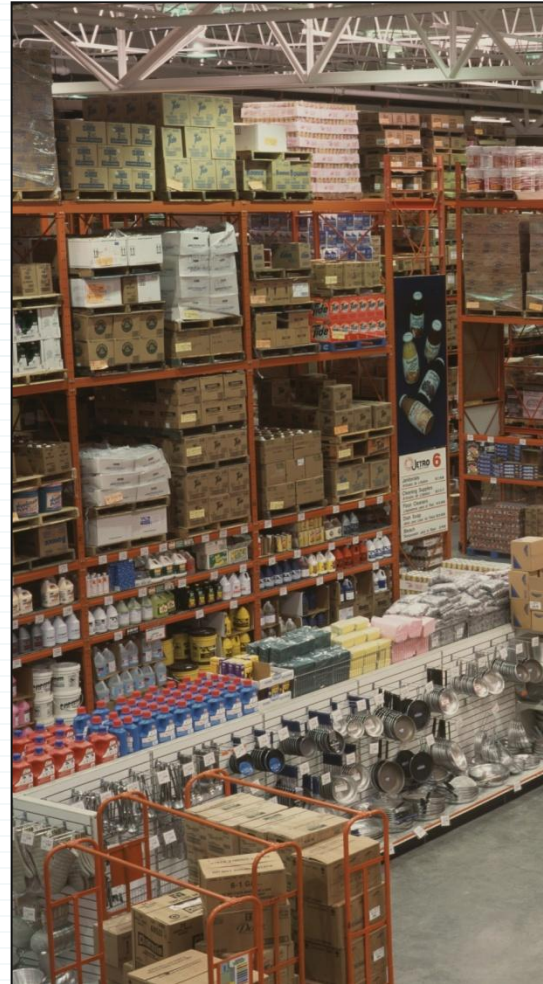


Food Distribution and Transport | *Slides*



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Overview

- Introduction
- Why food is transported
- Industry consolidation
- Food miles, energy and climate change
- Local food systems
- Regional food systems
- Reflection



Introduction

Essential questions

- Why is food transported over long distances?
- How, and how far, is food transported?
- What are the consequences of transporting food over long distances?
- What are the alternatives to global food distribution? What are their strengths and limitations?
- From where should our community get its food?

Overview

- **Introduction**

Why food is transported

Industry consolidation

Food miles, energy and climate change

Local food systems

Regional food systems

Reflection



“For most of human history, perishable foods were by definition local. They travelled far only if they could be kept alive and breathing.”

- Susan Freidberg, *Fresh: A Perishable History*

Introduction

Recent developments

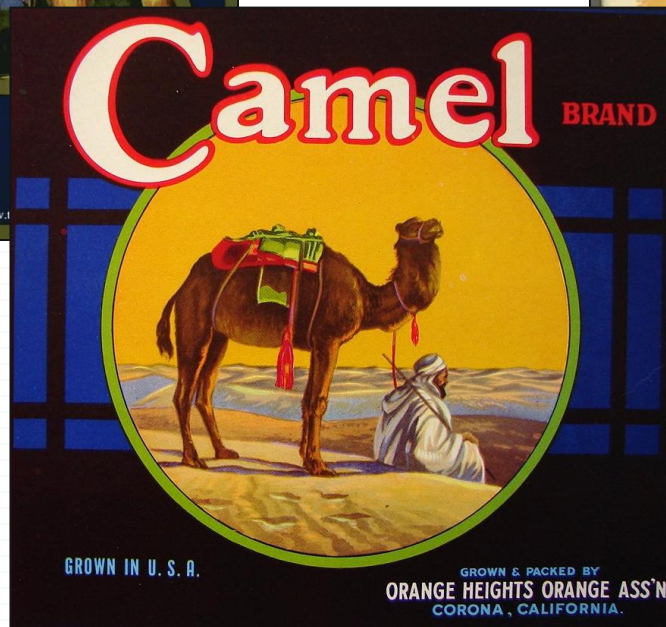
- Inexpensive oil
- Refrigerated transport
- New forms of processing
- Free trade policies
- Consumer demand



Image copyright.

