recycling Asks for the 2018 Farm Bill

1. **Provide grants to support state and municipal organic waste bans, zero waste goals, and food waste prevention plans**
2. **Provide grants and loans for the development of composting and anaerobic digestion infrastructure**

Food waste is the largest component of municipal solid waste in landfills nationwide.<sup>186</sup> Food waste in landfills produces at least 113 million tons of greenhouse gases each year.<sup>187</sup> Additionally, in 2010, the EPA reported that the cost of disposing of food waste in landfills was approximately \$1.3 billion.<sup>188</sup> Even as food waste prevention efforts and recovery initiatives are scaled up, there will always remain some portion of food that needs to be discarded. It is important to support methods of food disposal that are sustainable and economically beneficial, while also limiting the use of landfill space.

Composting and anaerobic digestion (AD) are widely recognized as effective approaches to diverting surplus food from the waste stream when it is no longer suitable for consumption. Composting is the “controlled aerobic, or oxygen-requiring, decomposition of organic material by microorganisms under controlled conditions.”<sup>189</sup> When applied to fields and gardens, compost improves soil quality and reduces the need for chemical fertilizers.<sup>190</sup> Compost can also reduce water use and help prevent soil erosion.<sup>191</sup> Anaerobic digestion (AD) is a recycling process that can turn food waste into biofuels through a series of biological processes.<sup>192</sup> AD can be used to produce on-site heat, natural gas, vehicle fuel, electricity, biofertilizer, or compost.<sup>193</sup>

Together, composting, AD, and other recycling solutions have the potential to divert 9.5 million

tons of food waste from landfills annually.<sup>194</sup> Additionally, composting and AD can improve state and local economies. In Massachusetts, for example, the passage of an organic waste ban has driven economic growth. The organics waste industry—including waste processing, waste hauling, and food recovery—created over 500 new jobs between 2014 and 2016, and produced approximately \$175 million in industry activity.<sup>195</sup> Unfortunately, many cities and states are not located in areas served by composting or AD facilities;<sup>196</sup> furthermore, there are many barriers to growing composting and AD infrastructure, including the costs of constructing composting and AD facilities. The federal government can help keep food scraps out of landfills by encouraging development of sustainable methods of food disposal. This section identifies areas in the next farm bill that would help support composting, AD, and other recycling processes.

## RECOMMENDATION:

**Provide grants to support state and municipal organic waste bans, zero waste goals, and food waste prevention plans**

Organic waste bans prevent entities that generate specified amounts of food waste from sending this waste to landfills, subject to exceptions. By limiting the amount of organic waste that entities can dispose of in landfills, these bans compel food waste generators to implement various practices, at the discretion of the generator, to prevent food waste, like streamlining food purchasing orders, repurposing ingredients and leftovers into new dishes, offering flexible portion sizes, and donating or recycling surplus food instead of putting it in the trash. This approach to reducing food waste often stems from state efforts to reduce the load on overburdened landfills. For example, in Massachusetts, the organic waste ban was passed after studies found that more than 25% of the state’s waste stream was made up of organic waste.<sup>197</sup> Approaches like this have the potential to foster transformational change



because they change the default in the way food is treated, forcing food businesses to treat food as a resource or internalize the costs of wasting it. They also catalyze development of new food recovery and recycling industries, as well as provide an opportunity for public awareness and education.

Four states—Connecticut,<sup>198</sup> Massachusetts,<sup>199</sup> Rhode Island,<sup>200</sup> and Vermont<sup>201</sup>—have instituted organic waste bans, while one state—California<sup>202</sup>—has instituted a waste recycling law requiring commercial generators of organic waste to either compost or anaerobically digest organic waste. Although many states' regulations have been passed too recently to assess efficacy, the feedback so far has been promising. In Massachusetts, the ban has achieved a five-fold increase in waste diversion,<sup>203</sup> and has driven economic growth in the state, as mentioned above. Organic waste bans have shown corollary benefits with regards to food recovery. For example, Vermont's Universal Recycling Law led to a 60% increase in food donations in 2016,<sup>204</sup> and in one year, Massachusetts saw a 25,000 ton increase in food donations.<sup>205</sup>

In addition to the states mentioned above, several municipalities have adopted similar organics recycling laws, or have chosen to pursue zero food waste goals or food waste prevention plans, which often consist of a compilation of policies and programs designed to divert food waste from landfills. These goals and plans can help municipalities address their specific food waste challenges from multiple directions, but are difficult to get off the ground because of high start-up costs. For example, the city of Battle Creek, Michigan recently proposed a \$3 million plan for a citywide food waste reduction and recovery initiative.<sup>206</sup> Although private sector partners might provide some funding, Battle Creek has requested financial assistance from USDA to help with initial start-up costs.<sup>207</sup> Yet, this kind of request may be difficult for USDA to meet, unless specific authority and funding are granted by Congress.

