Following the Roadmap to 2030

Taking Action to Reduce U.S. Food Waste by 50%

#HalveFoodWasteBy2030
Alexandria Coari
Vice President
Capital, Innovation & Engagement
ReFED
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
- Impact Calculator
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%

**Optimize the Harvest**
- Avoid overproduction, 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 earliest 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 in-store handling.

**Maximize Product Utilization**
- Design for flexibility, operations, and merchandising so much of each product is possible. Optimize surplus and hydrogenated into food products.

**Reshape Consumer Environments**
- Drive consumers toward better food management and less waste by motivating shopping, cooking, and eating environments that promote these behaviors. Shift culture to place more value on food and robust 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.

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#### Action Areas

<table>
<thead>
<tr>
<th>Action Area</th>
<th>Optimized Solutions</th>
<th>Unmodeled Solutions</th>
<th>Best Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyer SPEC</td>
<td>Expansion</td>
<td>Decreased Transit Time</td>
<td>Assisted Distressed Sales</td>
</tr>
<tr>
<td>Cleaning</td>
<td></td>
<td>First Expired First Out</td>
<td>Decreased Minimum Order Quantity</td>
</tr>
<tr>
<td>Imperfect &amp; Surplus Produce Channels</td>
<td>Intelligent Banking</td>
<td>Temperature Monitoring (Pallet Transport)</td>
<td>Enhanced Demand Planning</td>
</tr>
<tr>
<td>Partial Order Acceptance</td>
<td>Reduced Warehouse Handling</td>
<td>Advanced Shipment Notifications</td>
<td>Increased Delivery Frequency</td>
</tr>
<tr>
<td>Field Cooling Units</td>
<td>In-Field Sanitation Monitoring</td>
<td>Early Spoilage Detection (Hyperspectral Imaging)</td>
<td>Markdown Alert Applications</td>
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<tr>
<td>Innovative Grower Contracts</td>
<td>Labor Matching</td>
<td>Inventory Traceability</td>
<td>Minimized On-Hand Inventory</td>
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<tr>
<td>Smaller Harvest Lots</td>
<td>Improved Communication for Planning Schedules</td>
<td>Modified Atmosphere Packaging System</td>
<td>Temperature Monitoring (Foodservice)</td>
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<tr>
<td>Sanitation Practices &amp; Monitoring</td>
<td>Optimized Truck Parking, Loading &amp; Unloading (e.g., Cross Docking)</td>
<td>Low Waste Event Contracts</td>
<td>Direct to Consumer Channels</td>
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<tr>
<td>Optimized Harvesting Schedules</td>
<td>On-Farm / Near-Farm Processing</td>
<td>Regular Maintenance on Refrigerated Trucks</td>
<td>Online Marketplace Platform</td>
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<td>Local Food Systems</td>
<td>Clear Product Ownership</td>
<td>Cross-Docking</td>
<td>Online, Advanced Grocery Sales</td>
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<thead>
<tr>
<th>Enhanced Distribution</th>
<th>Refine Product Management</th>
<th>Maximize Product Utilization</th>
<th>Reshape Consumer Environments</th>
<th>Strengthen Food Rescue</th>
<th>Recycle Anything Remaining</th>
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<tbody>
<tr>
<td>Active &amp; Intelligent Packaging</td>
<td>Meal Kits</td>
<td>Donation Coordination &amp; Matching</td>
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<td>Manufacturing (Product Utilization &amp; Upcycling)</td>
<td>Buffet Signage</td>
<td>Centralized Anaerobic Digestion</td>
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<td>Manufacturing Line Optimization</td>
<td>Consumer Education Campaigns</td>
<td>Community Composting</td>
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<td>Edible Coatings</td>
<td>K-12 Lunch Improvements</td>
<td>Centralized Composting</td>
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<td>Improved Recipe Planning</td>
<td>Package Design</td>
<td>Co-Digestion at Wastewater Treatment Plants</td>
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<td>In-House Repurposing</td>
<td>Portion Sizes</td>
<td>Home Composting</td>
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<td>Precision Food Safety</td>
<td>Small Plates</td>
<td>Livestock Feed</td>
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<td>Discount Meal Plans</td>
<td>Employee Meals</td>
<td>Waste-Derived Agricultural Impacts</td>
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<td>Standardized Date Labels</td>
<td>Larger Quantities for Take Home</td>
<td>High-Frequency Retail Logistics</td>
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<td>K-12 Education Campaigns</td>
<td>Trayless</td>
<td>Established Relationships with Businesses</td>
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<td>Trayless</td>
<td>Home Shelf-Life Extension Technologies</td>
<td>Food Recovery Organizations</td>
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<td>Sub-Side Cooking</td>
<td>Smart Home Devices</td>
<td>Waste-Derived Biopolymers</td>
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<td>Waste-Derived Biodegradable Packaging</td>
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<td>Enabling Technologies (e.g., de-packaging and pre-treatment)</td>
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<td>Separation &amp; Measurement</td>
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<td>Relationships with Waste Haulers</td>
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<td>Waste Audits by Waste Haulers</td>
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<th>Modelled Solutions</th>
<th>Unmodelled Solutions</th>
<th>Best Practices</th>
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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
You're invited to join the
ReFED Food Waste Action Network
Dana (brief remarks) Importance of OTH FWAN CTA bit.ly/JoinReFEDFWAN

