

A close-up photograph of several tomatoes on a vine. Some tomatoes are green, while others are ripening and showing orange and red hues. The background is slightly blurred, focusing attention on the tomatoes in the foreground.

ReFED

Rethink Food Waste through Economics and Data

Food Waste Solutions, Economics, and Agriculture

Presentation to the Farm, Ranch, and Rural
Communities Committee, November 13, 2021



ReFED

Rethink Food Waste
Through Economics and Data

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

Our Work

Aligning with the United Nations 2030 Sustainable Development Goals, we are working toward a **50% reduction in food loss and waste** by the year 2030. We'll get there by:

Motivating More Actors

We use compelling data, actionable guidance, and strategic communications to inspire, inform, and guide people towards action.

Mobilizing More Action

We catalyze capital, collaboration, and innovation to accelerate adoption of solutions.

Advancing More Solutions

We break down barriers to solution innovation and adoption, and drive scale.

THE PROBLEM



40%

of all food goes uneaten



\$218B

a year is spent on food that
is never eaten

Meanwhile



50M+

Americans are food insecure

Environmental Impact of Food that is Produced But Never Eaten



8%

of Global
GHG Emissions



21%

of All
Freshwater*



19%

of All
Fertilizer*



18%

of All
Cropland*



21%

of Landfill
Volume*

**statistics are based on US numbers*

THE OPPORTUNITY

ReFED estimates that reducing food waste by just 20% would have the following positive impacts annually:



1.8 billion meals recovered



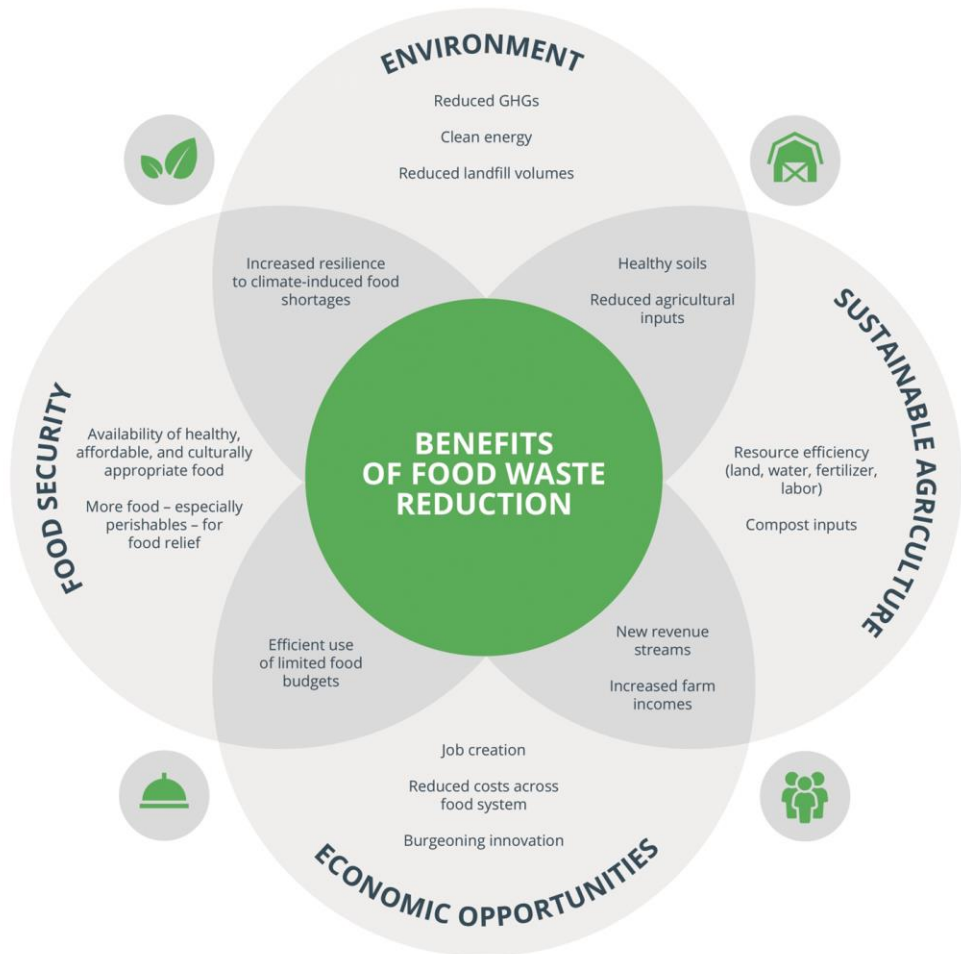
1.6 trillion gallons of water conserved



18 million tons of GHG emissions avoided



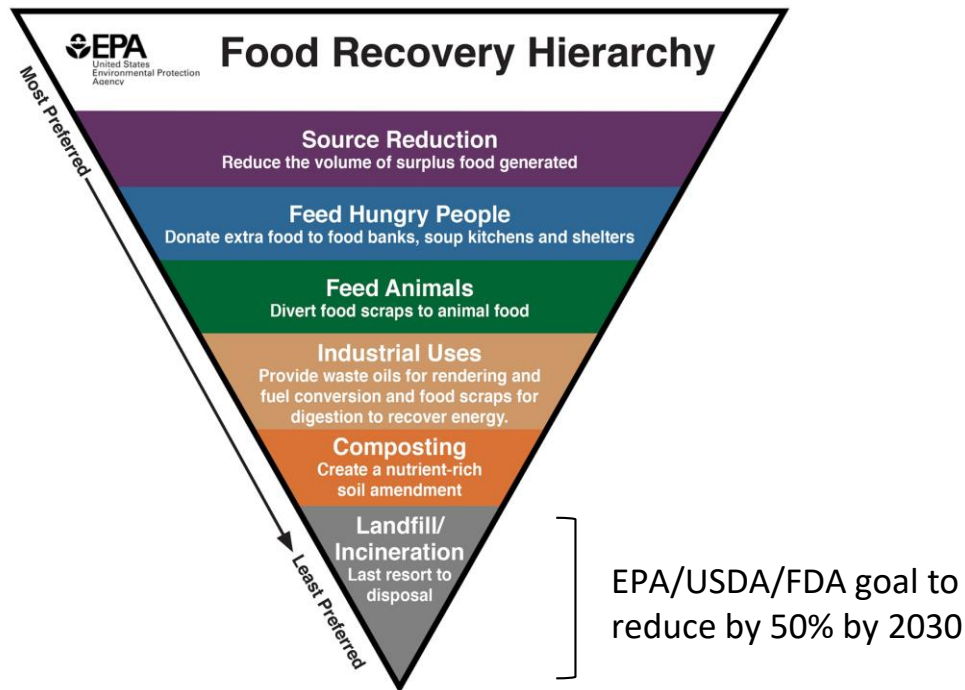
\$6 billion of consumer savings



What is Food Waste?