For a variety of reasons, it would be difficult for to create an organic waste ban at the federal level. But because these policies have shown such promise for transformational change in the way that food is treated, the federal government should play a role in encouraging their adoption. Supporting organic waste bans or waste prevention plans at the state level can allow states to tailor these laws to their own unique contexts. Some states might want to start with an organic waste ban that only applies to a narrow set of businesses or institutions, since composting or AD may be limited, or existing facilities may be unable to accommodate a large increase in food scraps in the short term.<sup>208</sup> States can also use this flexibility to determine the best

methods for enforcement, tracking and evaluation of the ban's success, and raising awareness among affected industries. The federal government should use the farm bill to support the development of state and local initiatives by providing incentives and assistance to encourage state-level organic waste bans and food waste prevention plans.



#### IMPLEMENTATION OPPORTUNITY:

The next farm bill could provide grants to state and municipal agencies interested in implementing an organic waste ban, zero food waste goal, or food waste prevention plan. Specifically, Congress should incentivize creation of such policies by providing funding to states in order to plan or implement an organic waste ban, zero food waste goal, or food waste prevention plan. Grants should be broken up into planning grants and implementation grants, with the former supporting staff time, research, and organizing around policy development and the latter supporting infrastructure development, enforcement capacity, and other capital and labor needs. Such funding would encourage states to adopt such bans or initiatives in order to receive the grant funding. This program should be established within the Miscellaneous Title or a dedicated Food Waste Reduction Title.

#### RECOMMENDATION:

##### **Provide grants and loans for the development of composting and anaerobic digestion infrastructure**

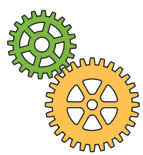
Cost poses a significant barrier to expanding composting and AD infrastructure. Construction of a large AD facility that processes 50,000 tons per year costs around \$20 million to build.<sup>209</sup> A large composting facility that processes up to 40,000 tons per year costs around \$5-9 million to build, and \$17-28 per ton to operate.<sup>210</sup> States often do not have the funds to support creation of this much-needed infrastructure. To defray the steep upfront cost, the federal government should support composting and AD by providing grants and loans to help build these facilities.

Several existing programs in the Rural Development Title focus on natural resources and waste management, and can be used to fund composting and AD facilities. For towns with populations under 10,000, two grant programs can be used to support composting and AD facilities: Solid Waste Management Grants (provide technical assistance around solid waste management practices)<sup>211</sup> and Water and Waste Disposal Loans and Grants<sup>212</sup>

(fund wastewater systems, including those that convert food waste to energy).<sup>213</sup> Just this year, the Solid Waste Management Grant Program was adjusted to prioritize food waste reduction; now, in scoring applications, the administrator is permitted to award bonus points to projects involving composting programs that emphasized reducing food waste from landfills.<sup>214</sup> In rural areas with populations less than 50,000, the Business and Industry Loan Program provides guaranteed loans that can be used to purchase land, build or improve facilities, purchase equipment, or cover start-up costs.<sup>215</sup> USDA indicates that this program could be used to advance food waste recycling goals by providing loans to rural businesses that use food waste to manufacture energy renewables.<sup>216</sup>

These programs provide funding for composting and AD infrastructure in rural areas. Yet, to successfully divert food waste from large population centers, facilities need to be available in urban or peri-urban areas, as well as rural areas. The next farm bill can help support composting and AD by providing funding to support construction of these facilities in more populated areas.

As described above, the costs for composting and AD infrastructure are high, but there are significant and sustainable long-term benefits. Congress can support this needed infrastructure by adjusting and expanding the existing grant programs mentioned above, or creating a new program to target food waste recycling projects.



#### IMPLEMENTATION OPPORTUNITY:

The next farm bill can provide grants for the development of composting and AD infrastructure through the Rural Development Title, Conservation Title, Energy Title, Miscellaneous Title, or a Food Waste Reduction Title as laid out below.

#### RURAL DEVELOPMENT TITLE

As mentioned above, there are several existing programs and grants within the Rural Development Title and Energy Title that are currently used to support composting and AD facilities.<sup>217</sup> Small adjustments to these programs could significantly increase the support they are able to provide for composting and AD infrastructure. In the Rural Development Title, Congress should amend authorizing language for the Water and Waste Disposal Loans and Grants and Business and Industry Loan Program to preference applicants with a food waste reduction focus, similar to the recent change made to the Solid Waste Management Grant Program. Congress should also create similar programs in more populated areas. Because the new grant programs would apply to

urban areas, it would need to be located outside the Rural Development Title, likely within the Conservation or Miscellaneous Titles, or in a new Food Waste Reduction Title.

#### CONSERVATION TITLE

The Environmental Quality Incentives Program (EQIP)<sup>218</sup> provides agricultural producers with financial and technical support to implement conservation practices that improve natural resources, such as soil health.<sup>219</sup> EQIP already provides funding to “waste storage facilities, waste transfer, composting facilities, solid/liquid waste separation and nutrient management.”<sup>220</sup> However, EQIP funding is highly competitive and thus not all program objectives can be met; generally each state has the authority to set its own priority resource concerns, eligible practice standards, payment rates, and ranking criteria for evaluating projects.<sup>221</sup>

Although individual states spend differing amounts on EQIP, state-specific total obligations for the program in 2016 were typically between \$15 and \$30 million.<sup>222</sup> Because they require a large initial investment, building new composting and AD facilities would demand a large percentage of a state’s EQIP funding; thus, it is unlikely that states would prioritize spending their federal allocation on these projects over funding a larger number of lower cost projects.<sup>223</sup> This creates a barrier to using EQIP funding to support AD and composting projects. The next farm bill can support AD and composting by expanding EQIP’s overall funding and then setting aside a portion of EQIP funds to be dedicated for AD and composting facility development.

