



**food &
creation care**

MARC AUBERTIN and RICHARD HARTUNG
June 2022 - Saint Mark's Creation Care Ministry

Tonight's Conversation

- Welcome + Land Acknowledgment
- Opening Prayer
- **Food & Its Impact on Climate Change** *::Richard::*
- **Sustainable Meal Planning & Preparation** *::Marc::*

::breakout::

- **Sustainable Cooking** *::Marc::*
- **After the Meal** *::Richard::*

::breakout::

- **Sharing and Q+A**
- Closing



Food & Its Impact on Climate Change

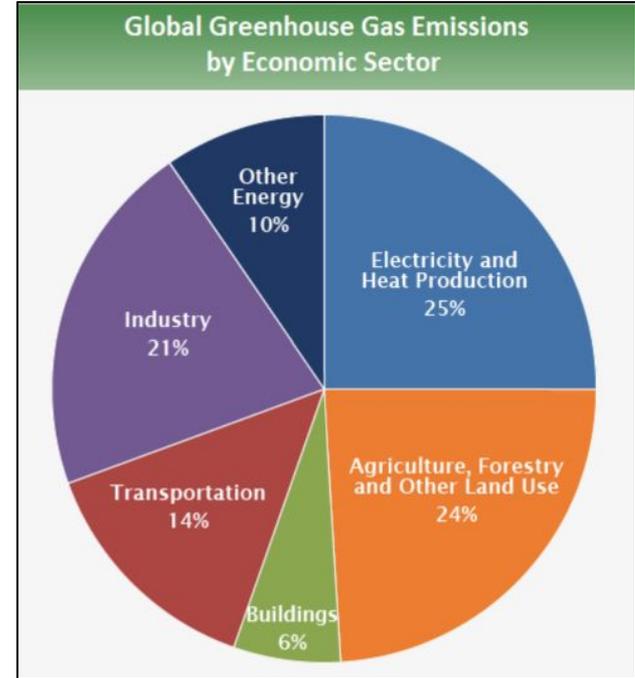
Framework

Agriculture creates nearly one quarter of greenhouse gas (GHG) emissions

- Production
- Transport
- Distribution Preparation & disposal

14%

GHG created by animal agriculture



Food & its Impact on Climate Change

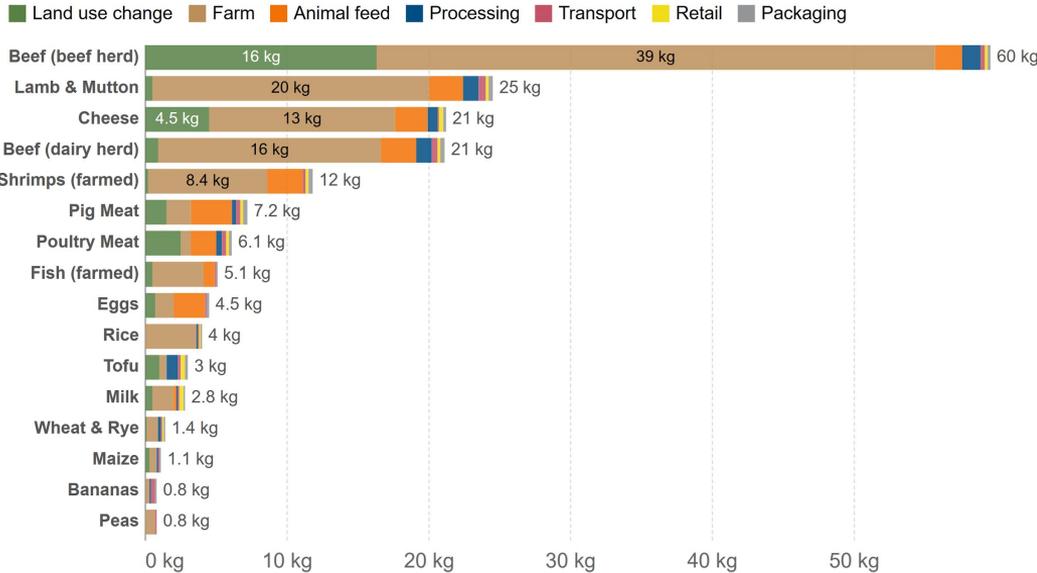
The Climate Impact

Beef: 50 kg of greenhouse gasses to create 99 g of protein

Food: greenhouse gas emissions across the supply chain

Greenhouse gas emissions are measured in kilograms of carbon dioxide equivalents (kgCO₂eq) per kilogram of food. This means non-CO₂ greenhouse gases are included and weighted by their relative warming impact.

Our World in Data



Source: Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. Science. OurWorldInData.org/environmental-impacts-of-food • CC BY

WHAT GOES INTO A HAMBURGER?



ENOUGH WATER FOR A 3 HOUR SHOWER

One quarter pound of beef uses 450 gallons of water. The average shower is 8.2 minutes at 2.1 gal/min.

* Robinson, M. M. and Posthumus, A. T., "The Green, Blue and Grey Water Footprint of Farm Animals and Animal Products," *WATER*, 2015.

