



**food &  
creation care**

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*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

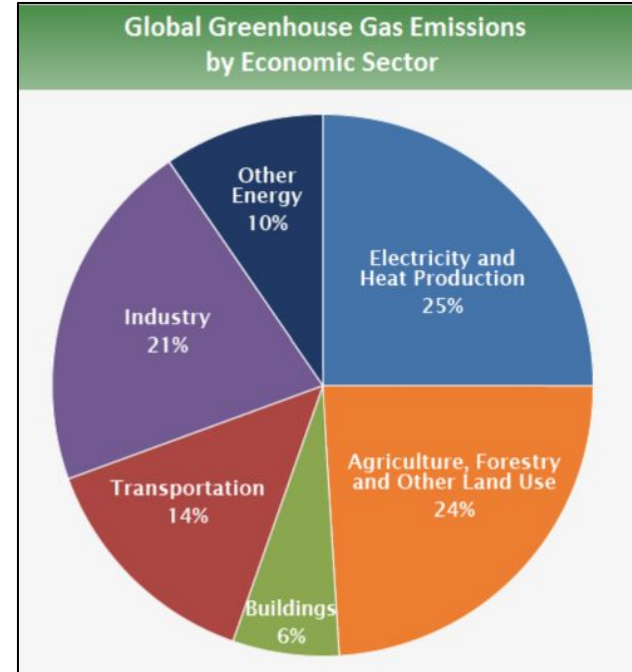
## *Framework*

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

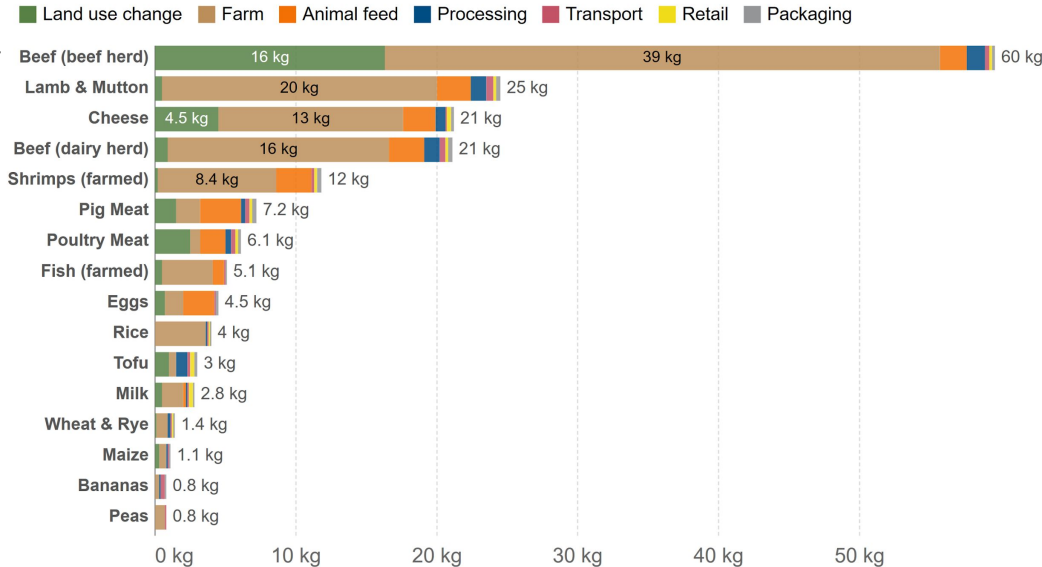
## The Climate Impact

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 (kgCO<sub>2</sub>eq) per kilogram of food. This means non-CO<sub>2</sub> 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. H., and Hootman, 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 CO<sub>2</sub> equivalent. The average US car emits .404 kg/mile.

\* Schindler, Kurt, and Eike Stehfest. "Including CO<sub>2</sub> 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