In addition to EQIP, the Conservation Title’s Conservation Stewardship Program (CSP)<sup>224</sup> helps farmers develop and improve conservation systems and activities<sup>225</sup> and could be used to support composting systems on farms. The next farm bill could facilitate the use of the program for this purpose by amending the definition of “conservation practice” in the statute to include “composting practices.”<sup>226</sup>

#### ENERGY TITLE

The Rural Energy for America Program (REAP),<sup>227</sup> provides funding in the form of grants or guaranteed loans for the development and construction of renewable energy systems and energy efficiency improvement projects, including AD and other energy-related projects.<sup>228</sup> In the last farm bill, roughly \$50 million in mandatory funding was authorized for 2014 and each year after until funds are expended, and \$20 million in annual discretionary funding was also authorized from 2014-2018.<sup>229</sup> REAP is extremely competitive,



and primarily focuses on other forms of renewable energy, such as wind and solar,<sup>230</sup> making it difficult for AD projects to access funding. Thus, the next farm bill can help by expanding funding, and setting aside a portion of funding for composting and AD.

#### MISCELLANEOUS OR FOOD WASTE REDUCTION TITLE

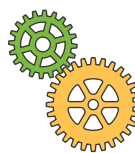
As an alternative, the next farm bill could create a new grant program specifically tailored to support composting and AD infrastructure through the Miscellaneous Title or a new Food Waste Reduction Title. Creating a new program could ensure that money is set aside for the creation of this need infrastructure, rather than leaving its funding to chance as a potential component of various other grant programs not specifically created for this purpose.

### RECOMMENDATION: Provide research and development funding to expand the range of compostable and digestible materials and explore additional applications for compost and digestate

Although composting and AD have been established as important methods of recycling food waste, there remain many questions about how to increase their efficacy. Most importantly, today, the majority of composting and AD facilities do not accept food scraps, and instead only accept yard scraps and other organic matter. In 2014, there were 4,914 composting facilities nationwide, yet only 347 facilities accepted food scraps.<sup>231</sup> This is generally because of concerns about the several types of contaminants commonly found in food waste, which can harm the decomposition processes of both composting and AD. One of the major contaminants is non-compostable food packaging, which does not break down during the decomposition process.<sup>232</sup> Removal of non-compostable packaging prior to incorporating food scraps and other organic materials into the composting pile or digester poses a barrier to efficiently processing food waste.<sup>233</sup> Further, even compostable packaging takes longer to decompose than general organic matter, and can create an extra burden on facility operators.<sup>234</sup> In addition to being packaging-free, food waste generally must be extremely clean and pulped before the digestion process, adding yet another step to the process.<sup>235</sup> Rather than working to remove contaminants from food waste prior to decomposition, many facilities focus on other, cleaner organic waste streams.

Because of these issues, composting and AD facilities are far from reaching their full potential for processing food scraps. But these challenges have been solved before; in Europe, many AD facilities are able to operate almost exclusively using food scraps.<sup>236</sup> In the next farm bill, Congress should provide funding to help researchers, academics, and businesses develop new technologies and processes that can solve these issues, for example by creating more easily compostable packaging, a better system for effectively sorting food scraps from other waste, or a more effective way of teaching consumers and businesses to keep compostable waste clean.

Another important research area, and an emerging benefit of AD systems, is the potential to extract and recover nutrients from food scraps.<sup>237</sup> Currently, most AD facilities are focused on creation of energy, rather than on nutrient recovery.<sup>238</sup> However, interest in protecting waterways and recycling nutrients has sparked renewed interest in recovering nutrients, such as phosphorous, from AD digestate for reuse to support healthy soil.<sup>239</sup> Recovered nutrients can be used to create products like organic fertilizers, which AD facilities can sell off-site.<sup>240</sup> Improving nutrient-capture technology could also allow the U.S. to become self-sufficient for nutrients like phosphorous, rather than import from other countries.<sup>241</sup> In the next farm bill funding could be provided to conduct research and develop new technologies for improving nutrient management using compost or digestate from AD systems.



#### IMPLEMENTATION OPPORTUNITIES:

The next farm bill could provide research and development funding to expand the range of compostable and digestible materials and additional applications for compost and digestate through the Research Title, Miscellaneous Title, or Food Waste Reduction Title.

