

# FOOD RECOVERY WEEK 2022

DC • MD • VA • OCTOBER 16-22

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**FOOD RECOVERY  
WEEK 2022**

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# Food Waste 101: A Roadmap to Achieving 50% Reduction by 2030

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**FOOD RECOVERY  
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# *Moderator: Carol Adaire Jones*

Montgomery County Food Council Environmental Impact WG  
Environmental Law Institute

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MONTGOMERY COUNTY  
FOOD COUNCIL



**FOOD RECOVERY  
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# *Speaker: Jackie Suggitt*

Director, of Capital, Innovation, & Engagement

ReFED



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**ReFED**



MONTGOMERY COUNTY  
FOOD COUNCIL



Advancing Data-Driven Solutions  
to Reduce Food Loss and Waste

# The Roadmap to 2030 and the ReFED Insights Engine

October 17, 2022



Supply Chain Disruptions  
Labor Shortages  
Rise in Food Delivery



Less predictability  
More instant



Increased chances of more  
food waste occurring

Supply Chain Disruptions  
Labor Shortages  
Rise in Food Delivery



Less predictability  
More instant



Increased chances of more  
food waste occurring

Rising Food Prices  
Trucker Shortage  
Natural Disasters



Food seen as more precious



Increased motivation and  
payback of reducing food  
loss and waste

Supply Chain Disruptions  
Labor Shortages  
Rise in Food Delivery



Less predictability  
More instant



Increased chances of more  
food waste occurring

Rising Food Prices  
Trucker Shortage  
Natural Disasters



Food seen as more precious



Increased motivation and  
payback of reducing food  
loss and waste

Climate Change  
Consumer Anxiety  
COVID Rollercoaster



Increased attention toward  
food as a source of pleasure  
and control



Opportunity to influence  
food behavior



A collage of various fresh fruits and vegetables. On the left, there are sliced beets on a wooden cutting board. In the center, a white bowl contains sliced lemons. On the right, there is a whole peach and a head of broccoli. The background is a mix of these colors and textures. A white rectangular box with a dark blue border is centered over the image, containing the text.

**No Time – or Food! –  
To Waste**

# The Global Food Loss and Waste Overview





## Global Food Waste

$\frac{1}{3}$  of all food  
produced <sup>1</sup>

**\$1T** in value <sup>2</sup>

**8%** of global  
GHG emissions <sup>3</sup>

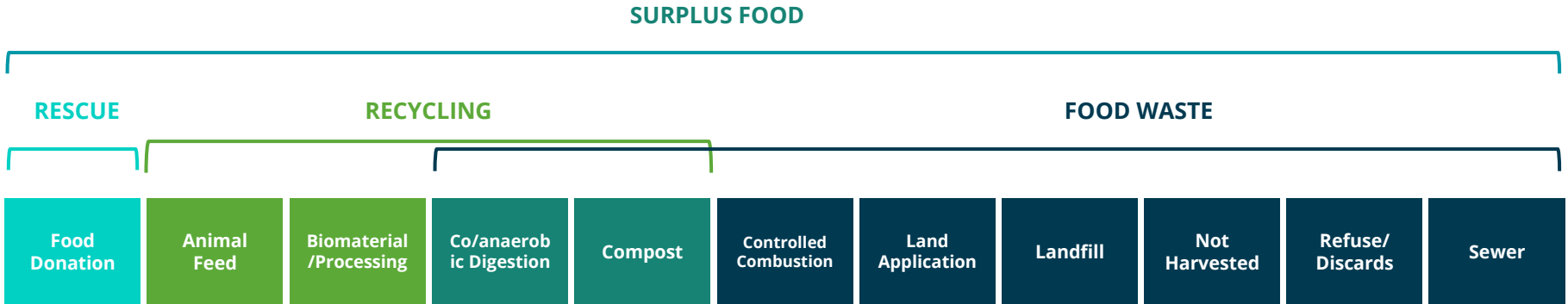
# 50%

National and international goal for the amount of food waste that must be reduced by the year 2030



