



Halving Waste of Food: Leveraging Partnerships, Research, Strategy to Maximize Co-Benefits

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Overview

- ▶ Halving waste of food – solutions, research
 - ▶ Co-Benefits – multifunctional
 - ▶ And tradeoffs, unintended consequences, nuances
 - 4 Examples: healthy eating, food safety/freshness, composting, levels of hierarchy
 - ▶ Partnerships



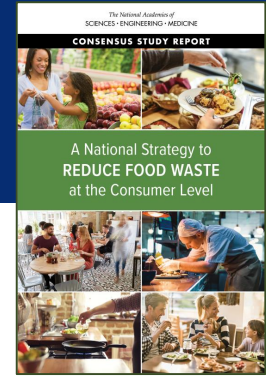


Public health
research, education,
and practice for a
healthier, more
sustainable food
system

RECIPES: Resilient, Equitable, and Circular Innovations
with Partnership and Education Synergies

Food waste research network

- > 40 researchers, 14 institutions
- Launched October 1, 2021, 5 year, \$15M (NSF)
- Goal to address key research questions needed to address wasted food & advance sustainable food systems; includes focus on regions, rural-urban interconnections, partnerships



NASEM Consensus
panel report: *A
National Strategy to
Reduce Food Waste
at the Consumer
Level*

<https://clf.jhsph.edu/>

<https://Wastedfood.American.edu>

<https://www.nap.edu/catalog/25876/a-national-strategy-to-reduce-food-waste-at-the-consumer-level>

Co-Benefits

Climate and environment

Nutrition

Food safety

Food security – short term

Food security – longterm

Environmental justice

Jobs

FOOD & HEALTH: AN OVERVIEW

By Roni A. Neff, Rebecca Kanter, and Stefanie Vandevijvere

Reducing Food Loss And Waste While Improving The Public's Health

DOI: 10.3377/hlthaff.2015.0647
HEALTH AFFAIRS 34,
NO. 11 (2015): 1821–1829
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The People-to-People Health
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Bloomberg School of Public Health

WHAT'S NEEDED

40+
SOLUTIONS

\$14B
INVESTMENT ANNUALLY

POLICY CHANGES

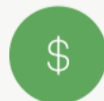
INNOVATION

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

REFED: Top 10 Solutions Vary with Goal



Top Ten Solutions | **GHG EMISSIONS AVOIDED IN MTCO₂e**

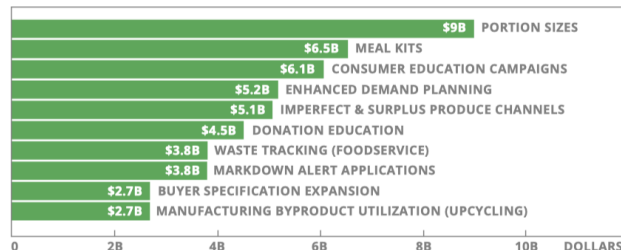


GHG avoided:

1. Portion size
2. Meal kits
3. Consumer education campaigns



Top Ten Solutions | **NET FINANCIAL BENEFIT**

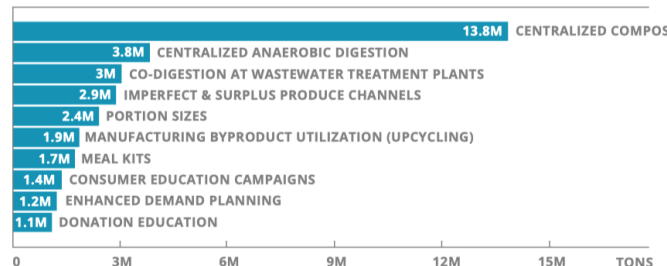


Net financial benefit:

1. Portion size
2. Meal kits
3. Consumer education campaigns



Top Ten Solutions | **TONS WASTE DIVERTED**



Tons waste diverted:

1. Centralized composting
2. Centralized AD
3. Co-digestion at wastewater treatment plants

Win - Win - Win - Win - Win

- ▶ Nutrition
- ▶ Food safety
- ▶ Food security – short term
- ▶ Food security – longterm
- ▶ Environmental justice
- ▶ Climate and environment
- ▶ Jobs

Food waste is A win, A solution for all of these

- ▶ If done right
- ▶ Not *THE* solution
- ▶ Also tradeoffs
- ▶ Need to test impacts across domains, identify & address tradeoffs
 - 4 Examples: healthy eating, food safety/freshness, composting, levels of hierarchy