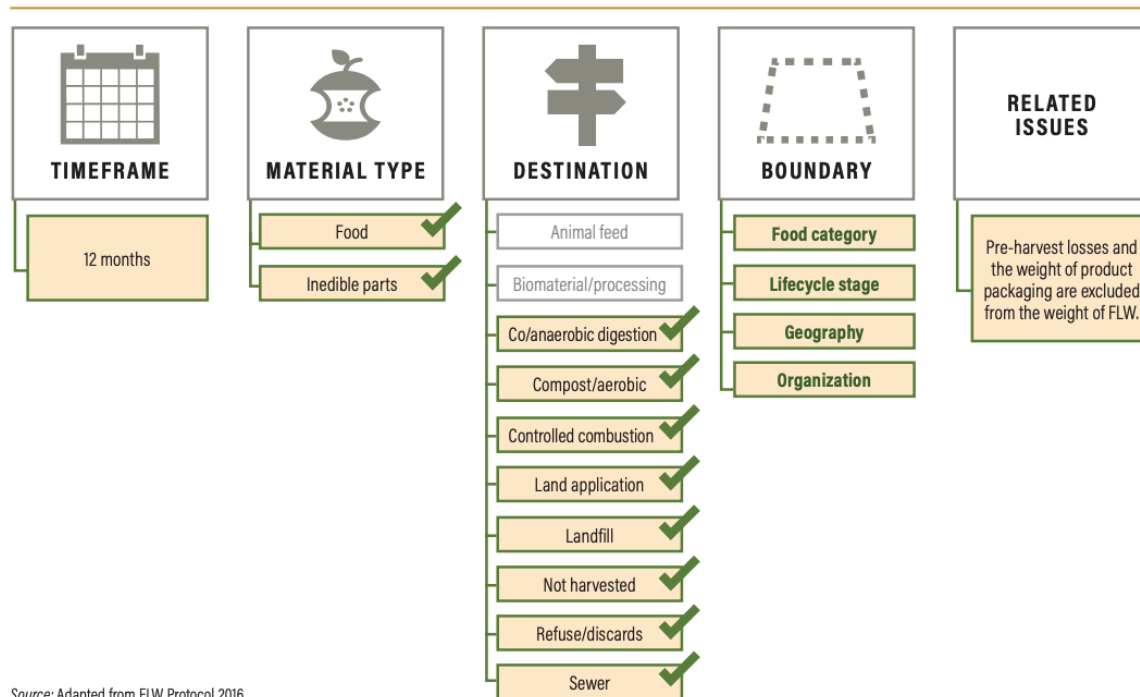


EPA Food Recovery Hierarchy



Definition of “Food Loss and Waste”--International Goals

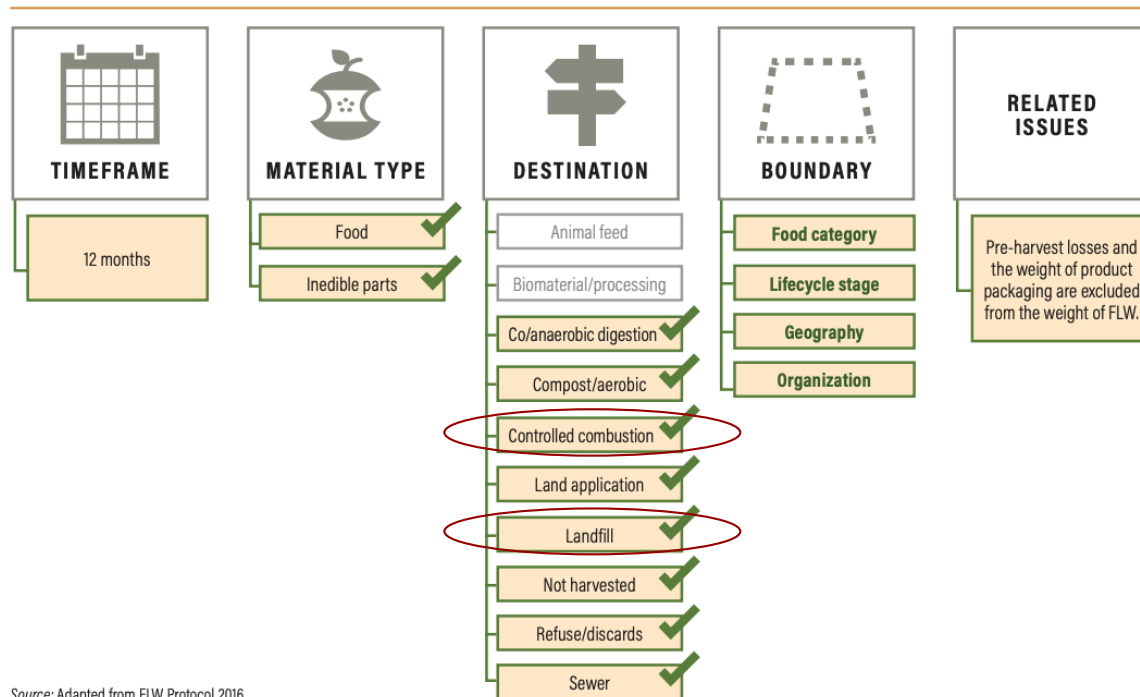
FIGURE 2. Recommended scope for interpreting SDG Target 12.3



Source: Adapted from FLW Protocol 2016.

Definition of “Food Loss and Waste”--U.S. Goals

FIGURE 2. Recommended scope for interpreting SDG Target 12.3



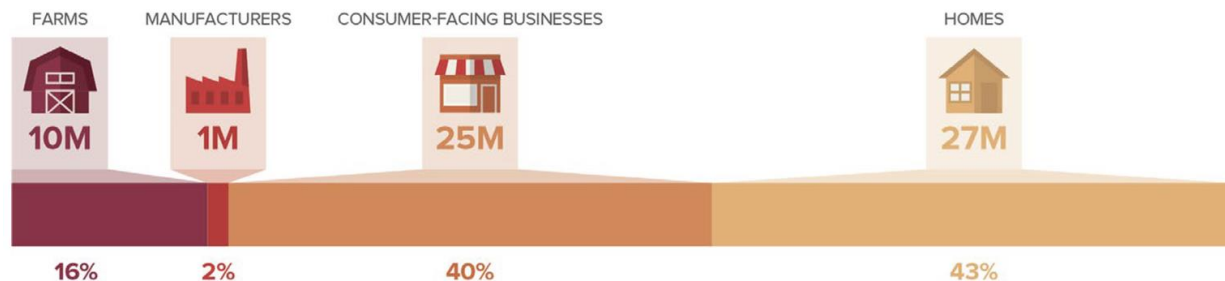
Source: Adapted from FLW Protocol 2016.

ReFED's Original Roadmap



How much food waste is there?

FOOD WASTED BY WEIGHT — 63 MILLION TONS



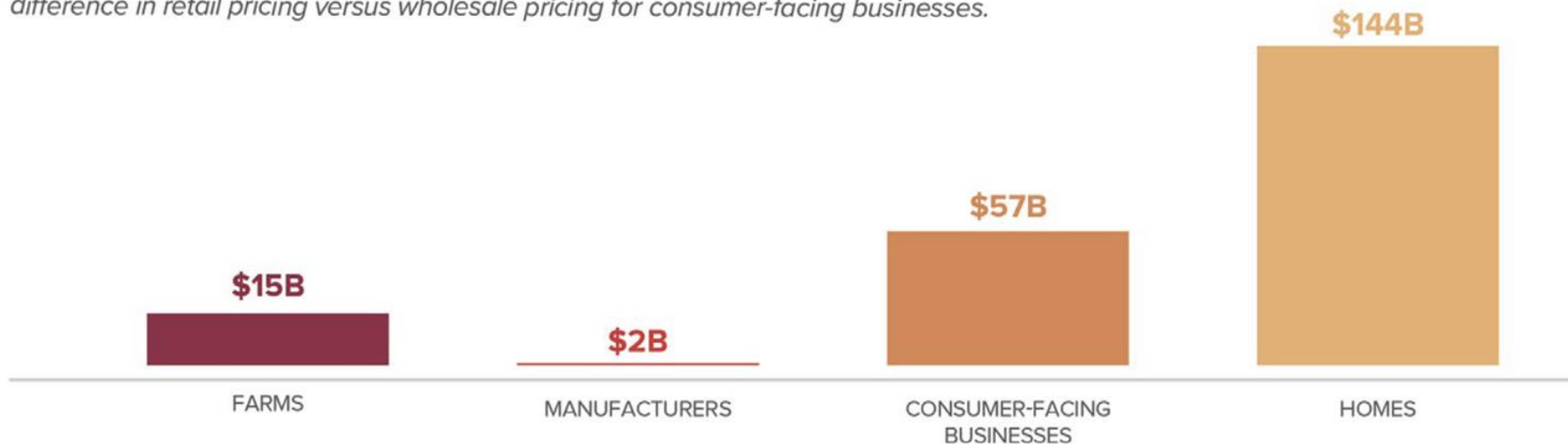
CONSUMER-FACING BUSINESSES INCLUDE



How much is it worth?

VALUE OF WASTE — \$218 BILLION

The financial cost of food waste ends up costing consumers the most due to the difference in retail pricing versus wholesale pricing for consumer-facing businesses.