* "Showers," Home Water Works, Alliance for Water Efficiency, 2019.

AS MUCH CO2 EQUIVALENT AS A 90 MILE DRIVE

One quarter pound of beef emits 38 kg of CO₂ equivalent. The average US car emits .404 kg/mile.

* Schindler, Kurt, and Elke Stehfest, "Including CO₂ Implications of Land Occupation in LCA: Method and Example for Livestock Products," 2012.

* "Greenhouse Gas Emissions from a Typical Passenger Vehicle," EPA, 2018.



ENOUGH CALORIES OF GRAIN TO FEED SOMEONE FOR 15 DAYS

One quarter pound of beef is about 300 calories. Producing one calorie of beef requires 100 calories of feed.

* "FoodData Central Search Results," FoodData Central, USDA.

* Ranganathan, Janet, et al. "Shifting Diets Toward a Sustainable Food Future." World Resources Institute, 2016.

TRY SWAPPING FOR FISH, CHICKEN, OR PLANT-BASED PROTEIN!



EAT GREEN AT STANFORD

Food & its Impact on Climate Change

Meat & Dairy

- Animal agriculture uses **77%** of agricultural land and produces **17%** of the food supply
- Plant-based meats use **41%** less land than fish farms, **77%** less than poultry and **98%** less than beef
 - Beyond and Impossible burgers reduce water use by **87%-99%**
- Eating plant-based diets could reduce food GHG emissions by **29%-70%**
 - Soy, lentils & chickpeas: **70x** less GHG emissions than beef
- Producing cow's milk causes **3 times** as much GHG emissions, uses **10 times** as much land and uses **3 times** as much water as plant-based milk



