

# ReFED 2018 ANNUAL REPORT



**ReFED**

**Rethink Food Waste**  
*Through Economics and Data*

# Our Vision: Eliminate food waste in order to increase food security, spur economic growth and protect the environment

## THE PROBLEM

Today, the United States spends over **\$218 billion** on food that is never eaten.

**63M**

TONS OF FOOD WASTED ANNUALLY



**\$218B**

SPENT ON WASTED FOOD

FOOD WASTED BY WEIGHT (TONS)

FARMS  
10M  
16%



MANUFACTURERS  
1M  
2%



CONSUMER-FACING BUSINESSES  
25M  
40%



HOMES  
27M  
43%



FOOD WASTED BY VALUE

**\$74B**  
U.S. BUSINESSES

**\$144B**  
U.S. CONSUMERS

This costs **\$74 billion** to American businesses and **\$144 billion** to American consumers.



Wasted food accounts for approximately **20% of land, water and fertilizer use** and **8% of global GHG emissions**, and is the single largest material type in landfill.



Meanwhile, **40 million** Americans are food insecure.



## THE SOLUTIONS

The Roadmap to Reduce U.S. Food Waste was developed to identify the most cost-effective, scalable solutions to food waste. An **\$18 billion** investment in 27 solutions will cut food waste by 20% and yield **\$100 billion** in societal economic value over the next decade.

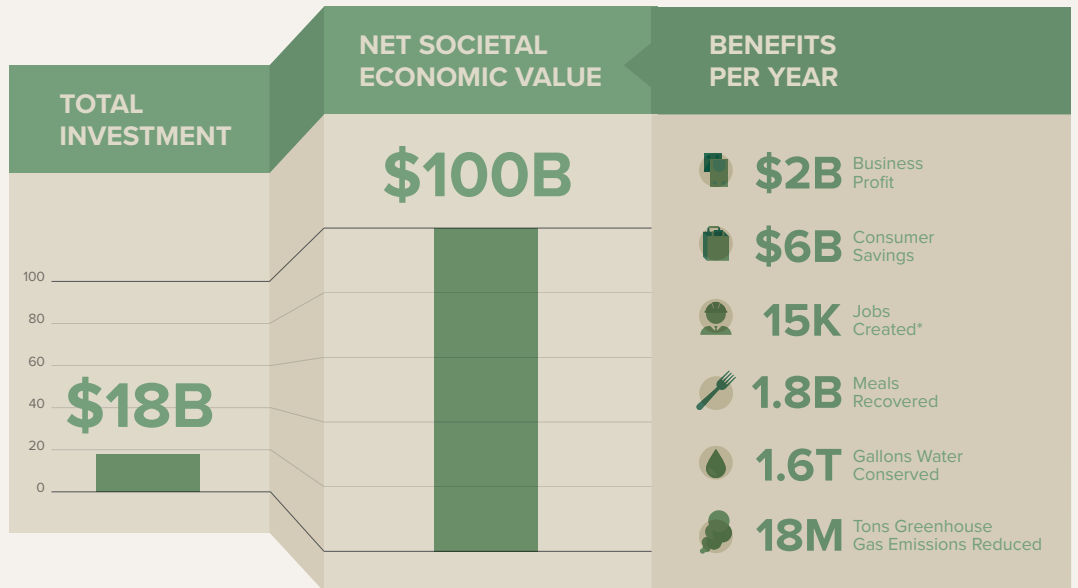
**\$18B**

TOTAL INVESTMENT



**\$100B**

NET SOCIETAL ECONOMIC BENEFIT



Jobs and environmental benefits not included in \$100b calculation  
\*Jobs created is a total number, not annual new jobs

# Our Mission:

## Accelerate solutions to U.S. food waste

Over the past year, ReFED has had the privilege of working with hundreds of decision-makers from across the public, private and nonprofit sectors to create a more efficient and equitable food system. They come from various stakeholder groups: large food companies, tech startups, investors, foundations, nonprofits and policymakers. They have a wide spectrum of motivations ranging from hunger relief to job creation, environmental impact to financial returns. However, **these diverse stakeholders hold this in common: they see food waste as a solvable problem and a tremendous opportunity to create value.**

**2018 marked the transition from awareness to action** towards achieving the national goal to cut food waste in half by 2030. As we enter the new year, I invite you to take a moment to reflect, celebrate what we've accomplished together this past year and look ahead to what's needed to accelerate solutions to food waste in 2019 and beyond.