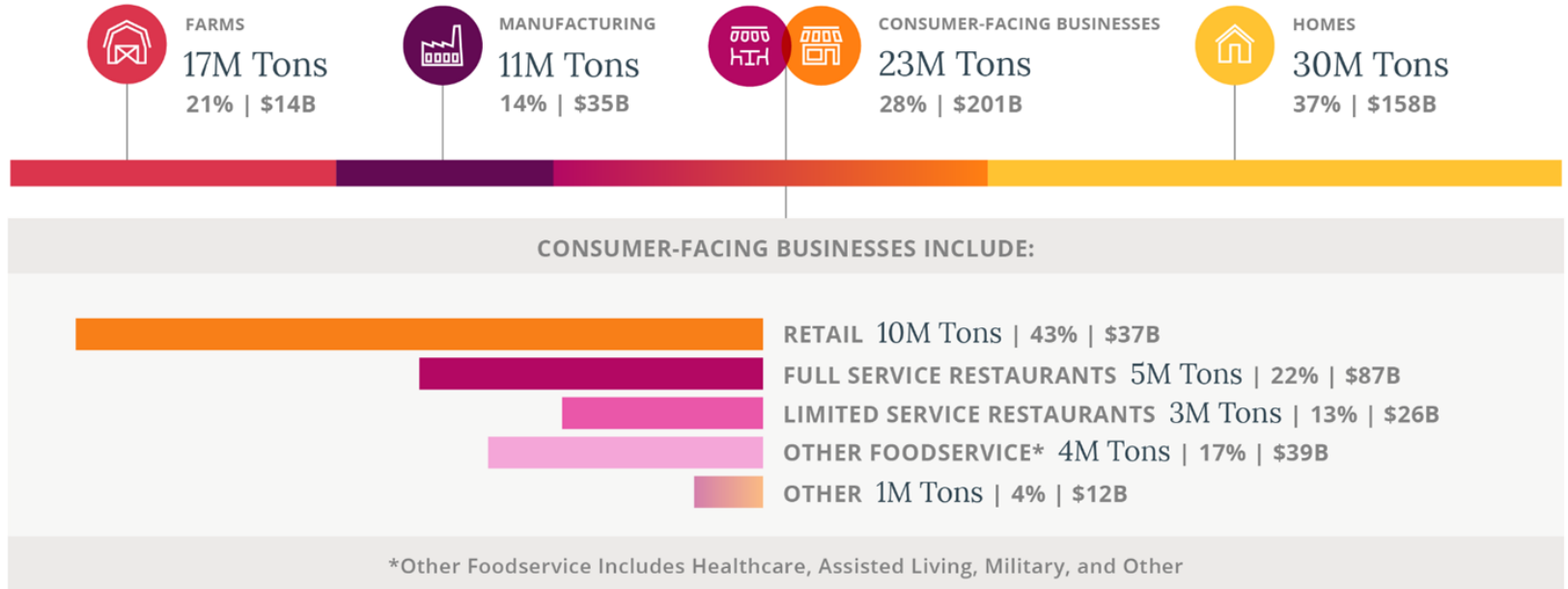
## What is “Surplus Food”?

All food that goes *unsold* or *unused* by a business or that goes *uneaten* at home – including food and inedible parts (e.g., peels, pits, bones) that are fed to animals, repurposed to produce other products, composted, or anaerobically digested. It also includes food that is *donated*.



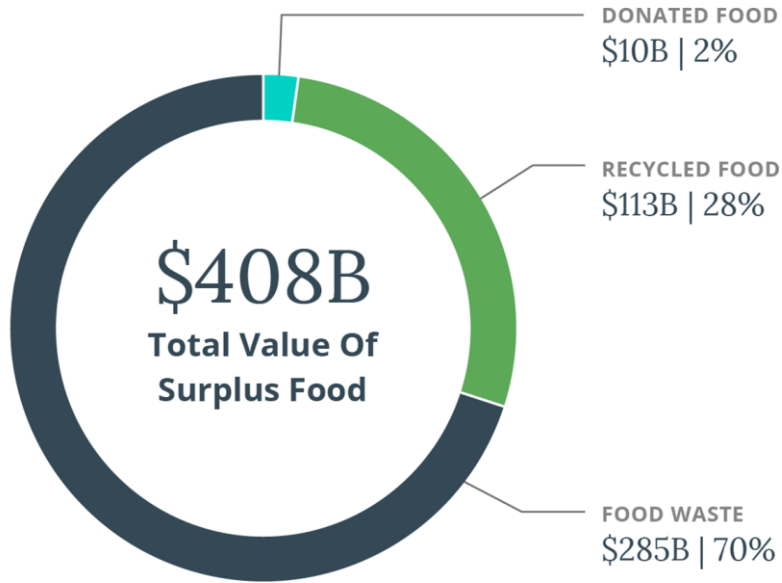
*Depending on the definition, some consider these to be recycling/waste destinations*

Surplus food occurs across the supply chain.



Source: ReFED

## Impacts of Uneaten Food: Economic



Source: ReFED

That surplus food was valued at \$408 billion – nearly 2% of U.S. GDP.

## Impacts of Uneaten Food: Environmental



4%  
of U.S. GHG  
Emissions



14%  
of all  
Fresh Water Use



18%  
of all  
Cropland Use



24%  
of Landfill Inputs  
#1 material (EPA Estimate)

