

# Food and Climate

## Intensive chemical practices

- Synthetic pesticides and fertilizers are widely used and often made from fossil fuels
- Manufacturing and transporting these chemicals uses significant amounts of energy and produces greenhouse gases



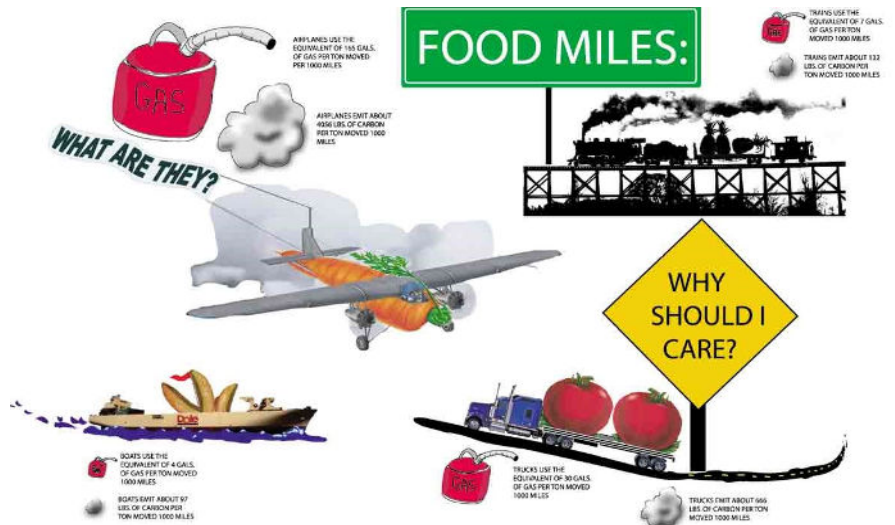
Studies are showing that chemical farming uses more energy per unit of production than organic farms. Synthetic nitrogen fertilizers in soils produces nitrous oxide, a greenhouse gas that is more powerful than carbon dioxide at trapping heat in the atmosphere. Organic farms, on the other hand store much more carbon in the soil, keeping it out of the atmosphere.

## Transportation

A complex issue to tackle. Our meals, on average, come from five different countries according to the NRDC.

Foods that are shipped by air contribute the most to greenhouse gas emissions.

Some animals, like cattle, may travel even further. From birth to death, a beef cow may travel from farm to finishing lot to slaughter house to processing plant before ending up at a grocery store. There also remains the issue of the impacts from housing and feeding animals.



This poster indicates roughly how much energy each form of transportation uses and how much carbon dioxide it produces. As any car driver knows, these figures depend a great deal on how the vehicle is driven, the vehicle's condition and technology, and the weather. These are some of our best guesses of industry-wide averages based upon the existing literature.

<http://hvfarmscape.org/food-miles>

Food grown closer to home will have fewer vehicle related emissions, be fresher, and support local farmers. And as the distance food travels increases, so does the need for special processing and refrigeration to reduce spoilage and protect fragility.

## Meat and climate

There is little doubt that meat production contributes to climate change in a significant way.

It is estimated that livestock (dairy, eggs, and all meat) production accounts for 58-70% of all agricultural land use and occupies 30% of the land surface of the planet.

Because of their sheer numbers, the United Nations Food and Agriculture Organization (FAO) has estimated that livestock production is responsible for 18% of greenhouse gases.

The growing of livestock for food is an extremely inefficient process. For example, it takes approximately five to seven kilograms of grain to produce one kilogram of beef.

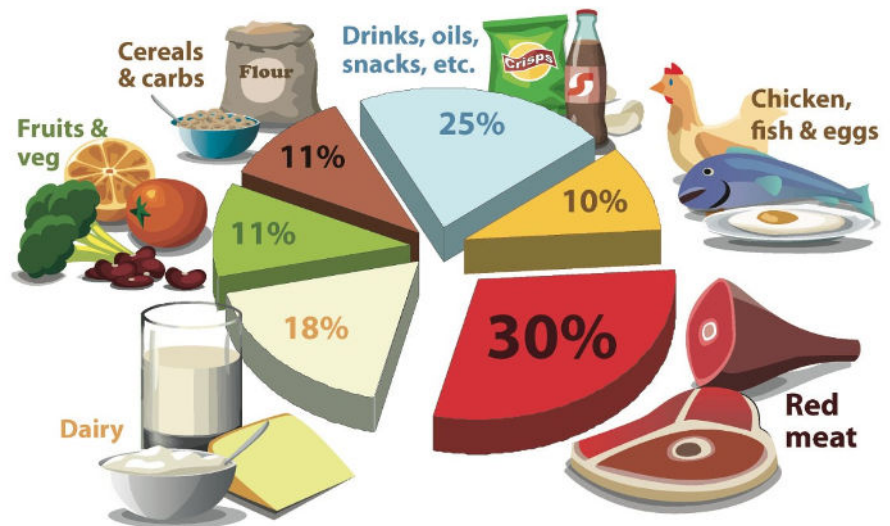
## What we can do together

**Buy organic and local whenever possible** - Vote with your fork. Let your local farmers know organic is the way to grow!

**Eat plant-based meals** - Enjoy Meatless Mondays for example, and if you're already doing that, gradually increase the number of plant-based meals you eat.

**Other things you can do** - Reduce food waste and packaging and grow some of your own food and/or support local organic farms.

## Sources of greenhouse gas emissions from U.S. food choices



Adapted from: Weber and Matthews (2008) *Food-Miles and the Relative Climate Impacts of Food Choices in the United States*. *Environmental Science & Technology*, 42 (10), 3508-3513.

JOHN HOPKINS  
Center for a Livable Future  
B. Kim