Food waste has emerged as a priority among the business, startup, investment and policy communities.

**Two-thirds of the top 50 global food companies are now committed to Sustainable Development Goal (SDG) 12.3 to cut food waste in half by 2030.** IKEA has set the most aggressive timeline to achieve this goal by 2020. Kroger has set the most ambitious target of zero food waste by 2025. Walmart announced their Eden technology that will save \$2 billion in food waste costs over the next 5 years. *Food businesses must now translate their ambitious public commitments into demonstrated progress.*

**Over 500 for-profit and nonprofit startups are supplying prevention, recovery and recycling solutions.** Apeel Sciences launched a plant-based coating that doubles the shelf-life of fruits and vegetables and closed a \$70 million funding round. Imperfect Produce expanded its ugly produce delivery to a 12th city and received a major investment from NBA all-star Kevin Durant. Replate now serves 300 cities with its "Uber for food recovery" model. Generate Capital became the largest owner-operator of food waste digesters in the U.S. *Startups must now achieve scale equal to the size of the problem through rapid organic growth or through a massive wave of mergers and acquisitions.*

**\$125 million in venture capital and \$134 million in philanthropic funding are now being invested in food waste.** Silicon Valley giants Andreessen Horowitz and Viking Global led venture capital while Rockefeller Foundation and Walmart Foundation led philanthropic capital and are joined by more than 2,750 funders across the U.S. The Kroger Co. Foundation and General Mills Foundation each launched dedicated funding programs for food waste solutions. *Capital providers of all types must now double their efforts to meet the \$18 billion in investment needed over the next decade.*

**More than 90 pieces of new legislation were introduced across 30 states and at the federal level last year.** Five states, including Massachusetts and California, and five cities, including New York City, now prohibit food waste from being sent to landfill, creating market conditions for innovation. The 2018 Farm Bill included unprecedented support for food waste solutions, including more than



Chris Cochran (right) and Emily Broad Leib (left) at a happy hour during the 2018 U.S. Food Waste Summit.

*\$150 million in funding. Policymakers must now roll out a 50-state organic landfill plan, continue donation tax incentives and remove cumbersome regulation like state-specific date label requirements.*

At ReFED, we believe that food waste is a solvable problem and a tremendous opportunity to increase food security, spur economic growth and protect the environment. Achieving the national goal to cut food waste in half by 2030 will require a systems approach and our collective action. As we enter 2019 and beyond, we must come together to create the food system that we need and deserve.

I am incredibly grateful to you, our funders and partners, who make this work possible.

Sincerely,

A handwritten signature in black ink that reads "Chris Cochran".

**CHRIS COCHRAN**  
EXECUTIVE DIRECTOR



# Our Work:

## Identifying and accelerating solutions through economics and data

### FOOD WASTE SOLUTIONS

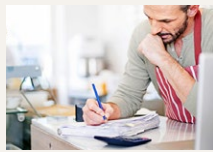
The ReFED Roadmap has identified 27 of the most cost-effective, scalable solutions to reduce U.S. food waste.

### PREVENTION

#### 1 CONSUMER EDUCATION CAMPAIGNS

Conducting advocacy campaigns to raise awareness and educate consumers about ways to save money and prevent wasted food.

#### 2 WASTE TRACKING AND ANALYTICS



Providing restaurants and food service providers with data on wasteful practices to inform behavioral and operational changes.

#### 3 STANDARDIZED DATE LABELING



Standardizing food label dates, including eliminating visible “sell by” dates to reduce consumer confusion.

#### 4 PRODUCE SPECIFICATIONS (IMPERFECT PRODUCE)

Accepting and integrating the sale of off-grade produce for use in food-service and restaurant preparation and for retail sale.

#### 5 PACKAGING ADJUSTMENTS

Optimizing food packaging size and design to ensure complete consumption by consumers and avoid residual container waste.

#### 6 SMALLER PLATES

Providing consumers with smaller plates in self-service, all-you-can-eat dining settings to reduce consumer waste.

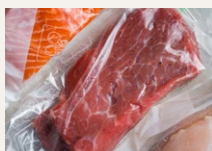
#### 7 SECONDARY RESELLERS

Businesses that purchase unwanted processed food and produce directly from manufacturers/distributors for discounted retail sale to consumers.

#### 8 TRAYLESS DINING

Eliminating tray dining in all-you-can eat dining establishments to reduce consumer waste.

