



# Low Carbon Diets

# Food and Climate Change

- Know how your food affects both your health and your environment.
- Climate change is affecting the way that people produce and consume food.
- A low-carbon diet leads to better health

# Livestock Production

- Growing livestock versus plant-based products is extremely inefficient
  - It requires approximately 5-7 kilograms of grain to produce one kilogram of beef
- Beef is the least resource-efficient of all livestock production and the most damaging to the environment

# Beef Production

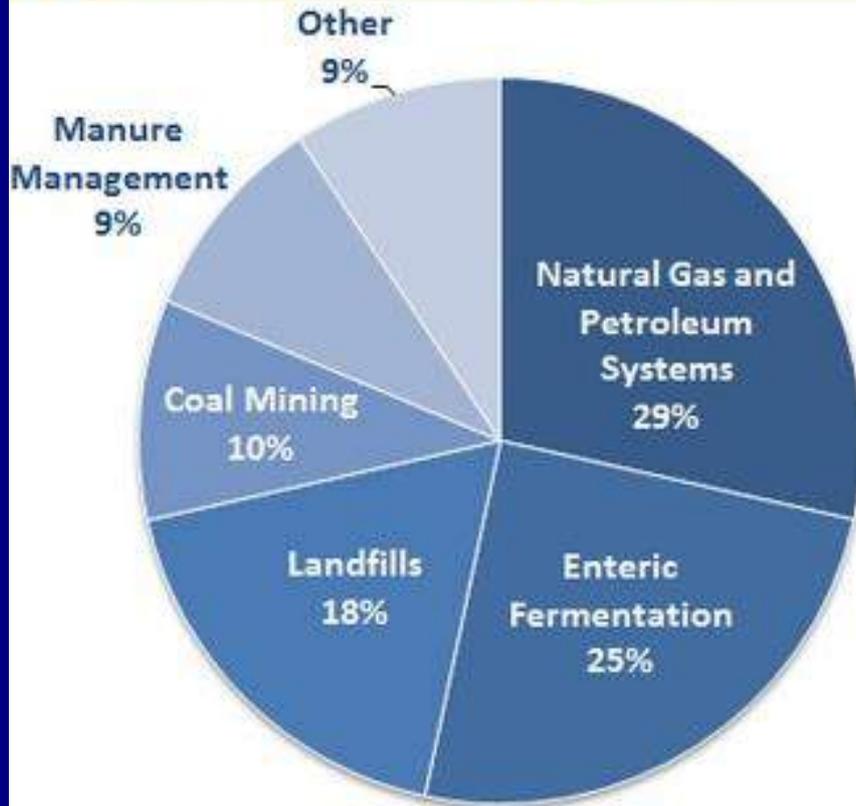
- Beef production contributes to approximately 9% of all emissions linked to human activity and 65% of all livestock emissions in the United States.
- Cattle feed requires more water than any other agricultural product, and the nitrogen-containing fertilizer used to grow it is a major source of water pollution.
- Raising cattle produces methane, a potent greenhouse gas, and contributes additional carbon dioxide emissions because of the energy required to provide feed using modern industrial food systems.
- Beef production promotes deforestation.

Source: Eshel G, Shepon A, Makov T, Milo R. Land, irrigation water, greenhouse gas, and reactive nitrogen burdens of meat, eggs, and dairy production in the United States. *Proc Natl Acad Sci USA*. 2014;111(33):11996-12001.

# Meat Diet and Methane Pollution

(Methane has 70 times the warming power of CO<sub>2</sub>)

U.S. Methane Emissions, By Source



Note: All emission estimates from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012*.



# Food, Agriculture, and Your Health



# New USDA Dietary Guidelines

- Strong evidence has shown that diets with lower intake of meat are associated with reduced risk of cardiovascular disease (CVD)
- Moderate evidence indicates that lower meat intake is associated with reduced risk of obesity, type 2 diabetes, and some types of cancer in adults
- Average intakes of meats, poultry, and eggs for teen boys and adult men are above current recommendations
- The recommendation for the meats, poultry, and eggs subgroup in the Healthy U.S.-Style Eating Pattern at the 2,000-calorie level is 26 ounce-equivalents per week

Source: U.S. Department of Health and Human Services and U.S. Department of Agriculture. *2015 – 2020 Dietary Guidelines for Americans*. 8<sup>th</sup> Edition. December 2015. Available at <http://health.gov/dietaryguidelines/2015/guidelines/>.

# The Evidence on Red Meat

- **NIH-AARP Study: 20-50% increased mortality from cancer and CVD (Sinha, 2009)**
- **Women's Health Study: 28% more incidence of diabetes (DM) over 8 years (Song, 2004)**
- **Nurses' Health Study/ Health Professionals Follow-up Study: 13% increase in mortality per serving (all cause, cancer, and CVD). (Pan, 2012)**
- **Extra daily half serving of meat raised risk of DM 48% for subsequent 4 years (Pan, 2013)]**

# INTERVENTION STUDIES

**Mediterranean Diet:** emphasizes eating primarily plant-based foods, such as fruits and vegetables, whole grains, legumes and nuts, and limiting red meat to no more than a few times a month

- 60% decrease cardiac events (Ornish, 1998)
- 70% decrease CVD mortality (DeLogeri, 1994)
- 35- 48% decrease in metabolic syndrome (Esposito, 2004; Azadhbakt, 2005)

# HEALTHY FOOD SYSTEM

Currently, the average meal travels 1200 km from the farm to plate. Local healthy food is grown closer to home, causing fewer transportation emissions, and is also fresher. The amount of energy needed for processing and refrigeration is reduced as the distance food travels decreases.



# What you can do!

- Limit red meat consumption
  - Try to eat at least one meat-free meal per day
- Eat local food whenever possible
- Don't waste food:
  - Nearly half of all food produced is discarded. When food is wasted, all the resources to grow, ship, package and produce it are wasted, too, including massive amounts of water.
  - Composting reduces methane emissions produced by landfills
- Consider growing your own food
  - Growing vegetables at home eliminates some of the transport required to get food to your table.
- Contact your elected officials to tell them about climate change!

# Healthy diets for people and the environment