Introduction

1930s



Orange crate labels: www.thelabelman.com



Overview

Introduction

- **Why food is transported**

Industry consolidation

Food miles, energy and climate change

Local food systems

Regional food systems

Reflection

Why food is transported

Reasons

- Feeding densely populated places
- Demand for out-of-season foods
- Allowing regions to specialize in what they can best produce

Why food is transported

Feeding densely populated places

All the land in New York State could only feed
55% of New York City



AngMoKio. *Manhattan, New York City*. 2006. Available at Wikimedia Commons.

Why food is transported

Demand for out-of-season foods



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Why food is transported

Allowing regions to specialize



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Why food is transported

Allowing regions to specialize

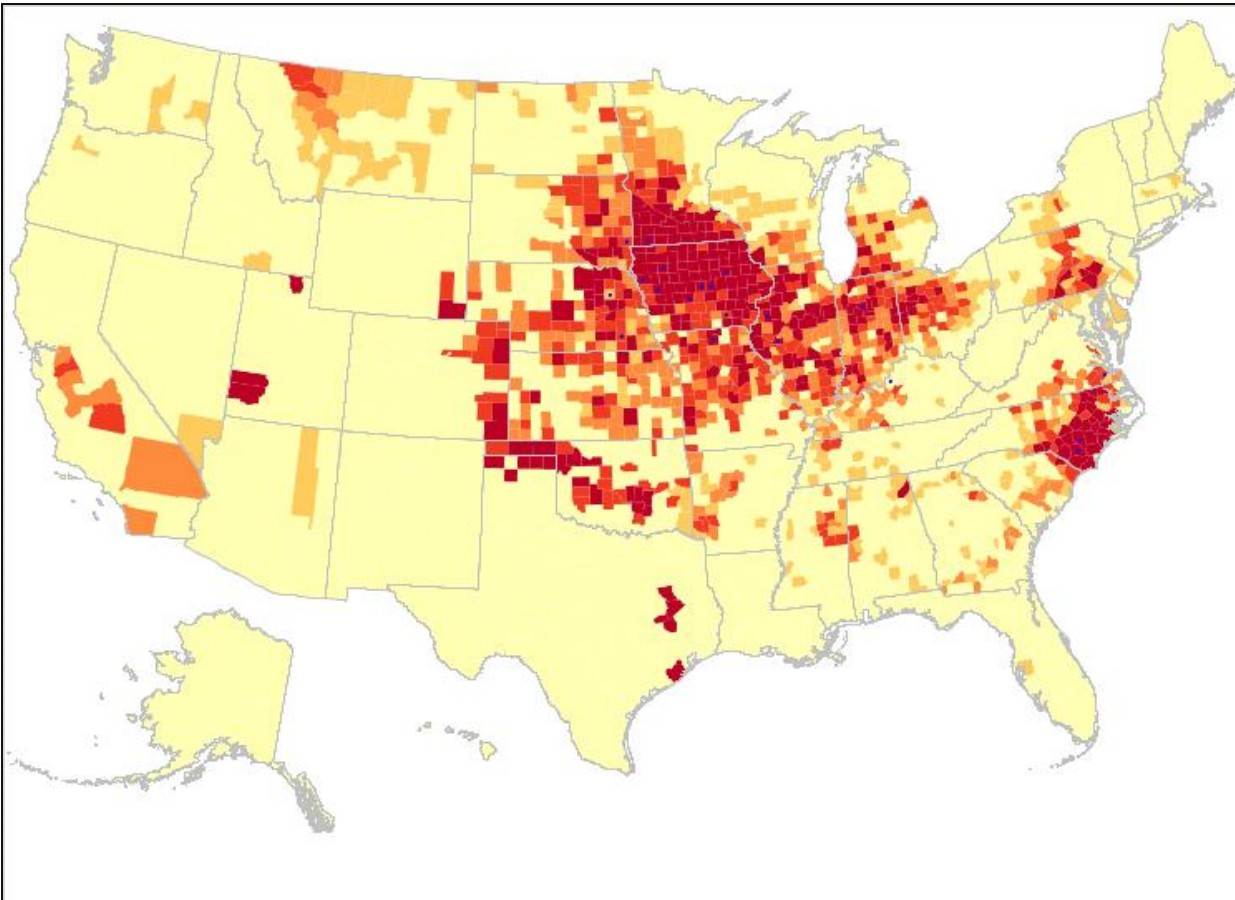


Cooper C. *Banana "tree" in the Dominican Republic*. 2008. Available at Wikimedia Commons. Public domain. Other images copyright.