FINANCIAL BENEFIT

WASTE DIVERTED

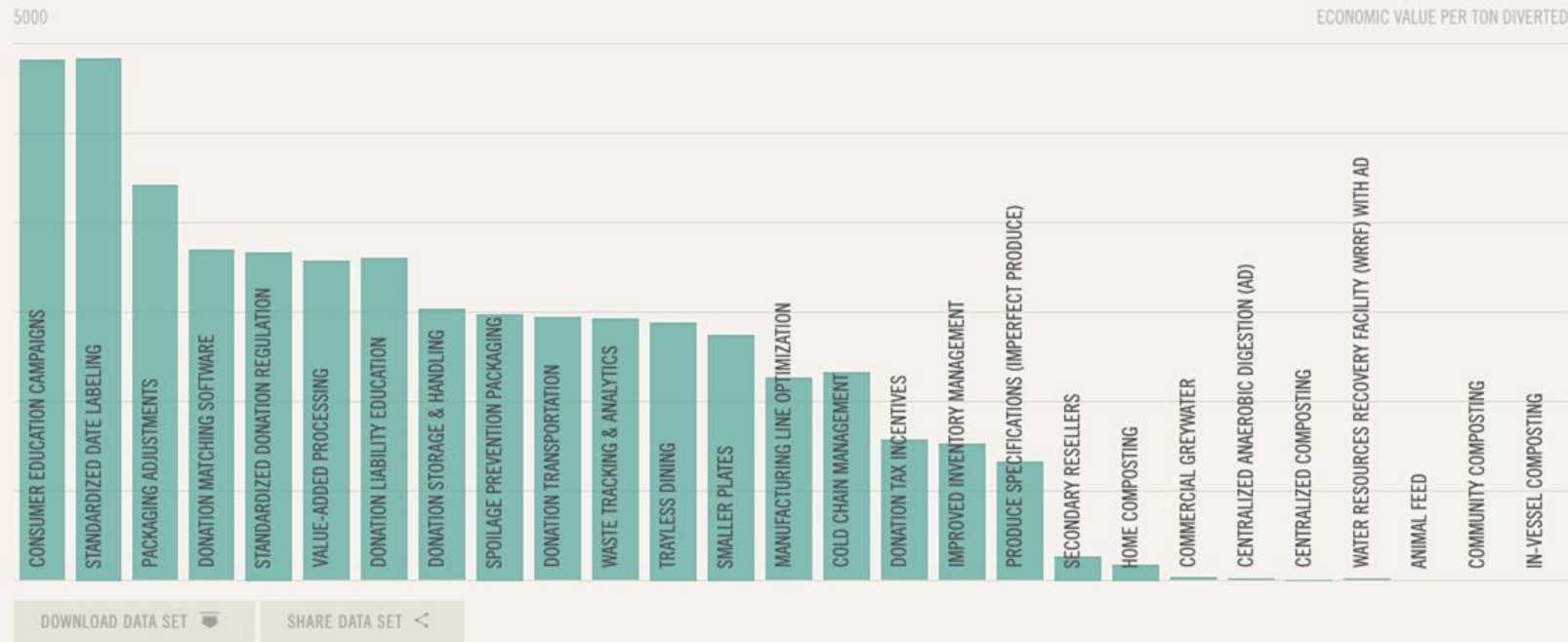
EMISSIONS REDUCED

WATER SAVED

JOBS CREATED

MEALS RECOVERED

The aggregate financial benefit to society (consumers, businesses, governments, and other stakeholders) minus all investment and costs per ton of food waste diverted. It shows the amount of benefit received per ton of reduction and is calculated as the Economic Value per Ton.



FINANCIAL BENEFIT

WASTE DIVERTED

EMISSIONS REDUCED

WATER SAVED

JOBS CREATED

MEALS RECOVERED

The tons of annual waste that can feasibly be diverted from landfills and on-farm losses per solution.

6000

K TONS/ YEAR



DOWNLOAD DATA SET



SHARE DATA SET



FINANCIAL BENEFIT

WASTE DIVERTED

EMISSIONS REDUCED

WATER SAVED

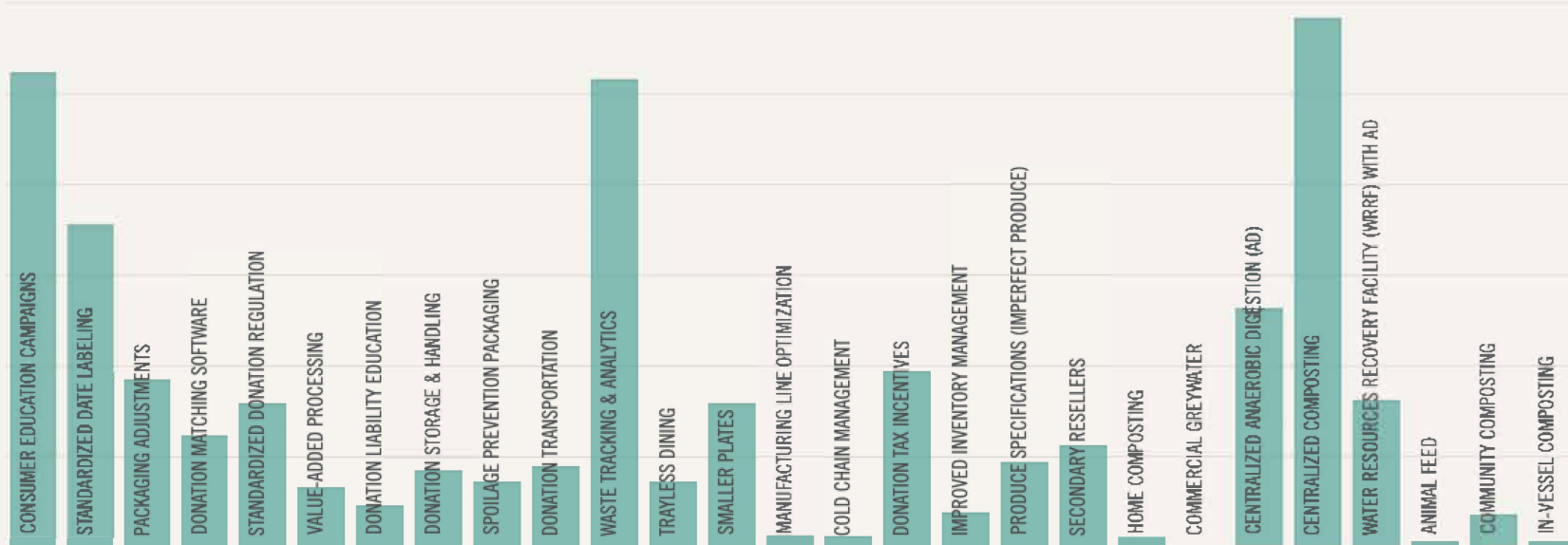
JOBS CREATED

MEALS RECOVERED

Greenhouse gases are reduced per solution by avoiding the resources that go into producing, processing, and transporting food, as well as the methane emissions from food disposed of in landfills.

3000

GHGS (K TONS / YEAR)



DOWNLOAD DATA SET

SHARE DATA SET

The ReFED Insights Engine and Roadmap to 2030



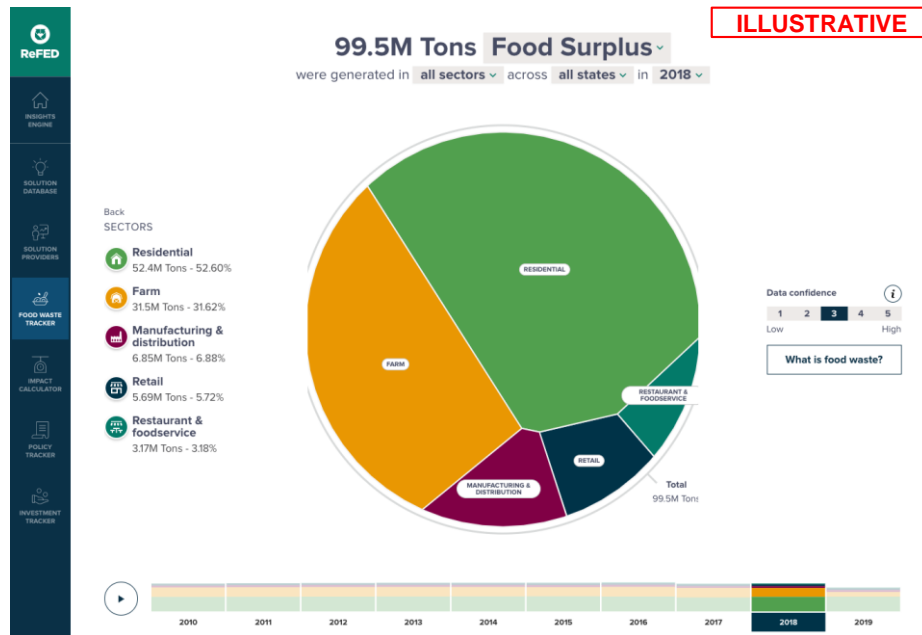
Informing the Future: The ReFED Insights Engine

The **ReFED Insights Engine** is an online data center designed to serve as the next generation of data, insights, and guidance on U.S. food waste reduction.

