



Farm to Table to Trash

Breaking the Cycle
Session 2

Activity

Well...

what did you do / notice
since the last session?



Why is food waste an environmental problem?

How big is the problem?





25%

**On average, people waste
25% of the food they buy.**

How much food
produced
on the
planet
is lost or
wasted
every year?

Did we say?



10%
25%
33%
50%

How much food
produced
on the
planet
is lost or
wasted
every year?



10%

25%

33%

50%

% of
farmland
worldwide
used to
produce
wasted food



28%

When food is wasted, so too is the land, water, labor, and energy

used in...

producing,
processing,
transporting,
preparing,
storing, and
disposing of the discarded food



Wasted food

generates about **8 %**
of the world's
heat trapping gases





What can we as consumers do about it?

Stewardship



Cheese paring

Before



Cheese paring

After

Restaurant Leftovers

38% of leftovers taken home are never eaten.



17% of restaurant meals aren't eaten.



55% of leftover restaurant food doesn't get taken home.



Bringing it home...

Ace's (before)



Mary's (after)



Exodus 12

If a household is too small for a whole lamb, it shall join its closest neighbor in obtaining one; the lamb shall be divided in proportion to the number of people who eat of it. [. . .] **8** They shall eat the lamb that same night; they shall eat it roasted over the fire with unleavened bread and bitter herbs. **9** Do not eat any of it raw or boiled in water, but roasted over the fire, with its head, legs, and inner organs. **10** You shall let none of it remain until the morning; anything that remains until the morning you shall burn.



Solutions

Plan

Purchase

Prepare

Salvage

Dispose

Plan

- Keep a running grocery list
- Plan forward
- Plan backward



Purchase

- How much?
- How often?
- In what form?
- What staples to keep in stock?



Prepare

- Substitute ingredients
- Find multiple ways to use foods
- Love leftovers



Dispose





Food Recovery Hierarchy

Most Preferred

Source Reduction

Reduce the volume of surplus food generated

Feed Hungry People

Donate extra food to food banks, soup kitchens and shelters

Feed Animals

Divert food scraps to animal feed

Industrial Uses

Provide waste oils for rendering and fuel conversion and food scraps for digestion to recover energy

Composting

Create a nutrient-rich soil amendment

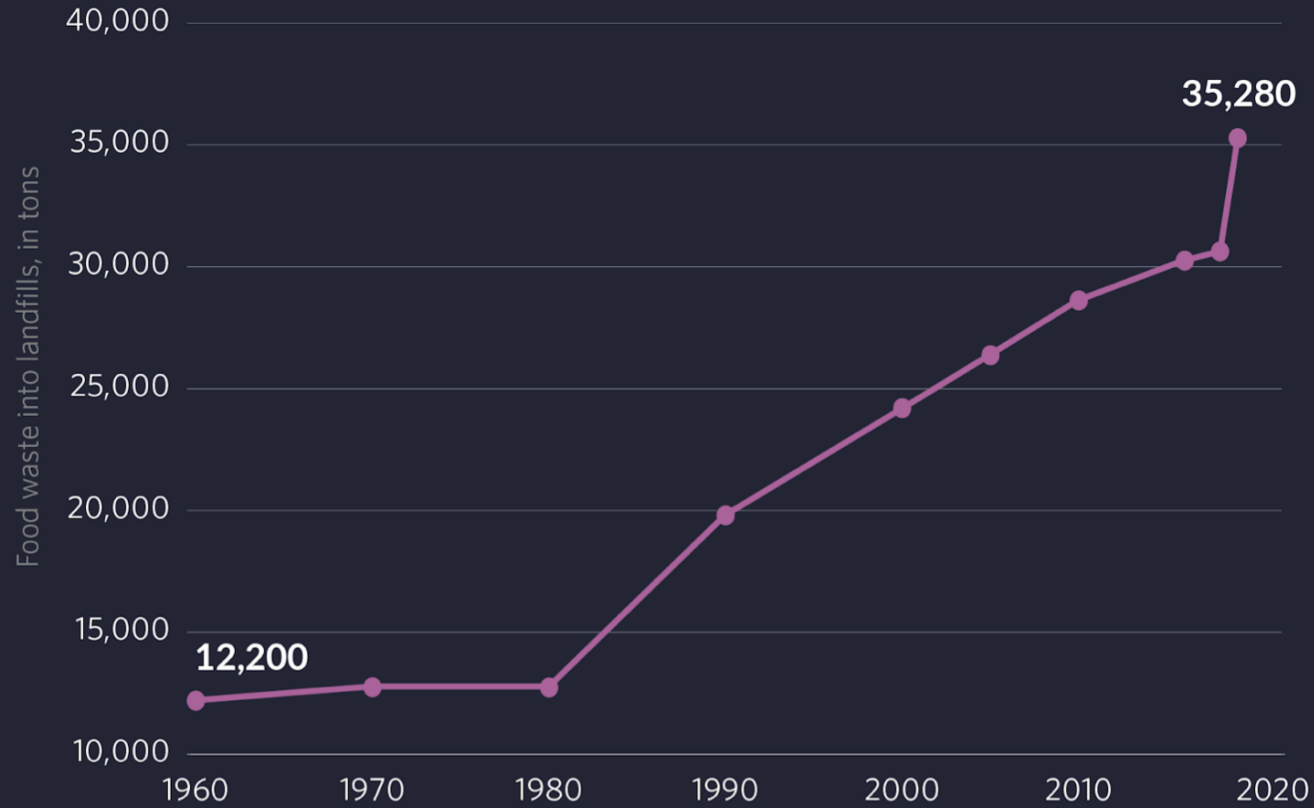
Landfill/ Incineration

Last resort to disposal

Least Preferred

Food Waste in Landfills Nearly Triples

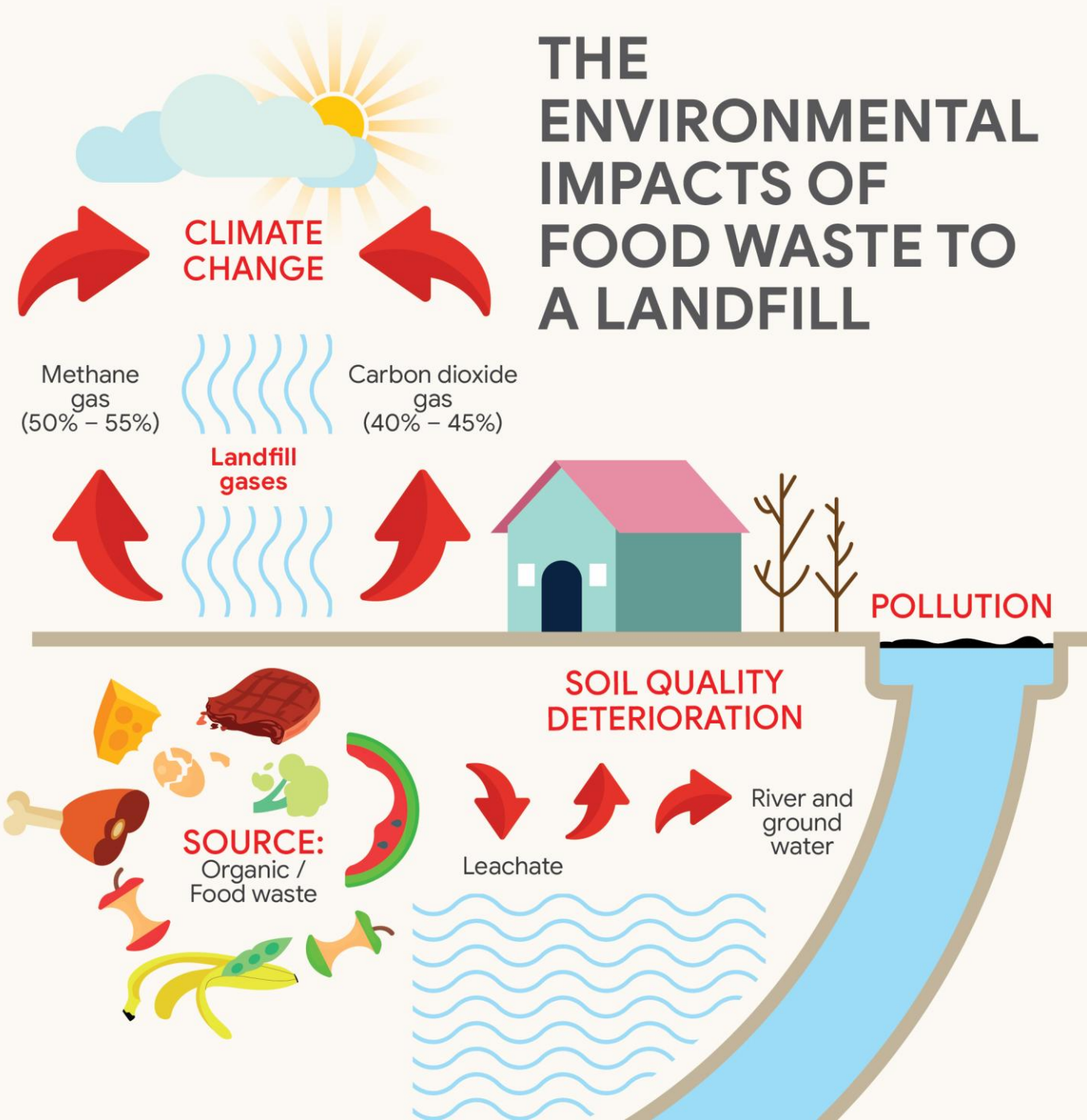
The amount of spoiled food going to landfills has increased dramatically since the 1960s, producing tons of methane, a greenhouse gas. Now, states and some industries are trying to reduce that waste with anaerobic recycling and other methods.