Source: ReFED

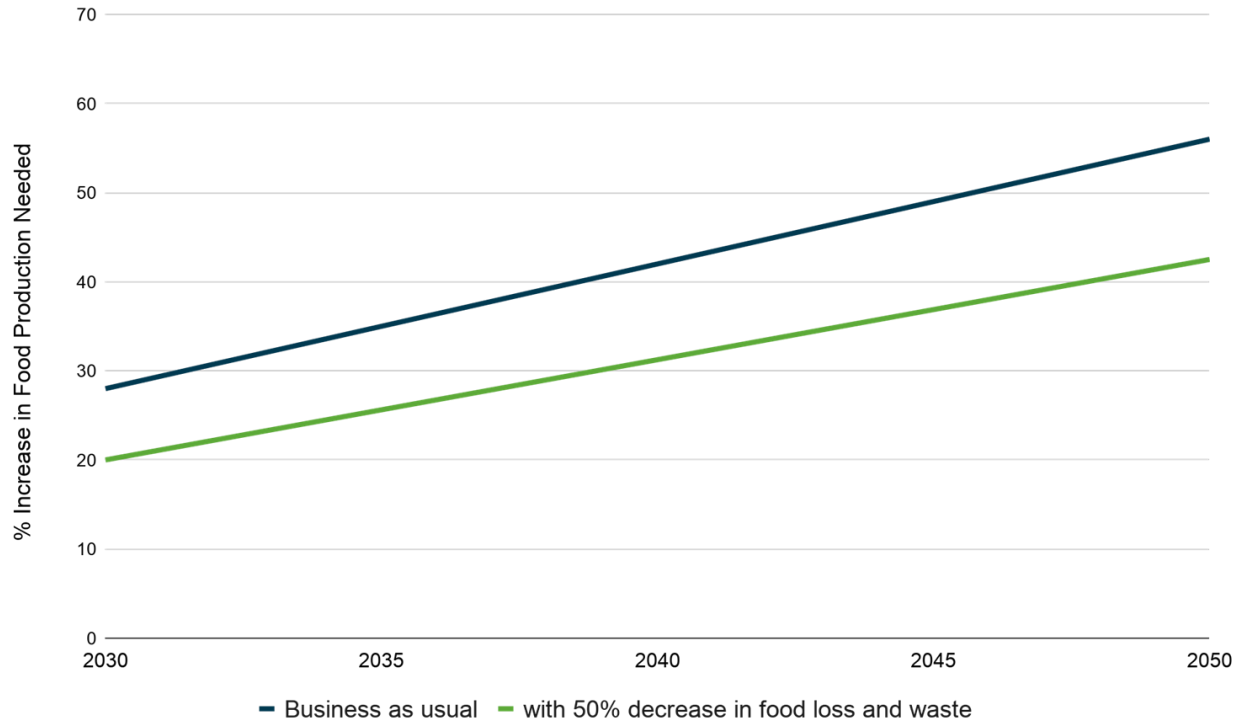


# Impacts of Uneaten Food: Hunger and Food Insecurity



Source: Feeding America

# Feeding More People with Less Resources



Estimated  
**24%**  
reduction in  
supply needed if  
food waste is  
cut in half.

# The Roadmap to 2030



# Our Mission

We're a national nonprofit working to end food loss and waste across the food system by advancing data-driven solutions to the problem.



# Our Vision

We envision a sustainable, resilient, and inclusive food system that optimizes environmental resources, minimizes climate impacts, and makes the best use of the food we grow.

## DATA & INSIGHTS

Leveraging data and insights to highlight supply chain inefficiencies and economic opportunities

## CAPITAL & INNOVATION

Catalyzing capital to spur innovation and scale high-impact initiatives

## STAKEHOLDER ENGAGEMENT

Mobilizing and connecting supporters to take targeted action

# A Blueprint for Action

The *Roadmap to 2030* looks at the entire food system and provides a framework to focus waste reduction efforts. Powered by the Insights Engine, the *Roadmap to 2030* is an indispensable resource for reaching our 2030 goal.

# 7

ReFED outlined seven key action areas for the food system to focus its efforts over the next ten years to *prevent*, *rescue*, and *recycle* food at risk of going to waste.

## PREVENTION

## RESCUE

## RECYCLING



Optimize  
The  
Harvest



Enhance  
Product  
Distribution



Refine  
Product  
Management



Maximize  
Product  
Utilization



Reshape  
Consumer  
Environments



Strengthen  
Food  
Rescue



Recycle  
Anything  
Remaining

### Action Areas



#### OPTIMIZE THE HARVEST

Avoid over-production, then harvest as much as possible. For wild caught products, source only what is needed.



#### ENHANCE PRODUCT DISTRIBUTION

Leverage technology to create smart systems that help efficiently move products to maximize freshness and selling time.



#### REFINE PRODUCT MANAGEMENT

Align purchases with sales as closely as possible and find secondary outlets for surplus. Build out systems and processes for optimal on-site handling.



#### MAXIMIZE PRODUCT UTILIZATION

Design facilities, operations, and menus to use as much of each product as possible. Upcycle surplus and byproducts into food products.



#### RESHAPE CONSUMER ENVIRONMENTS

Drive consumers towards better food management and less waste by creating shopping, cooking, and eating environments that promote those behaviors. Shift culture to place more value on food and reduce waste.



#### STRENGTHEN FOOD RESCUE

Further the rescue of high-quality, nutritious food by increasing capacity, addressing bottlenecks, and improving communication flow.



#### RECYCLE ANYTHING REMAINING

Find the highest and best use for any remaining food or food scraps in order to capture nutrients, energy, or other residual value.