Why food is transported

Political, economic advantages

- U.S. Hog production, 2007



Food & Water Watch. *Factory Farm Map*. 2011. www.factoryfarmmap.org.



Overview

Introduction

Why we transport food

- **Industry consolidation**

Food miles, energy and climate change

Local food systems

Regional food systems

Reflection

Consolidation and other trends

Food distributors

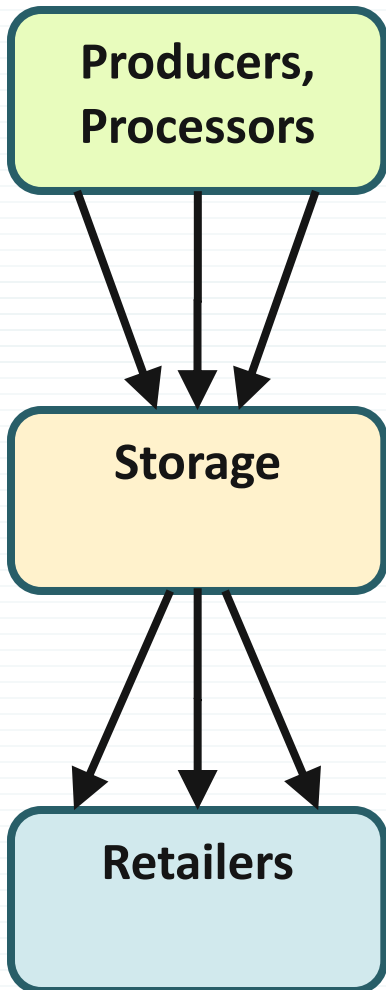


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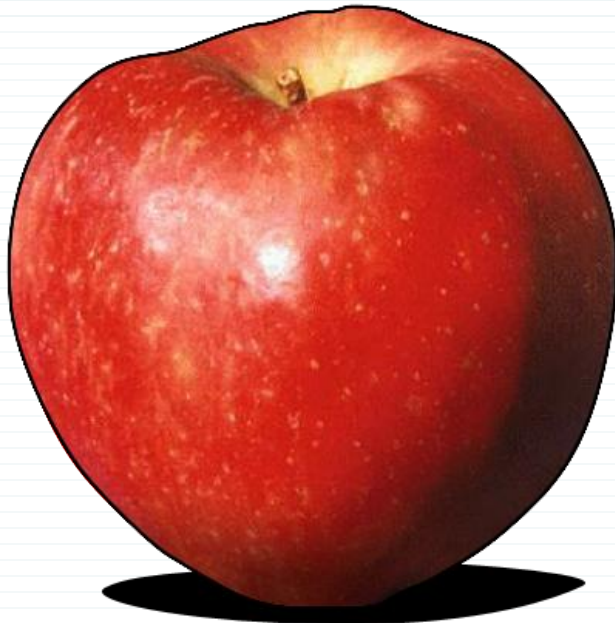
Consolidation and other trends

