



Beyond Food Miles

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Where did your food come from?

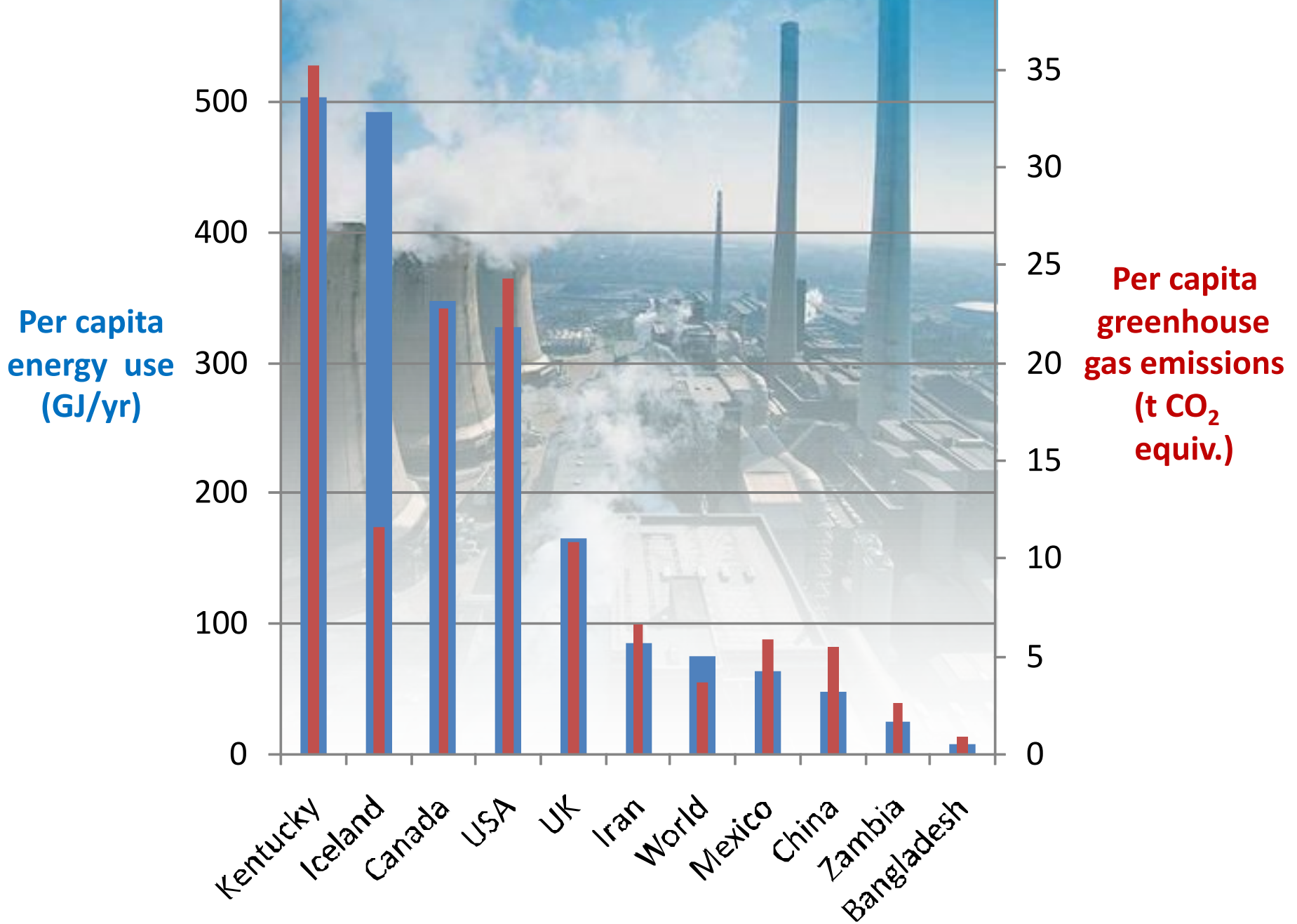
How did it get to your plate?

How much energy did that take?

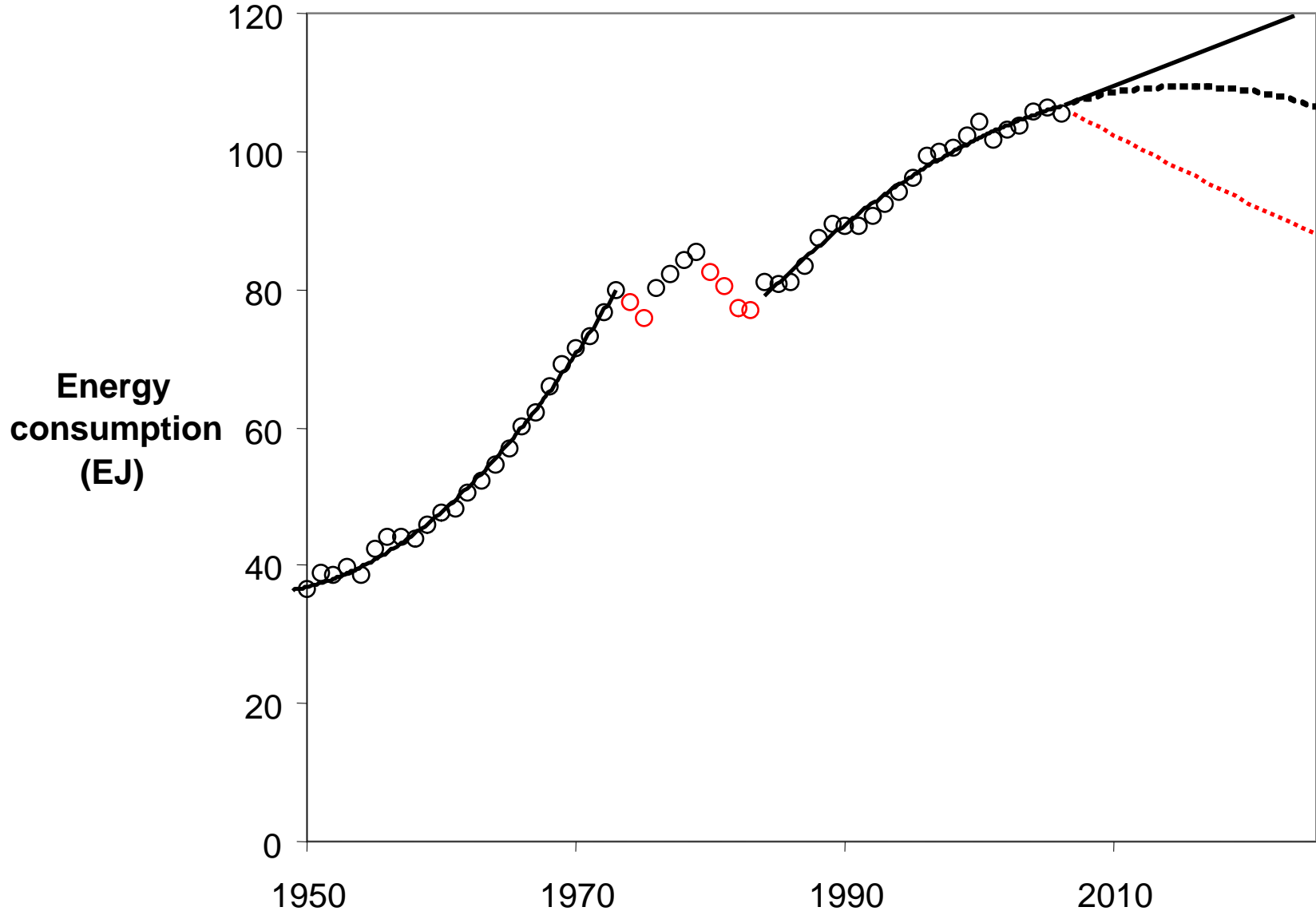
How much greenhouse
gas did that produce?