Through a variety of online tools and resources, users will be able to:

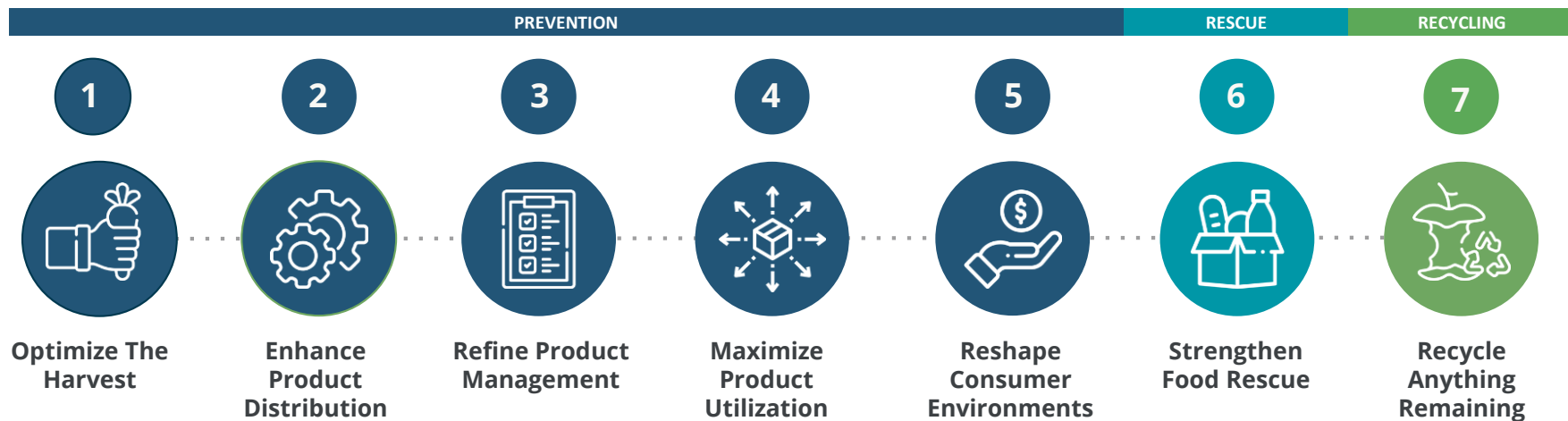
- View a quantitative analysis of solutions
- Generate customized analyses of solutions pertinent to a stakeholder's situation
- Understand the public, private, and philanthropic investments needed
- Identify and connect with solutions providers
- Calculate the environmental and social impacts of each solution

Live Demo: <https://refed-frontend.vizzuality1.now.sh/>



Informing the Future: *Roadmap to 2030*

The *Roadmap to 2030* will condense key takeaways from the Insights Engine to **articulate an action plan with seven priority action areas for key food system stakeholders.**



Informing the Future: *Roadmap to 2030*

PREVENTION

RESCUE

RECYCLING

1



Optimize The Harvest

Avoiding over-production, then harvesting as much as possible. For wild-caught products, sourcing only what is needed.

2



Enhance Supply Chains

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

3



Refine Product Management

Aligning purchases with sales as closely as possible, and finding secondary outlets for surplus. Building out systems and processes for optimal on-site handling.

4



Maximize Product Utilization

Designing facilities, operations and menus to make use of as much of each product as possible. Upcycling byproducts into food products.

5



Reshape Consumer Environments

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

6



Strengthen Food Rescue

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

7



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: Preliminary Results

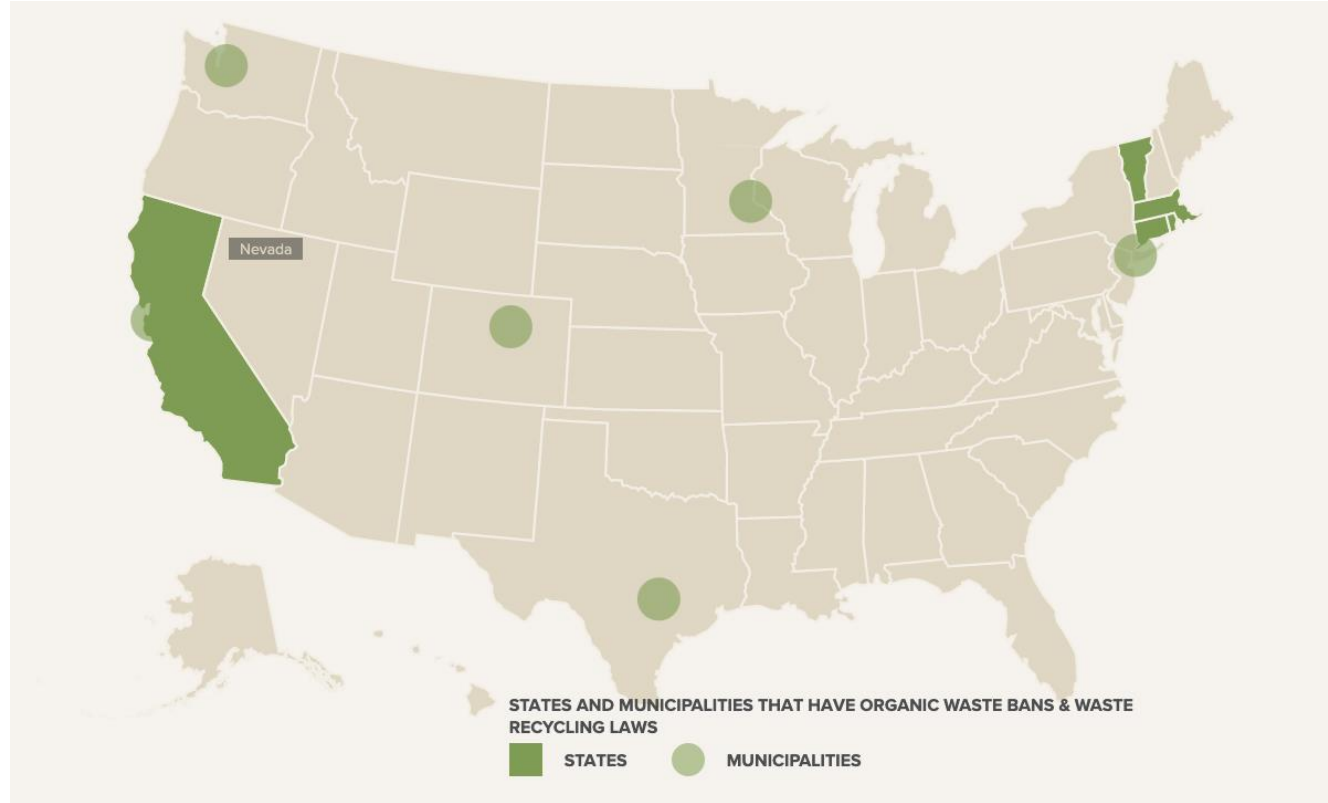
Preliminary results show that Optimize the Harvest solutions have low net financial benefit, but high potential for tons to be captured with new solutions

| | | |
|-----------------------|---|--------|
| Net Financial Benefit | → | LOW |
| Tons of Surplus | → | HIGH |
| Climate Mitigation | → | MEDIUM |