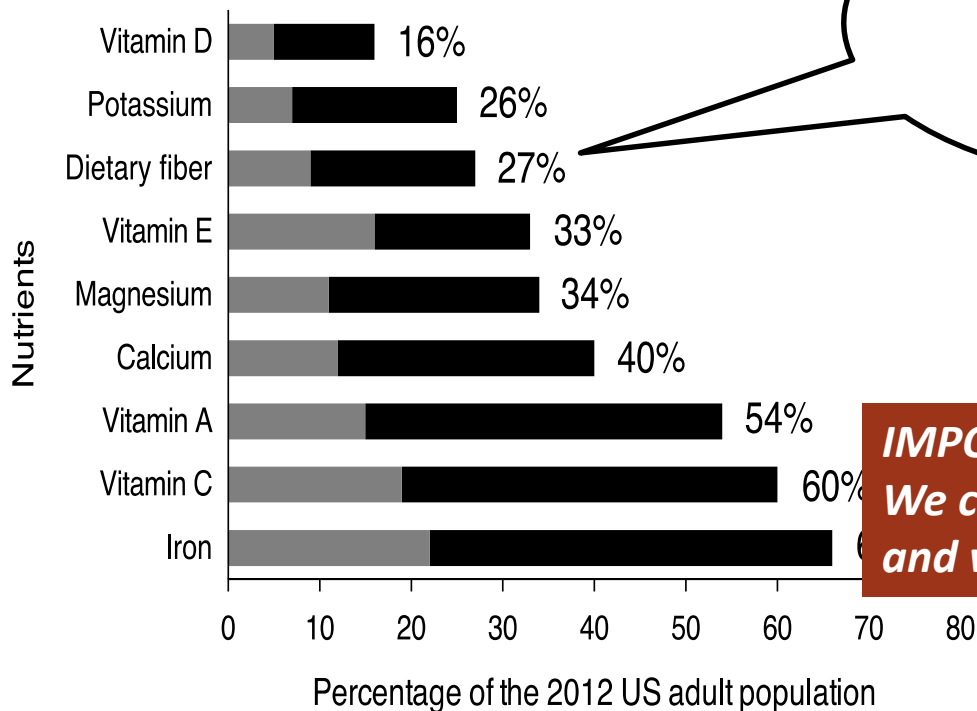




Tradeoffs

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“Nutrient-Days” Lost



“Each day we waste enough dietary fiber to meet RDA for 74M women or 48M men -- approx. **27% US adult population.**”

IMPORTANT CAVEAT:

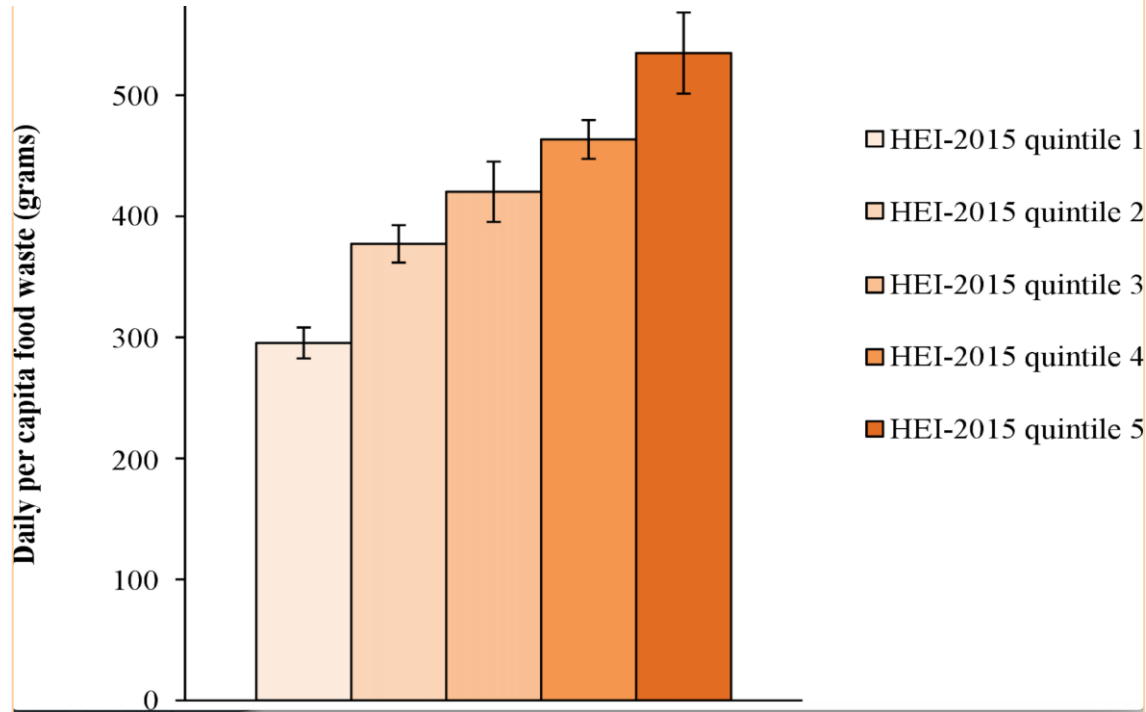
We can't actually recover ALL the food and wouldn't necessarily want to!

