



EXPLAINER

# How Reducing Food Waste Promotes A Circular Economy

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## INTRODUCTION

Reducing food waste is a key strategy in transitioning to a circular economy—one that minimizes waste and maximizes resource usage. Food waste contributes 6.1% of greenhouse gas emissions in the United States and costs the country \$473 billion a year, among other impacts.

By preventing food from going to waste in the first place, recovering and redistributing surplus food, and diverting food from landfills through strategies that aim to capture its nutrients and byproducts, we can catalyze the food system into becoming more resilient, sustainable—and circular.



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## TRANSITIONING OUR FOOD SYSTEM

# *What is a Circular Economy?*

A circular economy is a system that aims to minimize waste and maximize resource use. Unlike resources in a traditional economy—which are extracted, used, and then discarded—resources in a circular economy are in use for as long as possible, and waste is minimized through strategies like recycling and reusing. If approached with circular economy principles, food has the potential to be an entirely circular product.

In a circular economy, the primary focus of addressing food waste should be on preventing food from becoming waste in the first place. For food that is unavoidably lost from the human consumption chain, we should then treat food like other materials whose "waste" streams represent valuable resources that are full of potential for circular transformation, helping to ensure that food materials go to better use than rotting in a landfill.

38%

of all food in the United States goes unsold or uneaten each year, causing

6.1%

of U.S. greenhouse gas emissions and costing the country

\$473B

a year, among other impacts.



# Making Food Circular

For food at risk of going to waste, the **U.S. EPA's Wasted Food Scale** identifies five major categories of destinations in order of environmental preference considering both circularity and life-cycle analysis. The most preferred destination for surplus edible food is food donation, and for edible byproducts that are converted into other human food products. If food waste is not captured here, it should be used for animal feed. Then the most preferred destination is in compost or anaerobic digestion (with proper use of digestate). While the former increases soil fertility, the latter creates useful digestates and biosolids.

Following this system, food can be recaptured at several points from farm to fork, so that it can be utilized and kept from going to waste. If implemented at each stage of the supply chain, these regenerative practices have the ability to reduce or even eliminate food waste altogether, further solidifying food as a resource that is wholly compatible with a circular economy.



## THE PRINCIPLES OF A CIRCULAR ECONOMY



### *Eliminate Waste & Pollution*

**Prevention is the most powerful solution from a climate and resource perspective.**

Prevention reduces methane emissions from landfill disposal and makes the best use of the resources necessary to produce food and move it through the supply chain. Prevention strategies include:

- Optimizing distribution
- Upcycling byproducts into food products
- Improving order forecasting and fulfillment for food buyers
- Designing packaging to encourage less waste
- Educating consumers on proper food management



## THE PRINCIPLES OF A CIRCULAR ECONOMY



### *Circulate Products & Materials*

**Capturing and redistributing edible food through food rescue efforts is the best way to repurpose surplus food.**

When rescuing whole foods for human consumption can't be done, here are some options that can capture nutrients and byproducts:

- Animal feed
- Compost
- Anaerobic Digestion





## THE PRINCIPLES OF A CIRCULAR ECONOMY



### *Regenerate Nature*

**Regenerative farming practices maximize soil health and limit the need for synthetic inputs, creating a food economy that is truly circular.**

Combining compost use with the following practices creates healthy soils, which can help restore the natural carbon cycle and have the ability to hold and absorb water, creating more resilient farmland:

- Diversifying crop varieties
- Planting cover crops
- Utilizing agroforestry practices
- Implementing rotational grazing



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# Food Waste Solutions to Promote a Circular Economy

Transforming our economy into a circular one takes all of us. Whether you're a grower, manufacturer, retailer, foodservice stakeholder, policymaker, or capital provider, here are some solutions for you to reduce food waste and promote a circular economy.

*For more information about dozens of food waste solutions, visit the ReFED Insights Engine at [insights.refed.org](https://insights.refed.org).*

## SECTOR RECOMMENDATIONS

### Producers

- Identify alternative markets to diversify sales channels and sell crops otherwise left in the field.
- Propose new buyer arrangements that expand product specifications, establish new contract types, and lead to better upstream communication of demand.
- Establish new donation channels with food recovery organizations and gleaners.
- Participate in emerging tools and efforts to better align production with market demand and track harvest and yield patterns over time.

### Manufacturers

- Upcycle edible byproducts.
- Optimize manufacturing lines to reduce waste during production and product line changeovers.
- Improve package design to enable transferability between supply chains, encourage consumer behavior that reduces waste, and implement date labeling.
- Recharge distressed sales through internal and external channels.
- Eliminate mandatory destruction requirements and opt to allow donation instead.





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## Retailers

- Strengthen buyer-grower relationships.
- Strive for innovative purchasing models to ensure full utilization of products.
- Revise product specifications to accept broader cosmetic variety.
- Optimize forecasting and inventory management systems throughout operations.
- Employ dynamic pricing models.
- Implement advanced distribution technologies.
- Educate and assist customers in better home food management.

## Restaurants & Foodservice

- Offer flexible portion sizes and “a la carte” choices.
- Implement waste tracking processes.
- Design low-waste menus that prioritize smaller portion sizes, product repurposing, and whole-product utilization.
- Establish relationships with food donation organizations.

## Policymakers

- Fight for better organic waste management.
- Fund research and technology that prioritizes innovation.
- Improve and expand laws and policies related to food donation.
- Back legislation related to consumer education.

## Capital Providers

- Utilize ReFED’s [Capital Tracker](#), which offers a deep dive into private capital food waste investments over the last ten years, to determine where to focus your efforts.
- Join collaborative networks like the [ReFED Food Waste Funder Circle](#) to learn the latest in food waste innovation.
- Explore the report [Reducing Food Loss & Waste: A Roadmap for Philanthropy](#), which identifies \$300 million in ready-to-fund investments that can transform the food system.



# Connect With Us

## ABOUT ReFED

ReFED is a national nonprofit that catalyzes the food system toward evidence-based action to stop wasting food – for the climate, environment, people, and the economy. ReFED promotes the adoption of food waste solutions across the food supply chain by convening the community, delivering actionable evidence and insights, and seeding and accelerating solutions and levers. ReFED's vision is a sustainable, resilient, and inclusive food system that optimizes environmental resources, minimizes climate impacts, and makes the best use of the food we grow.

refed.org  

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