OPTIMIZE THE HARVEST	ENHANCE PRODUCT DISTRIBUTION	REFINE PRODUCT MANAGEMENT	MAXIMIZE PRODUCT UTILIZATION	RESHAPE CONSUMER ENVIRONMENTS	STRENGTHEN FOOD RESCUE	RECYCLE ANYTHING REMAINING
Buyer Spec Expansion	Decreased Transit Time	Assisted Distressed Sales	Active & Intelligent Packaging	Meal Kits	Donation Coordination & Matching	Centralized Anaerobic Digestion
Gleaning	First Expired First Out	Decreased Minimum Order Quantity	Manufacturing Byproduct Utilization (Upcycling)	Buffet Signage	Donation Education	Community Composting
Imperfect & Surplus Produce Channels	Intelligent Routing	Dynamic Pricing	Manufacturing Line Optimization	Consumer Education Campaigns	Donation Storage Handling & Capacity	Centralized Composting
Partial Order Acceptance	Temperature Monitoring (Pallet Transport)	Enhanced Demand Planning	Edible Coatings	K-12 Lunch Improvements	Donation Transportation	Co-digestion at Wastewater Treatment Plants
Field Cooling Units	Reduced Warehouse Handling	Increased Delivery Frequency	Improved Recipe Planning	Package Design	Donation Value-Added Processing	Home Composting
In-Field Sanitation Monitoring	Advanced Shipment Notifications	Markdown Alert Applications	In-House Repurposing	Portion Sizes	Blast Chilling to Enable Donations	Livestock Feed
Innovative Grower Contracts	Early Spoilage Detection (Hyperspectral Imaging)	Minimized On-Hand Inventory	Precision Food Safety	Small Plates	Donation Reverse Logistics	Waste-Derived Agricultural Inputs
Labor Matching	Inventory Traceability	Temperature Monitoring (Foodservice)	Discount Meal Plates	Standardized Date Labels	High-Frequency Reliable Pickups	Insect Farming
Smaller Harvest Lots	Modified Atmosphere Packaging System	Waste Tracking (Foodservice)	Employee Meals	K-12 Education Campaigns	Established Relationships with Businesses	Rendering
Improved Communication for Planting Schedules	Vibration & Drops Tracking	Low Waste Event Contracts	Larger Quantities for Take Home	Trayless	Culling SOPs	Waste-Derived Processed Animal Feed
Sanitation Practices & Monitoring	Optimized Truck Packing, Loading & Unloading (e.g., Cross-Docking)	Direct to Consumer Channels	Small and Versatile Menus	Home Shelf-life Extension Technologies		Waste-Derived Bioplastics
Optimized Harvesting Schedules	Enforcing Cold Chain SOPs	Online Marketplace Platform	Sous-Vide Cooking	Smart Home Devices		Waste-Derived Biomaterials
On-Farm / Near-Farm Processing	Regular Maintenance on Refrigerated Trucks	Online, Advanced Grocery Sales		Waste Conscious Promotions		Enabling Technologies (e.g. depackaging and pre-treatment)
Local Food Systems	Cross-Docking	Precision Event Attendance		Frozen Value-Added Processing of Fresh Produce		Separation & Measurement
Clear Product Ownership		Repackaging Partially Damaged Products		Customizable Menus/Options		Relationships with Waste Haulers
		Retail Automated Order Fulfillment		To-Go Offerings		Waste Audits by Waste Haulers
		SKU Rationalization		Free Items Offered Upon Request (e.g., bread, chips)		
		Markdowns		Storytelling (e.g. product impact, source, upcycled ingredient components)		
		Optimal Storage				
		Reduced Displays				
		Optimized Walk-In Layouts				

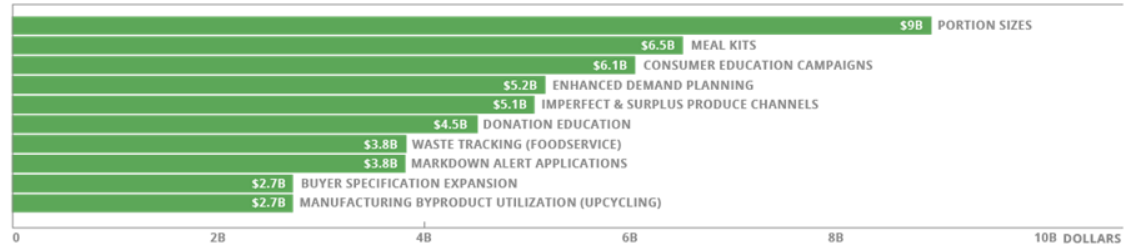
Modeled Solutions

Unmodeled Solutions

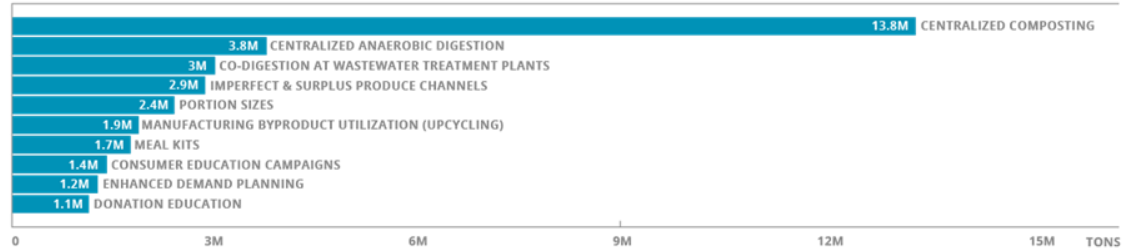
Best Practices



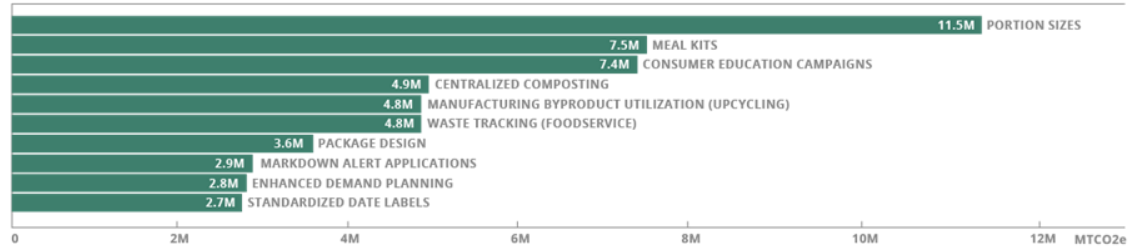
### Top Ten Solutions | NET FINANCIAL BENEFIT



### Top Ten Solutions | TONS WASTE DIVERTED



### Top Ten Solutions | GHG EMISSIONS AVOIDED IN MTCO<sub>2e</sub>



# Key Action Areas

These are the seven areas where the food system must focus its efforts over the next ten years to prevent, rescue, and recycle food at risk of going to waste.