One way to support such research is via the Foundation for Food and Agricultural Research (FFAR), created in the 2014 Farm Bill under the Research Title to provide \$200 million “to increase the scientific and technological research, innovation, and partnerships critical to boosting America’s agricultural economy.”<sup>242</sup> FFAR’s purpose is to fund research on topics that include renewable energy, natural resources, the environment, and agricultural systems and technology.<sup>243</sup> This purpose is broad enough as written to cover research on new composting and AD technology. FFAR gives strong priority to research concepts that fall within seven identified “Challenge Areas.”<sup>244</sup> Two of the current “Challenge Areas” are Food Waste and

Loss, and Healthy Soils,<sup>245</sup> suggesting that research on compost, AD, and their potential for reducing waste and improving nutrient management, fit within the FFAR's current priorities. The 2014 Farm Bill gave FFAR \$2 million in mandatory funding, with the condition that these funds would continue to be available only to the extent that FFAR is able to secure matching funding for each expenditure.<sup>246</sup> In order to prioritize research on composting and AD, Congress could expand FFAR's overall funding

and set aside a portion of funding for research and development of new technologies that improve the ability of composting and AD facilities to accept food scraps and to improve nutrient management using compost and digestate.



## FOOD WASTE REDUCTION COORDINATION

### Top Food Waste Reduction Coordination Ask for the 2018 Farm Bill

**Create an Office of Food Waste Reduction or a Food Waste Coordinator Position within the USDA**

Food waste often occurs for a very benign reason: because it is invisible. Evidence shows that one of the best ways to reduce food waste is by educating people about the issue and helping them to see how much they waste.<sup>247</sup> Creating an office or agency devoted to understanding food waste and raising awareness of the issue can help increase opportunities to reduce this waste and assist businesses in understanding the relevant laws and utilizing existing grants and incentives for waste reduction. At present, there is no government office or agency directly responsible for coordinating food waste reduction or food recovery efforts. As a result, national food policies are developed without food waste reduction and food recovery in mind, opportunities to raise awareness about food waste are missed, and policy solutions that could make major strides toward reducing food waste rarely make their way into law.

Legislation and federal policies that aim to reduce food waste are rare at the federal level. For example, food waste reduction is often overlooked in conservation programs and food assistance programs, despite the fact that these programs

could serve as unique opportunities to reduce waste at very low cost. Greater coordination could help ensure that measures that could reduce food waste are included in appropriate federal legislation and federal programs. This section discusses opportunities in the next farm bill to provide federal coordination for food waste reduction and recovery activities.

### RECOMMENDATION:

#### Create an Office of Food Waste Reduction or a Food Waste Coordinator Position within the USDA

In order to maximize our economic and natural resources, preserve our environment, and reduce food insecurity across the country, the federal government should ensure that food waste reduction is considered and prioritized in national policymaking.

The federal government can support such prioritization by establishing an Office for Food Waste Reduction within the USDA. The Office of Food Waste Reduction could conduct research and implement new programs around food waste reduction, identify and recommend ways to amend existing federal programs to better support food waste reduction, and identify ineffective regulations or redundancies that hinder food recovery efforts and harm businesses. This Office could be charged with instituting a process for documenting progress towards the national food waste reduction goal set by the EPA and USDA, including providing regular

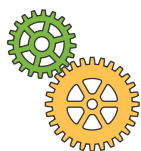
### Priority activities for an Office of Food Waste Reduction or a Food Waste Coordinator:

- Identify and eliminate regulations that inadvertently cause waste and harm businesses
- Provide insight to Congress and other agencies on barriers to food waste reduction in pending laws and regulations
- Serve as an external liaison to provide information and break down barriers to donation for the food industry
- Identify existing programs, such as USDA and EPA grants, that could be expanded to include food waste prevention or food recovery

reports. Additionally, this Office could serve as a liaison with the food industry to help break down barriers to food donation and assist companies in understanding and accessing tax incentives and other supports for donations. Establishing this Office would ensure that the federal government prioritizes food waste reduction in years to come, and it would better position the United States to meet or surpass its national food waste reduction goal.

In the past, the farm bill has established offices that function similarly to this proposed Office of Food Waste Reduction. For example, the 1994 Department of Agriculture Reorganization Act established a similar Office of Energy Policy and New Uses.<sup>248</sup> That Office assists the USDA in developing research and programs for new and sustainable energy use.<sup>249</sup> An Office of Food Waste Reduction within the USDA could conduct similar research and program development around food waste prevention, food recovery, and food waste recycling.

A lower cost option would be to create a singular position, such as a Food Waste Coordinator within the USDA Office of the Secretary. For example, the 1994 Farm Bill authorized the Secretary of Agriculture to establish the position of Military Veterans Agricultural Liaison, who is tasked with assisting returning veterans with beginning farming careers and accessing agricultural programs.<sup>250</sup>



#### IMPLEMENTATION OPPORTUNITY:

In the next farm bill, Congress should mandate creation of a USDA Office of

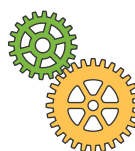
Food Waste Reduction or a Food Waste Coordinator position within the Office of the Secretary. This could be done through the Miscellaneous Title or through a new Food Waste Reduction Title.