#### 9 SPOilage PREVENTION PACKAGING



Using active intelligent packaging to prolong product freshness and slow down spoilage of perishable produce and meat.

#### 10 IMPROVED INVENTORY MANAGEMENT



Improvements in retail inventory management systems to track an average product's remaining shelf-life and reduce days on hand.

#### 11 MANUFACTURING LINE OPTIMIZATION

Targeting systemic and sporadic waste generation by optimizing equipment operating conditions, and addressing production line design flaws.

#### 12 COLD CHAIN MANAGEMENT

Reducing product loss during shipment to retail distribution centers by using direct shipments and cold-chain-certified carriers.

### RECOVERY

#### 13 DONATION TAX INCENTIVES

Expanding federal tax benefits for food donations to all businesses and simplifying donation reporting for tax deductions.

#### 14 STANDARDIZED DONATION REGULATION

Standardizing local and state health department regulations for safe handling and donation of food through federal policy.

#### 15 DONATION MATCHING SOFTWARE



Using technology platforms to connect individual food donors with recipient organizations to reach smaller-scale food donations.

#### 16 DONATION TRANSPORTATION

Providing small-scale transportation infrastructure for local recovery as well as long-haul transport capabilities.

#### 17 DONATION STORAGE AND HANDLING

Expanding temperature-controlled food distribution infrastructure and labor availability to handle additional donation volumes.

#### 18 VALUE-ADDED PROCESSING

Extending the usable life of donated foods through processing methods such as making soups, sauces, etc.

#### 19 DONATION LIABILITY EDUCATION

Educating potential food donors on donation liability laws.

### RECYCLING

#### 20 CENTRALIZED COMPOSTING

Transforming food from retail/restaurants into compost at large-scale facilities to create economies of scale.

#### 21 CENTRALIZED ANAEROBIC DIGESTION (AD)



A series of biological processes in which biodegradable material is broken down into biogas and digestate.

#### 22 WATER RESOURCES RECOVERY FACILITY WITH AD

Delivering waste to a municipal water resources recovery facility (WRRF) where it is treated with anaerobic digestion and turned into a biosolid for beneficial application to land.

#### 23 COMMERCIAL GREYWATER

Greywater aerobic digesters break down food organics into a soluble state, where it can be flushed into the sewage system.

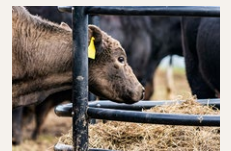
#### 24 COMMUNITY COMPOSTING

Transforming food from homes into compost at small, community-level facilities.

#### 25 HOME COMPOSTING

Keeping a small bin for on-site waste at residential buildings to be managed locally.

#### 26 ANIMAL FEED

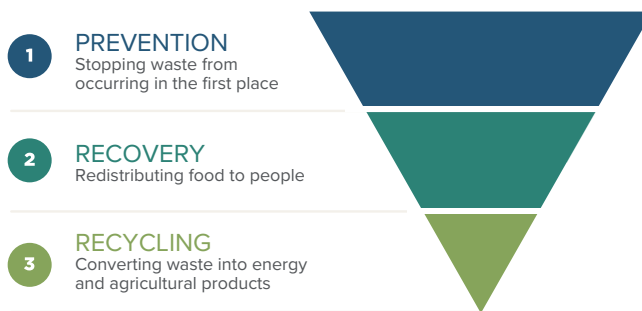


Feeding food waste to animals after it is heat-treated and dehydrated and either mixed with dry feed or directly fed.

#### 27 IN-VESSEL COMPOSTING

Composting at small-scale at institutions of businesses with heat and mechanical power.