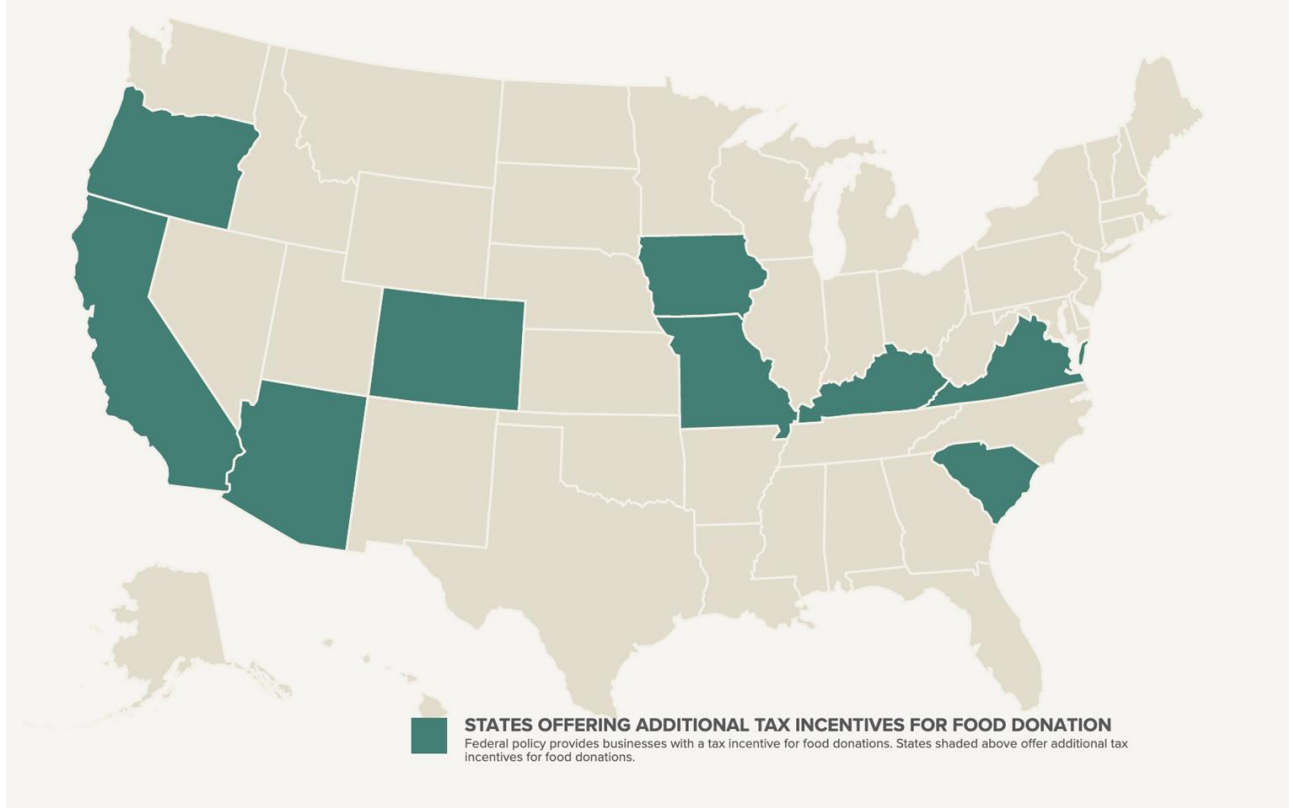
Optimize the Harvest Solutions (Specialty Crop Focus)

| Best Practices | Modeled Solutions | Unmodeled |
|--|---|--|
| Sanitation Practices In-field Sanitation Monitoring Optimized Harvesting Schedules | Buyer Spec Expansion Partial Order Acceptance Gleaning Imperfect Product Lines | Field Cooling Units Labor Matching Software Innovative Grower Contracts Improved Communication for Planting Schedules Risk-Based Quality Procedures Smaller Harvest Lot |

Landfill Bans



State Tax Incentives



A Word on Data



Thank you

For questions and more information please contact:



Dana Gunders
Executive Director
dana.gunders@refed.com

“

What interests us about food waste is that it is a very solvable problem. ReFED has made food waste understandable