PREVENTION

RESCUE

RECYCLING



Optimize the Harvest



Enhance Product Distribution



Refine Product Management



Maximize Product Utilization



Reshape Consumer Environments



Strengthen Food Rescue



Recycle Anything Remaining

## Solutions

Within each action area are a range of solutions, including those that we've modeled using key data points, promising solutions that we're still gathering data on, and best practices that many organizations have already worked into their operations.

## Lever

Key levers include important supporting efforts that enable or accelerate the adoption of solutions, including *financing, policy, innovation, and engagement.*



# 4

A set of 4 key levers are essential to the successful and sustainable implementation of solutions.

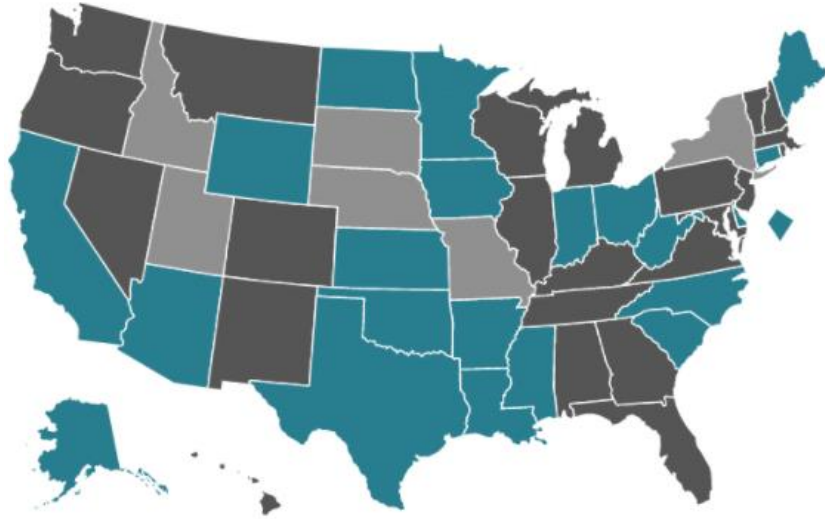


### Policy

Policy and regulation are especially effective in overcoming challenges by 1) changing incentive structures, especially when there are misaligned incentives between who is funding a solution and who is receiving the benefit; 2) driving scaled adoption of early-stage technologies; and 3) bringing about changes that market forces alone don't address. Additionally, federal policy plays an important role when differing state policies can make solutions implementation difficult (e.g., by standardizing conflicting date labeling requirements).



# ReFED Insights Engine: U.S. Food Waste Policy Finder



## LEVEL OF STATE DATE LABELING REGULATIONS

Under federal law, date labels are almost entirely unregulated. States have filled the void with a wide variety of regulations that often fail to reflect the distinction between food safety and food quality.



## PREVENTION POLICY

Policy changes related to date labeling have the potential to prevent 582,000 tons of waste per year

[Reveal case studies](#)

### Date Labeling

Reveal state policies that hinder food waste prevention

[View Date Labeling categories](#)

#### Negative Policy

The state requires date labels for certain foods and prohibits or limits the sale or donation of food after its label date.

#### No Policy

There are no laws pertaining to date labels on food products.

#### Moderate Policy

The state requires date labels for certain foods but does not prohibit or limit the sale or donation of food after its label date.

#### Strong Policy

The state maintains standardized mandatory date labeling policy that clearly differentiates between quality-based versus safety-based labels and is in alignment with federal guidance. In addition, the state does not prohibit or limit the sale or donation of food after its label date; and the state has issued clear permission to donate after the quality-based date.

## RECOVERY POLICY

## RECYCLING POLICY

Tracks five food waste-related policies at the federal and state levels.

### Sample Use Cases:

- **State Policy Makers** can find examples of policies passed in other states that better reduce food waste.
- **Food Businesses, Solution Providers,** and **Advocates** can read about policies that may affect their operations across several states with the Policy Matrix and Score Sheet.
- **Consumers** can learn about how policies in their own state aid in reducing waste.

# The Role of Policymakers

The *Roadmap to 2030* includes a set of 6 **key policy areas** for policymakers to focus their efforts in food waste reduction.

## Improvements to Tax Laws

Laws can be adjusted to incorporate alternative tax credits for food donations by farmers, expand food donation tax deductions to include non-profit sales and transportation services, allow application of beginning inventory donations to current year losses, and eliminate tax deduction for edible food discards that incentivize waste.

## Expanded Food Donation Policies

Federal and state governments can work to expand food donation programs, clarify guidance on food safety for donations, strengthen liability protections, and incorporate donation requirements into operational guidelines for government agencies and their contractors.

## Consumer Education

Federal, state, and local governments can drive full-scale consumer education campaigns, changes to school lunch programs, and industry changes to address the confusion and lack of awareness that results in waste.

## Better Organic Waste Management

Organic waste bans are one of the most powerful ways to not only require recycling, but act to incentivize preventative measures and food donations while also enabling measurement. Federal, state, and local governments can disincentivize, limit or ban food from landfills, and eliminate restrictions on food scraps in animal feed.

## Funding for Infrastructure

Government-funded capital investments are critical for donation storage and capacity-building projects, temperature-controlled food distribution, and streamlined development of food waste reduction and waste management infrastructure.