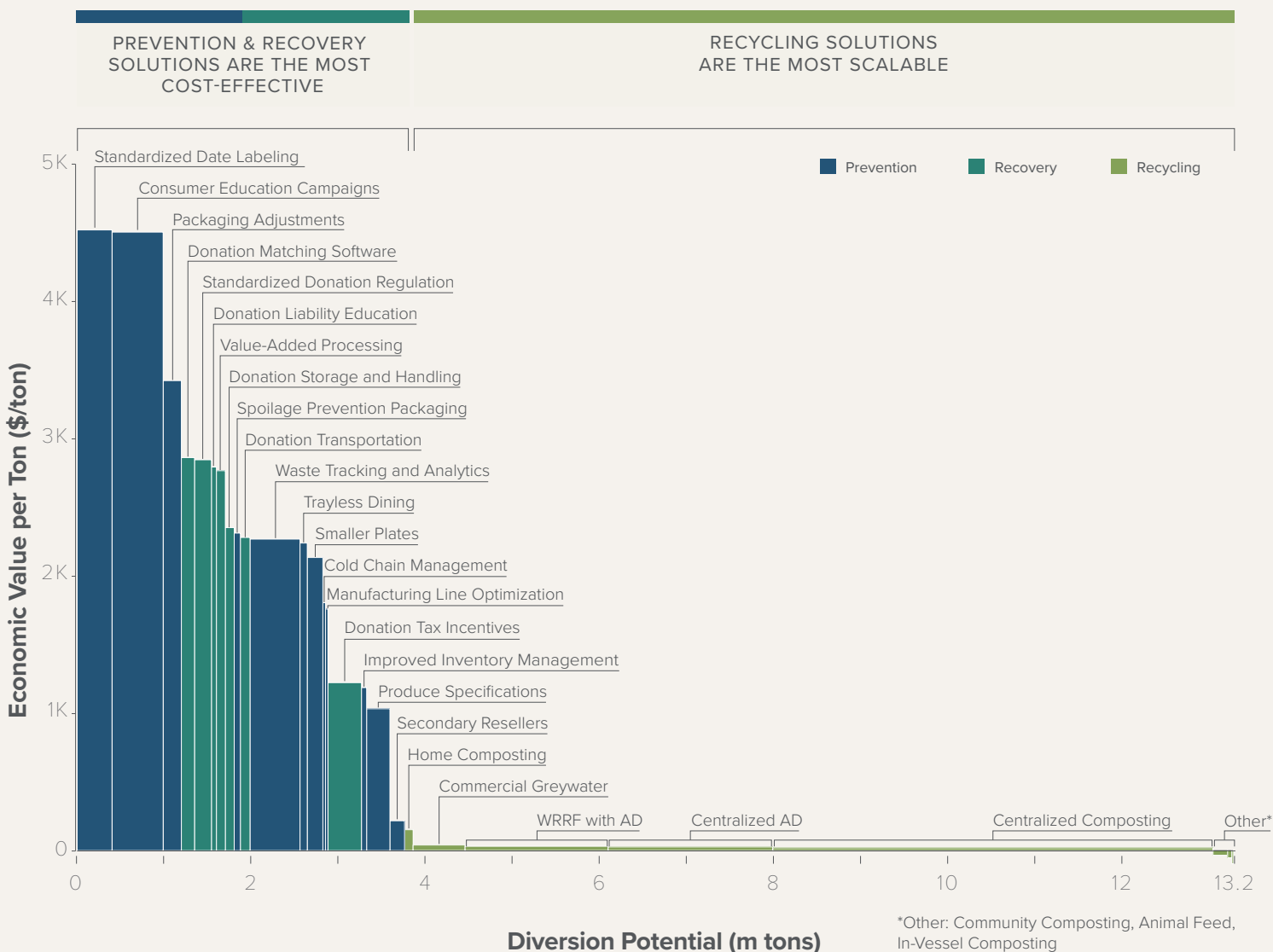
## FOOD RECOVERY HIERARCHY



### HOW DO I READ THE COST CURVE?

The Cost Curve displays each solution in order of greatest to lowest Economic Value in dollars per ton of food waste diverted. The width of each bar reflects the feasible near-term diversion potential for each solution by weight measured in tons of waste reduced per year. The total area of each bar represents the Economic Value, and the bar's color represents the prevention, recovery or recycling categories.

## MARGINAL FOOD WASTE ABATEMENT COST CURVE



# Our Progress:

## Big wins in 2018

THE FOOD WASTE MOVEMENT IS GROWING RAPIDLY  
*2018 was a year of progress, growth and learning  
 for ReFED and the sector.*

FOOD WASTE IS MAKING HEADLINES

*ReFED contributed to 120 major  
 news stories in 2018.*

### FINANCIAL TIMES

*Businesses find appetite  
 to cut food waste*

DECEMBER 4, 2018

### THE WALL STREET JOURNAL

*Tech startups take a  
 bite out of food waste*

JANUARY 23, 2018

### Forbes

*More than \$125 million  
 poured into food waste  
 startups in 2018*

NOVEMBER 14, 2018

### The Washington Post

*The climate impact of  
 the food in the back  
 of your fridge*

JULY 31, 2018

### WASTE DIVE

*Congress passes Farm  
 Bill with unprecedented  
 level of food waste action*

DECEMBER 13, 2018

## 1 FOOD WASTE HAS EMERGED AS A C-SUITE PRIORITY AMONG THE BUSINESS, INVESTMENT AND POLICY COMMUNITIES.

*ReFED influences decision-makers across the food system as the leading source of data-driven guidance on food waste solutions.*