Source: U.S. Environmental Protection Administration

© 2021 The Pew Charitable Trusts

THE ENVIRONMENTAL IMPACTS OF FOOD WASTE TO A LANDFILL





Wasted food causes
58%
of methane emissions from
municipal solid waste landfills.



In landfills, wasted food breaks down relatively quickly, generating methane – a powerful greenhouse gas – before landfill gas collection systems are in place.

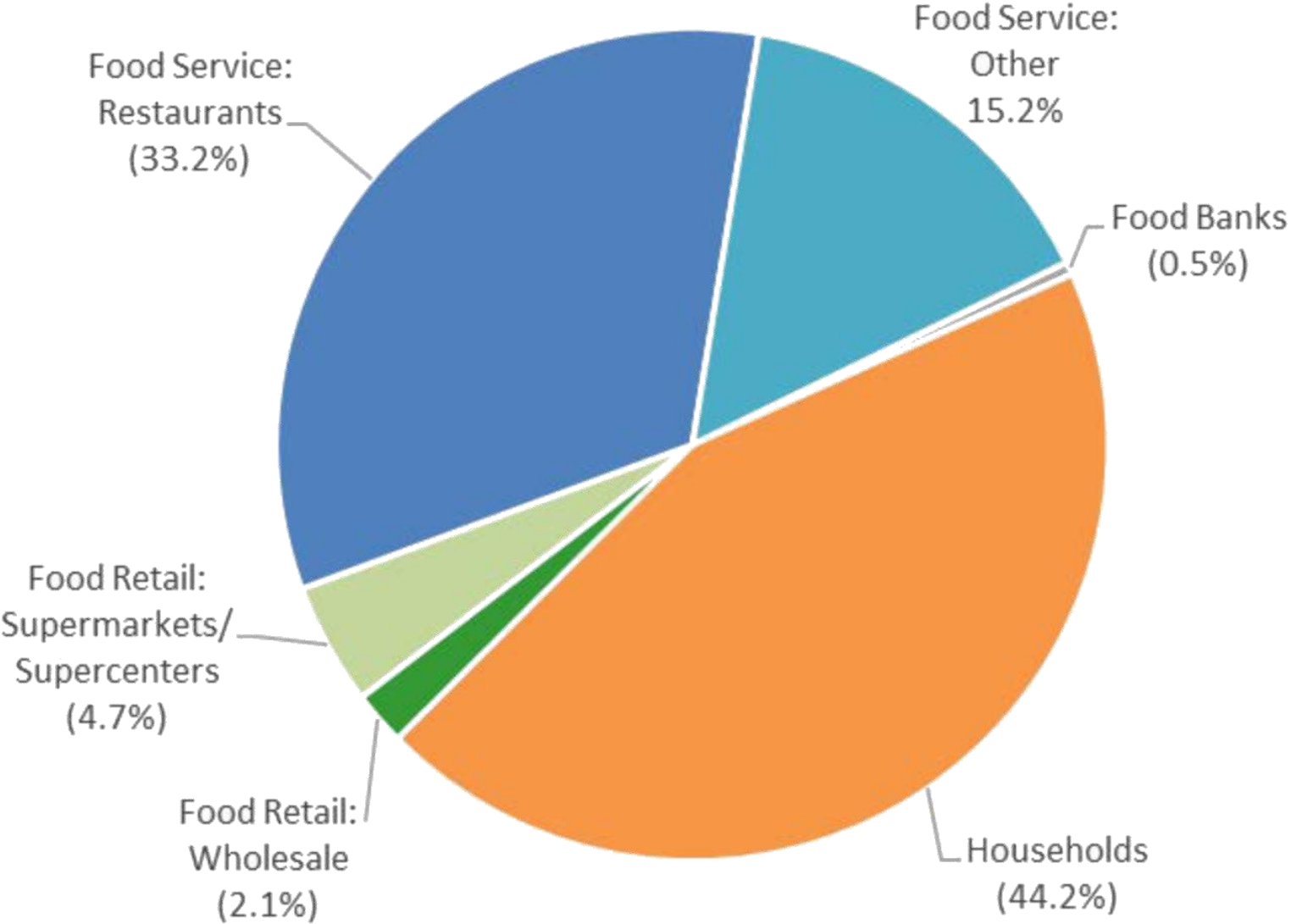
Keeping food out of landfills helps tackle climate change.



Wasting food in the U.S. causes greenhouse gas emissions equivalent to those of more than 50 million gas-powered passenger vehicles.



Landfilling Sources (2019)



- While total methane emissions from MSW landfills are decreasing due to improvements in landfill gas collection systems, methane emissions from landfilled food waste are increasing.
- An estimated 58 percent of the fugitive methane emissions (i.e. those released to the atmosphere) from MSW landfills are from landfilled food waste

The 5 most abundant greenhouse gases in (decreasing order)

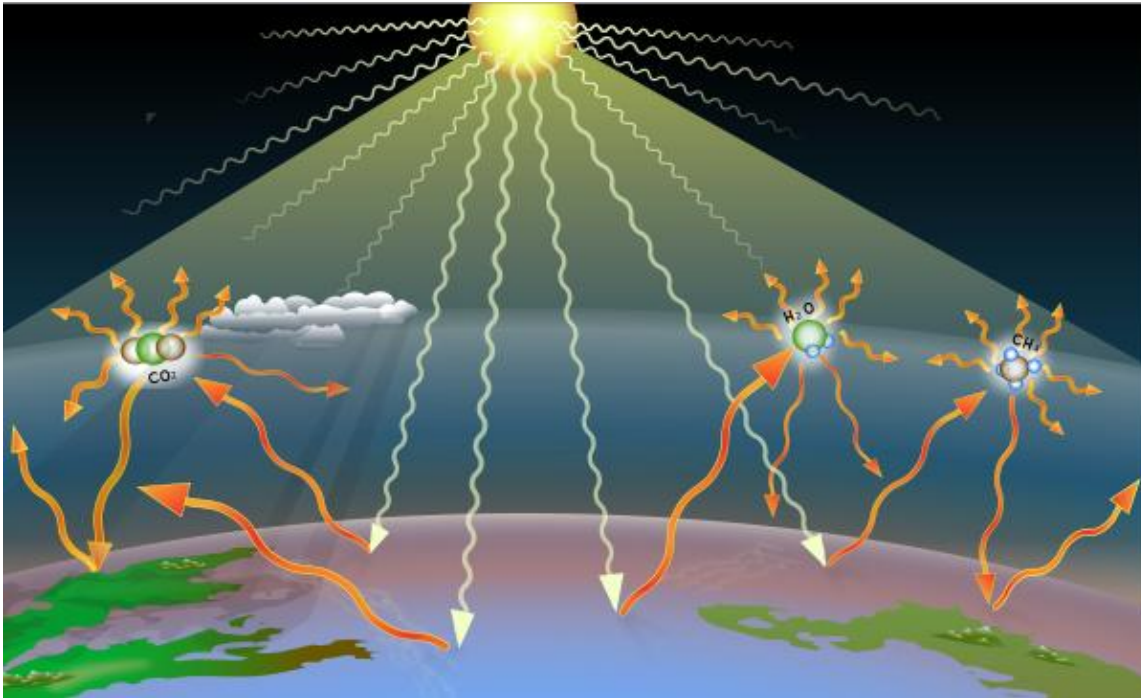
water vapor,
carbon dioxide, methane,
nitrous oxide, ozones

Carbon dioxide

- Causes $\frac{3}{4}$ of global warming
- Can take 1000's of years to be absorbed

Methane

- Causes most of the remaining warming
- lasts an average of 12 years



- Maryland requires food facilities producing more than two tons of food waste a week to separate it from other waste and divert it from landfills by January 1, 2023. Facilities that produce one ton a week have until January 1, 2024. In both cases, the law applies only if the food originates within a 30 mile radius of a recycling facility.
- Maryland Gov. Larry Hogan, a Republican, allowed the bill to become law without his signature.

Composting Basics



"greens" and "browns" for your compost, you're ready to create the perfect o
need BOTH.

- Technically, the ideal successful compost constantly change pe
transition



Stacey Murphy and GrowYourOwnVegetables.org

ROGEN for the most organic materials and carbon as they

Every year, U.S. landfills and trash incinerators receive **167 MILLION TONS** of garbage.