■ Contribution of retail level ■ Contribution of consumer level



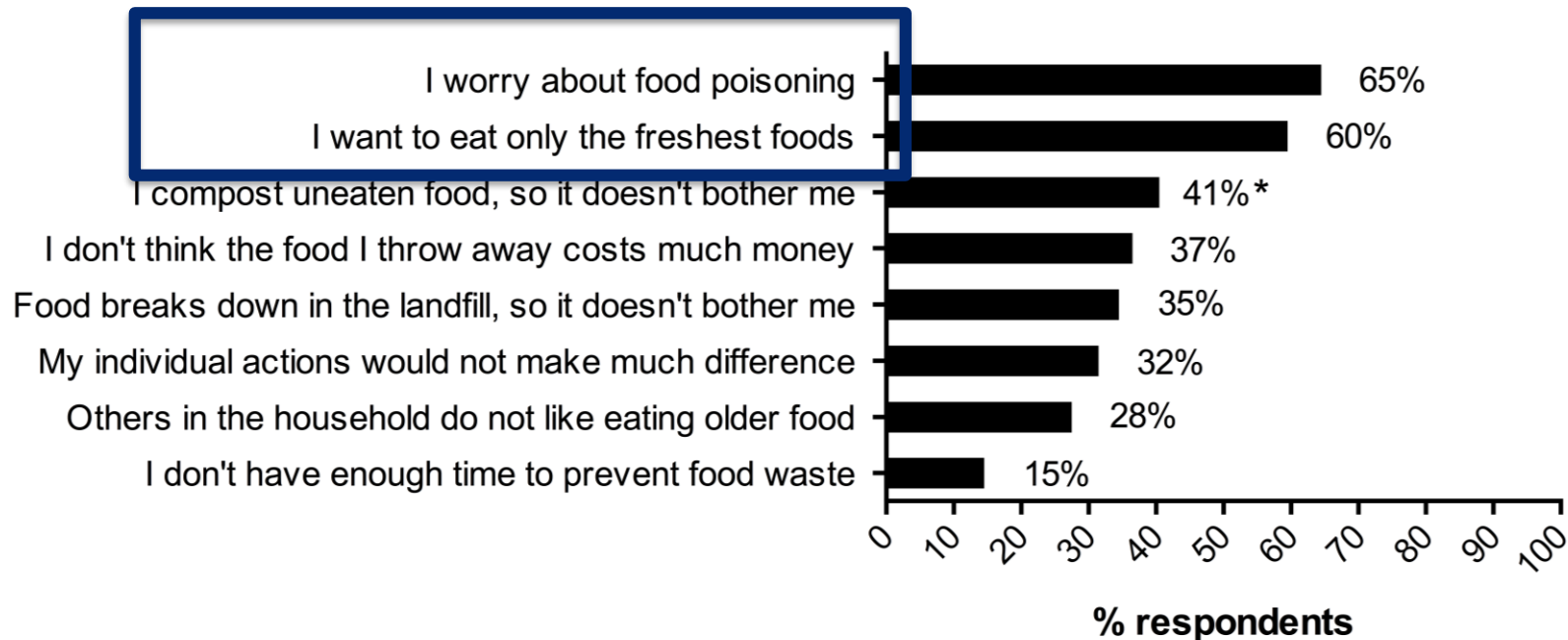
Tradeoffs 1: Waste rises with healthy eating (perishability)

