



Following the Roadmap to 2030

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

In partnership with **foodtank**
THE THINK TANK FOR FOOD

#HalveFoodWasteBy2030

Following the Roadmap to 2030 Discussion Series
Maximize Product Utilization

AUGUST 25 | 1:00 P.M. ET



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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

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.

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

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

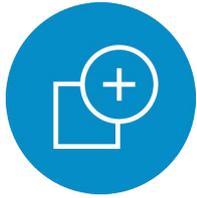
 75M TONS GHG EMISSION REDUCTION
POTENTIAL (MT CO₂e)

 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.

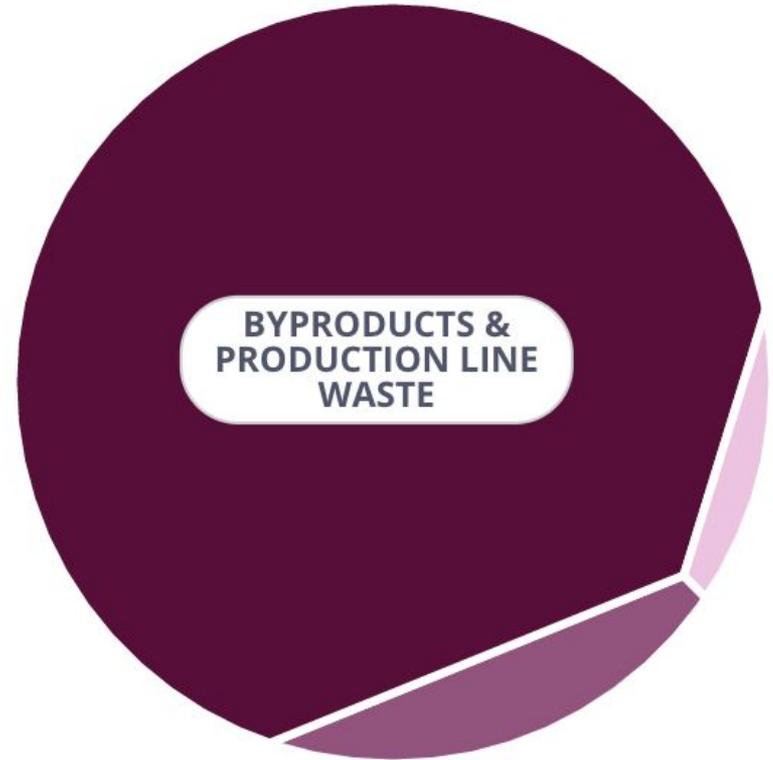


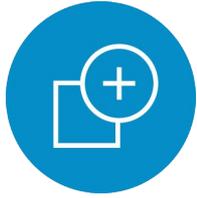


ACTION AREA #4

Maximize Product Utilization

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





ACTION AREA #4

Maximize Product Utilization

KEY INDICATORS (ANNUAL)

3.3M

FOOD WASTE TONS
DIVERTED

\$4.8B

NET FINANCIAL BENEFIT

\$2.4B

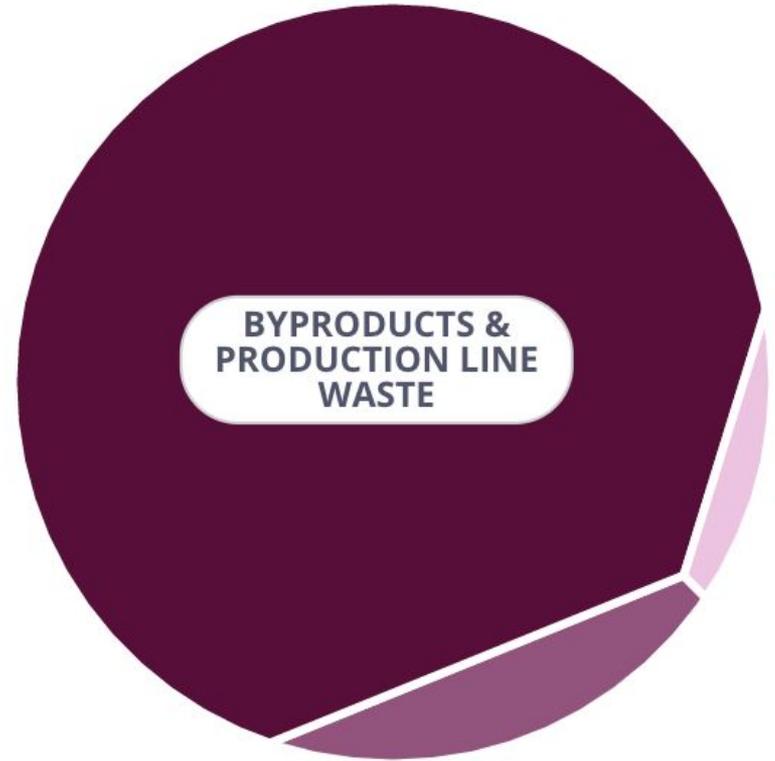
INVESTMENT NEEDED

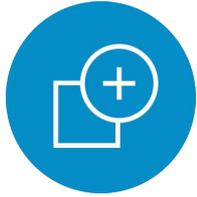
9.8M

MT CO2E REDUCTION

869.7B

GALLONS WATER SAVED





ACTION AREA #4

Maximize Product Utilization

Top Solutions

1/ Manufacturing Byproduct Utilization (Upcycling)