> 50% of typical municipal garbage set out at the curb is compostable.

Landfills and incinerators are dangerous.
Every bag thrown out contributes to:



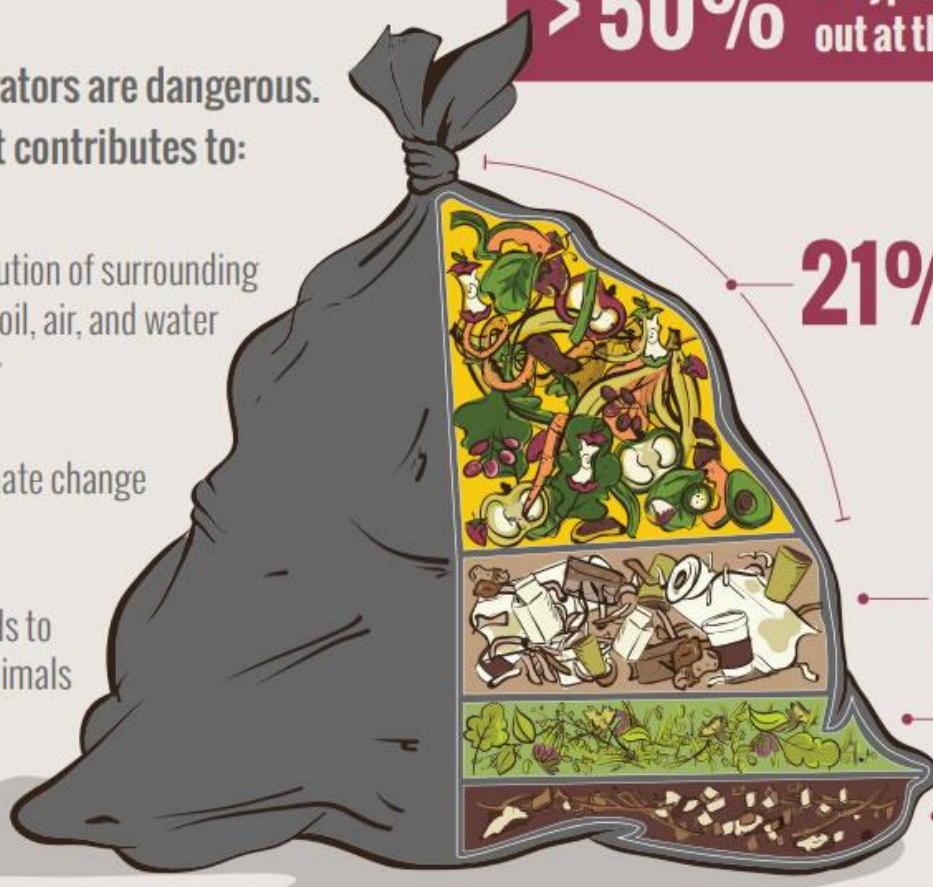
Pollution of surrounding soil, air, and water



Climate change



Health hazards to humans and animals



21% is food scraps alone

15% paper/paperboard

8% yard trimmings

8% wood waste

SOURCES:

Brenda Platt, Nora Goldstein, Craig Coker, and Sally Brown, *The State of Composting in the U.S.: What, Why, Where, & How*, Institute for Local Self-Reliance (ILSR), June 2015.

US EPA, *Advancing Sustainable Materials Management: Facts and Figures 2013*, June 2015, pp. 12, 46.

Brenda Platt, Eric Lombardi, and David Cipliet, *Stop Trashing the Climate*, Institute for Local Self-Reliance (ILSR), 2008.

Brenda Platt, Bobby Bell, and Cameron Harsh, *Pay Dirt: Composting in Maryland to Reduce Waste, Create Jobs & Protect the Bay*, Institute for Local Self-Reliance (ILSR), May 2013.

Mike Ewall, *Trash Incineration Factsheet*, Energy Justice Network web page, <http://www.energyjustice.net>, accessed April 2016.

ILSR INSTITUTE FOR
Local Self-Reliance

To learn more, visit: ilsr.org/compost-impacts

Planning



See what you have

Plan meals that use foods you already have. Look in your freezer, cabinets, and refrigerator, and be sure to check expiration dates.



Map out your meals

Write out the meals you plan to eat for the week and use it as a guide. Be sure to list beverages and snacks, too.



Find balance

Plan your meals so you eat from all five food groups—fruits, vegetables, grains, protein foods, and dairy or fortified soy products—every day. When planning, be aware of added sugars, saturated fat, and sodium by reading the [Nutrition Facts label](#).



Think about your schedule

Prepare meals and sides—including whole grains, vegetables, and beans—on the weekends when you may have more time. This will help during busy weekdays.



Make a grocery list

Start by listing ingredients for the meals you plan to make and then cross off items you already have. Buying for the week can help you make fewer shopping trip.



Love your leftovers

Prepare enough of a dish to eat multiple times during the week or freeze some to enjoy later. Making leftovers part of your plan can save you time and money.



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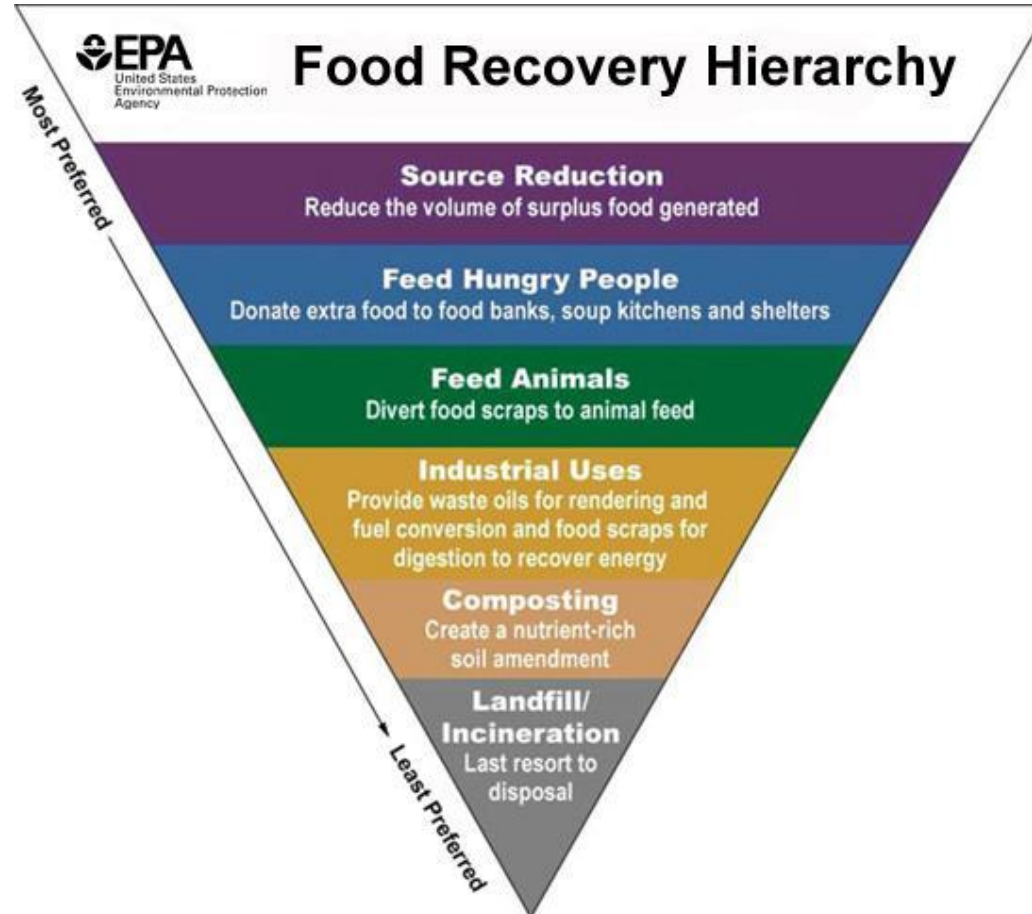
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Landfill/ Incineration

Last resort to disposal

Most Preferred

Least Preferred



The Chef's Guide to Substitutes in Cooking and Ending Food Waste

Composting 101

The easiest approach is to stick to the basic 2:1 (two parts green to one part brown) recipe.

BROWNS (CARBON-RICH)

- Dried leaves
- Sawdust and woodchips (make sure these are from untreated wood)
- Shredded black and white newspaper
- Egg cartons
- Cardboard
- Dead, dried-out plants (disease-free)
- Tree bark
- Straw
- Peanut shells

GREENS (NITROGEN-RICH)

- Fruit and vegetable kitchen scraps
- Coffee grounds and tea bags
- Green garden cuttings
- Fresh leaves and flowers
- Grass clippings

WHAT DINERS CAN DO

Share restaurant meals.



Bring home (and eat!) your leftovers.



Give your leftovers to someone in need.



Try a tapas or small plates restaurant.