How can we reduce its footprint?

The USA uses a lot
of energy and emits
a lot of greenhouse gas



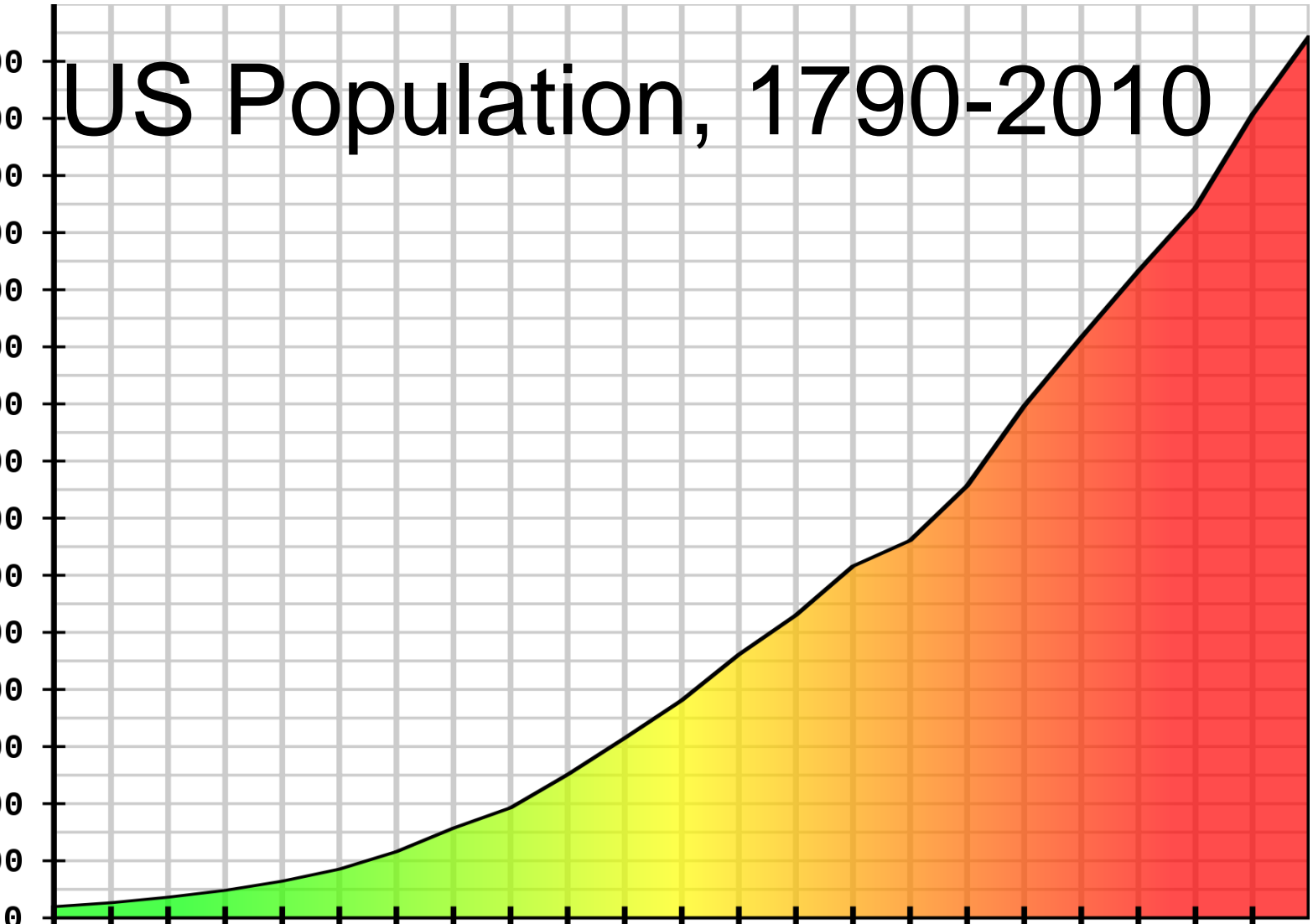
US Energy Consumption, 1950-2025



US Population, 1790-2010

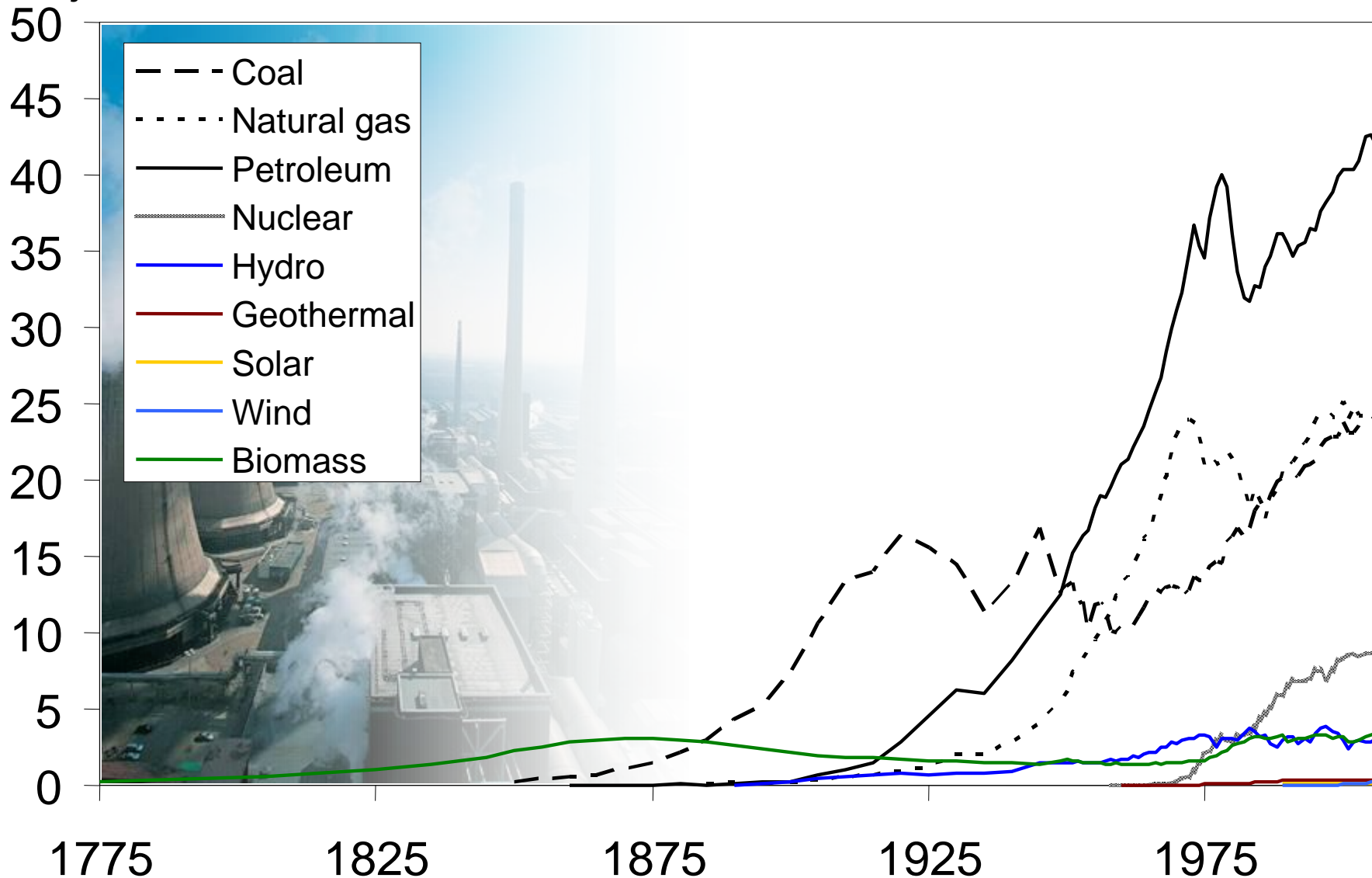
300,000,000
280,000,000
260,000,000
240,000,000
220,000,000
200,000,000
180,000,000
160,000,000
140,000,000
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
0