### RECOMMENDATION:

#### Establish an interagency task force and an external advisory council on food recovery

Despite various agency efforts over the past few years to increase food recovery through federal policy and programs more can be done. In addition to the EPA and USDA, which have demonstrated leadership on the issue of food waste reduction, agencies such as the Department of Health and Human Services, Food and Drug Administration, Department of Homeland Security, Department of Commerce, and the Department of State could all have a role to play in addressing the problem of food waste. Many agencies impact the food system—according to the Government Accountability Office, 15 federal agencies play a role in regulating food safety alone<sup>251</sup>—and these various agencies can all do their part to reduce food waste.

An interagency task force or working group should be created to help coordinate waste reduction efforts. A broad collaboration of agencies seeking to reduce food waste is not unprecedented. In the late 1990s, the Clinton administration recognized food waste as a problem deserving the concerted efforts of the federal government. In a 1996 memorandum, President Clinton created an Interagency Working Group on Food Recovery to Help the Hungry to carry out the government's policy of promoting the donation of excess wholesome food.<sup>252</sup> The Secretary of Agriculture chaired the group, and each agency appointed an individual to sit on the working group and serve as a food recovery coordinator.<sup>253</sup> In addition to facilitating discussion between agencies on food recovery issues, this group developed resources on ways citizens could reduce food waste through gleaning and supporting food recovery organizations.<sup>254</sup>



#### IMPLEMENTATION OPPORTUNITY:

The next farm bill should create an interagency working group or task force to coordinate food waste reduction efforts across agencies.

In addition to including various agencies, this working group should create an external advisory council to provide needed input. Participating stakeholders should represent a diverse array of perspectives, from the private sector to nonprofit

organizations, including businesses and food recovery organizations of varying sizes. Congress should appoint a chair for this working group, likely the Secretary of Agriculture. This working group and the advisory council could be created

in the Miscellaneous Title or in a new Food Waste Reduction Title. The working group could encourage agencies beyond the USDA and EPA to consider how their programs impact food waste.

## CONCLUSION

Every year, 62.5 million tons of food—40% of all food produced in the United States—goes to waste, most of it ending up in landfills.<sup>255</sup> At the same time, one in seven Americans is food insecure. Food waste also carries with it high economic costs to farmers, retailers, and consumers alike, and causes serious environmental impacts.<sup>256</sup> Because it already touches most aspects of the U.S. food system, the farm bill provides an appropriate vehicle for the federal government to take concerted action against food waste. In a new Food Waste Reduction Title, the government can provide support for research, grants, education, and other policies that aim to improve waste prevention, increase food recovery, and bolster food recycling, and in

so doing improve the lives of millions of Americans and our environment. Whether or not a new Title is created, the next farm bill can support food waste reduction by continuing, expanding, or adapting existing grants and programs across a variety of titles that can be used to prevent food waste and increase food recovery and recycling. Congress can also support efforts to reduce food waste through the expansion of grant programs and funding in legislation outside the farm bill, as described throughout this report. Food waste presents a grave threat to our economy, our health, and our environment, and it is time for Congress to take a leadership role in addressing this issue.



## TABLE OF RECOMMENDATIONS



Prevention



Recovery









Recycling



Coordination

### POLICY CHANGE AND COORDINATION

-  Standardize and clarify date labels
-  Implement a certification system for businesses that demonstrate food waste reduction practices
-  Strengthen the Bill Emerson Good Samaritan Food Donation Act
-  Expand federal tax incentives for food donations
-  Create an Office of Food Waste Reduction or a Food Waste Coordinator Position within the USDA
-  Establish an interagency task force and an external advisory council on food recovery

### PROGRAMMATIC CHANGE AND NEW FUNDING

#### MODIFICATIONS TO EXISTING PROGRAMS

-  **Provide funding to K-12 schools to incorporate food waste prevention practices and food recovery education in their programs**  
Modify the Food and Agriculture Service Learning Program priorities to include food waste reduction education and preference applicants who focus on food waste reduction in their programs
-  **Launch a national food waste education and awareness campaign**  
Amend the Expanded Nutrition Education Program and SNAP-Ed to include food waste reduction education in order to extend food budgets and increase nutrition
-  **Provide grant funding for new technologies to slow spoilage**  
Adjust the Specialty Crop Research Initiative to preference projects addressing crop preservation or post-harvest loss
-  **Encourage USDA grant recipients to donate surplus food by incentivizing food donation through grant selection criteria**
-  **Provide grant resources to support infrastructure investment for food recovery organizations**  
Expand the Local Food Promotion Program (LFPP) and Community Food Project (CFP) grants to include and preference food recovery organizations, which distribute surplus food to those in need
-  **Provide grants to innovative food recovery models**  
Adjust CFP grants, LFPP, and the Value Added Producer Grant to include and preference food recovery organizations testing new models and entrepreneurial approaches
-  **Provide grants and loans for the development of composting and anaerobic digestion infrastructure**  
Adjust Water and Waste Disposal Loans and Grants, the Business and Industry Loan Program, the Environmental Quality Incentives Program, the Conservation Stewardship Program, and the Rural Energy for America Program to prioritize composting and anaerobic digestion initiatives that focus on food waste reduction