## Funding for Innovation

Government-funded research can support market expansion and product utilization. Recommended projects to fund include farm-level yield and loss research, crop preservation and post-harvest loss prevention technologies, spoilage-inhibition technologies, and upcycled food R&D.

[Read more about these recommendations here](#)

[Explore ReFED's Policy Finder tool here](#)

## Local Governments also have a role

In addition to the general policy recommendations on the previous slide, there are other steps County and local governments can take, such as:

Educate communities about food waste and food waste solutions

Create a school program, including:

- WWF grant support
- Education on food waste and tools for kids to take home
- Share table and donation procedures
- School food waste measurement, composting and gardening

Add food waste to the local [climate action plan](#)

Support rescue organizations with government grants

Pass a [compost procurement ordinance](#)

# The ReFED Insights Engine



# ReFED Insights Engine

An interactive knowledge hub for food loss and waste launched in 2021, the Insights Engine lets users:

1. Understand the Problem

2. Explore the Solutions

3. Find Solution Providers

4. Calculate Impact

5. Track Capital

6. Review Policies

Launch the Insights Engine



# Food Waste Monitor: Understand the Problem

80.6 million Surplus Food Tons

were generated in All Sectors across All States in 2019

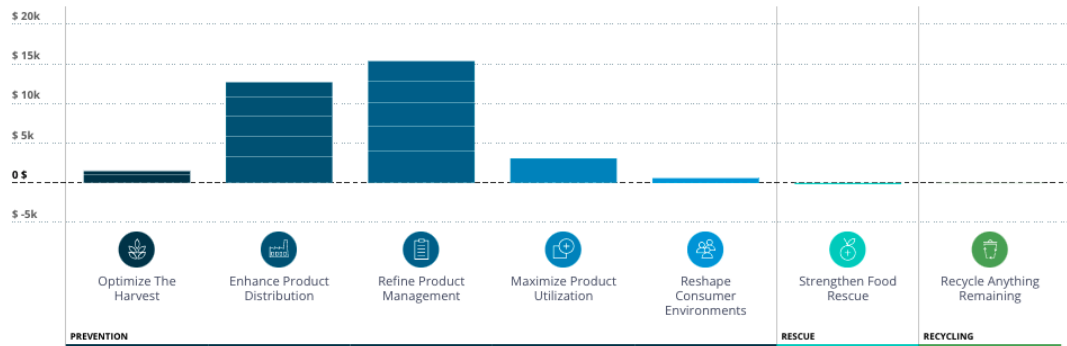
Destinations Food Types Causes Sectors



# Solutions Database: Find Solutions

## Explore solutions to food waste

ANNUAL NET FINANCIAL BENEFIT  
POTENTIAL OF FOOD WASTE SOLUTIONS  
U.S. DOLLARS



Impact Metric:

Net \$ Tons Climate Water Meals Jobs

Stakeholders:

Retailers

Data View:

Per Ton

Food Type:

All Food Types

States:

All States

ACTION AREA	SOLUTION NAME	NET FINANCIAL BENEFIT	
	Enhanced Demand Planning	\$ 3.97k	<a href="#">VIEW DETAILS &gt;</a>
	Reduced Warehouse Handling	\$ 3.25k	<a href="#">VIEW DETAILS &gt;</a>
	Minimized On Hand Inventory	\$ 3.18k	<a href="#">VIEW DETAILS &gt;</a>
	Active & Intelligent Packaging	\$ 3.1k	<a href="#">VIEW DETAILS &gt;</a>
	Decreased Minimum Order Quantity	\$ 3.01k	<a href="#">VIEW DETAILS &gt;</a>

# Solutions Fact Sheets: Dive Deeper

[← BACK TO SOLUTION DATABASE VIEW](#)

PREVENTION | MAXIMIZE PRODUCT UTILIZATION

## Active & Intelligent Packaging

Packaging to slow spoilage through technologies such as ethylene absorption, modified atmospheres, moisture absorption, etc., or adaptive materials that inform as to the quality/safety of the contents.

### Overview

Fresh product naturally degrades over time due to chemical changes and moisture. Technologies that help absorb these chemicals (e.g. inserts) are one way to combat these impacts. Sensors can help communicate remaining shelf-life. Another method is to apply barriers directly onto products or create a barrier directly between food and an outside environment.

### Financial Cost Benefit By Stakeholder



### Annual Impact Potential \*

- Net Financial Benefit**  
\$ 1.74 billion
- Food Waste Diversion**  
452k Tons
- Emissions Reduction**  
2.43M Metric Tons CO<sub>2</sub>e
- Water Savings**  
194B gallons
- Jobs Created**  
685

*\* Incremental potential in addition to what is already happening currently*

### Annual Investment Required





# Solution Provider Directory: Find Partners

## Find food waste solution providers

Search our database of 850+ organizations offering products and services to help you reduce food waste.

Do you want to join the Solution Provider Directory?