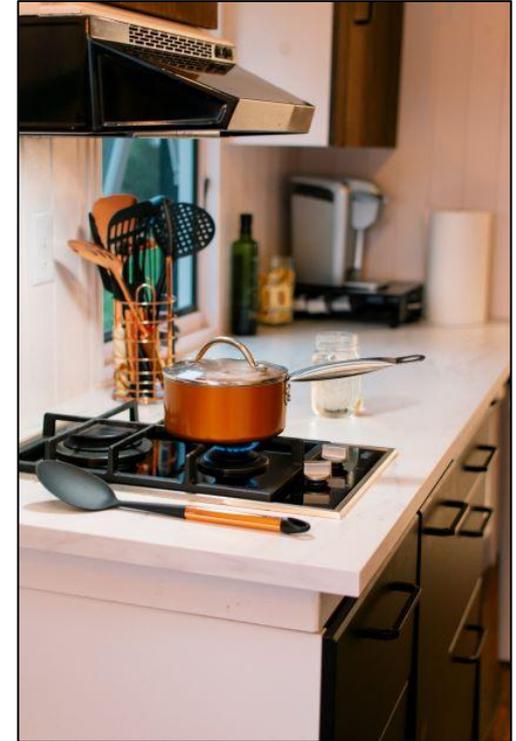
Source: Impossible

Source: Oatly

Food & its Impact on Climate Change

Preparation - Gas Stoves & Ovens

- Gas stoves and ovens release methane
 - When they cook
 - When they are off
- A gas stove increases exposure to NO₂ in homes by **30 micrograms**
 - Respiratory illness in children exposed to 30 more micrograms of NO₂ rise by **20%**
- Reducing emissions
 - Replace gas with electric
 - Use an exhaust hood fan above them, vented to the outdoors



Food & its Impact on Climate Change

Food Waste

- More than **30% of food - 2.5 billion tons** worth **\$230 billion** - is wasted or lost each year
 - Loss: Uneaten products from production & distribution
 - Waste: Unsold, thrown away or uneaten
- Food waste creates greenhouse gas emissions & wastes natural resources
 - **1.3 gigatons** of edible food waste (2013)
 - Released **3.3 gigatons** of CO₂
 - Causes about **6%** of global emissions
- Food waste would be the 3rd largest emitter of greenhouse gasses after China and the US if waste were a country

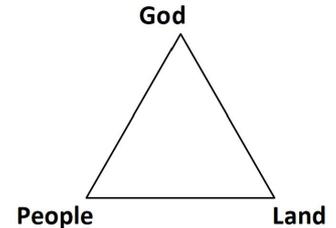


Food & its Impact on Climate Change

Scriptural Foundation: Planting & Growing Food

Biblical Principles

- **Remembering:** The world and all it produces is God's
- **Restraint:** Not pushing the land beyond its limits
- **Respect:** For people, for animals and the earth



How might God feel about a food system that relies on fossil fuels, destroys soil fertility, devastates wildlife, pollutes rivers and ground water, abuses animals, drives small farmers off the land, and leads to waste?

Genesis 1: 29

“I give you every seed-bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food.”

Proverbs 12:10

“The righteous care for the needs of their animals.”

Leviticus 25:23-24

“The land is mine and you reside in my land as foreigners and strangers. Throughout the land that you hold as a possession, you must provide for the redemption of the land.”

Food & its Impact on Climate Change

Scriptural Foundation: Eating Well

1 CORINTHIANS 10:31 *Whether you eat or drink, or whatever you do, do it all for the glory of God*

PROVERBS 25:16 *Hast thou found honey? Eat so much as is sufficient for thee, lest thou be filled therewith, and vomit it.*

MATTHEW 6:25 *For this reason I say to you, do not be worried about your life, as to what you will eat or what you will drink; nor for your body, as to what you will put on. Is not life more than food, and the body more than clothing?*

JOHN 6:12 *When they had all had enough to eat, he said to his disciples, "Gather the pieces that are left over. Let nothing be wasted."*