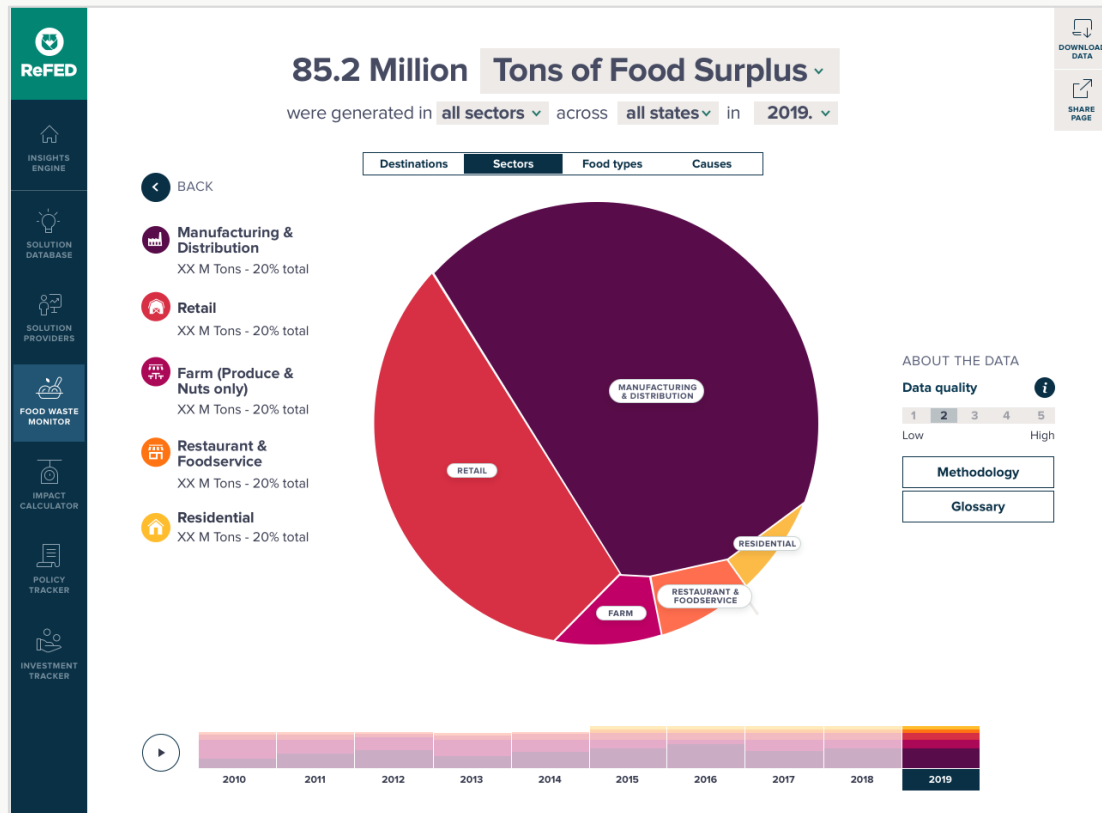
—
Jesse Fink
Founder, ReFED

Appendix



ReFED Insights Engine: U.S. Food Waste Monitor

DATA IS ILLUSTRATIVE



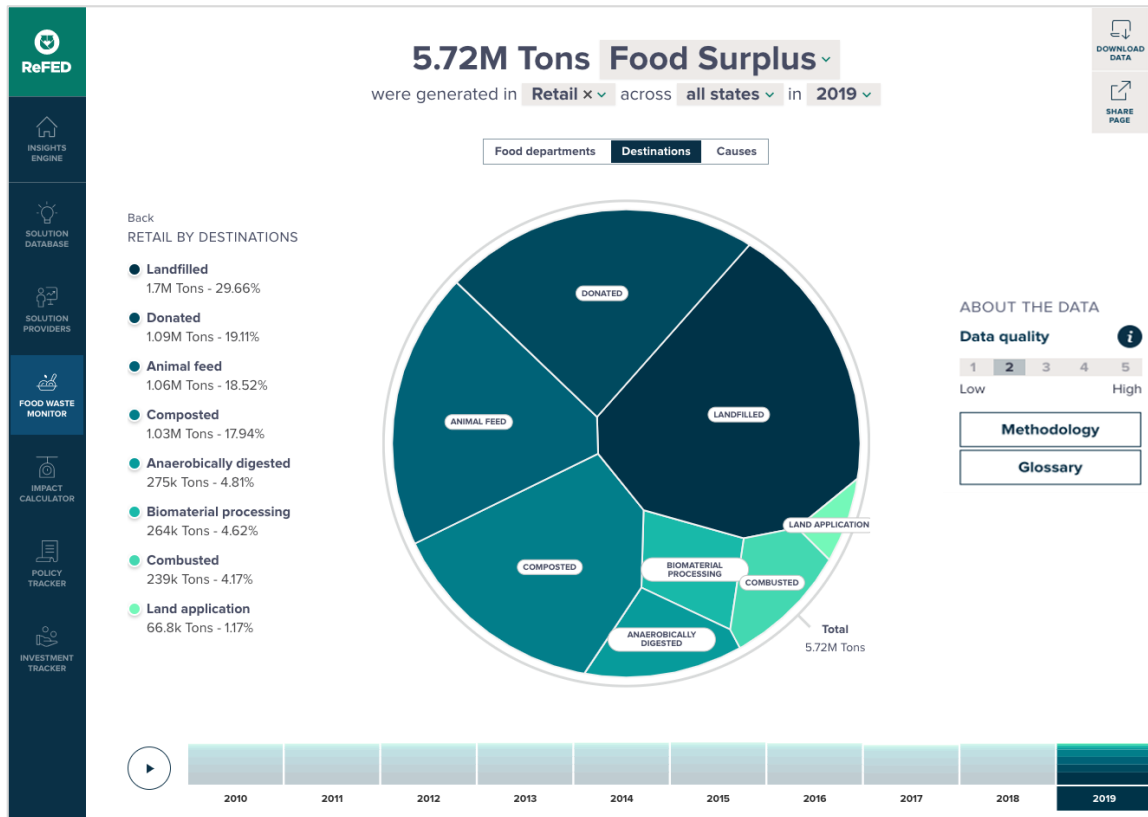
Combines 50+ public and proprietary datasets to quantify the amount and cost of surplus food in the U.S. with breakdowns by sector, food type, and state.

Sample Use Cases:

- Food Businesses** can identify hot spots to prioritize programs
- Entrepreneurs** can identify opportunities areas for innovation
- Food Recovery Organizations** can prioritize their sourcing strategy for specific food types, sectors, and geographies
- Researchers** can identify data gaps to guide future research.

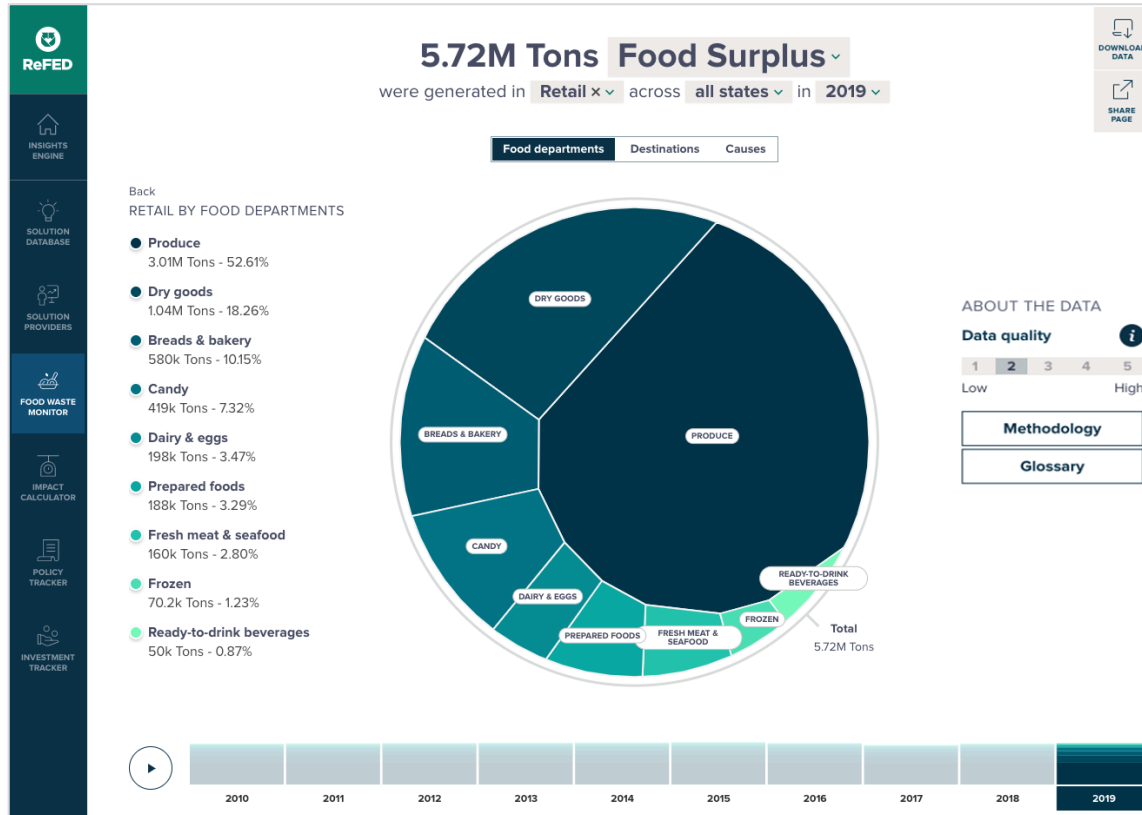
Food Waste Monitor: Destination Breakdown

