Following the Roadmap to 2030
Taking Action to Reduce U.S. Food Waste by 50%

In partnership with foodtank

#HalveFoodWasteBy2030
Following the Roadmap to 2030 Discussion Series

Maximize Product Utilization

AUGUST 25 | 1:00 P.M. ET

ReFED

In partnership with foodtank
Who We Are
ReFED is a national nonprofit working to end food loss and waste across the food system by advancing data-driven solutions to the problem.

Our Vision
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
ReFED Insights Engine and Roadmap to 2030: Reducing US Food Waste
ReFED Insights Engine: Your Source for Food Waste Data and Solutions

A knowledge hub for food loss and waste, designed to provide anyone interested in food waste reduction with the information they need to take meaningful action.

Insights Engine tools let users:

- Understand the Problem
- Explore Solutions
- Find Solution Providers
- Calculate Impacts
Roadmap to 2030: 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.

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.
# Roadmap to 2030: Reducing U.S. Food Waste by 50%

## Action Areas

### Optimize The Harvest
- Anticipate 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 maximum freshness and selling time.

### Refine Product Management
- Align purchases with sales as closely as possible and find secondary outlets for surpluses. Build out systems and processes for optimal on-site handling.

### Maximize Product Utilization
- Design facilities, operations, and logics to use as much of each product as possible; recycle surplus and engineered into food products.

### Reshape Consumer Environments
- Draw consumers towards better food management and less waste by inoculating cooking, shopping, and eating environments that promote these behaviors. Shift culture to place more value on food and less waste.

### Strengthen Food Rescue
- Further the notion 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.

## Solutions

### Optimized Behavior
- **Buyer Spec Expansion:** Decreased Transit Time
- **Cleaning:** First Expired First Out
- **Imperfect & Surplus Produce Channels:** Temperature Monitoring (Follett Transport)
- **Partial Order Acceptance:** Reduced Warehouse Handling
- **Field Cooling Units:** Advanced Shipments
- **In-Field Sanitation Monitoring:** Early Spoilage Detection (Hydropreschalar Imaging)

### Enhanced Distribution
- **Refined Product Management:** Decreased Minimum Order Quantity
- **Intelligent Packaging:** Reduced Demand Planning
- **Temperature Monitoring:** Increased Delivery Frequency
- **In-Field Sanitation Monitoring:** Minimized On-Hand Inventory
- **Labor Matching:** Temperature Monitoring (Footsteps)
- **Smaller Harvest Lots:** Waste Tracking (Footsteps)

### Refine Product Utilization
- **Active & Intelligent Packaging:** Markdown Alerts for Edible Coatings
- **Manufacturing/Residual Utilization (Upcycling):** Improved Recipe Planning
- **Retail Automation:** In-House Repurposing

### Reshape Consumer Environments
- **Meal Kits:** Precision Food Safety
- **K-12 Lunch Improvements:** Discount Meal Plans
- **Packaging Design:** Employee Meals
- **K-12 Education Campaigns:** Larger Quantities for Take Home

### Strengthen Food Rescue
- **Donation Coordination & Matching:** Home Composting
- **Buffet Signage:** Standardized Date Labels
- **Consumer Education Campaigns:** Established Partnerships with Businesses
- **Donation Transportation:** Traceless

### Recycle Anything Remaining
- **Centralized Anoxic Digestion:** Culling SOPs
- **Community Composting:** Waste-Derived Bioplastics
- **Centralized Composting:** Waste-Driven Agricultural Impacts
- **Co-Digestion at Wastewater Treatment Plants:** Insect Farming

## Modulated Solutions

- **Unmodulated Solutions:**
- **Best Practices:**
- **Interim Practices:**
WHAT'S NEEDED

40+ SOLUTIONS

$14B INVESTMENT ANNUALLY

POLICY CHANGES

INNOVATION

ENGAGEMENT

WASTE REDUCTION

45M ANNUAL FOOD WASTE DIVERSION (TONS)

IMPACT PER YEAR

$73B NET FINANCIAL BENEFIT

4T GALLONS IN WATER SAVINGS

75M TONS GHG EMISSION REDUCTION POTENTIAL (MT CO2e)

4B MEALS FOR PEOPLE IN NEED

51K JOBS CREATED THROUGH SOLUTION IMPLEMENTATION OVER 10 YEARS
“Maximizing product utilization” means designing facilities, operations, and menus to use as much of each product as possible. It also means rethinking the concept of “waste” by turning surplus and byproducts into food products through upcycling.
ACTION AREA #4
Maximize Product Utilization

- Byproducts & Production Line Waste: 9.67M Tons - 91.4%
- Buyer Rejections: 703k Tons - 6.6%
- Unshipped Finished Product: 210k Tons - 2%

Source: ReFED Insights Engine
ACTION AREA #4

Maximize Product Utilization

KEY INDICATORS (ANNUAL)

3.3M
FOOD WASTE TONS DIVERTED

$4.8B
NET FINANCIAL BENEFIT

$2.4B
INVESTMENT NEEDED

9.8M
MT CO2E REDUCTION

869.7B
GALLONS WATER SAVED

Source: ReFED Insights Engine
### ACTION AREA #4
Maximize Product Utilization

<table>
<thead>
<tr>
<th>Solution</th>
<th>Net Financial Benefit</th>
<th>Food Waste Tons Diverted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/ Manufacturing Byproduct Utilization (Upcycling)</td>
<td>$2.69B</td>
<td>1.87M</td>
</tr>
<tr>
<td>2/ Active &amp; Intelligent Packaging</td>
<td>$1.74B</td>
<td>452K</td>
</tr>
<tr>
<td>3/ Manufacturing Line Optimization</td>
<td>$328M</td>
<td>967K</td>
</tr>
</tbody>
</table>

#### Top Solutions
- Edible Coatings
- Improved Recipe Planning
- In-House Repurposing
- Precision Food Safety
ANNUAL INVESTMENT NEEDED

TOTAL
$2.4B

PUBLIC
- Government Grants - $96.1M

PHILANTHROPIC
- Non-Government Grants - $96.1M
- Impact-First Investments - $96.1M

PRIVATE
- Venture Capital - $288.4M
- Private Equity - $411.1M
- Corporate Finance & Spending - $1.4B

Source: ReFED Insights Engine
Claire Sand
Owner & Founder
PACKAGING TECHNOLOGY & RESEARCH
GAZELLE MOBILE PACKAGING

Adjunct Faculty
CALPOLY & MICHIGAN STATE UNIVERSITY
Liran Akavia
Co-Founder & CEO
SEEBO
Turner Wyatt
Co-Founder & CEO
UPCYCLED FOOD ASSOCIATION
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#HalveFoodWasteBy2030
Please answer the survey questions appearing on screen.

Your answers will be anonymous.

Thank you!
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Reshape Consumer Environments

SEPTEMBER 22 | 1:00 P.M. ET

ReFED

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Stay Connected!

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