1790 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000

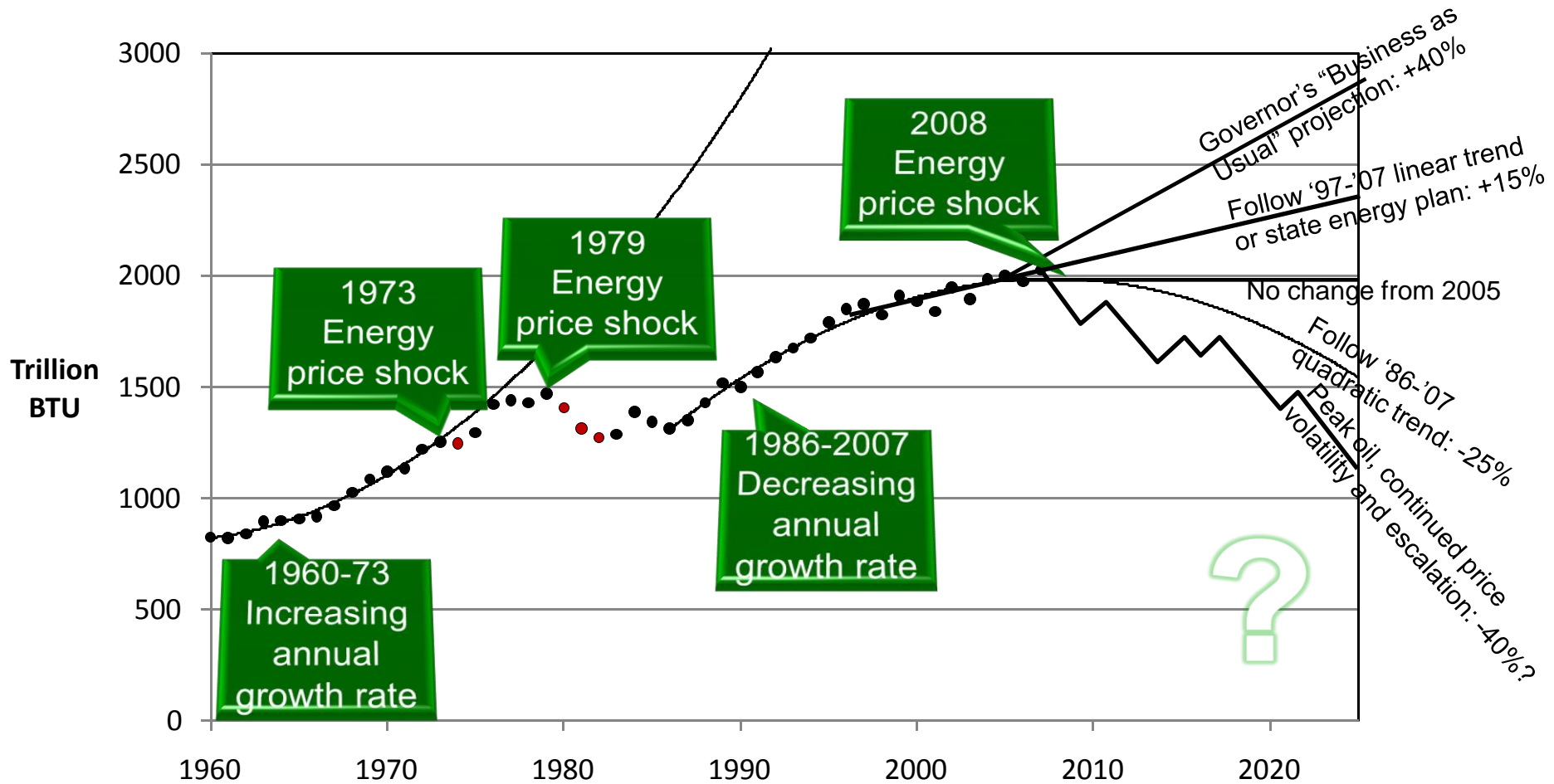


US Energy Consumption by Source, 1775-2006

Exajoules



KY Energy Consumption, 1960-2025

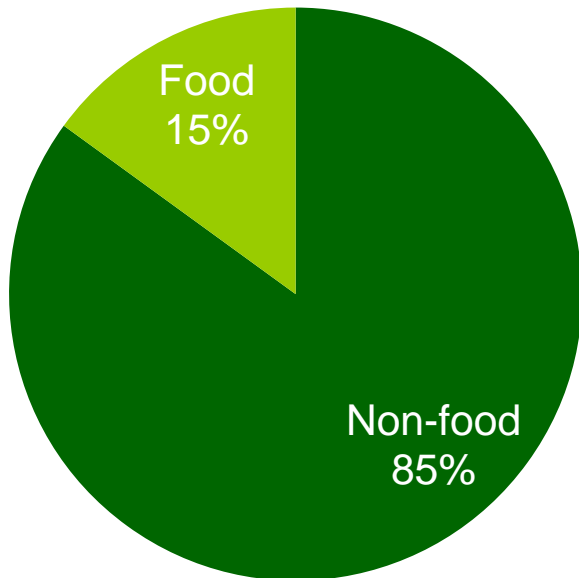


Why Reduce Fossil Fuel Use?

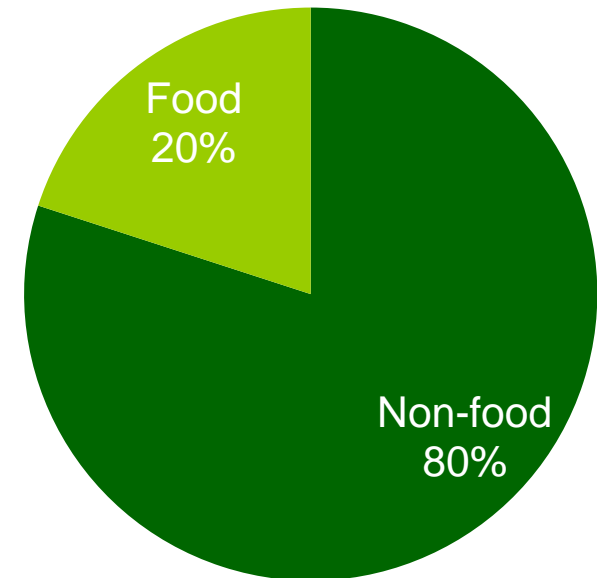
- Environmental reasons
 - Reduce carbon emissions
 - Reduce impacts of fossil fuel extraction and burning
- Economic reasons
 - Reduce input costs (sometimes...)
 - Reduce risk; enhance security, independence
- Prepare for energy-constrained future