Member Benefits:
- Networking
- Office Hours
- Lunch 'n Learns
- Innovation Demo Days
- Blogs & Case Studies

Join a growing list of industry leaders from organizations like:

bit.ly/JoinReFEDFWAN
Dana (brief remarks)

Importance of OTH FWAN CTA

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POLL QUESTION

bit.ly/JoinReFEDFWAN
“Optimizing the harvest” means aligning what is grown with what is ultimately harvested, by avoiding overproduction and then harvesting as much as possible. For wild-caught products, it means sourcing only what is needed.
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<th>Key Indicator</th>
<th>Value</th>
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<tr>
<td>Food Waste Tons Diverted</td>
<td>3.7M</td>
</tr>
<tr>
<td>Net Financial Benefit</td>
<td>$8B</td>
</tr>
<tr>
<td>Investment Needed</td>
<td>$699.1M</td>
</tr>
<tr>
<td>MT CO2e Reduction</td>
<td>466K</td>
</tr>
<tr>
<td>Gallons Water Saved</td>
<td>111.8B</td>
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</tbody>
</table>

**Total Food Surplus (Produce Only)**

- **20.8%**
- **(16.7M Tons)**

Source: ReFED Insights Engine
Optimize the Harvest

83% of surplus food on farms is never harvested

Source: ReFED Insights Engine
ACTION AREA #1
Optimize the Harvest

23% of surplus food is marketable and edible but not harvested

28% of surplus food is edible but considered "not marketable"

Source: ReFED Insights Engine
### Top Solutions

<table>
<thead>
<tr>
<th>Action Area</th>
<th>Solution Description</th>
<th>Net Financial Benefit</th>
<th>Food Waste Tons Diverted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/ Imperfect and Surplus Produce Channels</td>
<td>$5.08B</td>
<td>2.89M</td>
<td></td>
</tr>
<tr>
<td>2/ Buyer Specification Expansion</td>
<td>$2.69B</td>
<td>668K</td>
<td></td>
</tr>
<tr>
<td>3/ Gleaning</td>
<td>$152M</td>
<td>78.5K</td>
<td></td>
</tr>
<tr>
<td>4/ Partial Order Acceptance</td>
<td>$78.8M</td>
<td>38.6K</td>
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**Optimize the Harvest**

- **ReFED**
Lisa Johnson
Independent Consultant and Adjunct Professor
LKJ CONSULTING AND NORTH CAROLINA STATE UNIVERSITY
Derek Azevedo
Executive Vice President
BOWLES FARMING COMPANY, INC.
Following the Roadmap to 2030
Taking Action to Reduce U.S. Food Waste by 50%
#HalveFoodWasteBy2030
Following the Roadmap to 2030 Discussion Series

Enhance Product Distribution

JUNE 30 | 1:00 P.M. ET
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