Food waste by Healthy Eating Index quintile



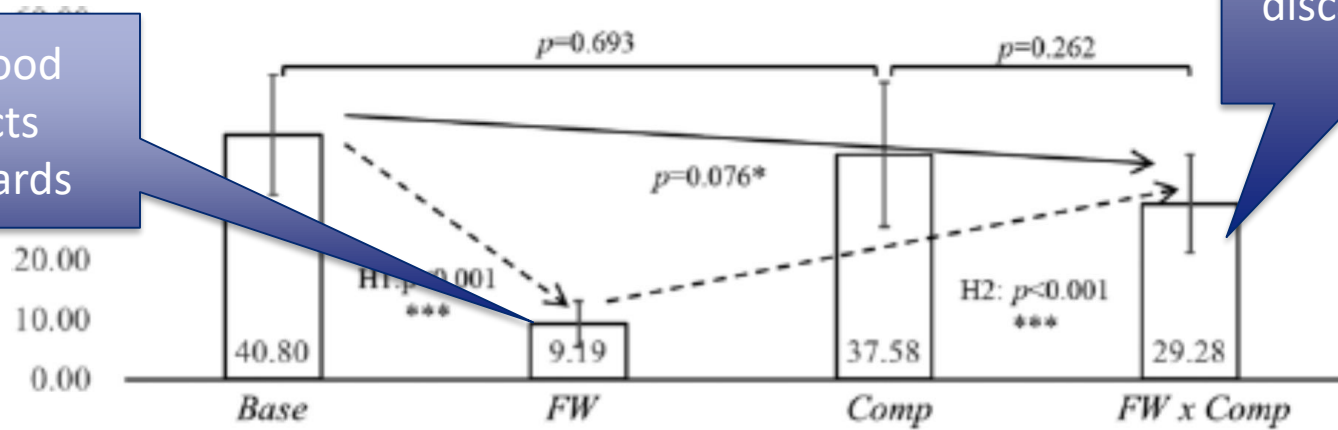
Conrad Z, Niles MT, Neher DA, Roy ED, Tichenor NE, Jahns L. 2018, Relationship between food waste, diet quality, and environmental sustainability. PLoS ONE 13(4): e0195405. <https://doi.org/10.1371/journal.pone.0195405>

Tradeoffs 2: Top consumer reasons for discarding food: concern about food safety, freshness



Tradeoffs 3: Composting - Licensing

Info about food waste effects reduces discards



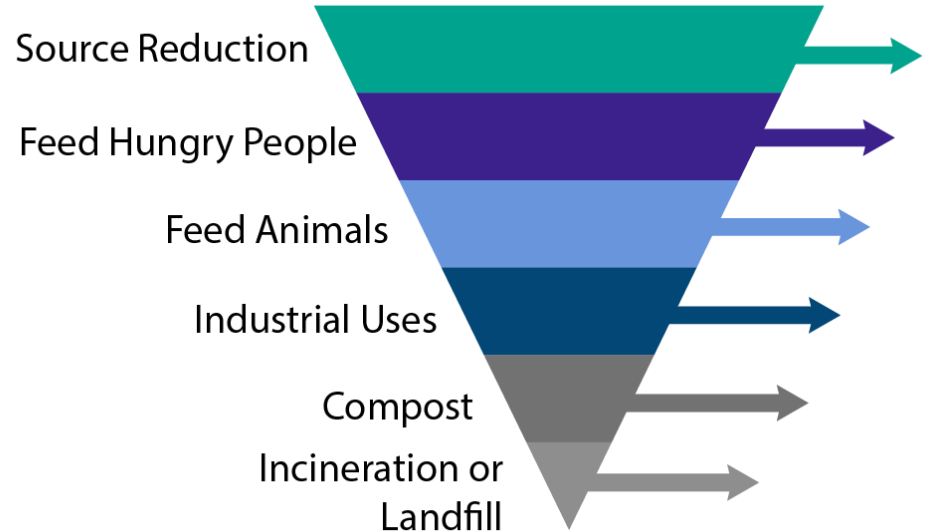
But when told their discards will be composted, discards rise



Tradeoffs 4: Levels of hierarchy

Competition among levels of hierarchy for same food “stock”

Policies keeping food out of landfill can also lead to donations of lower quality food



Complex, nuanced, many research needs

- ▶ Adapt plan to avert undesired consequences, address equity impacts
 - Nutrition, food safety messages – buy/prep what you need, frozen, learning when it's ok to eat
 - Composting initiative includes prevention messaging
 - Allocate food appropriately
 - Focus on dignity, equity
- ▶ Test solutions with eye to full range of consequences within and outside food system
 - Modeling
 - Qualitative approaches (including with those affected, workers)
 - Better designed studies, improved measurement
- ▶ Need everyone in room from the start, those most affected, workers
 - Incentives
 - Need creativity, convergent ideas, new players too





Partnerships

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A National Strategy to Reduce Food Waste at the Consumer Level

*The National Academies of
SCIENCES • ENGINEERING • MEDICINE*

CONSENSUS STUDY REPORT



A National Strategy to REDUCE FOOD WASTE at the Consumer Level



3 Pathways

Change in the Food Environment

- Implement change and innovation in the food industry
- Include food waste reduction in industry certification
- Develop and harmonize sensible date labeling
- Implement state and local policies