The Food System is a Big Part of the Picture

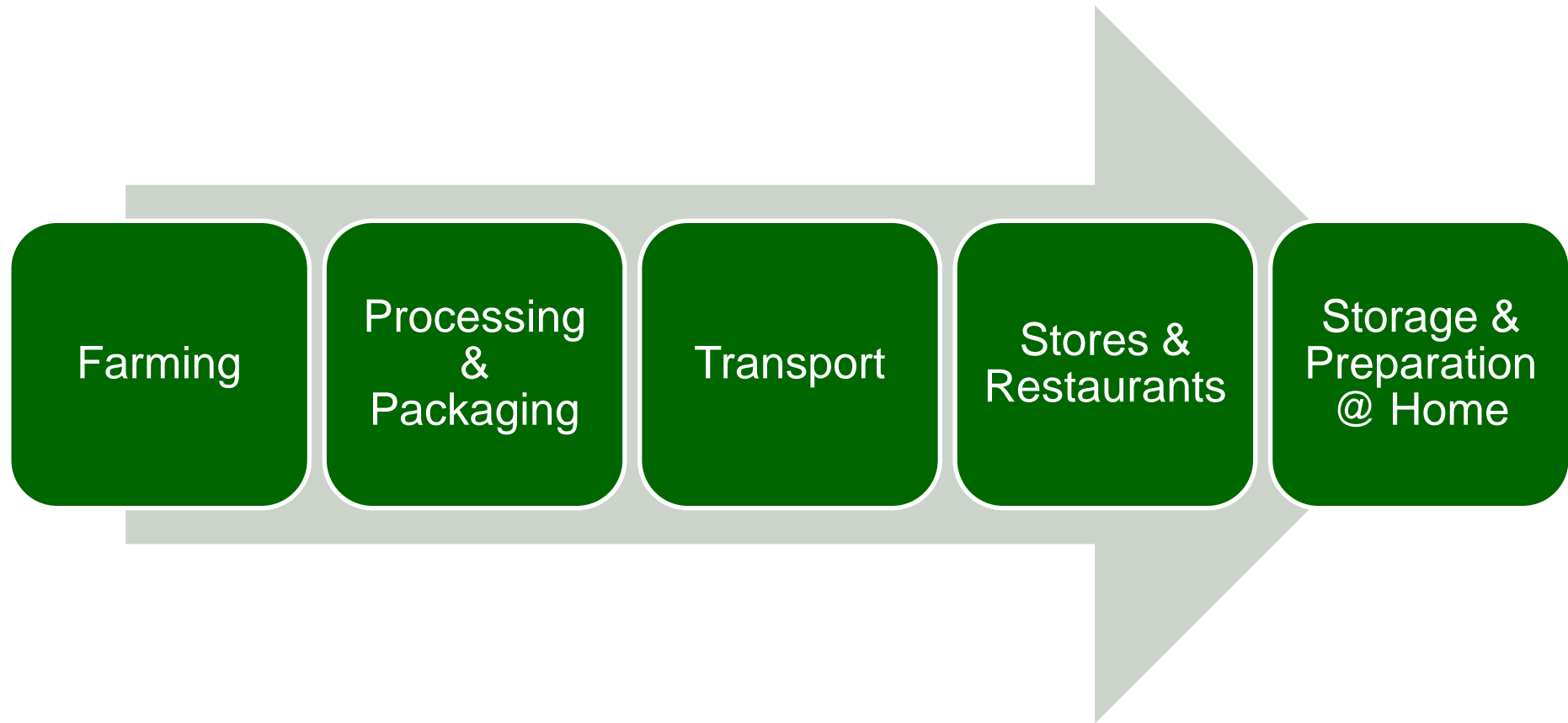
US Energy Use



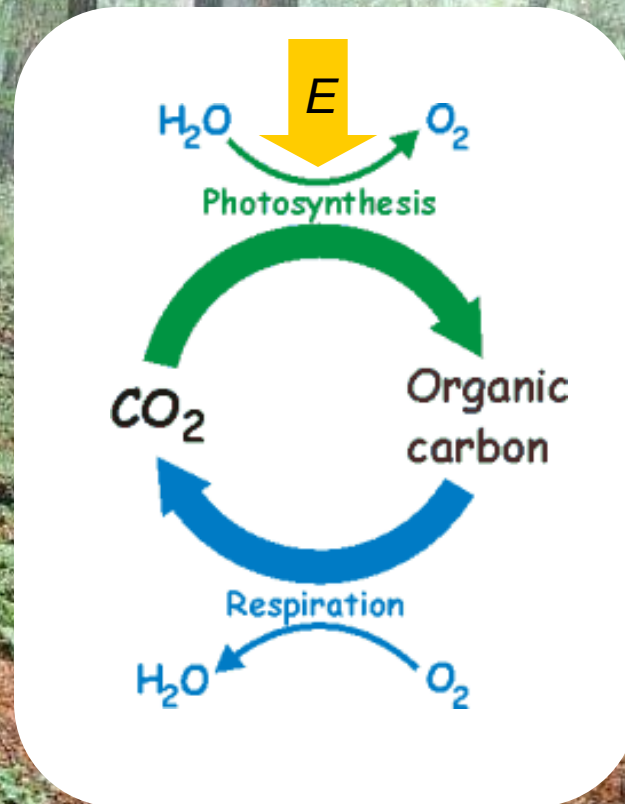
US GHG Emissions



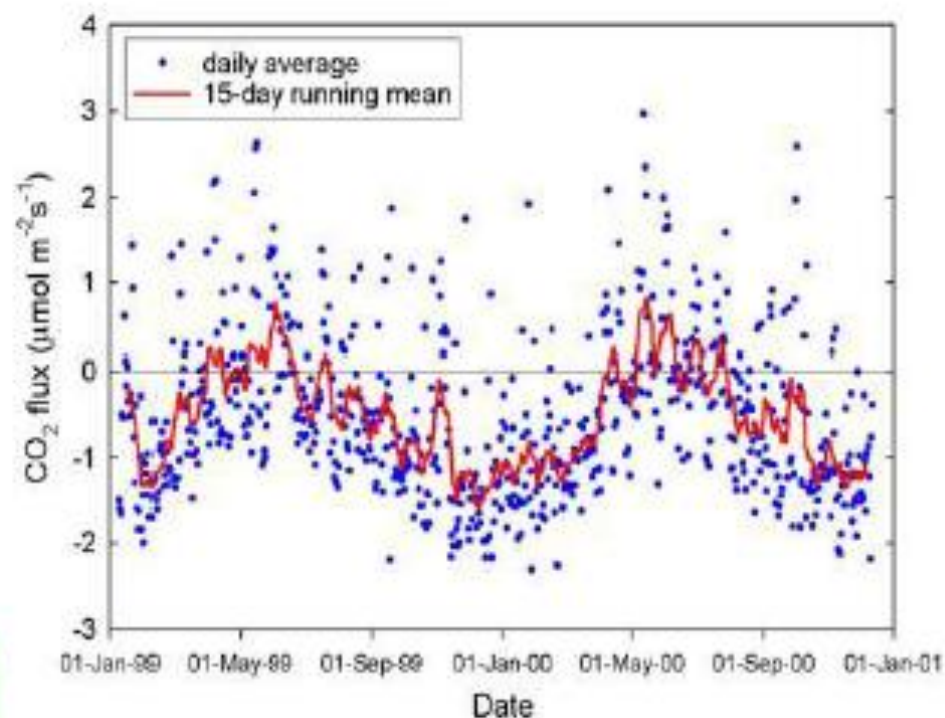
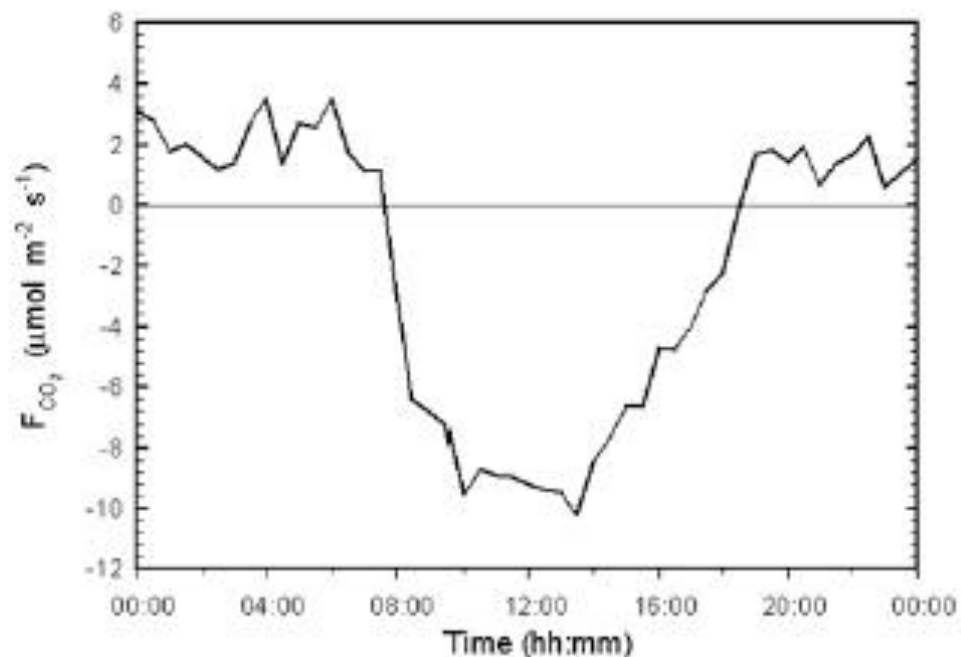
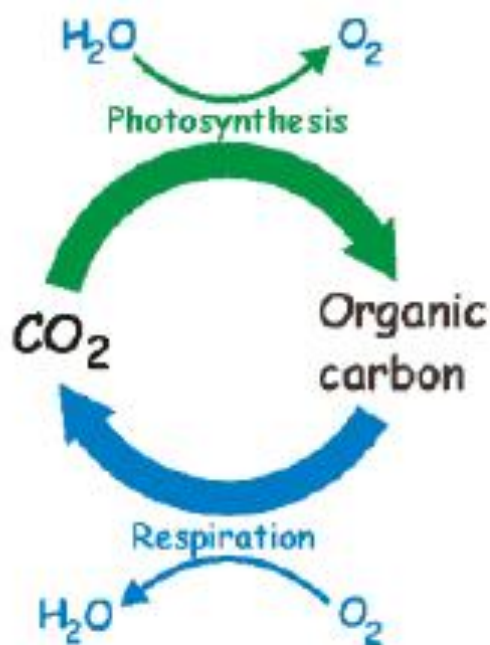
Journey of Food