From 2009 to 2014, the number of small plates and smaller portion items on menus across the country increased by 32%.

Ask for smaller portions.



Order a la carte.



Support restaurants with good sustainability practices.



Cafeteria style? Go trayless.

Taking away trays in cafeterias can reduce food waste by 32%.

Buffet bound? Watch your portions.

Buffet diners with large plates wasted 135% more food than those with smaller plates.

Hold the extras you don't want.

Say no to the basket of rolls or chips, or items you won't eat, like onions on a sandwich.

Visit valuefood.com to learn more.

**EAT ME
FIRST**

Photo

og

Build Your Own Hot Compost Pile

A hot compost pile that has a good balance between carbon, nitrogen, moisture, and oxygen will heat up to 113° and 160°. Hot piles yield finished compost in 8-12 weeks.

Make the pile up of a ratio of 2:1 brown and green materials. Don't add any more materials to the pile after this.

Create a pile that is around 3'-6' tall.



Turn the pile over 2 times per week.

Create a pile that is around 3'-6' wide

Keep the compost pile as moist as a wrung-out sponge

Keep it Simple

- Compost Infrastructure
 - 3 boxes
 - Pallet box
- Bin
- Ground

1 on your recent views



OXO Good Grips Easy-Clean Compost Bin, Charcoal - 0.75 GAL

★★★★★ 16,423

1K+ bought in past month

\$22⁹⁹

✓prime



Vatya Stainless Steel Kitchen Compost Bin - NO Filter Countertop Composter, ...

★★★★★ 21

\$69⁰⁰

✓prime



Navaris Compost Bin for Kitchen Counter - 0.8 Gallon (3L) Metal Countertop Indoor...

★★★★★ 2,443

\$28⁹⁹

✓prime



BLUE GINKGO Kitchen Compost Bin - Easy Clean Food Waste Bin for Kitchen with Handles |...

★★★★★ 1,302

200+ bought in past month

\$21⁹⁹

✓prime



ENLOY Compost Bin, 1.3 Gallon Stainless Steel Indoor Compost Bucket for Kitchen...

★★★★★ 4,284

200+ bought in past month

\$29⁹⁹

✓prime



Compost Bin for Kitchen Counter - 1.2 Gallon Countertop Composter with Extra Smell...

★★★★★ 802

500+ bought in past month

\$26⁹⁵

✓prime

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Start over

Page 3 of 67



Show desktop



www.tenthacrefarm.com

Based on your recent views

Sponsored ⓘ



Compost Tumbler, Easy Assemble & Efficient Outdoor Compost Bin, 45 Gallon/170 Liter...

★★★★☆ 24

200+ bought in past month

\$139⁹⁷

✓prime

Save 10% with coupon



VIVOSUN Dual Chamber Tumbling Composter, 2X 18.5 Gallon Compost Bin, Heavy-Duty Com...

★★★★☆ 360

18% off Limited time deal

\$89⁹⁹

✓prime

List: \$109.99



2021 Upgraded Tumbling Composter with Compost Thermometer - Dual...

★★★★☆ 638

200+ bought in past month

\$79⁹⁹

✓prime



Miracle-Gro Large Dual Chamber Compost Tumbler - Easy-Turn, Fast-Working System -...

★★★★☆ 6,200

1K+ bought in past month

\$129⁹⁰

✓prime



Compost Tumbler Bin Composter Dual Chamber 43 Gallon (Bundled with...

★★★★☆ 1,818

1K+ bought in past month

\$69⁹⁵

✓prime



Garden Compost Bin from BPA Free Material, Dual Rotating Outdoor Composting Tumbler...

★★★★☆ 3,142

200+ bought in past month


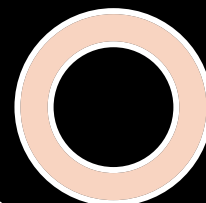


\$79⁹⁹

✓prime

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Why should we
care?



The Call to Care

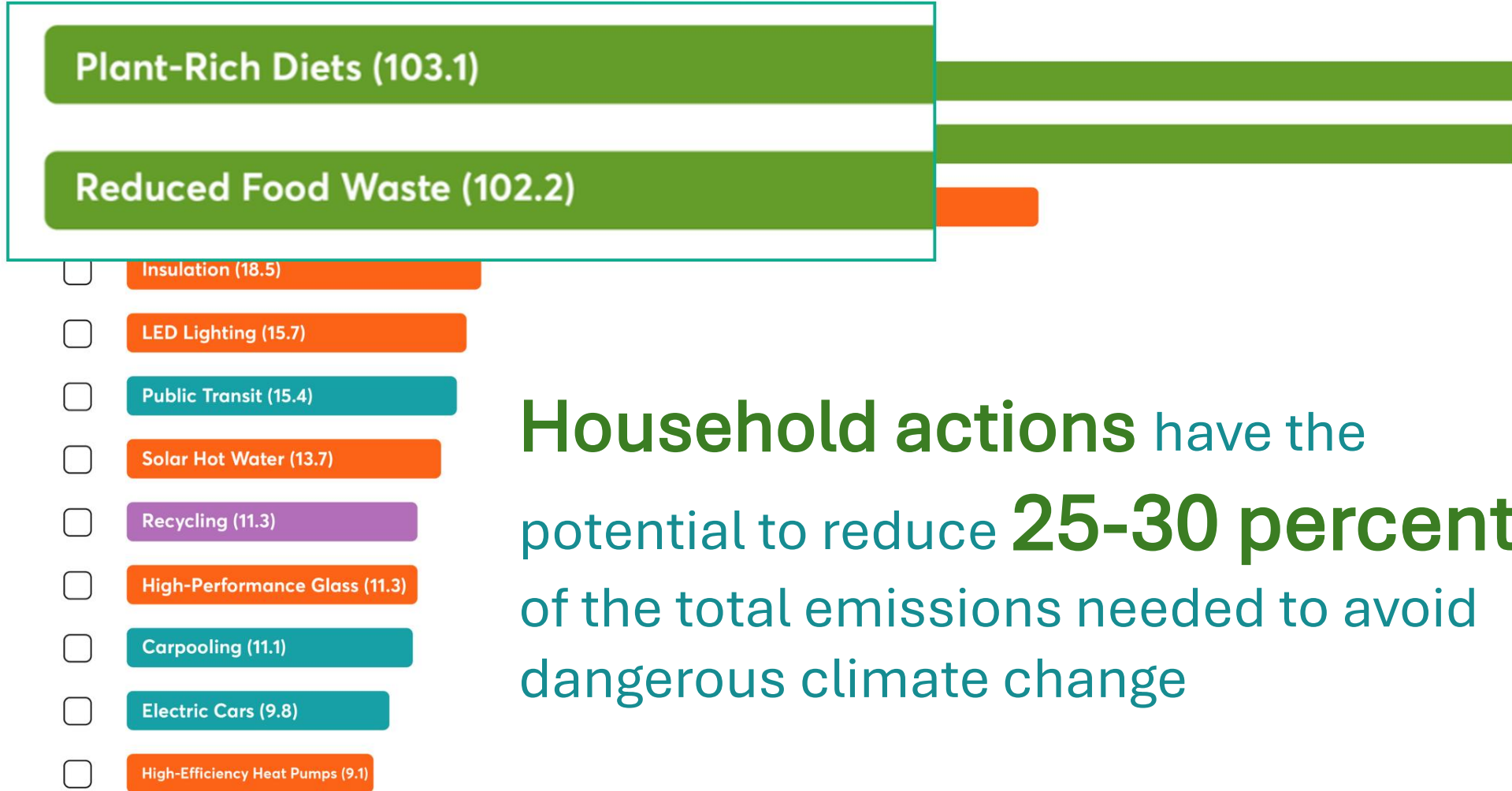
Out of the ground the Lord
God made to grow every tree
that is pleasant to the sight
and good for food,

...The Lord God took the man
and put him in the garden of
Eden to till it and keep it.

-Genesis 2:9,15



TOP 20 HIGH-IMPACT CLIMATE ACTIONS FOR HOUSEHOLDS AND INDIVIDUALS



Household actions have the potential to reduce **25-30 percent** of the total emissions needed to avoid dangerous climate change

Wasted food

...generates about
8% of the world's
heat trapping gases



Every year, 1/3 of food
produced on the planet is
lost or wasted



In 2022,
the world wasted

1 *billion* tons
of food



one billion meals
of edible food
is wasted
in *households*

worldwide...



every day

How is food wasted? It depends...

In many rich countries, this food waste happens in the kitchen



In developing countries, food loss happens at harvest time

Food “loss” / Food “waste”



Food loss

occurs along the food supply chain...before the food reaches the consumer

Food waste

occurs at the retail and consumption level; food is fit for consumption

Matching Quiz % by sector



Farms

20%

Distribution & Processing

15%

Retailers / Food Service

17%

Homes

48%



USA stats

Consumer food waste accounts for more than 48% of surplus food in the U.S.