**350 leaders advanced solutions at the 2018 U.S. Food Waste Summit through collaboration and partnership.** Co-hosts ReFED and Harvard Law School Food Law and Policy Clinic convened 350 food businesses, philanthropic, private and public capital providers, innovators, policymakers, researchers, nonprofits and government agencies to advance high-impact food waste solutions.



**Pacific Coast Collaborative states and cities pledged to cut food waste in half by 2030 at the Global Climate Action Summit.** The states of California, Oregon, Washington, province of British Columbia and cities of San Francisco, Oakland, Portland, Seattle and Vancouver are joining together to cut food waste in half. ReFED co-hosted the More Feast Less Footprint event at the Global Climate Action Summit with governors and mayors of the Pacific Coast Collaborative, WWF and NRDC.



**Food waste stole the main stage at major conferences and events, including the Wall Street Journal Global Food Forum.** ReFED influenced stakeholders at more than 25 high-profile events this year, including the Wall Street Journal Global Food Forum, GreenBiz, Future Food-Tech, SOCAP, Feeding America's Food Rescue Summit, FoodTank and more.

VOICES  
OF OUR  
STAKEHOLDERS



“ReFED has been integral in helping to develop our strategy, governance and impact measures for the Innovation Fund. We know we can’t do it alone.”

**SUNNY REELHORN PARR**  
KROGER CO. FOUNDATION



“ReFED has been instrumental in helping us size and understand this complex issue, build our network of fellow problem solvers, evaluate innovative solutions and determine where our capital and support can have the greatest impact.”

**ELIZABETH WASHBURN**  
DRAPER RICHARDS KAPLAN  
FOUNDATION



“ReFED has been instrumental to our success at Replate. They helped us better understand the food waste landscape and connected us to the right stakeholders to grow and fund our innovation.”

**MAEN MAHFOUD**  
REPLATE

## 2 TWO-THIRDS OF GLOBAL FOOD BUSINESSES ARE NOW COMMITTED TO SUSTAINABLE DEVELOPMENT GOAL 12.3 TO CUT FOOD WASTE IN HALF.\*

ReFED works with leading food businesses to reduce food waste by adopting prevention, recovery and recycling solutions.

### Three Action Guides were published to address the \$57 billion of food waste generated by consumer-facing businesses.

ReFED partnered with the Food Waste Reduction Alliance and collaborated with 45 major food businesses and 110 industry experts to publish Action Guides for the retail, foodservice and restaurant sectors. These sectors generate 40% of total U.S. food waste and indirectly influence the remaining 60% of waste generated by upstream producers and downstream consumers. Blue Apron cut food waste by 59% with help from ReFED in developing their food waste baseline and conducting a cost-benefit analysis of solutions for their CFO, achieving the company’s Food Loss and Waste 2030 Champion goal. Compass Group piloted solutions with ReFED at the World Bank headquarters in DC and at Portland State University (PSU). PSU saw a 20% reduction in plate waste as a result of consumer education.

\* Champions 12.3



## 3 \$125 MILLION IN VENTURE CAPITAL AND \$134 MILLION IN PHILANTHROPIC FUNDING ARE NOW BEING INVESTED IN FOOD WASTE SOLUTIONS.

ReFED creates and supports markets for food waste solutions by increasing investment from capital providers and helping innovations reach scale.



### 50 innovators and 30 food businesses, funders and policymakers connected at the U.S. Food Waste Innovator Workshop.

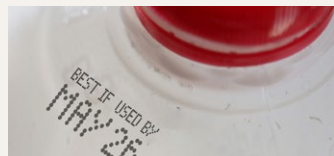
ReFED, Harvard Business School and Harvard Law School co-hosted the 2018 Innovator Workshop ahead of the U.S. Food Waste Summit. 50 participating innovators came away from the event with new funding, client leads and partnerships. Food businesses in attendance included Blue Apron, Compass, Darden, General Mills, Kroger, Marriott, McDonald’s, Panera Bread, Sodexo, Tyson, Walmart and Whole Foods.