[Apply here](#)

Search:



Solution Types:

Active & Intelligent Packaging X

States:

All States

Tags:

All Tags

Sectors:

All Sectors

Legal Status:

All Status

Sort by:

Organization Name

Currently looking for funding

21 Solution Providers fit this search criteria

### AgroFresh Solutions, Inc.



SOLUTION TYPE:

PREVENTION

LEGAL STATUS:

For-profit

SOLUTIONS:

Active & Intelligent Packaging

AgroFresh (Nasdaq: AGFS) is a leading global innovator and provider of science-based solutions, data-driven technologies and

### Avery Dennison

SOLUTION TYPE:

PREVENTION

LEGAL STATUS:

For-profit

SOLUTIONS:

Inventory Traceability  
First Expired First Out  
Minimized On Hand Inventory  
Waste Tracking (foodservice)  
Active & Intelligent Packaging



# Impact Calculator

## Sector

Residential



## Food Type

Standard Mix



## Unit

Tons



## Destinations

Remove alternative scenario

Name	Current scenario (Tons)	Alternative scenario (Tons)
Prevention		1000
Donations	0	0
Animal Feed	0	0
Industrial uses	0	0
Composting	0	0
Anaerobic Digestion	0	0
Not Harvested	0	0

## Impact Results



### GHG Footprint (MT CO2e)

CURRENT SCENARIO	ALTERNATIVE SCENARIO	NET BENEFIT
5,124.91 tons of CO2eq	0.00 lbs of CO2eq	5,124.91 tons of CO2eq avoided
EQUIVALENT TO:		
1,109 passenger vehicles driven for one year	0 pounds of coal burned	1,109 passenger vehicles driven for one year



### Water Footprint (million Gallons)

CURRENT SCENARIO	ALTERNATIVE SCENARIO	NET BENEFIT
198.62 million gallons	0 gallons	198.62 million gallons saved
EQUIVALENT TO:		
301 olympic swimming pools	0 showers	301 olympic swimming pools



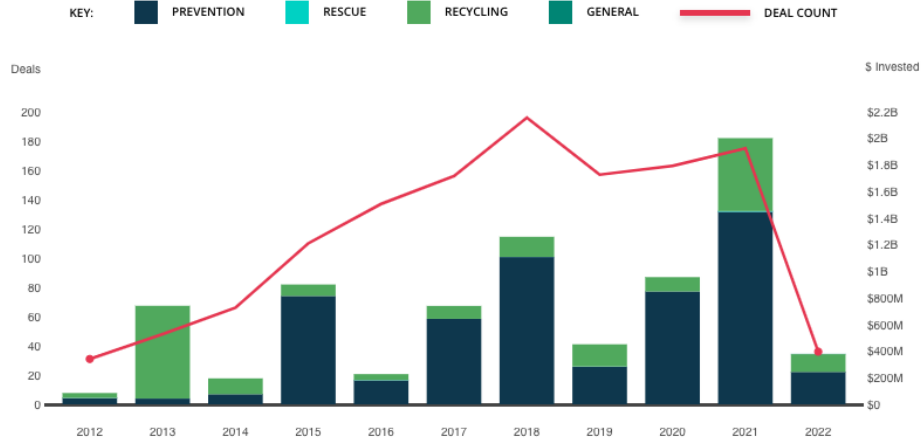
### Meals Recovered

CURRENT SCENARIO	ALTERNATIVE SCENARIO	NET BENEFIT
0 meals recovered	0 meals recovered	0 meals recovered

# Capital Tracker: Explore Movement of Capital

**\$7.94 billion has been invested in food waste solutions over the last 10 years, including \$379 million invested YTD.**

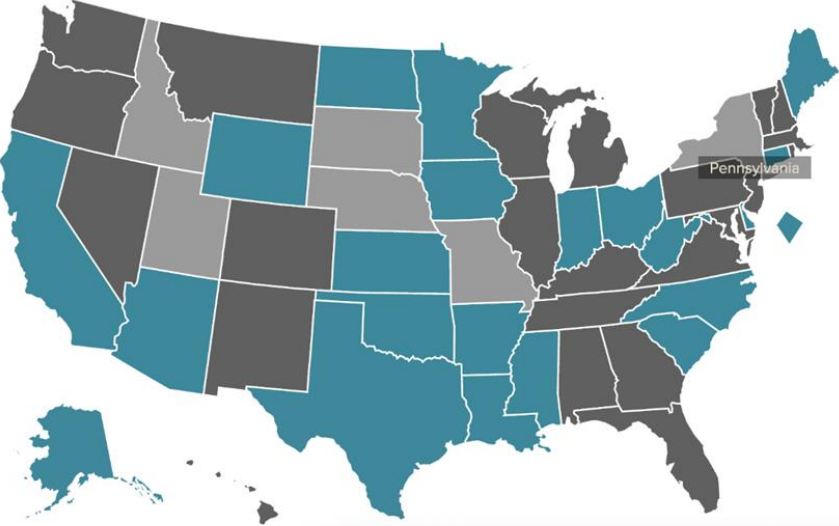
VIEW BY: **Solution Type** Capital Type All Investments  Include indirect ⓘ