Causes of Food Waste

Food Production

- Unharvested Crops
- Spoiled crops, pests, disease, infection, contamination

Processing and Distribution

- "Trimming"
- Spoiled/damaged product
- Overproduction

Retail

- Overstocking
- Expiration dates
- Selective consumers

Food Services and Households

- Oversized portions
- Poor Planning
- Spoiled/ruined
- Bulk Purchases



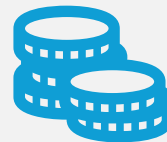
Wasted food is ...



a social problem



an environmental problem



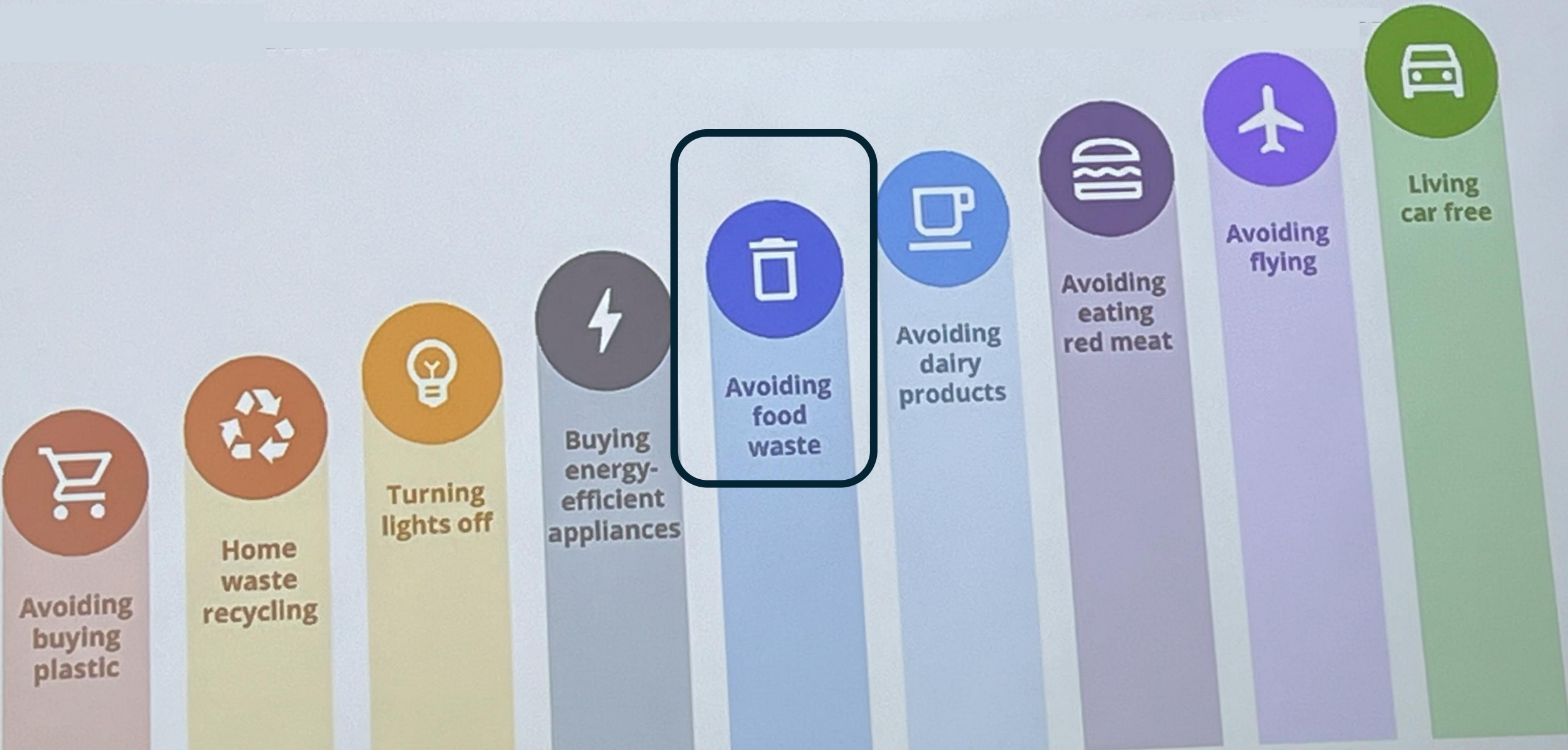
an economic issue



Source: USDA/2022



What lifestyle choices make a bigger impact to carbon output?



Discuss!

How much of the food you buy do you throw away?

What items do you throw away most often?

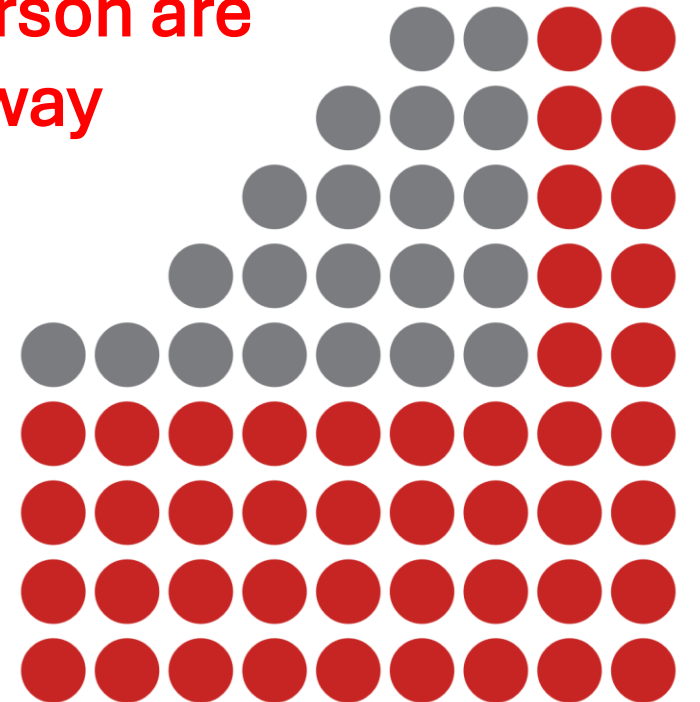


Fresh tomatoes bought by US Households...



each year ...

21 per person are
thrown away



USA stats

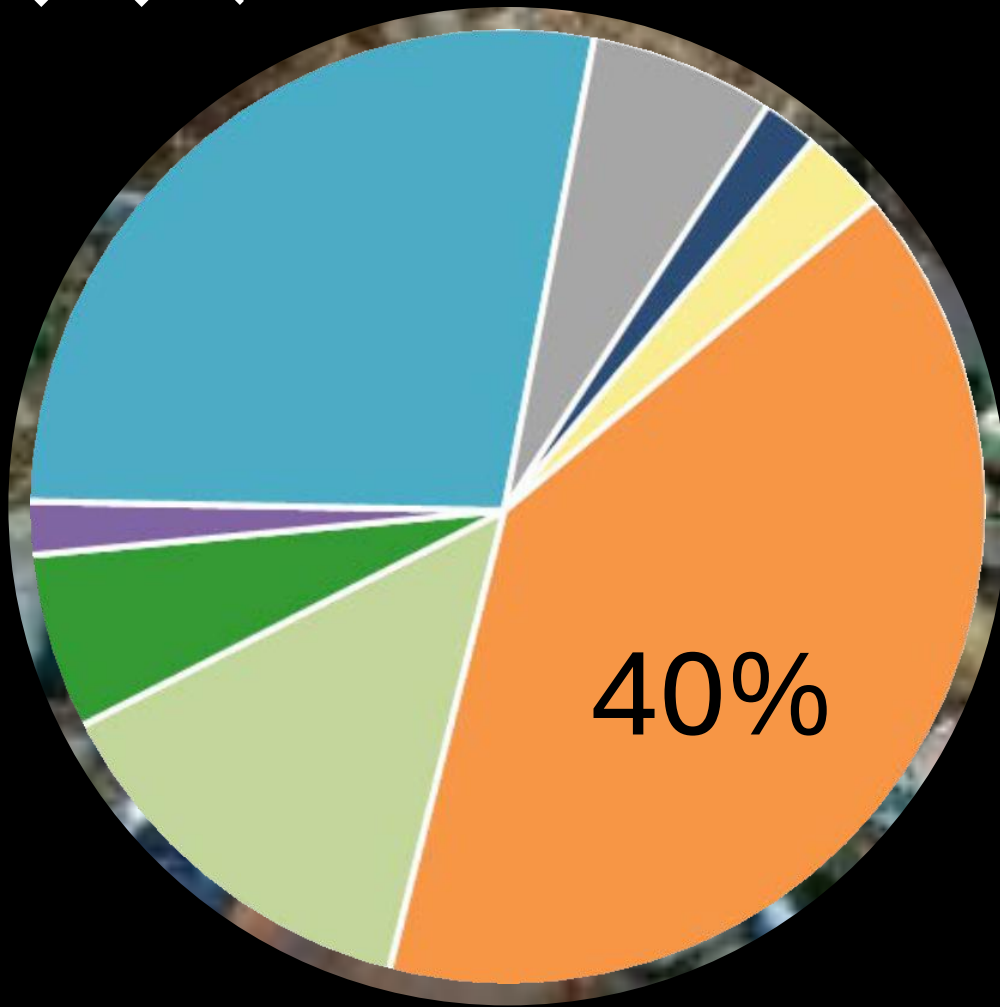
In 2022, the average American spent \$759 on food that went *uneaten*



Landfills

In 2019, EPA estimates 66 million tons of wasted food was generated in the food retail, food service, and residential sectors.