### Investment Report reveals an increase in food waste funding.

ReFED’s 2018 U.S. Food Waste Investment Report revealed foundation funding reached \$134 million in 2016 and venture capital funding reached \$125 million in 2018.

### Kroger partners with ReFED to create strategy for Zero Hunger | Zero Waste \$10 Million Innovation Fund.

ReFED serves as Strategic Advisor to The Kroger Co. Foundation’s \$10 Million Innovation Fund. ReFED supports The Foundation in designing the fund’s strategy, governance and operations to help realize their vision of a world with Zero Hunger | Zero Waste.

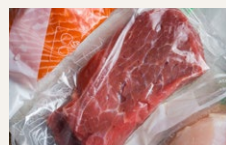


### Industry is on track to achieve widespread adoption of standardized date labels in 2019.

ReFED continued to support national adoption of standardized date labeling by advising major retailers, quantifying consumer behavior change with Ohio State University and developing an impact measurement methodology.

### The Future of Food Packaging Initiative launched to increase adoption of packaging solutions that reduce food waste.

ReFED launched the Future of Food Packaging Initiative in collaboration with Ameripen. The Initiative takes a comprehensive approach to food packaging, with a vision to accelerate solutions that simultaneously address food waste and plastics pollution.





# Our Organization:

## Growing capacity to scale impact

### FROM PROJECT TO INDEPENDENT ORGANIZATION, REFED IS GROWING CAPACITY TO SCALE IMPACT.

ReFED was formed in 2015 to catalyze the then-emerging food waste movement by publishing the *Roadmap to Reduce U.S. Food Waste by 20 Percent*, a first-of-its-kind economic analysis.

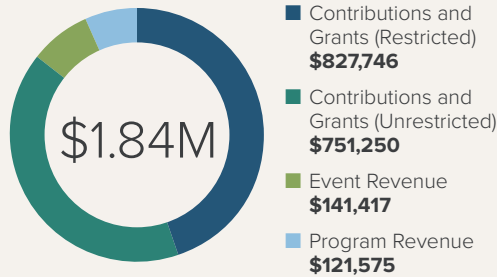
Unique in its ability to provide the economics and systems-approach needed to coordinate and drive national action, it quickly became clear that ReFED could address a gap in the sector by becoming a permanent organization.

In 2018, ReFED began its transition from a fiscally sponsored project to a permanent, independent nonprofit. This transition included establishing the ReFED, Inc. entity and adopting formal policies and structures to enable programmatic and operational success.

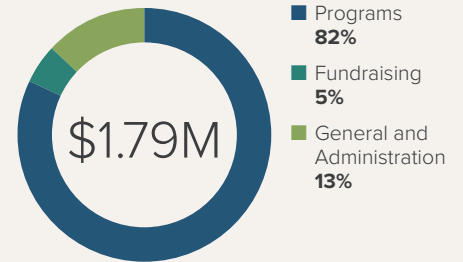
### FINANCIALS

*ReFED maintained a healthy financial position throughout 2018, exceeding revenue goals and managing expenses against the annual budget. While contributions and grants continue to make up the majority of the organization's revenue, new revenue streams were introduced to bolster financial sustainability while furthering ReFED's mission.*

#### 2018 REVENUES



#### 2018 EXPENSES



### INAUGURAL BOARD

*ReFED welcomed its inaugural Board of Directors in summer 2018, bringing leadership and expertise from across the food system.*



**JESSE FINK**  
FINK FAMILY FOUNDATION  
REFED BOARD CHAIR



**ROB KAPLAN**  
CIRCULATE CAPITAL  
REFED BOARD TREASURER



**DANA GUNDERS**  
NEXT COURSE, LLC  
REFED BOARD SECRETARY



**NICOLA DIXON**  
GENERAL MILLS FOUNDATION



**STEVEN SWARTZ**  
THE WONDERFUL COMPANY



VOICES  
OF OUR  
STAKEHOLDERS



“What interests us most about food waste and food waste solutions is that it’s a very solvable problem. ReFED is creating the platform of the big tent, and has made food waste understandable.”

**JESSE FINK**  
REFED BOARD CHAIR



“In a few short years, ReFED has established itself as the leading thought partner to almost any company, foundation, investor or innovator pursuing solutions towards less wasted food.”

**DANA GUNDERS**  
REFED BOARD SECRETARY



“The Wilson Trust is proud to support ReFED through a challenge grant aimed at exponentially building their organizational capacity and ability to develop a more efficient, equitable food system.”