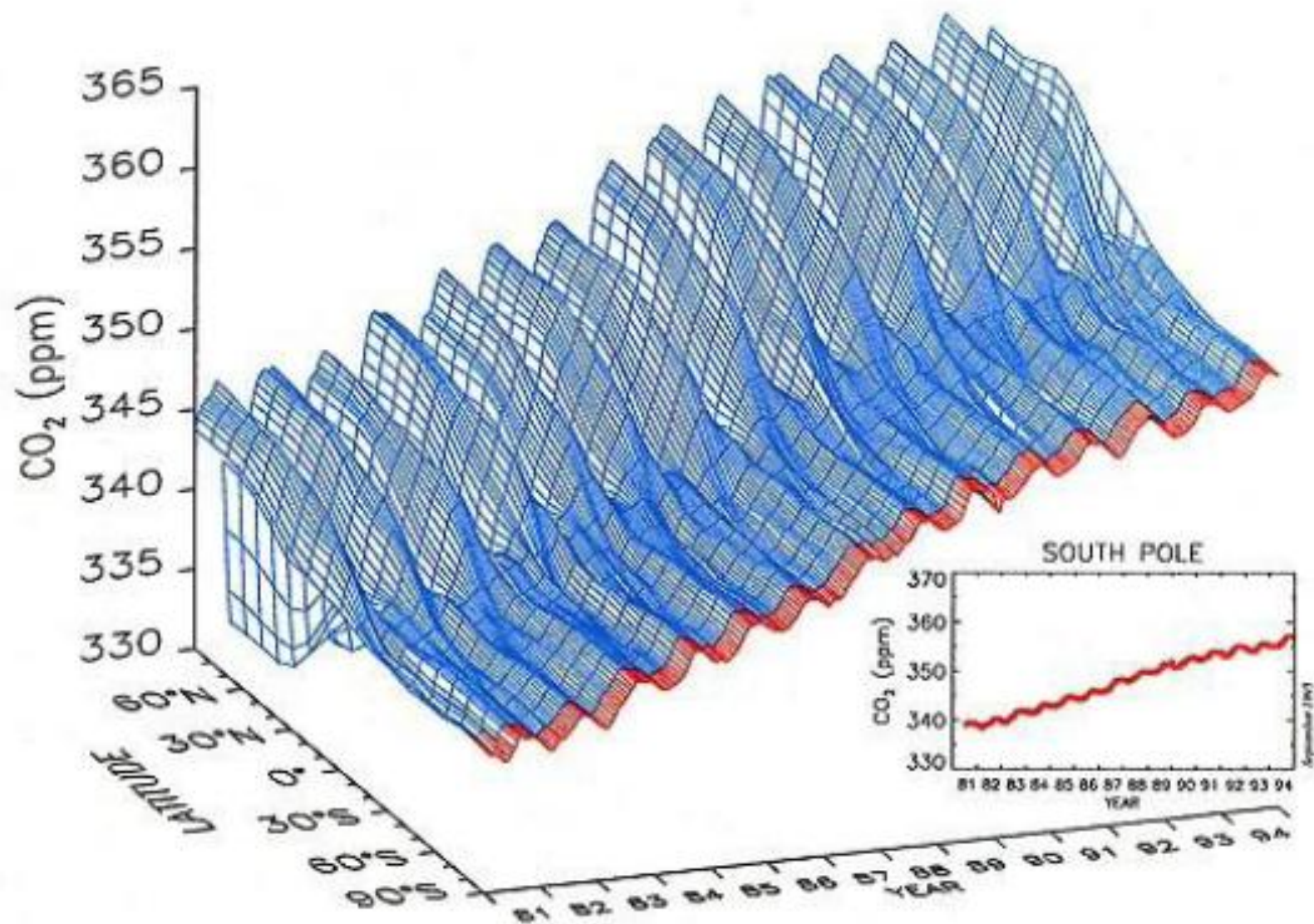
Photosynthesis: *Forests from thin air*



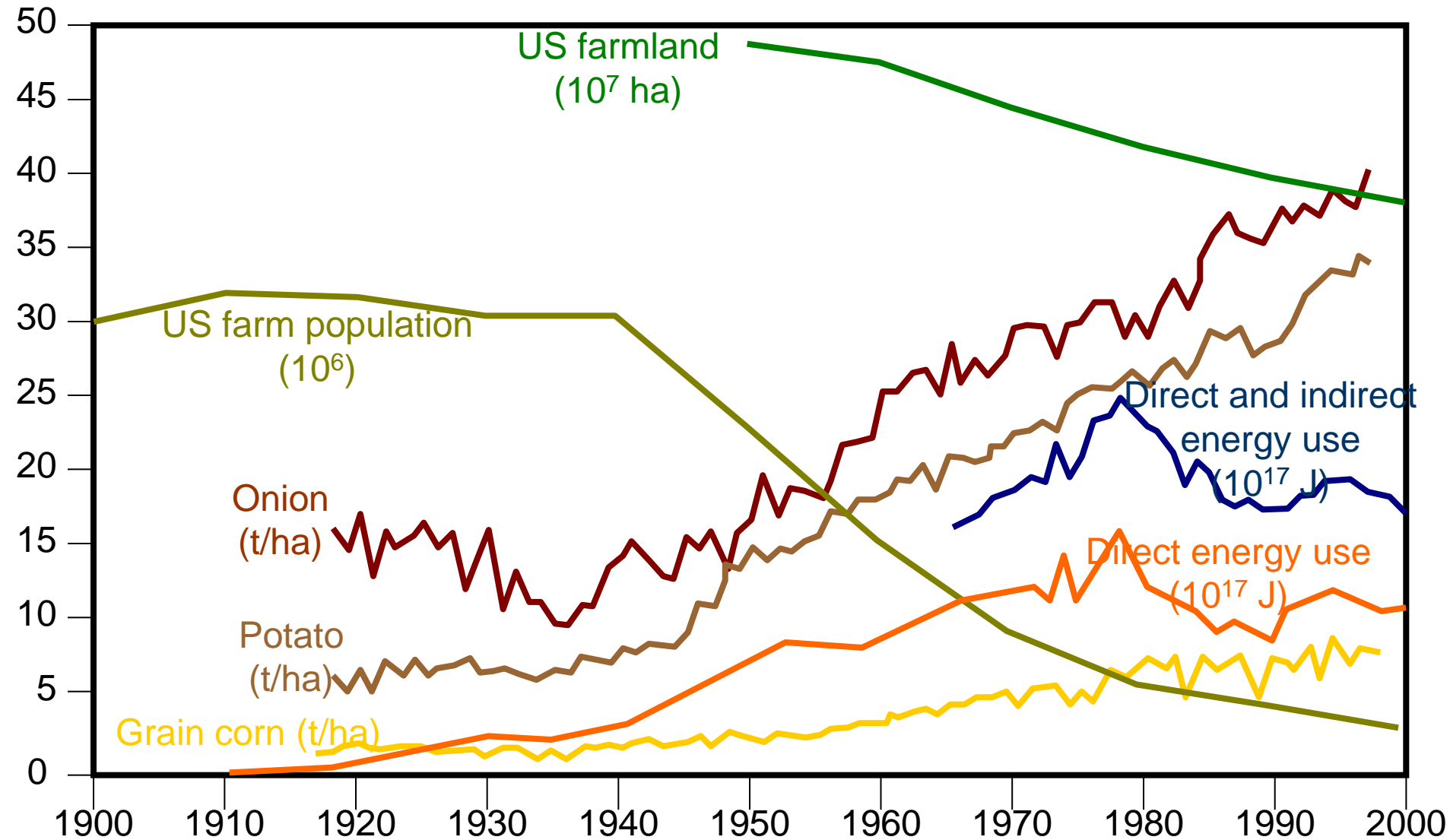
CO₂ flux



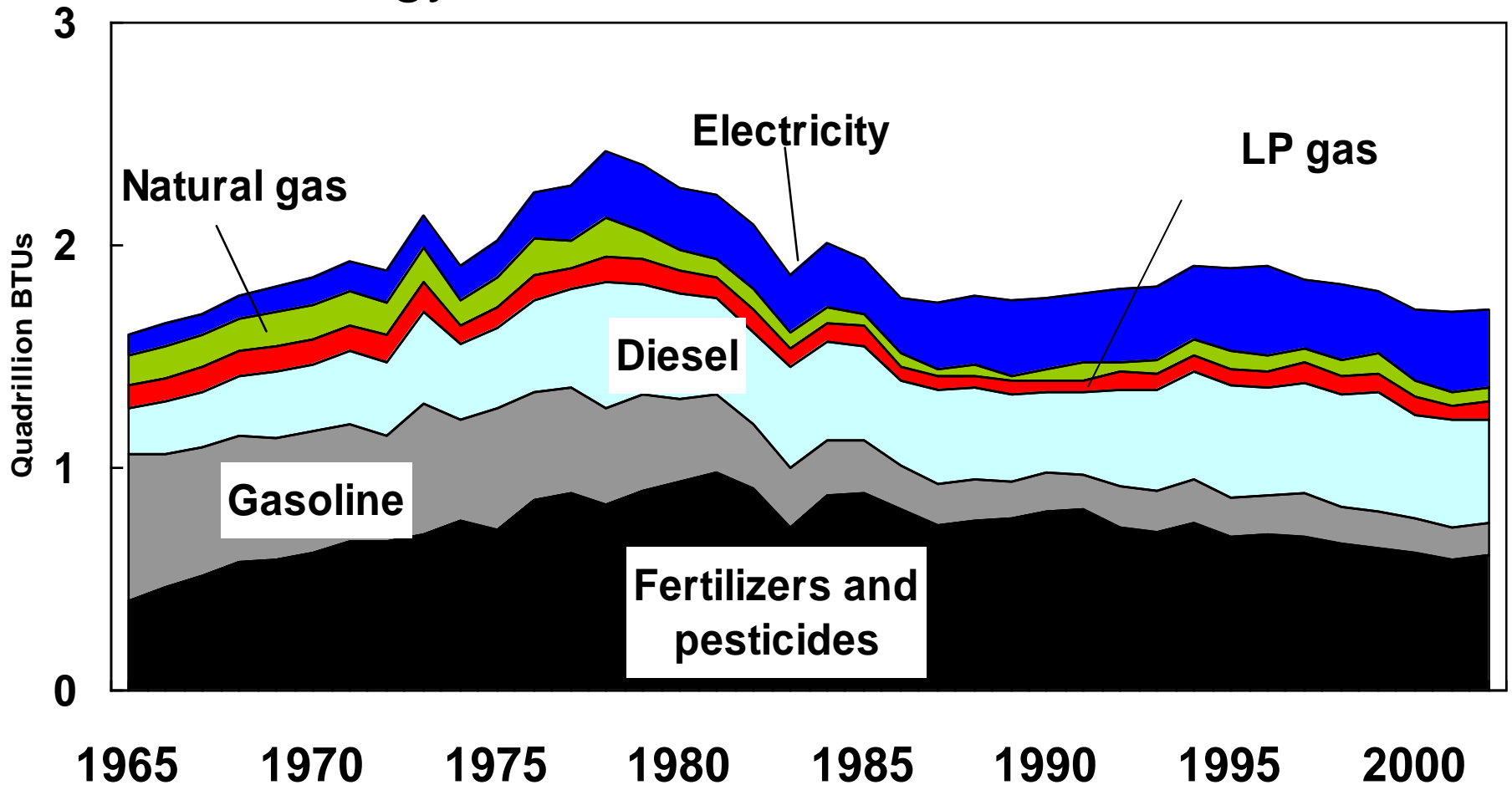
GLOBAL DISTRIBUTION OF ATMOSPHERIC CARBON DIOXIDE



Changing face of US agriculture



Total Energy Consumed on US Farms, 1965-2002



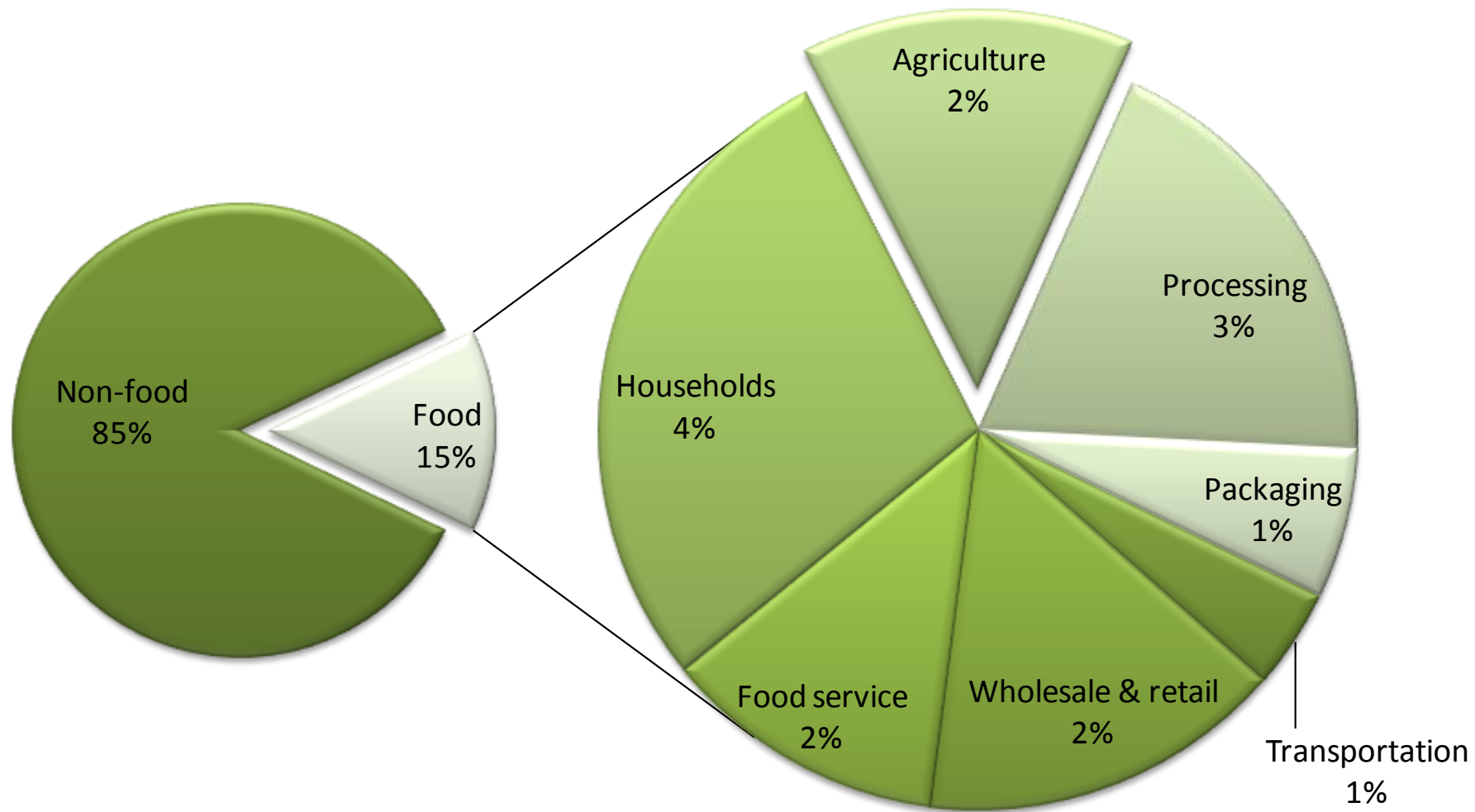