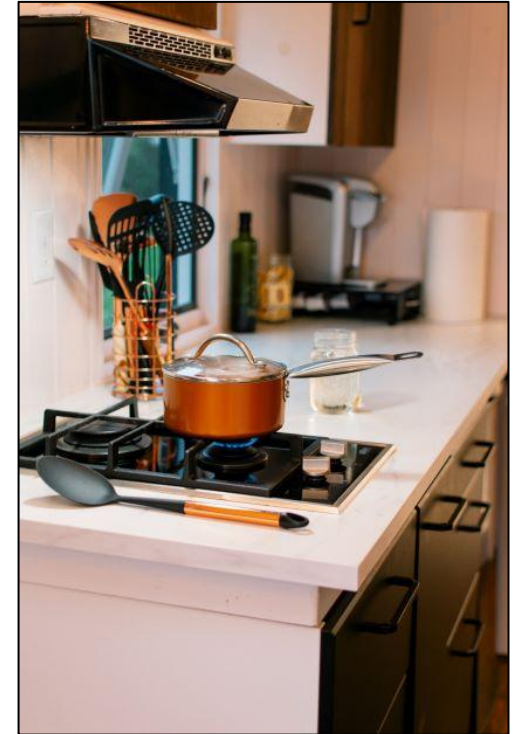
Source: Impossible

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 NO<sub>2</sub> in homes by **30 micrograms**
  - Respiratory illness in children exposed to 30 more micrograms of NO<sub>2</sub> 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 CO<sub>2</sub>
  - Causes about **6%** of global emissions
- Food waste would be the 3<sup>rd</sup> largest emitter of greenhouse gasses after China and the US if waste were a country