**ROBERT FEIDELSON**  
WILSON TRUST

OUR TEAM

*ReFED’s team brings together backgrounds in food business strategy and sustainability, innovation, finance, data analytics, research and communications.*



# Our Objectives:

## Increasing our impact in 2019 and beyond

### SCALING SOLUTIONS

*In 2019 ReFED will focus on opportunities to catalyze impact and collaborate with partners who can help us transform the food system.*

#### **1** Increase knowledge of how to reduce U.S. food waste.

- a. Refresh the Roadmap as a digital-first, continuously improved resource that continues to serve as the leading source of data-driven guidance on U.S. food waste and solutions.
- b. Host the 2019 U.S. Food Waste summit in collaboration with leading organizations.

#### **2** Increase investment in food waste solutions and increase innovator capacity to prevent, recover and recycle food waste.

- a. Increase funding for solutions by advising capital providers with a focus on catalytic philanthropic capital.
- b. Demonstrate a pathway to double U.S. food donations by hosting a food recovery accelerator with a focus on technology and nonprofit earned income models.

#### **3** Increase prevention, recovery and recycling by food businesses.

- a. Achieve widespread industry adoption of standardized date labeling.
- b. Scale packaging solutions that dramatically increase the shelf life of food.

## PREDICTIONS FOR FOOD WASTE IN 2019



“A country with significant food waste should not also be a country with significant food insecurity. The increased focus on building people-centered, demand-driven solutions to food waste will allow more nutritious food to be rescued for people facing hunger.”

**CLAIRE BABINEAUX-FONTENOT**  
FEEDING AMERICA



“To stop global warming, reducing food waste is as vital as solar, wind and forests. It’s quickly gaining its rightful place on the action agenda – from cities to businesses and beyond.”

**DR. KATHARINE WILKINSON**  
PROJECT DRAWDOWN



“The waste in the food system today presents a similar value-creation opportunity as the energy efficiency and solar markets of 10-15 years ago, with similar trends in public awareness, policy action and advances in technology and business models.”

**JIGAR SHAH**  
GENERATE CAPITAL



“Technology will be a critical enabler of achieving a global ‘foodshot’ to cut food waste in half. 2019 and beyond will see development and application of breakthrough technologies to transform the efficiency of the food system.”

**MICHEL BAKKER**  
GOOGLE

# Our Funders:

## Investing in ReFED: Investing in an efficient and equitable food system

### FUNDING

ReFED's work is made possible with generous support from and in partnership with our funders.

AJANA  
FOUNDATION

ARJAY R & FRANCES  
F MILLER  
FOUNDATION

ATTICUS  
TRUST

 The Claneil Foundation

THE CROWN FAMILY



GRACE  
Communications Foundation

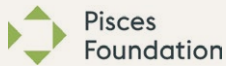
KENNETH GOLDMAN  
DONOR FUND



FOUNDATION



PETER WELLES



ROBERT W. WILSON  
CHARITABLE TRUST



### THE WILSON CHALLENGE

Maximizing impact through a challenge grant from the Robert W. Wilson Trust.

The Robert W. Wilson Trust is proud to award ReFED a Challenge Grant that provides a \$1 match to every \$3 of newly committed philanthropic contributions to ReFED in 2018 and 2019, with the goal of raising \$1 million from new donors.

In 2018, ReFED welcomed four new donors who qualify for matching funding from the Robert W. Wilson Trust, including The Kroger Co. Foundation, Peter Welles, Arjay R & Frances F Miller Foundation and an anonymous donor.

### ENGAGE WITH REFED

Join us on our mission to accelerate solutions to U.S. food waste.

### PHILANTHROPIC SUPPORT

Charitable contributions from mission-aligned donors allow ReFED to fulfill its mission and produce public goods that will advance the food waste sector.

### PROGRAMMATIC COLLABORATION

ReFED's programs are made possible in partnership and collaboration with food businesses, capital providers, innovators, policymakers and peer nonprofits and consultancies.

### STRATEGIC ADVISORY

Food businesses, capital providers and others seek out ReFED's expertise, experience and network to further financial, social and environmental goals by reducing food waste.

### WAYS TO CONNECT

Learn more and access resources at [refed.com](http://refed.com)

Join the conversation.



For more ways to get involved email us at [info@refed.com](mailto:info@refed.com)