DATA IS ILLUSTRATIVE



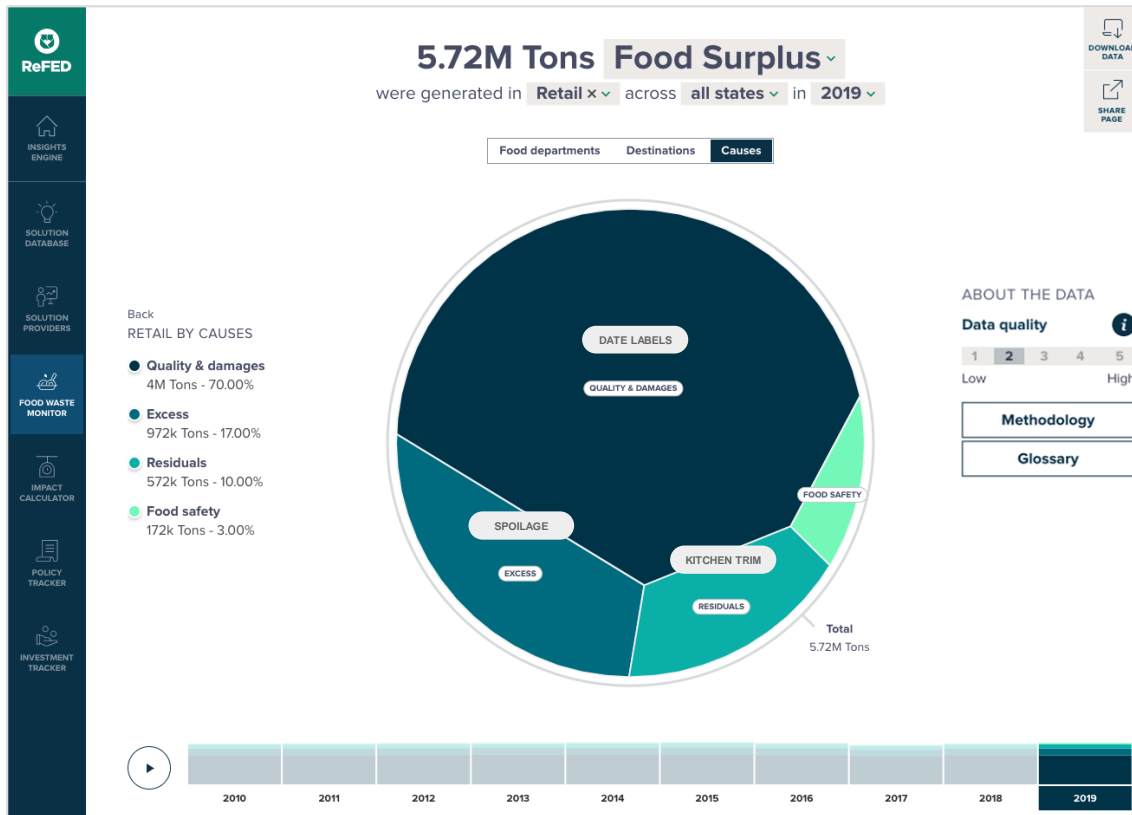
Food Waste Monitor: Food Type Breakdown

DATA IS ILLUSTRATIVE

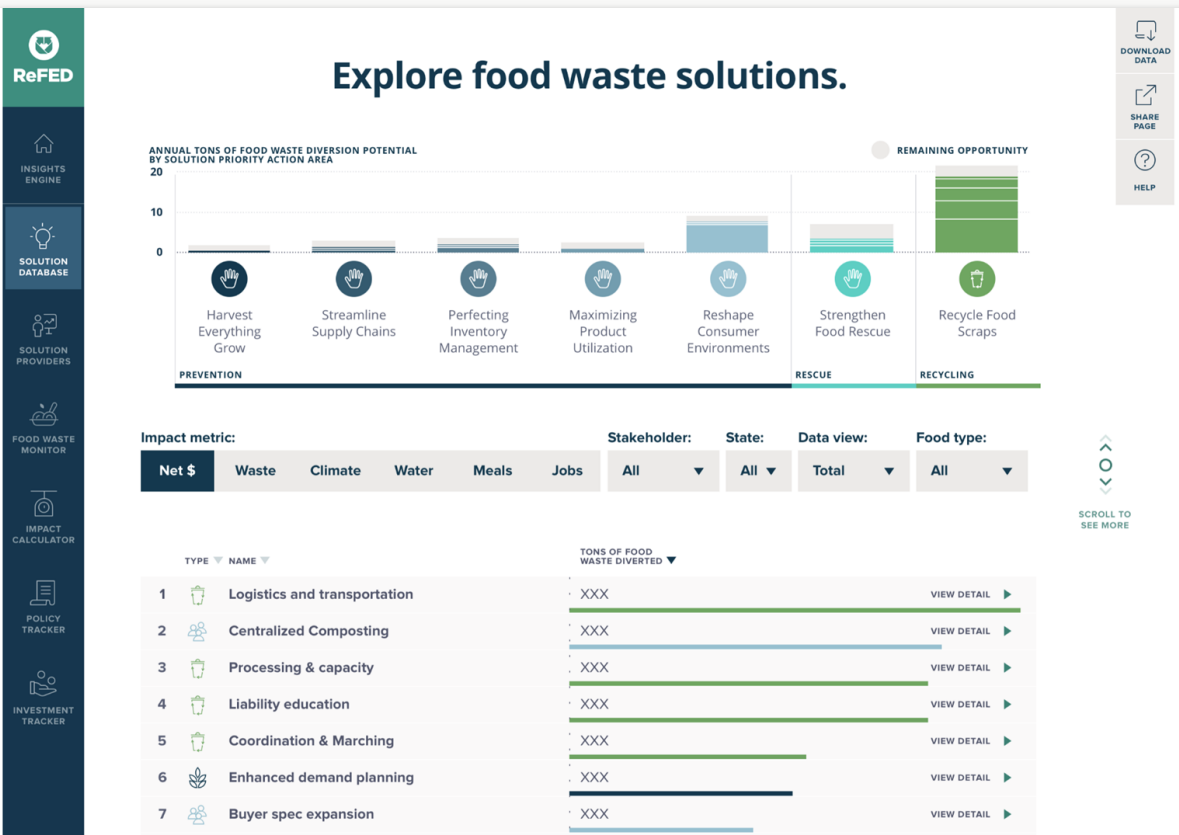


Food Waste Monitor: Cause Breakdown

DATA IS ILLUSTRATIVE



ReFED Insights Engine: Solutions Database



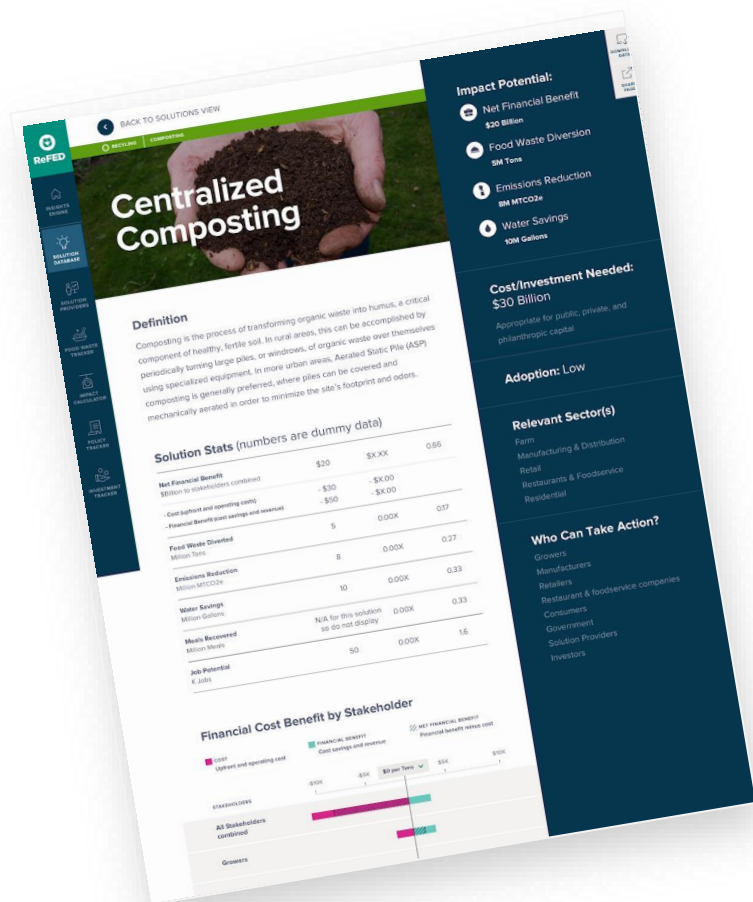
DATA IS ILLUSTRATIVE

Prioritizes solutions by stakeholder to understand the environmental and social impact potential of each.

Sample Use Cases:

- **Climate Funders** can determine the highest impact GHG solutions for specific regions.
- **State Agencies** can see what solutions will divert the greatest amount of food from landfills in their state.
- **Grocery Retailers** can estimate the profit potential of food waste solutions for their business and for their customers.

ReFED Insights Engine: Solution Fact Sheets



Dives deeper into each solution, including market size, ROI, diversion and impact potential, challenges and stakeholder actions needed.

Sample Use Cases:

- Sustainability Managers** can use to better understand options, then to pitch a pilot to their leadership.
- Solution Providers** can share with potential clients and investors.
- Consultants** can quickly find the numbers needed to run a business case on a particular solution for a client.

ReFED Insights Engine: Solution Provider Directory

ReFED

INSIGHTS ENGINE

SOLUTION DATABASE

SOLUTION PROVIDERS

FOOD WASTE TRACKERS

IMPACT CALCULATOR

POLICY TRACKER

INVESTMENT TRACKER

BACK TO SOLUTION PROVIDERS VIEW

RECOVERYDONATIONS

YEAR OF FOUNDATION: 2016

LAST UPDATED: 21st June, 2020

Goodr

| SOLUTION TYPE | SECTOR | STATUS |
|---------------|--|------------|
| Recovery | Farm Manufacturing Residential Restaurant & foodservice Retail | For profit |

The Goodr App merges food rescue with mobile technology, provides economic opportunity to drivers, saves families struggling with food security money and reduces waste in our community. While informing the donor of their impact in pounds donated and meals provided.

TAGS:
#Donation matching software

Headquarters address:

691 John Wesley Dobbs Ave NE
Suite A
Atlanta
Georgia
USA

States of operation:

California
Florida
Georgia
Louisiana
Pennsylvania
Washington

Impact potential:

Food waste Diversion
0 Tons

Emmissions reduction
0 Tons

Water Savings
0 gallons

Meals recovered
0

Related solutions:

Coordination & Matching >

in

Website

Contact

Allows filtered search through directory of food waste solution providers by solution type, service area, size, status, and performance metrics.