Prevention



Recovery



Recycling



Coordination



## TABLE OF RECOMMENDATIONS (CONT.)

PROGRAMMATIC CHANGE AND NEW FUNDING	<p><b>NEW PROGRAMS</b></p> <ul style="list-style-type: none"> <li> <b>Provide funding to K-12 schools to incorporate food waste prevention practices and food recovery education in their programs</b> Create a dedicated grant program to support food waste reduction education and practices in K-12 schools</li> <li> <b>Launch a national food waste education and awareness campaign</b> Launch a national food waste education and awareness campaign</li> <li> <b>Provide grant funding for new technologies to slow spoilage</b> Create a new program to support research and pilot studies on spoilage-inhibiting technologies for dairy, meat, poultry, and fish, in addition to specialty crops</li> <li> <b>Provide grant resources to support infrastructure investment for food recovery organizations</b> Create a new grant program to help food recovery organizations invest in infrastructure that can maximize their ability to use and distribute surplus food</li> <li> <b>Provide grants to innovative food recovery models</b> Create a dedicated grant program to support innovative food recovery organizations testing new models for technology, food recovery, or surplus food product development</li> <li> <b>Provide grants to support state and municipal organic waste bans, zero waste goals, and food waste prevention plans</b></li> <li> <b>Provide grants and loans for the development of composting and anaerobic digestion infrastructure</b> Create a new grant program specifically for new composting and anaerobic digestion infrastructure to increase the capacity of individual regions to recycle food waste</li> </ul>
RESEARCH	<ul style="list-style-type: none"> <li> <b>Conduct comprehensive national research on food waste to quantify the amount of food wasted, identify the types of food wasted, and determine the points in the supply chain at which food tends to be wasted</b></li> <li> <b>Require USDA to conduct a study on ways to reduce food waste and support food recovery from farms</b></li> <li> <b>Provide research and development funding to expand the range of compostable and digestible materials and explore additional applications for compost and digestate</b></li> </ul>