Strengthen Consumer's Motivation, Opportunity, and Ability

- Conduct a national behavior change campaign.
- Spread and amplify messages about food waste through influencers
- Include instruction and experiential learning about food literacy in education curricula

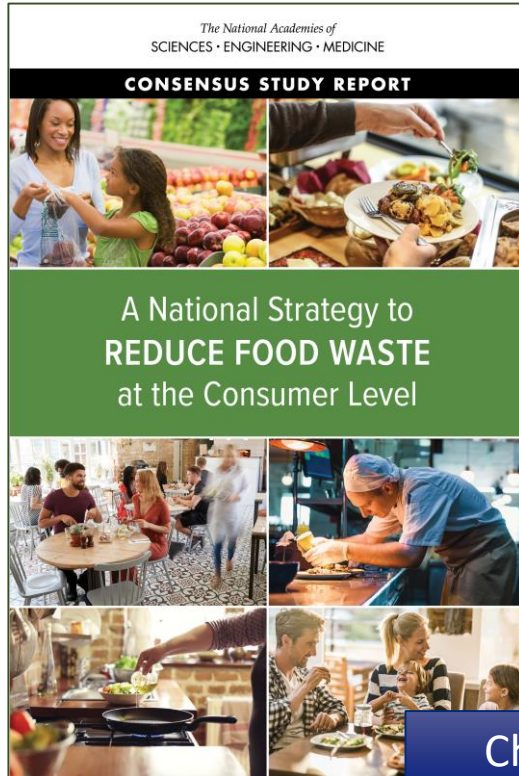
Leverage, Apply Research Findings and Technology

- Support research and technology

Coordination and Partnerships

Partnerships & Relationships - Roles for.....

Winning on Food Waste Initiative



Federal agencies	State and local agencies	Manufacturers, retailers, marketers
The agriculture sector	Food service providers	Food industry organizations
Standards organizations	Nongovernment organizations	Professional associations
Influencers	Schools, colleges and universities	Innovators
Foundations	Researchers and academic institutions	

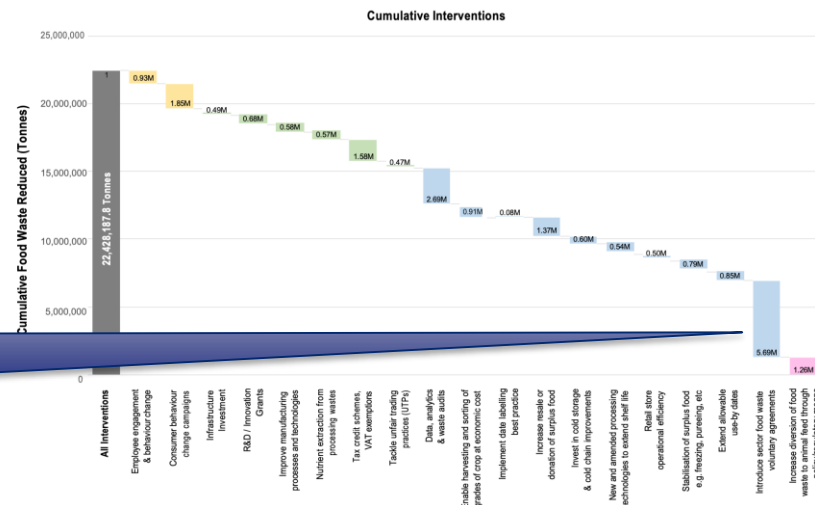
Address research gaps

Change practices

Voluntary Industry Agreements

- ▶ Courtauld Commitment (UK): Series of voluntary agreements since 2005
 - Target-measure-act
 - Best practices, tools, guidance/support, working groups
 - **UK cut post-farmgate food loss and waste per capita by 27% from 2007 baseline to 2018**
 - Surplus food redistribution tripled 2015-20
 - > £100 million business savings, 14:1 ROI per dol
 - 555,000 metric tons CO2e emissions reduced
- ▶ Australia's roadmap -- model of solution impact

Introduce sector food waste voluntary agreements



Pacific Coast Collaborative Voluntary Agreement

- ▶ Newer
- ▶ Public commitment to halving FW by 2030

Retailers



Manufacturers



Resource Partners



Jurisdiction Partners

California

Los Angeles
Oakland
San Francisco
Alameda County

Oregon

Portland

Washington State

Seattle
King County

British Columbia, Canada

Vancouver



Conclusions

- ▶ Addressing food waste has many co-benefits
- ▶ It's complex
- ▶ Need intentional, strategic effort to realize them, address undesired consequences
- ▶ Rooted in partnerships, research
- ▶ Target-measure-act: Opportunity for every organization and us as society