Sample Use Cases:

- Food Businesses** can find food waste solution providers that operate in their area.
- Investors** can find solution providers that match their investment thesis.
- Solution Providers** can communicate their environmental and social impact to potential clients and investors.

ReFED Insights Engine: Food Waste Impact Calculator

ReFED

INSIGHTS ENGINE

SOLUTION DATABASE

SOLUTION PROVIDERS

FOOD WASTE TRACKER

IMPACT CALCULATOR

POLICY TRACKER

INVESTMENT TRACKER

Calculate Waste Footprint

Calculate Reduction Impact

DOWNLOAD DATA

SHARE PAGE

Calculate the footprint of food waste.

How much food are you wasting?* REQUIRED

Insert weight

Tons

▼

Specify foodtype

Where in the food life cycle is the food waste happening?* REQUIRED

Select options

▼

What is happening to the waste? Where is it going?* REQUIRED

Select options

▼

Multiple destinations

Want to know more about the methodology behind?

Methodology

Indicate your footprint on left-hand selectors, to calculate the footprint.

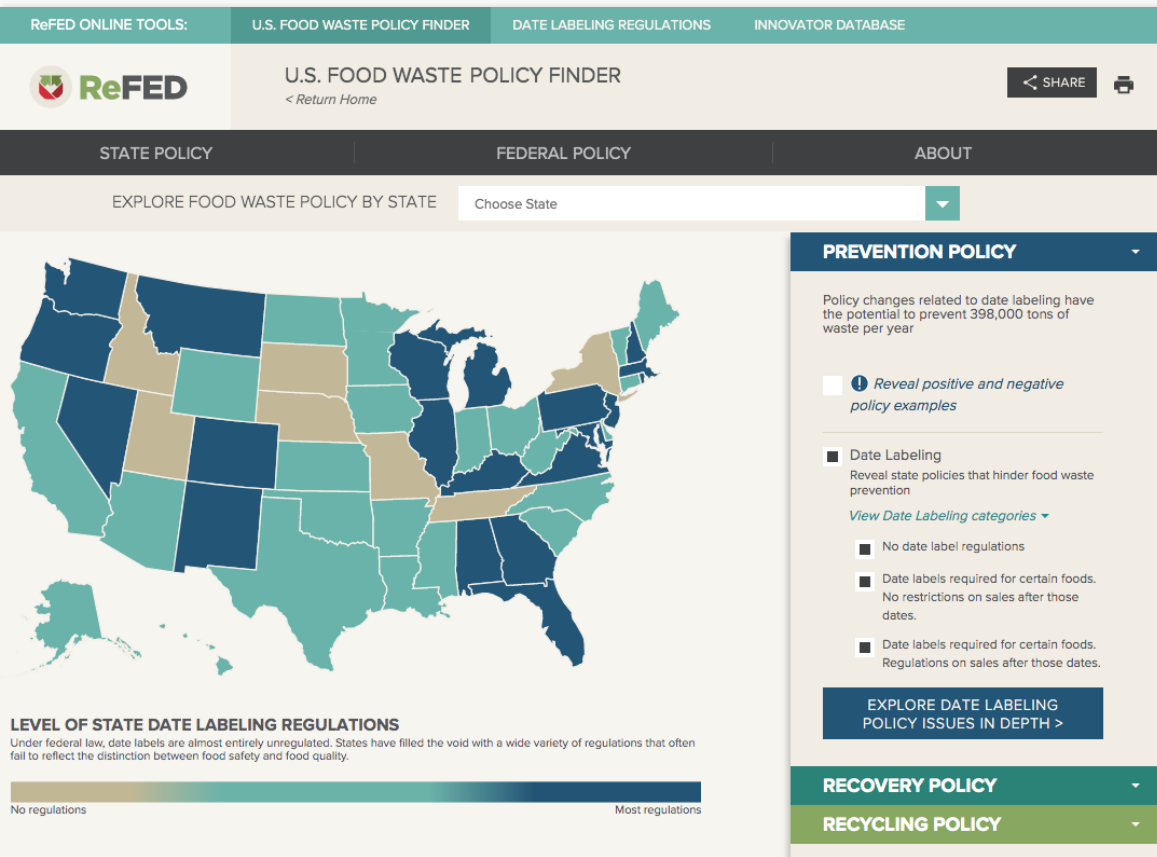
In partnership with: Quantz

Enables users to convert tons of food waste diverted to environmental and social impacts in a standardized method and format.

Sample Use Cases:

- **Food Banks** can quantify the impact of their organization for their annual report, including metrics such as GHG reduction, meals recovered, health impacts, etc.
- **Food Businesses** can quantify the impact of a specific food waste reduction program to share results with associates.
- **Food Waste Solution Providers** can communicate their impact to potential funders in a credible, standardized way.

ReFED Insights Engine: U.S. Food Waste Policy Tracker (2021)



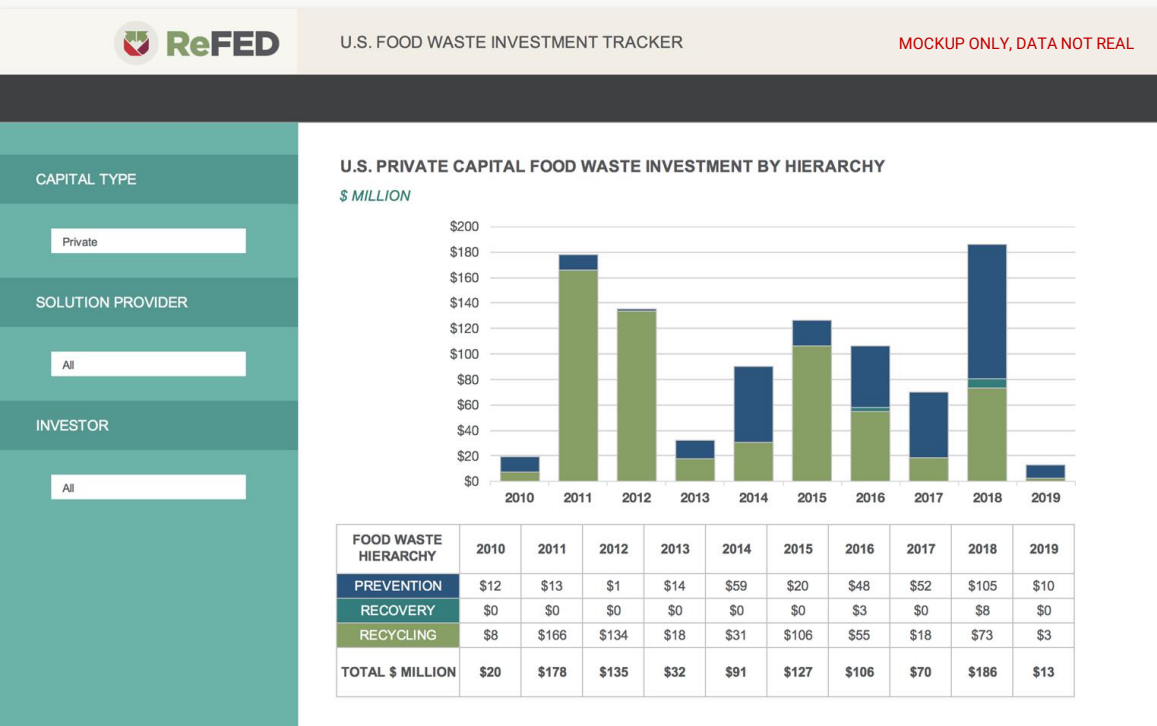
Tracks food waste-related policies at the federal and state levels and sends notifications when new policies are proposed.

Sample Use Cases:

- **State Policy Makers** can find examples of policies passed in other states.
- **Food Businesses, Solution Providers, and Advocates** can receive notifications when new food waste-related policies are proposed.

ReFED Insights Engine: U.S. Food Waste Investment Tracker (2021)

DATA IS ILLUSTRATIVE



Quantifies the annual philanthropic, private, and public investment in food waste solutions by funding area, state, recipient, investor, and capital type.

Sample Use Cases:

- **State Agencies** can understand what solutions are underfunded within their state.
- **Funders & Investors** can identify areas of white space, as well as the top recipients of funding for a given solution area.
- **Solution Providers** can see total funding in their solution area.