# ENDNOTES

- <sup>1</sup> Dana Gunders, *Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill*, NAT. RES. DEF. COUNCIL 4 (Aug. 2012), <https://www.nrdc.org/sites/default/files/wasted-food-IP.pdf>.
- <sup>2</sup> *A Roadmap to Reduce U.S. Food Waste by 20 Percent*, ReFED 16 (2016), [https://www.refed.com/downloads/ReFED\\_Report\\_2016.pdf](https://www.refed.com/downloads/ReFED_Report_2016.pdf).
- <sup>3</sup> *Id.* at 10.
- <sup>4</sup> ReFED estimates are 21% agricultural water use, 19% cropland, and 18% fertilizer use. See *A Roadmap to Reduce US Food Waste by 20 Percent Technical Appendix*, ReFED 65 (Mar. 2016), [https://www.refed.com/downloads/ReFED\\_Technical\\_Appendix.pdf](https://www.refed.com/downloads/ReFED_Technical_Appendix.pdf). These numbers apply ReFED's total estimate of food waste to water, fertilizer, and land calculations in Kummu *et al.* Kummu's numbers are 35% agricultural water use, 31% cropland use, and 30% fertilizer use, but are based on FAO's estimates of total food loss, which ReFED finds to be outdated. M. Kummu *et al.*, *Lost food, wasted resources: Global food supply chain losses and their impacts on freshwater, cropland, and fertiliser use*, SCI. OF THE TOTAL ENV'T. (2012), <http://www.sciencedirect.com/science/article/pii/S0048969712011862>.
- <sup>5</sup> See ReFED, *supra* note 2, at 50. See also *Understanding Global Warming Potentials*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials> (last visited Apr. 13, 2017).
- <sup>6</sup> Alisha Coleman-Jensen, *et al.*, *Household Food Security in the United States in 2015*, U.S. DEP'T OF AGRIC., ECON. RESEARCH SERV. 6 (2016), <http://www.ers.usda.gov/webdocs/publications/err215/err-215.pdf>.
- <sup>7</sup> ReFED, *supra* note 2, at 7.
- <sup>8</sup> *Id.* at 5.
- <sup>9</sup> *Massachusetts Commercial Food Waste Ban Economic Impact Analysis* 19, ICF (Dec. 2016), <http://www.mass.gov/eea/docs/dep/recycle/priorities/orgecon-study.pdf>.
- <sup>10</sup> Coleman-Jensen, *et al.*, *supra* note 6, at 6–7, 10.
- <sup>11</sup> ReFED, *supra* note 2, at 5.
- <sup>12</sup> Per capita food loss has increased by 50% from 1974 to 2005. Kevin D. Hall, *et al.*, *The Progressive Increase of Food Waste in America and Its Environmental Impact*, 4.11 PLoS ONE e7940 (2009), <https://doi.org/10.1371/journal.pone.0007940>.
- <sup>13</sup> *EPA and USDA Join Private Sector, Charitable Organizations to Set Nation's First Food Waste Reduction Goals*, U.S. ENVTL. PROT. AGENCY (Sept. 16, 2015), <https://www.usda.gov/wps/portal/usda/usdamediafb?contentid=2015/09/O257.xml&printable=true>.
- <sup>14</sup> *Id.*
- <sup>15</sup> H.R. 2029, 114th Cong. § 113(a) (2017) (codified as I.R.C. § 170(e)(3)(C)). The expansion of the enhanced deduction not only applies permanently to all business entities in future tax years, but it also applies retroactively for the 2015 tax year.
- <sup>16</sup> *Food Waste from Field to Table: Hearing Before the Comm. on Agric.*, 114th Cong. (2016).
- <sup>17</sup> See Food Date Labeling Act, H.R. 5298, 114th Cong. (2016); Food Date Labeling Act, S. 2947, 114th Cong. (2016); Food Recovery Act, H.R. 4184, 114th Cong. (2015) Food Recovery Act, S. 3108, 114th Cong. (2016); and Food Donation Act of 2017, H.R. 952, 115th Cong. (2017).
- <sup>18</sup> *Save the Food*, AD COUNCIL and NAT'L RES. DEF. COUNCIL (2016), <http://www.savethefood.com>. See also Dana Gunders, *Save the Food*, NAT'L RES. DEFENSE COUNCIL (Apr. 21, 2016) <https://www.nrdc.org/experts/dana-gunders/save-food>.
- <sup>19</sup> Christine St. Clair, *USDA, EPA Announce U.S. Food Loss and Waste 2030 Champions*, U.S. ENVTL. PROT. AGENCY (Nov. 17, 2016), <https://www.epa.gov/newsreleases/usda-epa-announce-us-food-loss-and-waste-2030-champions>.
- <sup>20</sup> *Grocery Industry Launches New Initiative to Reduce Consumer Confusion on Product Date Labels*, GROCERY MFR. ASS'N (Feb. 15, 2017), <http://www.gmaonline.org/news-events/newsroom/grocery-industry-launches-new-initiative-to-reduce-consumer-confusion-on-pr/>.
- <sup>21</sup> *Id.*
- <sup>22</sup> Agricultural Act of 2014, Pub. L. No. 113-79 § 1101 *et al.*, 7 U.S.C. § 1 *et al.* (2017).
- <sup>23</sup> *Food Recovery Hierarchy*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy> (last visited Apr. 13, 2017).
- <sup>24</sup> In this report, “wholesome” is used to mean food that is unadulterated, unspoiled, and safe to eat.
- <sup>25</sup> Organizations that perform this collection, transportation, and distribution of surplus healthy food are referred to collectively as “food recovery organizations” throughout this report.
- <sup>26</sup> Prevention can have 7x more GHG benefits per ton reduced than Recycling. This was calculated by dividing the total GHG tons of all prevention solutions in the ReFED roadmap by the tons diverted (3.7 tons GHG per ton diverted) and comparing them with the total GHG tons for all recovery solutions (3 tons GHG per ton diverted) and the total GHG tons for all recycling solutions (0.5 tons GHG per ton diverted). See ReFED, *supra* note 2.
- <sup>27</sup> This total was obtained by adding together the diversion potential of the education campaign, standardizing date labeling, imperfect produce, and spoilage prevention solutions in the ReFED roadmap. See ReFED, *supra* note 2, at 27–37.
- <sup>28</sup> This total was obtained by adding together the estimated economic value associated with prevention solutions described below (education campaign, standardizing date labeling, imperfect produce, and spoilage prevention solutions). See *id.* at 27–37.
- <sup>29</sup> Directive 2000/13/EC of the European Parliament and the Council on the approximation of the laws of the Member States Relating to the Labelling, Presentation, and Advertising of Foodstuffs, 2000 O.J. (L 109), Art. 3 (“E.U. Food Labeling Directive”). The Directive is implemented in Great Britain by the Food Labelling Regulations 1996 (FLR). According to the FLR, food ready for delivery to the ultimate consumer or to catering establishments must carry an “appropriate durability indication,” in the form of either a “best before” date or a “use by” date. Great Britain Food Labelling Regulations 1996, 1996 No. 1499 (20)–(22) (U.K.).
- <sup>30</sup> ReFED, *supra* note 2, at 33 (2016).
- <sup>31</sup> *Consumer Perceptions of Date Labels: National Survey*, HARVARD FOOD LAW & POL'Y CLINIC, NAT'L CONSUMERS LEAGUE & JOHNS HOPKINS CENTER FOR A LIVABLE FUTURE 2 (May 2016), [http://www.chlpi.org/wp-content/uploads/2013/12/Consumer-Perceptions-on-Date-Labels\\_May-2016.pdf](http://www.chlpi.org/wp-content/uploads/2013/12/Consumer-Perceptions-on-Date-Labels_May-2016.pdf).
- <sup>32</sup> GROCERY MFR. ASS'N, *supra* note 20.
- <sup>33</sup> *Food Product Dating, Food Safety Information*, U.S. DEP'T OF AGRIC., <https://www.fsis.usda.gov/wps/wcm/connect/19013cb7-8a4d-474c-8bd7-bda76b9defb3/Food-Product-Dating.pdf?MOD=AJPERES> (last visited Apr. 13, 2017).
- <sup>34</sup> The 2002 Farm Bill made Country of Origin Labeling (COOL) mandatory for products including fresh fruits