\$2.69B Net Financial Benefit

1.87M Food Waste Tons Diverted

2/ Active & Intelligent Packaging

\$1.74B Net Financial Benefit

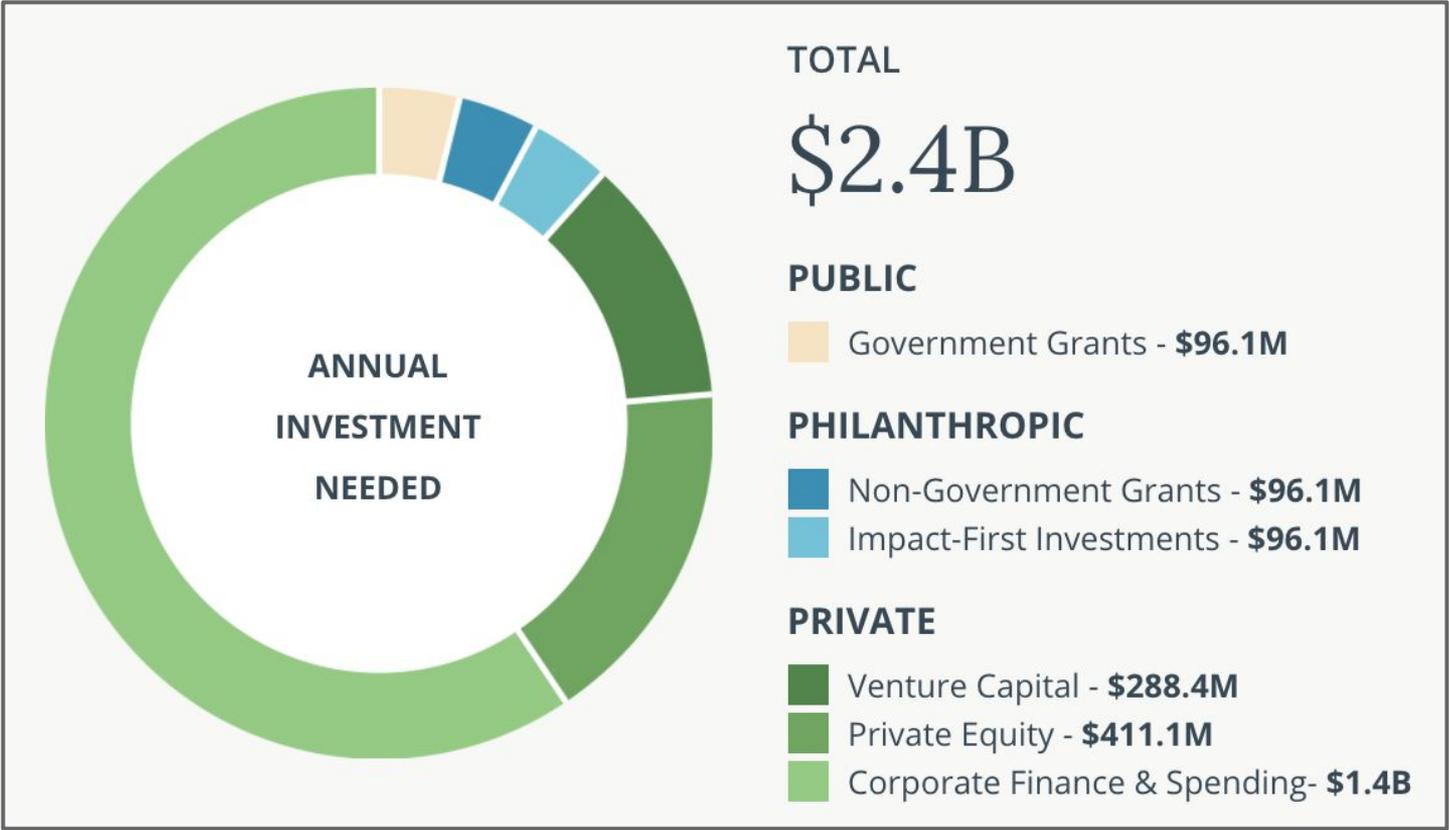
452K Food Waste Tons Diverted

3/ Manufacturing Line Optimization

\$328M Net Financial Benefit

967K Food Waste Tons Diverted

Edible Coatings / Improved Recipe Planning / In-House Repurposing / Precision Food Safety