**Household contribution
%age?**



Discuss!

What are
the
challenges
you face?



Discuss!

What are some ways you can address waste in your own household and habits?



Challenge

Choose one or more foods that might otherwise be wasted and create something that we can share for our lunch in the second session.

Think about foods that are nearing the end of their usable life, etc.

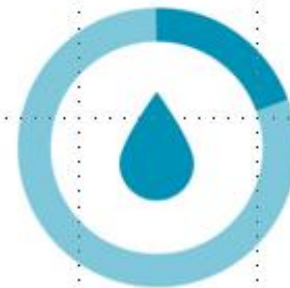


2nd week

Uneaten food consumes...



6.1%
of U.S. GHG
Emissions



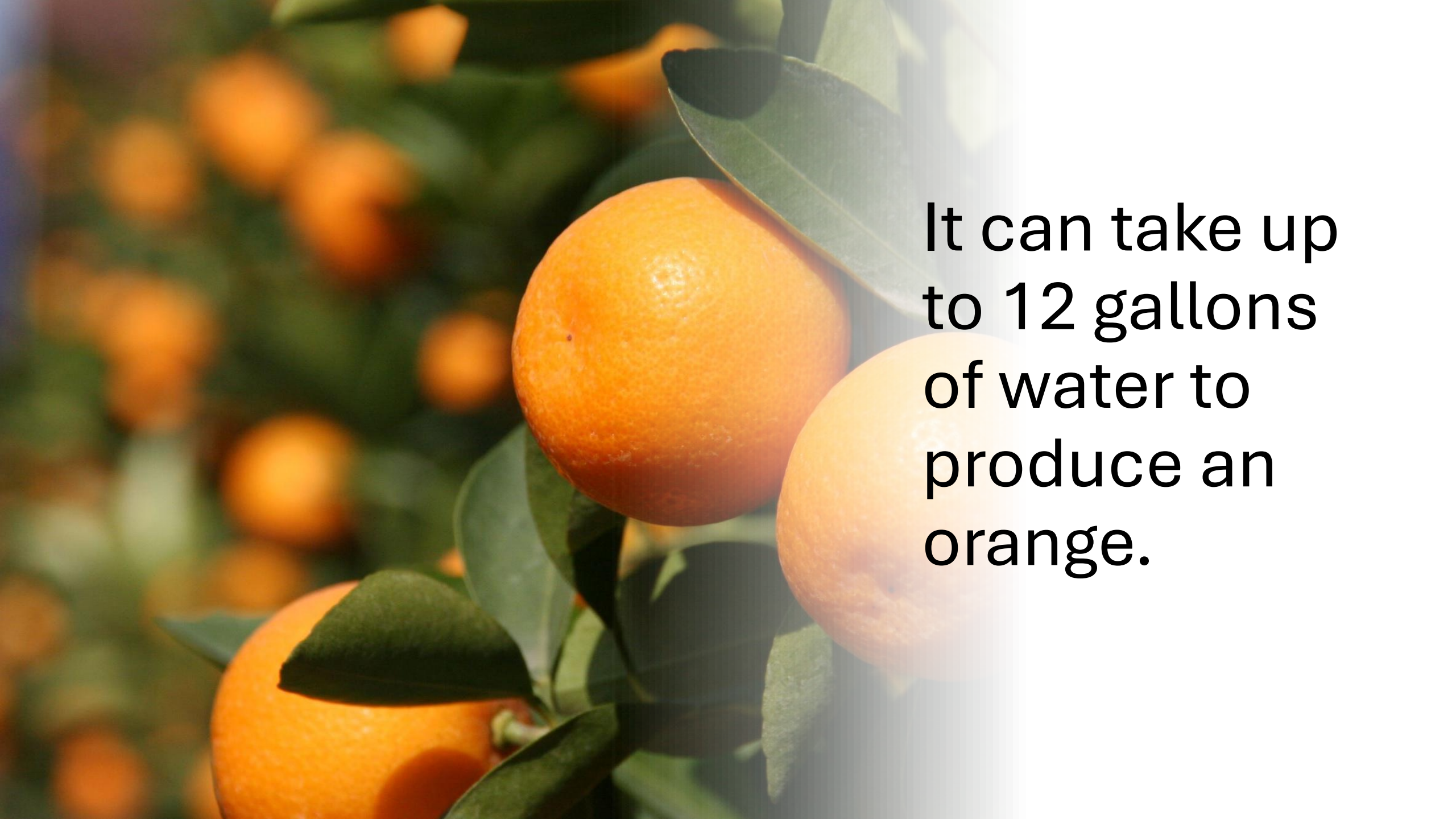
22%
of all
Fresh Water Use



16%
of U.S.
Cropland Use
(EPA Estimate)



24%
of Landfill Inputs
(EPA Estimate)



It can take up to 12 gallons of water to produce an orange.

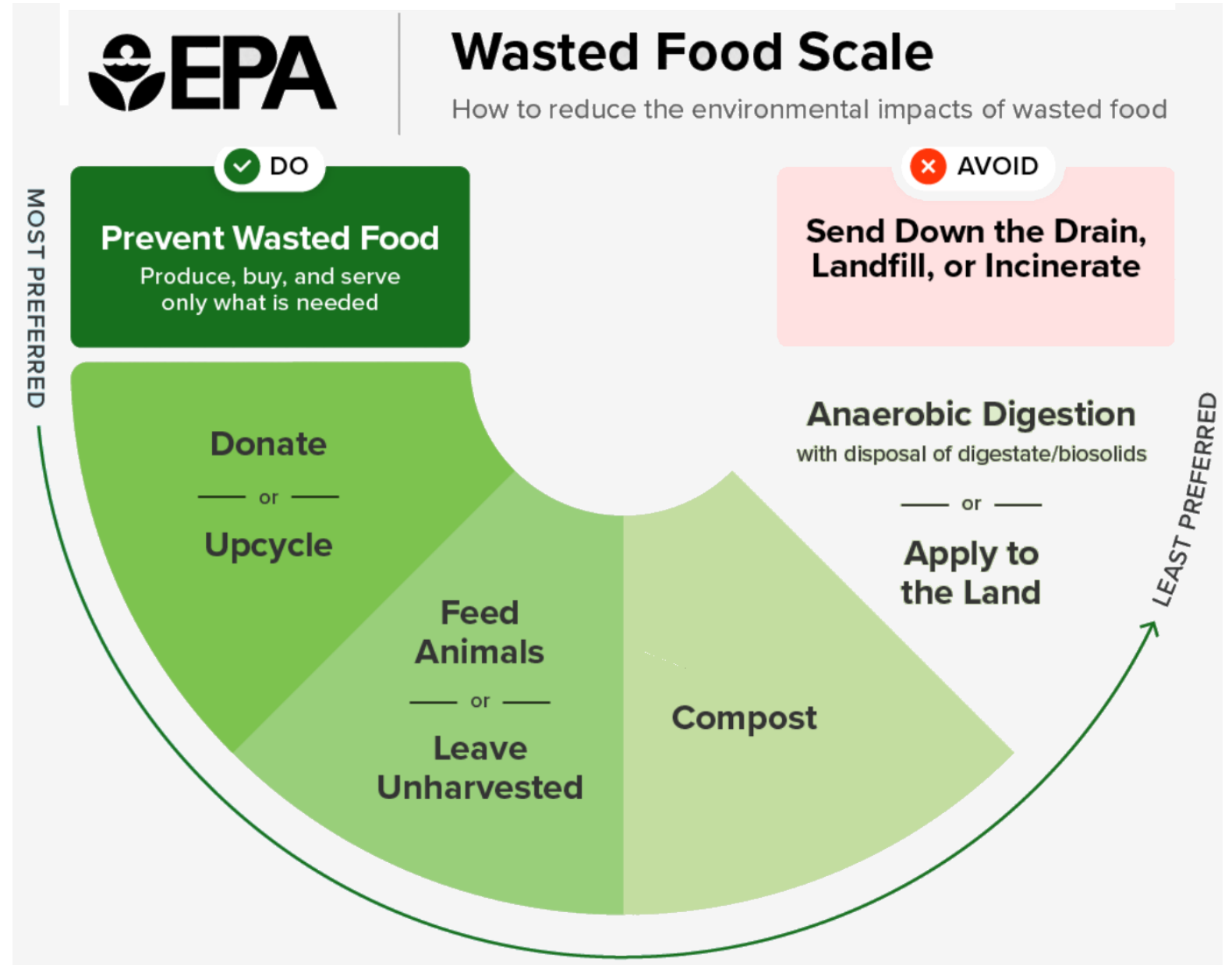
Bokashi ?