Prevention



Recovery



Recycling



Coordination

Opportunities to Reduce Food Waste in the 2018 Farm Bill

26

and vegetables, beef, pork, lamb, seafood, and peanuts (P.L. 107- 171, §10816). COOL regulations for fish and shellfish became effective in 2005, while for other commodities the rule did not go into effect until 2009. Exact regulations continue to change—the most recent amendment occurred in January 2017—and remain controversial, but have been included in subsequent farm bills. In 2002 and 2014, COOL was included in the Miscellaneous Title; in 2008, it was located within the Livestock Title. For more information, see *Country of Origin Labeling (COOL)*, U.S. DEP'T OF AGRIC., AGRIC. MKTG. SERV., <https://www.ams.usda.gov/rules-regulations/cool> (last visited Apr. 13, 2017) and Joel L. Greene, *Country-of-Origin Labeling for Foods and the WTO Trade Dispute on Meat Labeling*, CONG. RES. SERV. (Dec. 8, 2015), <https://fas.org/srg/crs/misc/RS22955.pdf>.

- 35 See *Food Waste Estimation Guide*, RECYCLINGWORKS MA, <http://recyclingworksma.com/wp-content/uploads/2014/01/2015-05-Printable-Threshold-Estimation-Guide-Elementary-and-Secondary-Schools.pdf>. (last visited Apr. 9, 2017). See also *Digging Deep Through School Trash*, MINNESOTA POLLUTION CONTROL AGENCY (Sept. 2010.), <https://www.pca.state.mn.us/sites/default/files/p-p2s6-14.pdf>.
- 36 *National School Lunch Program*, U.S. DEP'T OF AGRIC. FOOD & NUTRITION SERV. (SEPT. 2013), <https://www.fns.usda.gov/sites/default/files/NSLPFactSheet.pdf>.
- 37 ReFED, *supra* note 2, at 13.
- 38 Telephone interview with Kathleen Dietrich, Founder and Executive Director, Food Bus (Apr. 5, 2016).
- 39 Juliana F.W. Cohen, et al., *Amount of Time to Eat Lunch is Associated with Children's Selection and Consumption of School Meal Entrée, Fruits, Vegetables, and Milk*, 116 J. OF THE ACAD. OF NUTRITION AND DIETETICS 123 (2015), [http://www.andjrn.org/article/S2212-2672\(15\)01248-4/pdf](http://www.andjrn.org/article/S2212-2672(15)01248-4/pdf).
- 40 7 C.F.R. §210.1 et seq. (2017). See also *National School Lunch Program*, U.S. DEP'T OF AGRIC., <https://www.fns.usda.gov/nslp/national-school-lunch-program-nslp> (last visited Apr. 13, 2017).
- 41 *School Breakfast Program*, U.S. DEP'T OF AGRIC., <http://www.fns.usda.gov/sbp/school-breakfast-program-sbp> (Apr. 10, 2017).
- 42 7 C.F.R. §220.1 et seq. See also U.S. Dep't of Agric., *supra* note 60.
- 43 7 C.F.R. §210.10, § 220.8.
- 44 *Id.* §210.11.
- 45 Telephone interview with Kathleen Dietrich, Founder and Executive Director, Food Bus (Apr. 5, 2016). See also *Setting the Record Straight: School Meal Patterns and Smart Snacks Myths, Facts and Flexibilities*, U.S. DEP'T. OF AGRIC. 12-13, <https://www.fns.usda.gov/sites/default/files/cn/settingrecordstraight.pdf>. School meal reimbursement requirements are detailed in 7 C.F.R. § 210.10 (2017).
- 46 Cohen, et al., *supra* note 39.
- 47 Telephone interview with Kathleen Dietrich, Founder and Executive Director, Food Bus (Apr. 5, 2016). See also Interview with Carina Schusterman, Claire Stocker and Selen Aktar, Organizers, Sanborn Elementary School's Zero Waste Team (Apr. 24, 2016).
- 48 The Northeast Recycling Council produced a straightforward guide to conducting a school food waste audit. *Waste Assessments and Waste Audits*, NE. RECYCLING COUNCIL 1 (Aug. 2010), [https://nerc.org/documents/waste\\_assessments\\_and\\_waste\\_audits.pdf](https://nerc.org/documents/waste_assessments_and_waste_audits.pdf).
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- 50 *Id.* § 210.10(e); see also *Offer Versus Serve: Guidance for the National School Lunch Program and the School Breakfast Program*, U.S. DEP'T OF AGRIC. 3, 8-9 (2015-16), [https://www.fns.usda.gov/sites/default/files/cn/SP41\\_2015a.pdf](https://www.fns.usda.gov/sites/default/files/cn/SP41_2015a.pdf).
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- 56 *Id.*
- 57 National School Lunch Act, 42 U.S.C. § 1758 (l)(1).
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Prevention



Recovery



Recycling



Coordination

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Prevention



Recovery



Recycling



Coordination

Opportunities to Reduce Food Waste in the 2018 Farm Bill

32

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