# Policy Finder: Explore Current Legislation

STATE POLICY | FEDERAL POLICY | RESOURCES | ABOUT

EXPLORE FOOD WASTE POLICY BY STATE



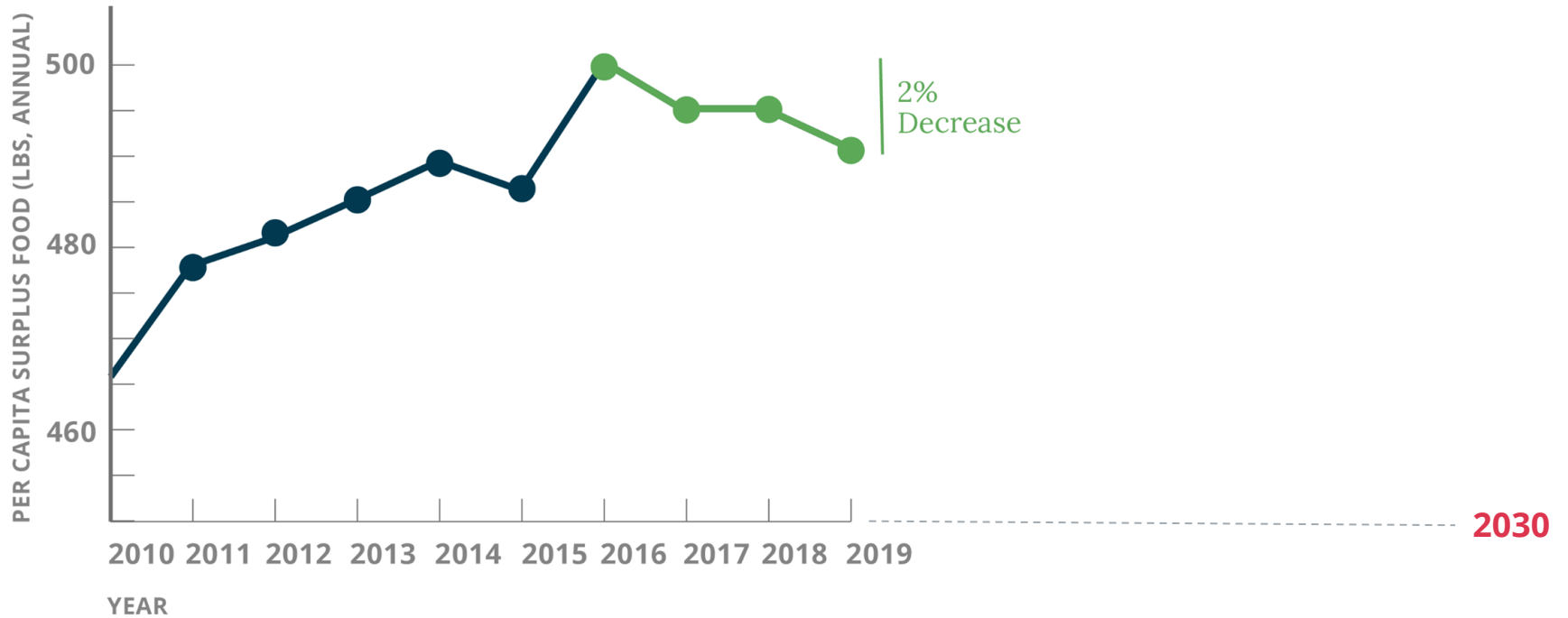
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**!** [Reveal case studies](#)

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The state maintains standardized mandatory date labeling policy that clearly differentiates between quality-based versus safety-based labels and is in alignment with federal



Source: ReFED

**2 DOWN**

**48 TO GO**

If not you, then who?  
If not now, then when?

- Malcolm X
- Teddy Roosevelt
- Hillel the Elder

Thank you!

[refed.com](https://refed.com)

[insights.refed.com](https://insights.refed.com)



**Thank you for coming today! Join us at other sessions:**

**DMV Food Recovery Week**



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**Learn more at:**  
[dmvfoodrecoveryweek.org](https://dmvfoodrecoveryweek.org)



## Intro to Composting at Home Hot & Worm Composting

October 18, 12:00 pm



Check out other FREE events  
[dmvfoodrecoveryweek.org](https://dmvfoodrecoveryweek.org)



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# ILSR

INSTITUTE FOR  
Local Self-Reliance

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## Making the Most of Food *Regrow, Reduce, Recycle*

October 18, 6:00 pm



Check out other FREE events  
[dmvfoodrecoveryweek.org](https://dmvfoodrecoveryweek.org)



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Recycle  
Leaders



MARYLAND  
SNAP-ED

*DMV Food Recovery Week is  
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DC FOOD RECOVERY  
WORKING GROUP



MONTGOMERY COUNTY  
FOOD COUNCIL



PRINCE GEORGE'S COUNTY  
FoodEquityCouncil

## Food Waste Policy: Pitfalls & Progress

October 19, 7:00 pm



Check out other FREE events  
[dmvfoodrecoveryweek.org](https://dmvfoodrecoveryweek.org)



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DEPARTMENT OF  
**ENVIRONMENTAL PROTECTION**  
MONTGOMERY COUNTY • MARYLAND



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## Taller del compostaje casero

October 20, 12:00 pm



Check out other FREE events  
[dmvfoodrecoveryweek.org](https://dmvfoodrecoveryweek.org)



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**ILSR**  
INSTITUTE FOR  
Local Self-Reliance



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## Launching Food Waste Action Movement In Public Schools

October 20, 7:00 pm



Check out other FREE events  
[dmvfoodrecoveryweek.org](https://dmvfoodrecoveryweek.org)



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## No Waste, Big Taste Cooking Competition

October 21, 3:00 pm



Check out other FREE events  
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**Marriott**  
INTERNATIONAL



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**manna**  
food center



**DC FOOD RECOVERY  
WORKING GROUP**



**MONTGOMERY COUNTY  
FOOD COUNCIL**



**PRINCE GEORGE'S COUNTY  
FoodEquityCouncil**

## H Street Food Waste Innovation Tour

October 22, 4:00 pm



Check out other FREE events  
[dmvfoodrecoveryweek.org](https://dmvfoodrecoveryweek.org)



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