Food Transport

- Grocery store is typically ~1,000 miles from farm
- Food journey from farm to store typically covers 4,000+ miles

The food
still has to
get home...



US Food System Energy Use, 2002



The “food mile” is a misleading concept:

How food travels has more impact on energy use and greenhouse gas emissions than how far it travels.

Planes
1%



Boats
65%

Big trucks
33%

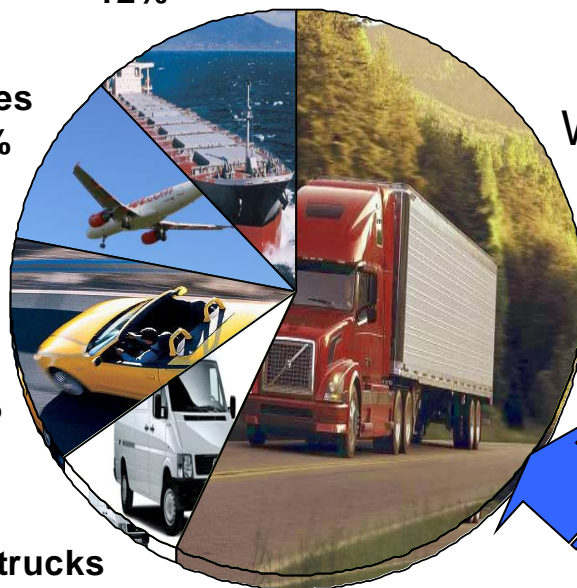
Little trucks
1%

Boats
12%

Planes
10%

Car
13%

Little trucks
8%



Car
48%

Big trucks
31%

Little trucks
21%

Big trucks
57%

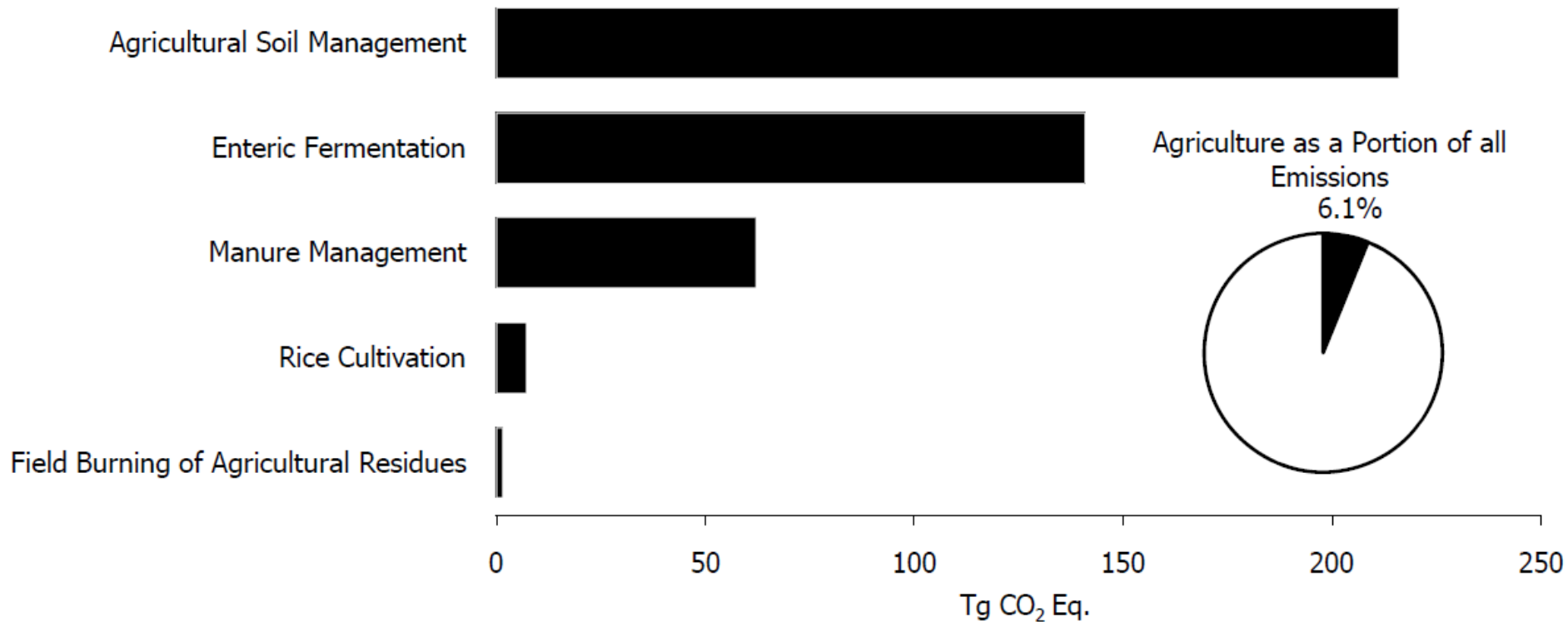
Who's making the most trips?
(Vehicle miles)

Who's emitting CO₂ to
haul food?