Food in landfills

8 – 10 % of the world's global
warming emissions



Stopping Food Waste Before It Starts Is Key to Reaching Climate Goals



US facts

—

wasted food is the single largest component taking up space inside US landfills

(22%)

food

- 1- buy it with thought
 - 2- cook it with care
 - 3- use less wheat & meat
 - 4- buy local foods
 - 5- serve just enough
 - 6- use what is left
-

don't waste it U.S.

U. S. FOOD ADMINISTRATION

By Library Company of Philadelphia -
<https://www.flickr.com/photos/26491575@N05/14003499592/>, Public Domain,
<https://commons.wikimedia.org/w/index.php?curid=34725771>



KEEP IT DRY FREE FROM GLASS METAL BONES PAPER ETC



Composting



What to Add to a Backyard Compost Pile

Nitrogen-Rich Materials ("Greens")	Carbon-Rich Materials ("Browns")
Fruit and vegetable scraps	Dry leaves
Grass clippings	Plant stalks and twigs
Coffee grounds and paper filters	Shredded paper (non-glossy, uncolored) and shredded brown bags
Paper tea bags (no staples)	Shredded cardboard (no wax coating, tape, or glue)

Recipe for Compost

- Mix:
 - leaves
 - grass clippings
 - food scraps
 - coffee grounds
- Add water as needed.



Compost!



An excellent (and simple) online guide:

<https://momsorganicmarket.com/recycle-center/compost/>

https://f.hubspotusercontent00.net/hubfs/416759/Homejpg.jpg

10 Tips and Tricks to Help Reduce Food Waste at Home

According to the United Nation's Environmental Programme, 1 billion tons of the world's food is wasted every year. The majority of that waste is generated in the home. Here are 10 ways to do something about it.

1. PLAN YOUR MEALS AHEAD



Know what you have on hand and buy only what you need. Plan for at least one day per week to use any leftovers in your fridge and get creative.

2. BUY LOOSE PRODUCT



Utilize the bulk bins at the grocery store to buy small quantities. Shop small and smart.

3. KEEP HERBS LIKE FLOWERS



Snip the ends of the stems of fresh herbs and keep them in a glass of water, just like you would fresh flowers.

4. ORGANIZE YOUR FRIDGE



Knowing what food you have and keeping it organized helps you use what's already in there. Avoid clutter, and practice the first-in, first-out rule.

5. "USE BY," "BEST BEFORE"



These dates are guidelines that refer to food quality more than food safety. Food can still be perfectly good past those dates. Trust your own senses.

6. TRY HANDPICK.COM



Handpick is an app that helps you build recipes around ingredients you already have. It's a useful tool!

7. USE CLEAR CONTAINERS



The easier it is to see what you have on hand, the easier it will be to track and use it.

8. MAKE STOCK



Freeze vegetable and protein trim as it accumulates and then utilize it in homemade stocks. And if you're not making

9. STORE THE RIGHT WAY



To ensure longevity, different foods need to be stored in different ways. Learn the basics: go to Lifehacker and



BUY WITH S

[More payment](#)

HOW IT WORKS

LightTags are set with the click of the Ov
want to track, up to 30 days.

The light ring on the Tag indicates what

- Teal = still tracking
- Yellow = last 24 hours
- Red = out of time

Have trouble with colors?

No problem.

[? FAQs](#)

How can you waste less food?

Check the boxes!

- Take only what you can eat.
- Eat what you take.
- Store leftovers for later.
- Learn how to store food so it lasts longer.
- Plan meals ahead of time.
- Use what is in the refrigerator first.
- Freeze uneaten food.
- Use your extra food in a new recipe.
- Share food with others.
- Compost food scraps.



Discuss why food is wasted in the US

1. **80 percent of Americans discard perfectly good, consumable food simply because they misunderstand expiration labels**

TIPS FOR REDUCING FOOD WASTE IN THE HOME



Keep track of what's in your refrigerator and cupboards to avoid buying food items you already have.

Plan your weekly meals before shopping to avoid buying items you might not eat.



Choose "imperfect" fruits and vegetables that others might overlook due to their appearance.

Another option is to **donate any extra food** to feed hungry people through food banks or shelters.



Research the best ways to store perishable food items to ensure they stay fresh for as long as possible; the United States Department of Agriculture has even developed an app called the FoodKeeper to help (<https://www.foodsafety.gov/keep-food-safe/foodkeeper-app>), and food storage tips can also be found at <https://savethefood.com>.



Learn how to interpret food product dating a significant amount of household food waste occurs because consumers throw out "expired" food that is still edible.

- <https://wedocs.unep.org/handle/20.500.11822/45230>
- https://wedocs.unep.org/bitstream/handle/20.500.11822/45230/food_waste_index_report_2024.pdf?sequence=3&isAllowed=y

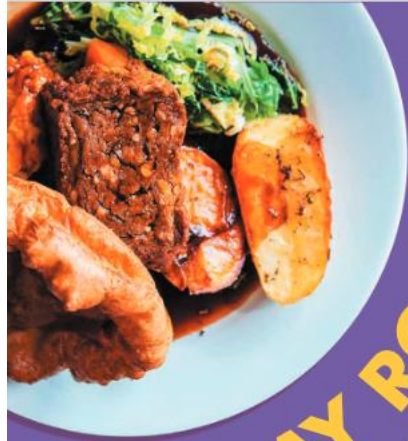
Key Messages in the Food Waste Index Report 2024:

- In 2022, the world wasted 1.05 billion tonnes of food. This amounts to one fifth (19 per cent) of food available to consumers being wasted, at the retail, food service, and household level. That is in addition to the 13 per cent of the world's food lost in the supply chain, as estimated by FAO, from post-harvest up to and excluding retail.
- Most of the world's food waste comes from households. Out of the total food wasted in 2022, households were responsible for 631 million tonnes equivalent to 60 percent, the food service sector for 290 and the retail sector for 131.
- Reducing food waste provides compounding benefits: Food loss and waste generates 8-10 per cent of global greenhouse gas (GHG) emissions – almost five times the total emissions from the aviation sector. It occurs while 783 million people are hungry and a third of humanity faces food insecurity.
- Households waste at least one billion meals a day: On average, each person wastes 79kg of food annually. The equivalent of at least one billion meals of edible food is being wasted in households worldwide every single day,

<https://wedocs.unep.org/bitstream/handle/20.500.11822/45275/Food-Waste-Index-2024-key-messages.pdf?sequence=1&isAllowed=y>

Surplus Food Occurs Across the Supply Chain:





SUNDAY ROAST.
MONDAY ROAST.
TUESDAY ROAST...

Couldn't finish it? **Don't waste it!** By storing food correctly in the fridge or freezer, you can make your Sunday roast go further. Visit our website for tips on how to **make your food go further.**



LoveFoodHateWaste.com

From wikipedia

The image contains two vintage posters. The left poster has a black background with white and yellow text. At the top, it reads 'WASTE NOT-WANT NOT' in white. Below this is an illustration of two women standing behind a table filled with various fruits and vegetables, including pumpkins, carrots, and apples. One woman is holding a jar of preserved food. At the bottom of the poster, it says 'PREPARE FOR WINTER' in large white letters, followed by 'Save Perishable Foods by Preserving Now' in smaller white text. A circular logo for the U.S. Food Administration is visible in the bottom left corner. The right poster has a light beige background. At the top, the word 'food' is written in a large, black, serif font. Below it, a list of six numbered items is presented in a bold, black, sans-serif font. The items are: 1- buy it with thought, 2- cook it with care, 3- use less wheat & meat, 4- buy local foods, 5- serve just enough, and 6- use what is left. At the bottom of the poster, the phrase 'don't waste it' is written in a large, black, cursive font. Below this, the text 'U.S. FOOD ADMINISTRATION' is printed in a small, black, sans-serif font.