Jonathan Deutsch

Professor, Department of Food
& Hospitality Management and
Director, Drexel Food Lab

DREXEL UNIVERSITY



Claire Sand

Owner & Founder

PACKAGING TECHNOLOGY & RESEARCH
GAZELLE MOBILE PACKAGING

Adjunct Faculty

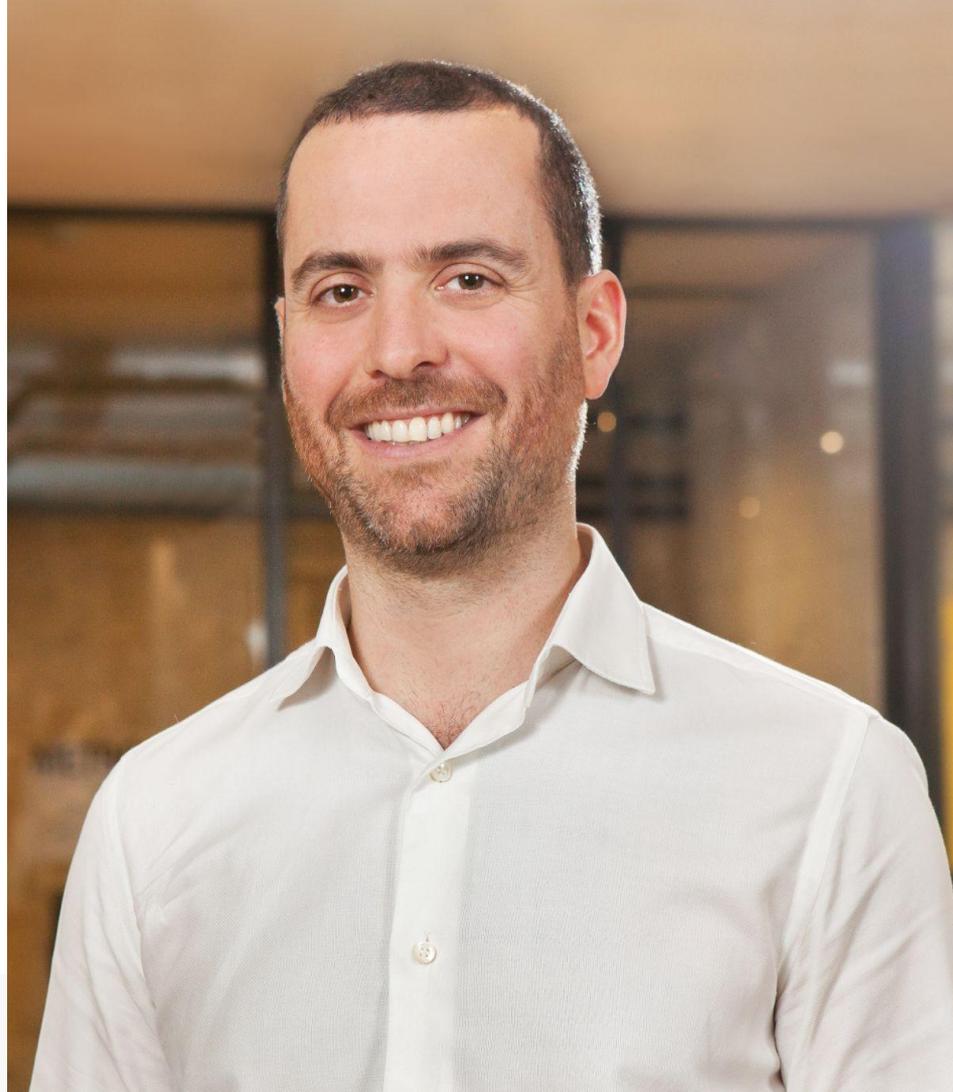
CALPOLY & MICHIGAN STATE UNIVERSITY



Liran Akavia

Co-Founder & CEO

SEEBO



Turner Wyatt

Co-Founder & CEO

UPCYCLED FOOD ASSOCIATION





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U.S. Food Waste by 50%*

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**Please answer the survey questions
appearing on screen.**

Your answers will be anonymous.

Thank you!

the
to 2030

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Following the Roadmap to 2030 Discussion Series
Reshape Consumer Environments

SEPTEMBER 22 | 1:00 P.M. ET



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Stay Connected!



@refed

refed.com

insights.refed.com

Questions/Feedback: insights@refed.com

Food Waste Action Network: bit.ly/JoinReFEDFWAN