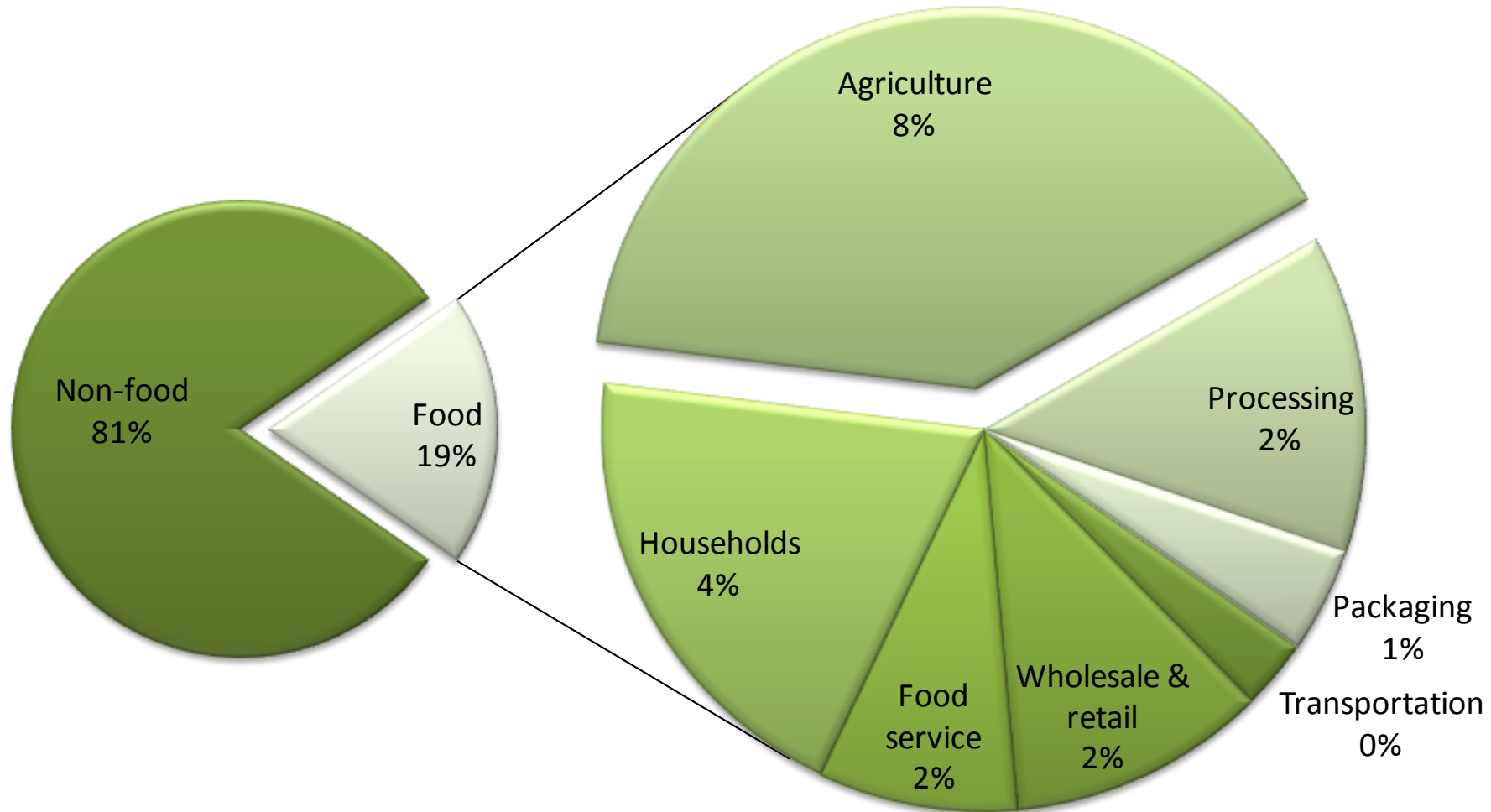
How is food hauled?
(Weight and distance)

US Agricultural Greenhouse Gas Sources, 2008

(over and above GHG from ag. energy use)



US Food System GHG Emissions



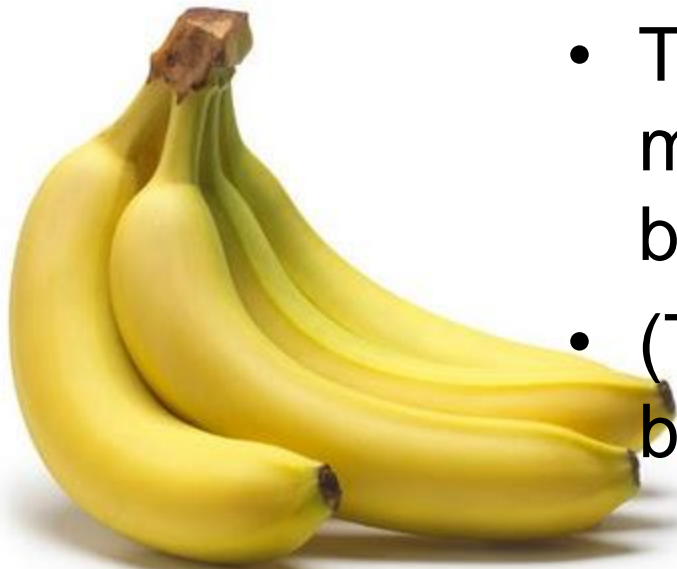
Great Reasons to Buy Local

- Keep \$ in local economy
- Know your farmer
- Support local food security / resilience
- Get less processed & packaged food

- Reducing food miles may not be a great reason on its own

Interesting unexpecteds

- Driving a Ford Explorer 4 miles in the city uses as much energy as shipping 2 pound of bananas around the world eight times
- The energy required for a Prius to make the trip would get the bananas around the world twice
- (The 'Hummer of fruit' is not the banana... it's the Hummer)



Interesting unexpecteds

- A person in England emits less greenhouse gas by eating organic wheat from the USA and pasture-raised lamb from New Zealand than by eating conventional English wheat and lamb.



Interesting unexpecteds



- A person in New York emits less greenhouse gas by drinking wine from France than from California.
- (In Kentucky, it's a tie.)

Consumers have far more control over food system energy use than farmers

- Get a small, energy efficient fridge. Get rid of the one in the basement.
- Beware labor saving gadgets...
 - Coffee makers, bread makers, food processors...
- But gadgets can reduce energy use too...
 - Dishwashers use less hot water, and less energy, than hand-washing (especially on air dry)
 - Microwaves use much less energy than ovens
 - Electric kettles uses less energy than stove-top kettles
- Avoid processed and packaged food



	Less Meat	Organic	Home cooked	Pasture-fed	Small farms	Whole foods	Local	Seasonal
Less energy	++++	++	+++	++	+	++++	+	++
Less greenhouse gas	++++	+	++	+		+		
Food security	++	+	++++	+	++	++	+++	++
Cleaner air/water	++	+++	+	+++	+			
Cleaner food	++	++++	++	+++		++		
Biodiversity	++	++			+++		+	++
Social diversity		++	+++	+	+++	+	+++	++
Animal welfare	+++	+++		+++	++			
Total	19	18	15	14	12	10	8	8