WASTE NOT-WANT NOT

PREPARE FOR WINTER

Save
Perishable Foods
by
Preserving Now

food

- 1- buy it with thought
- 2- cook it with care
- 3- use less wheat & meat
- 4- buy local foods
- 5- serve just enough
- 6- use what is left

don't waste it

U.S. FOOD ADMINISTRATION

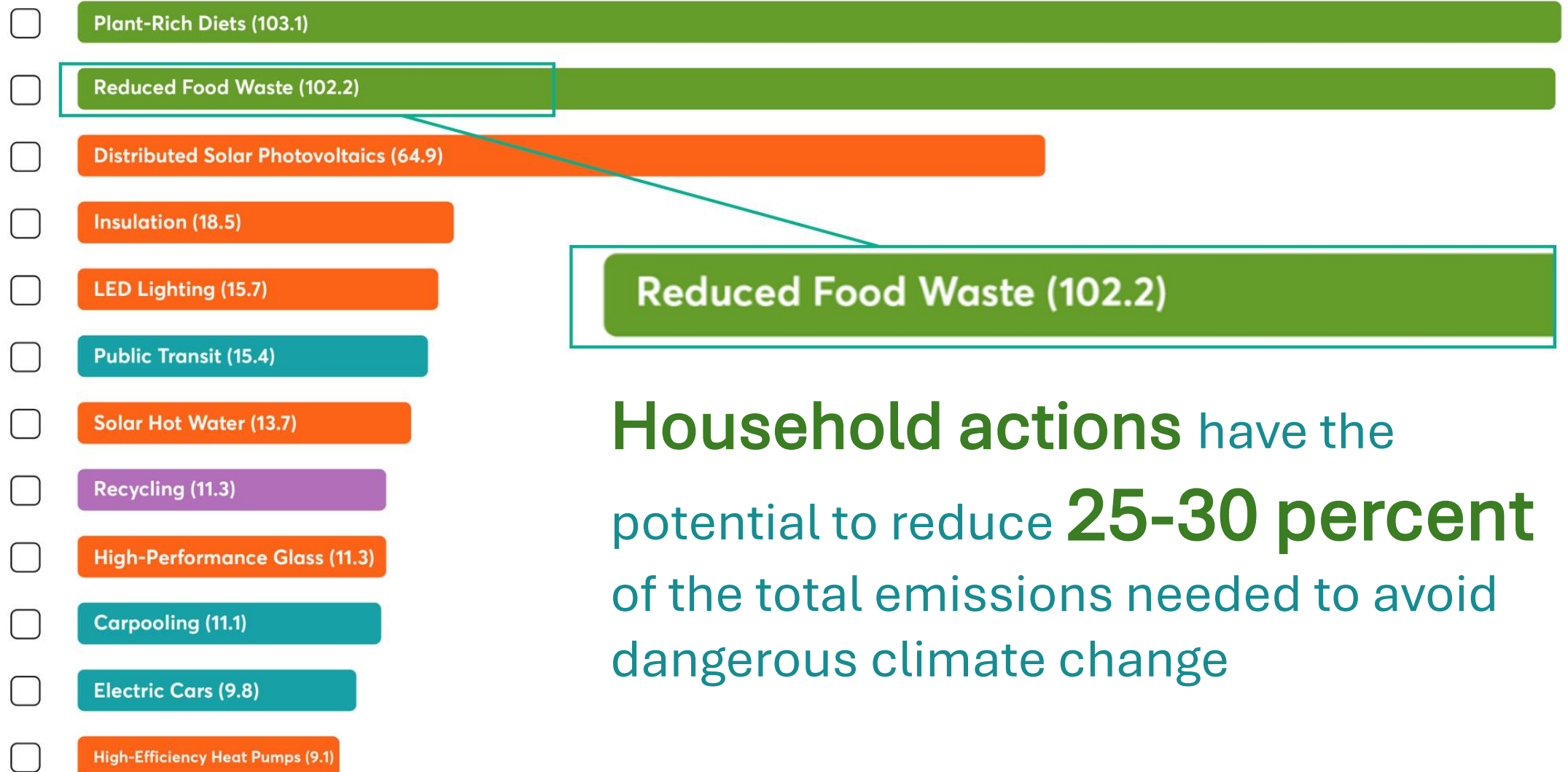
Limiting food wastage has seen the adoption of former [World War I](#) and [World War II](#) slogans by antiwaste groups such as [WRAP](#).^[122]

Food Supply Chain





TOP 20 HIGH-IMPACT CLIMATE ACTIONS FOR HOUSEHOLDS AND INDIVIDUALS



Household actions have the potential to reduce **25-30 percent** of the total emissions needed to avoid dangerous climate change

Wasted food is ...



a social problem



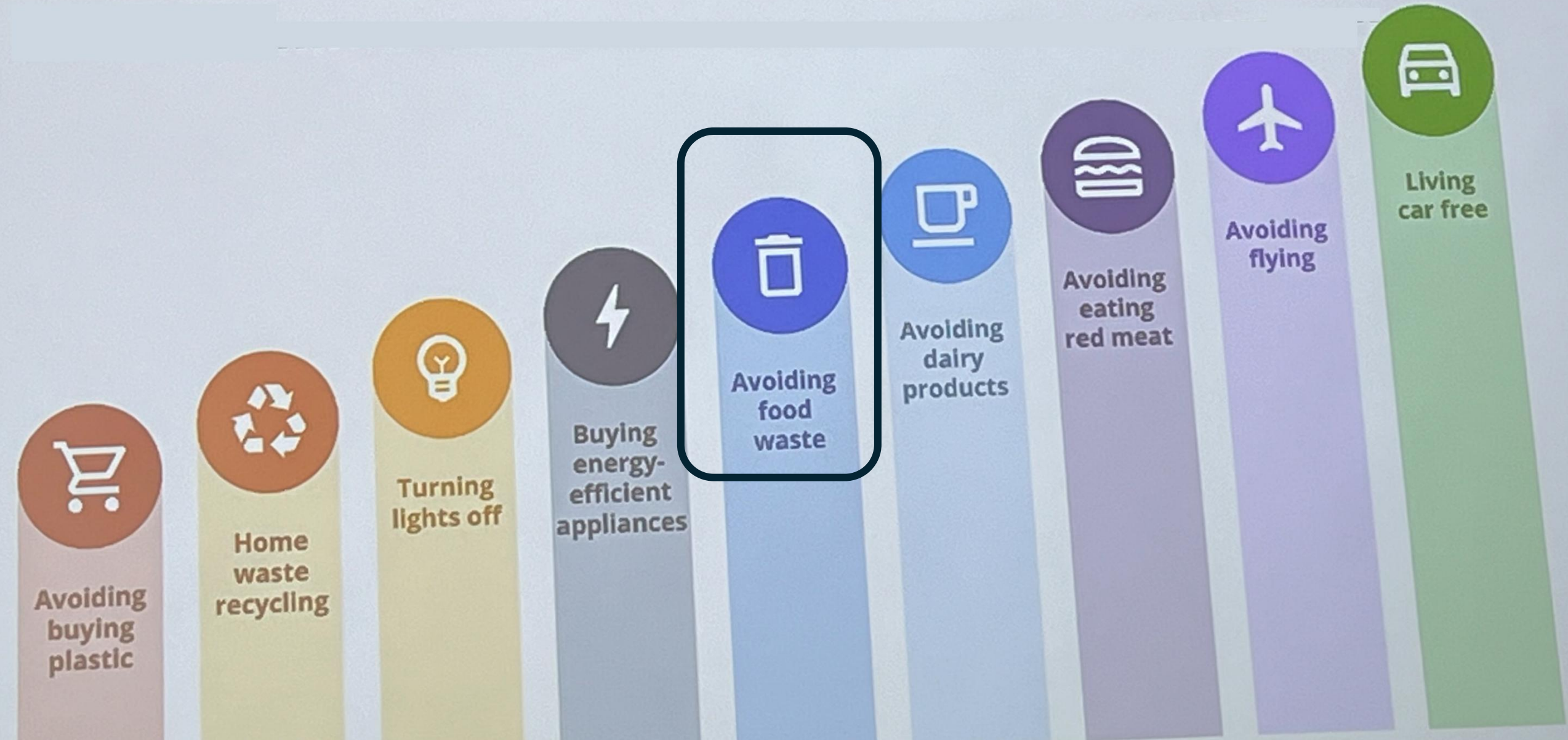
an environmental
problem

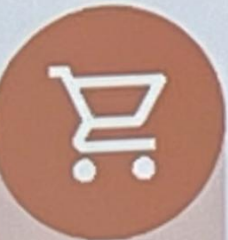


Source: USDA/2022




What lifestyle choices make a bigger impact to carbon output?

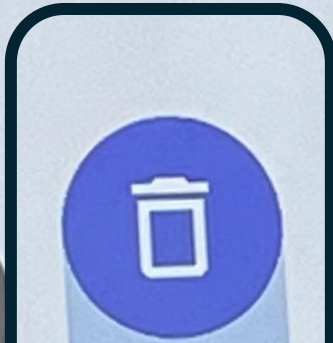


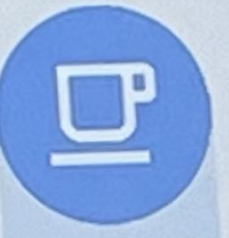

Avoiding buying plastic



Home waste recycling

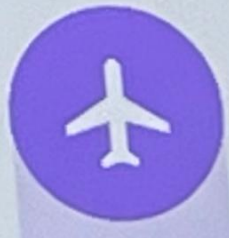

Turning lights off

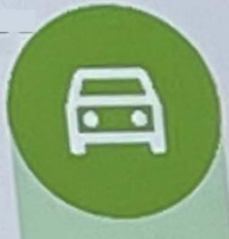

Buying energy-efficient appliances


Avoiding food waste


Avoiding dairy products


Avoiding eating red meat


Avoiding flying


Living car free