EAT LESS

L = local

E = ethical

S = seasonal

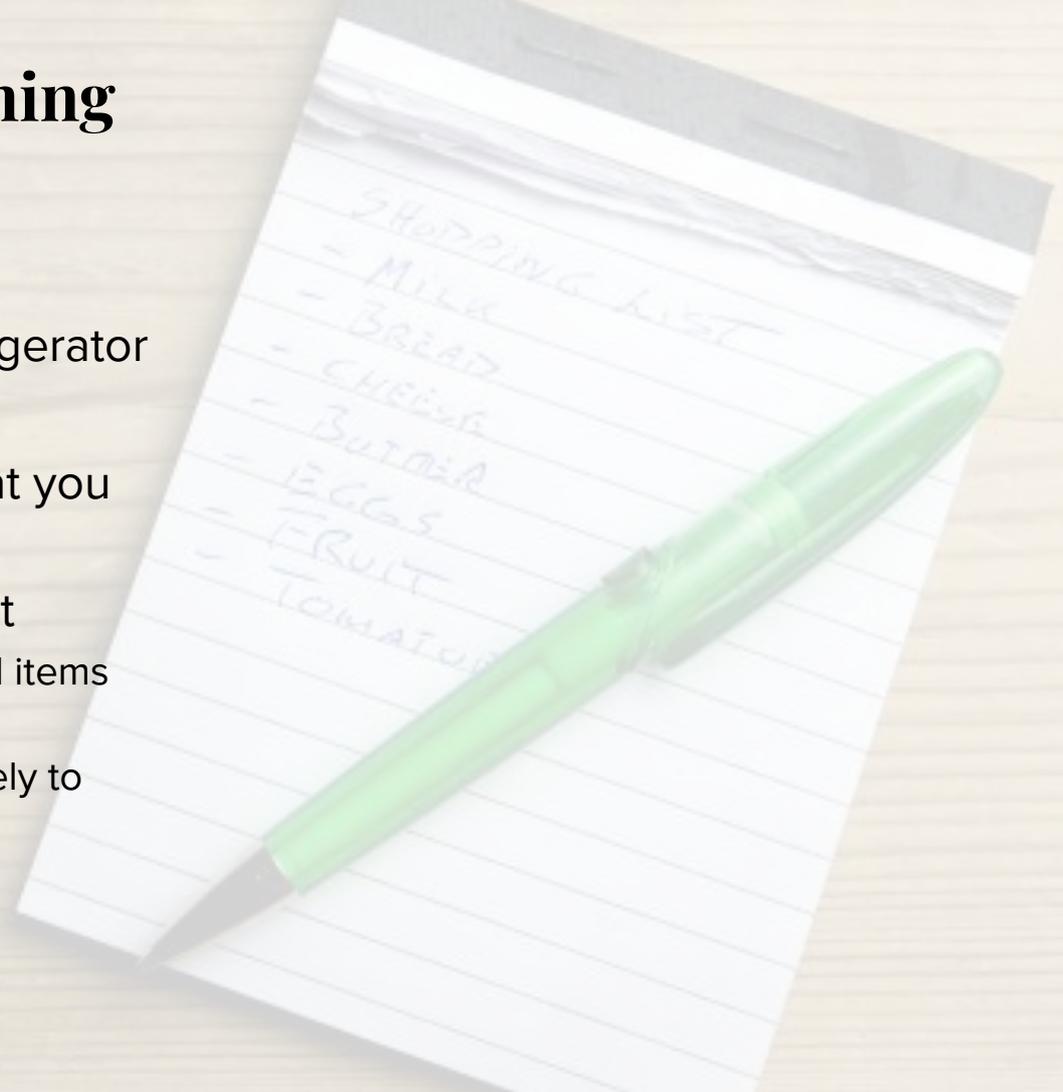
S = slow

EAT IN WAYS THAT
REMEMBER **GOD** AS THE
SOURCE AND NURTURER
OF LIFE.

Sustainable Meal Planning & Preparation

Plan your Shopping

- Check your cupboards & refrigerator
- Plan to cook with leftovers
- Create a shopping list for what you actually need
- Only buy the items on your list
 - Avoid special deals or promoted items you may not need
 - If you buy extra, you're more likely to waste some food.