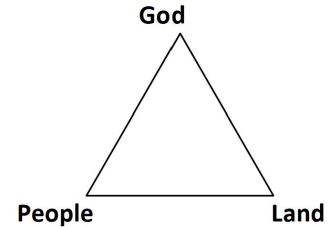


# Food & its Impact on Climate Change

## *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

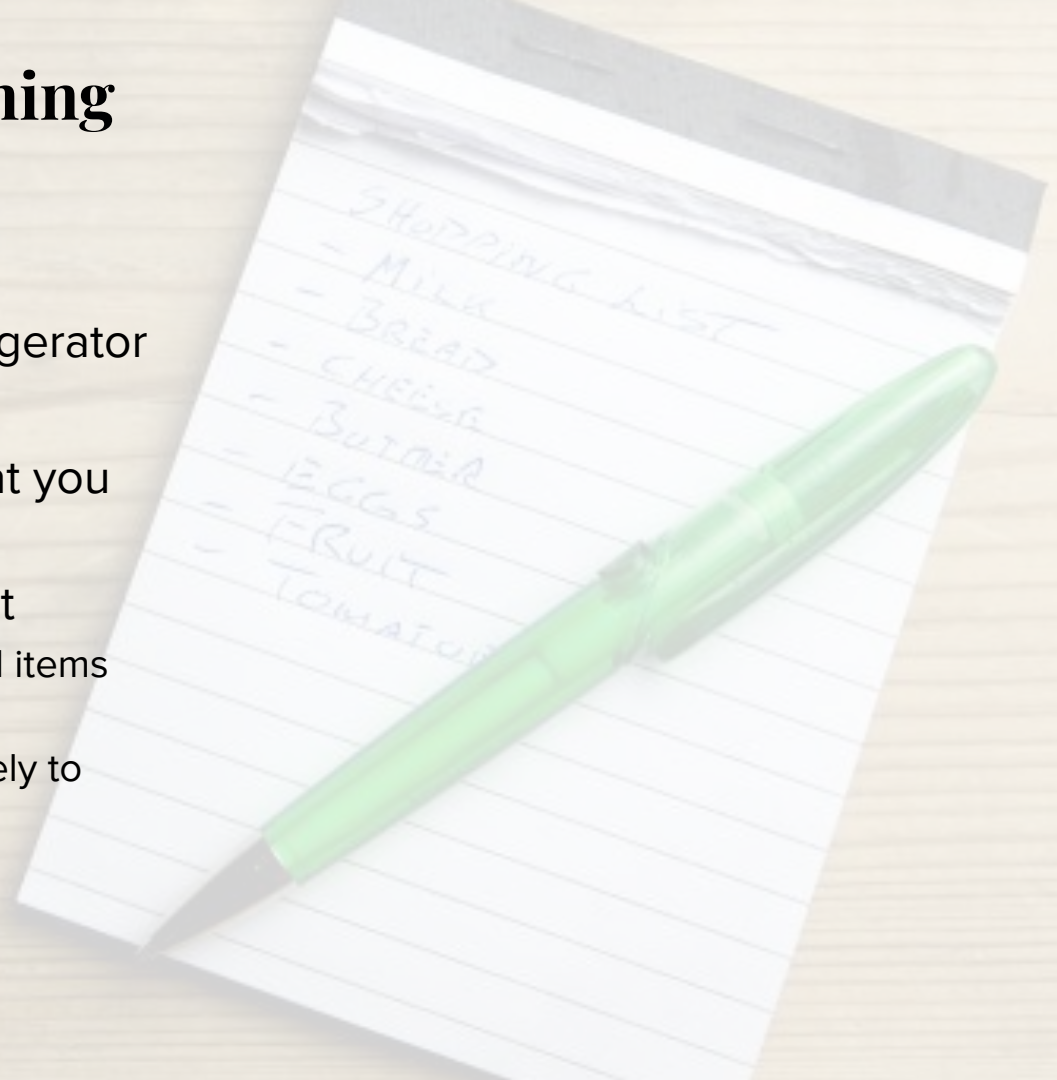
S = slow

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

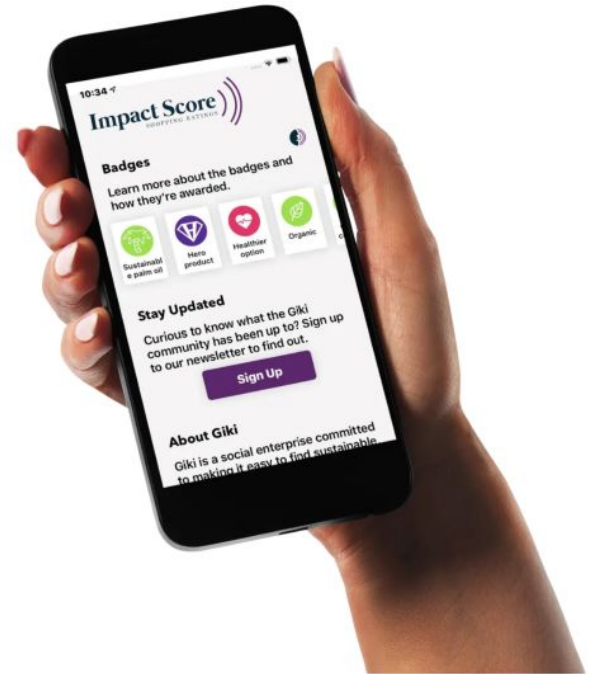


# Sustainable Meal Planning & Preparation

## *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:**

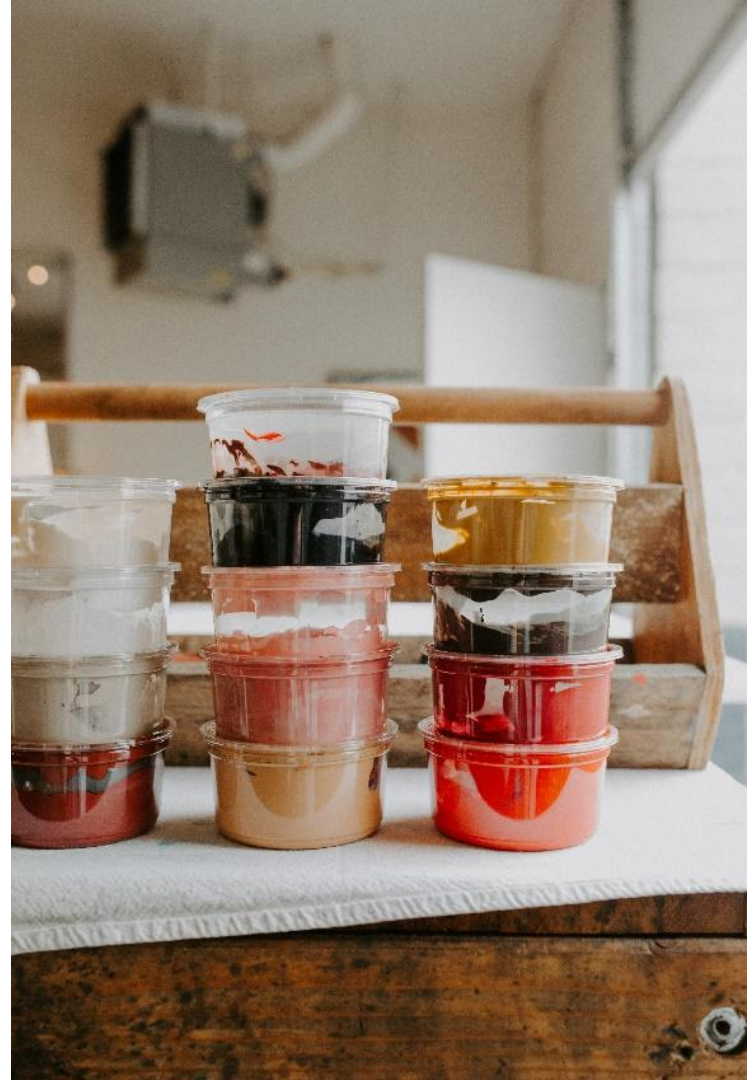
- Spread the bread pieces on a baking pan.
- In a bowl, mix egg, sugar, raisins, and water. Beat until well-mixed.
- Pour the mixture over the bread, and mix lightly with a spoon, until the bread is covered and soaking up the egg mixture.
- Spread the cheese on top of the bread.
- Bake in the oven at 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