Sustainable Meal Planning & Preparation

Shop Local

- Be mindful of climate change
- Look for foods that are grown or produced locally
 - Reduce emissions from transport
 - While Australian carrots or South African apples might seem exotic, local options are better
 - Local options can be fresher and tastier
- Farmers markets and CSA (community supported agriculture)
- Choosing products with less packaging is more eco-friendly
- Take reusable bags
- Consider selecting organic foods



Source: Ballard Farmers Market

Sustainable Meal Planning & Preparation

Growing your Own Food

- Indoor gardens
- Backyard gardens
- Community gardens

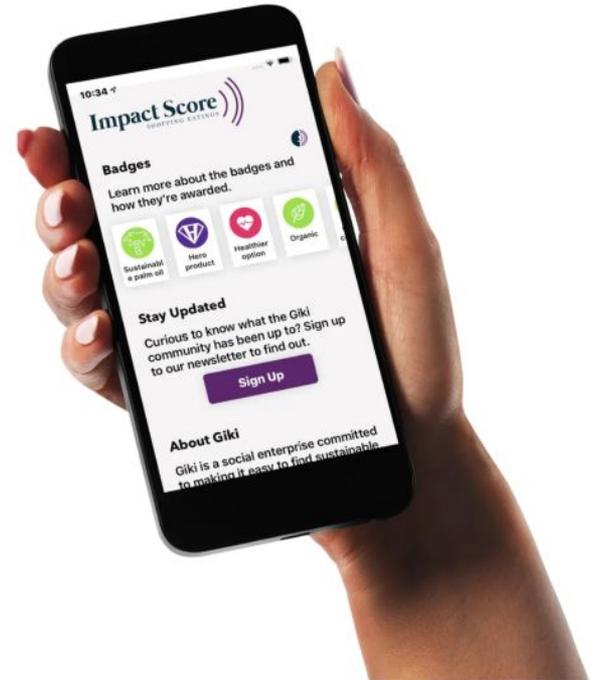


Sustainable Meal Planning & Preparation

Leverage Technology

Tools Include:

- [Impact Score](#)
 - It provides sustainability information about thousands of products and can tell you anything from whether the packaging is recyclable to whether ingredients were sourced responsibly
- [My Foodways](#)
 - Discover recipes that use the ingredients you have at home
- And more!



Breakout Session

Discussion questions

- What stood out for you among the impacts of food on climate change?
- How can you plan your shopping better?
- Where and how can you shop local?



Sustainable Cooking

The Kitchen

- Electric stoves or cookers
- Choose the correct pans so they are full
- Put lids on pots & pans
 - Trap the heat and use less energy
- Choose the right-sized burner
- Place pans in the middle of the burners on the stove
 - Helps make sure energy isn't wasted



>>> these steps can save about 3% of energy costs

Sustainable Cooking

Cook Better

- Cook the right amount
- Use the oldest ingredients first
- Get creative to use up ingredients
 - Sell-by, best-by, use-by, enjoy-by and best-if-used-before dates are not precise
- Make veggies the main course
 - Chef Amanda Cohen's trick for eating more veggies is to make them taste better, even if it means frying eggplant or buttering peas
- Cook meat as a side dish, to use less



After the Meal

Scraps and Leftovers

- Cook for more than one meal
 - Eating leftovers reduces food waste and saves money
 - some foods taste better later
- Use vegetable scraps from cooking to make a soup stock
- Store food safely in your refrigerator
- Turn leftovers into tasty new dishes
- Freeze anything you cannot eat soon

RECIPES USING LEFTOVERS



Bread Love Pudding

CONTRIBUTED BY: MIRNASARI DEWI

A delightful dessert for all, especially those with a sweet tooth. Serves 3 - 5.

Main leftover ingredient:
WHITE OR WHOLEMEAL BREAD

Ingredients:

- 4 - 5 slices of bread, torn to small pieces
- 1 egg
- 1 tsp of sugar
- 50ml of water
- 40g of raisins
- 2 slices of cheese

Method:

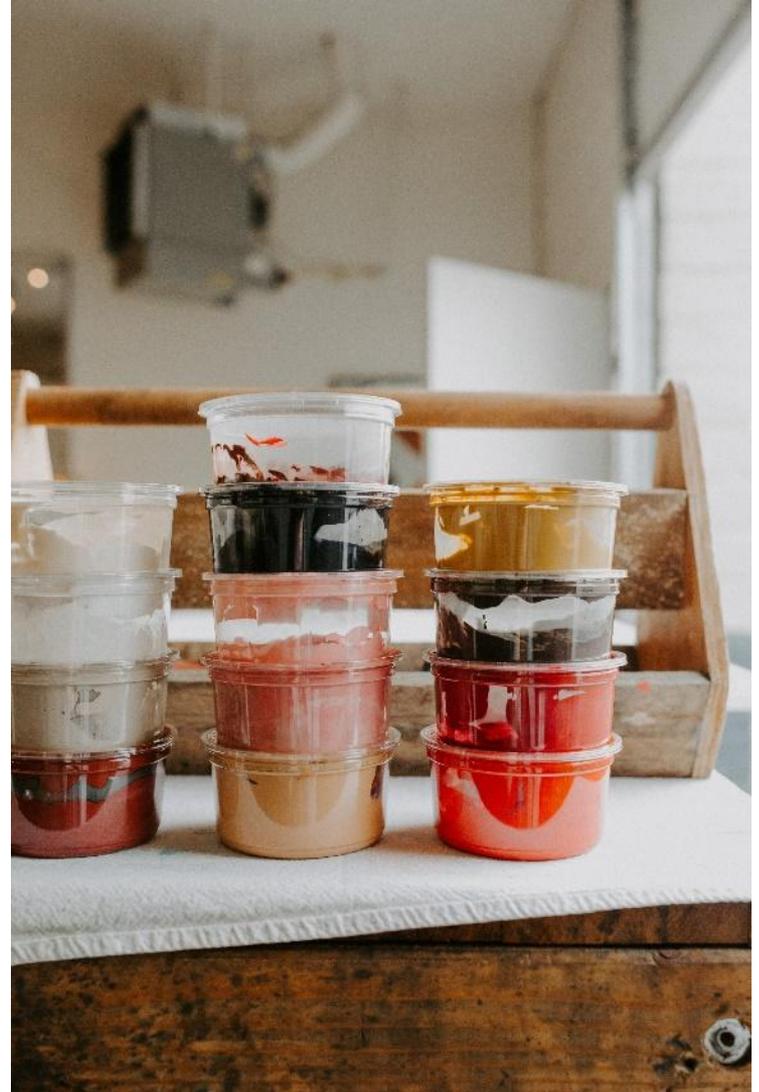
- Spread the bread pieces on a baking pan.
- In a bowl, mix egg, sugar, raisins, and water. Beat until well-mixed.
- Pour the mixture over the bread, and mix lightly with a spoon, until the bread is covered and soaking up the egg mixture.
- Spread the cheese on top of the bread.
- Bake in the oven at 175°C for 30 min. (Alternatively, you may also steam the bread.)
- Serve either hot or cold.



After the Meal

Storing Food

- Put some veggies in the high humidity fridge drawer
- Put fruits & vegetables that may rot in the low humidity fridge drawer
- Store fruit that releases ethylene (bananas, apples, pears, stone fruits, etc.) away from other produce
- Wash berries, cherries & grapes when you're ready to eat them
- Store potatoes, eggplant, squash, onions & garlic in a cool, dry, dark, ventilated place
- Refrigerator door is warmest, lower shelf coolest



After the Meal

Cleaning Up

- Use eco-friendly cleaning products
 - Sponges made from recycled materials
 - Biodegradable soaps.
- Install a low-flow device in the faucet
 - Don't let the faucet run
- For a two-compartment sink
 - Soapy water on one side
 - Rinse on the other



After the Meal

Minimize Food Waste

- Check what you have, and plan
- Use ingredients if possible
- Donate usable extras
- Compost



Source: EPA

Breakout Session

Discussion questions

- What might you change in your kitchen?
- How can you cook better?
- What can you do to minimize waste?





Sharing and Q&A

Insights from breakout groups

Make a Difference

“You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of difference you want to make.”



Photo by Stuart Clark