Excluding farmers from regional markets

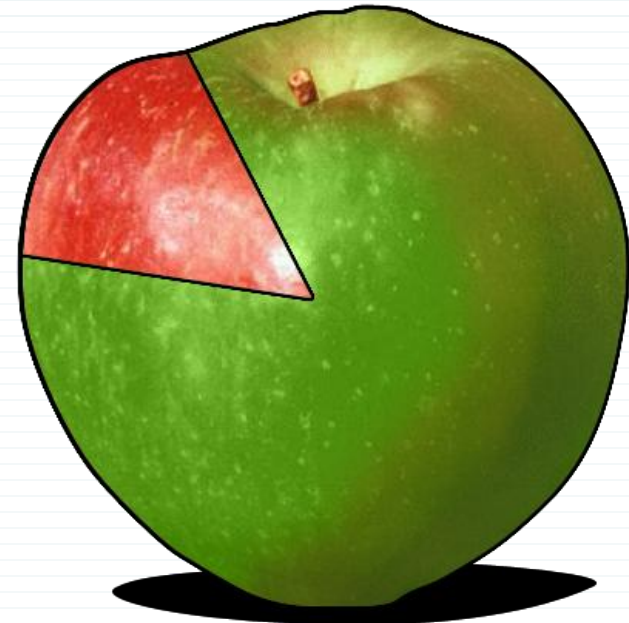
Apples consumed in Iowa

● Grown in Iowa ● Imported from out of state

1870



1999

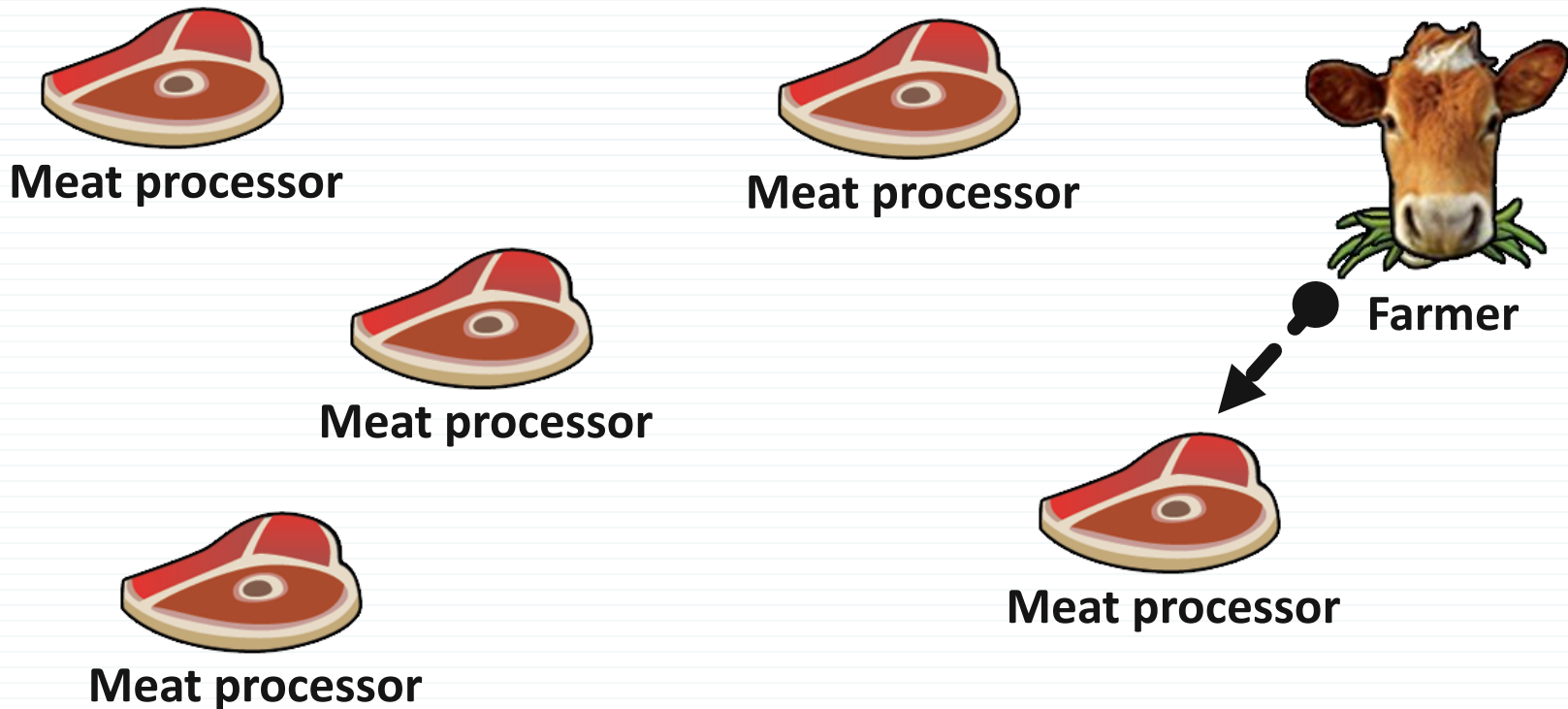


Kim B. Johns Hopkins Center for a Livable Future; 2011.

Consolidation and other trends

No place to process

Smaller producers lost access to nearby processors

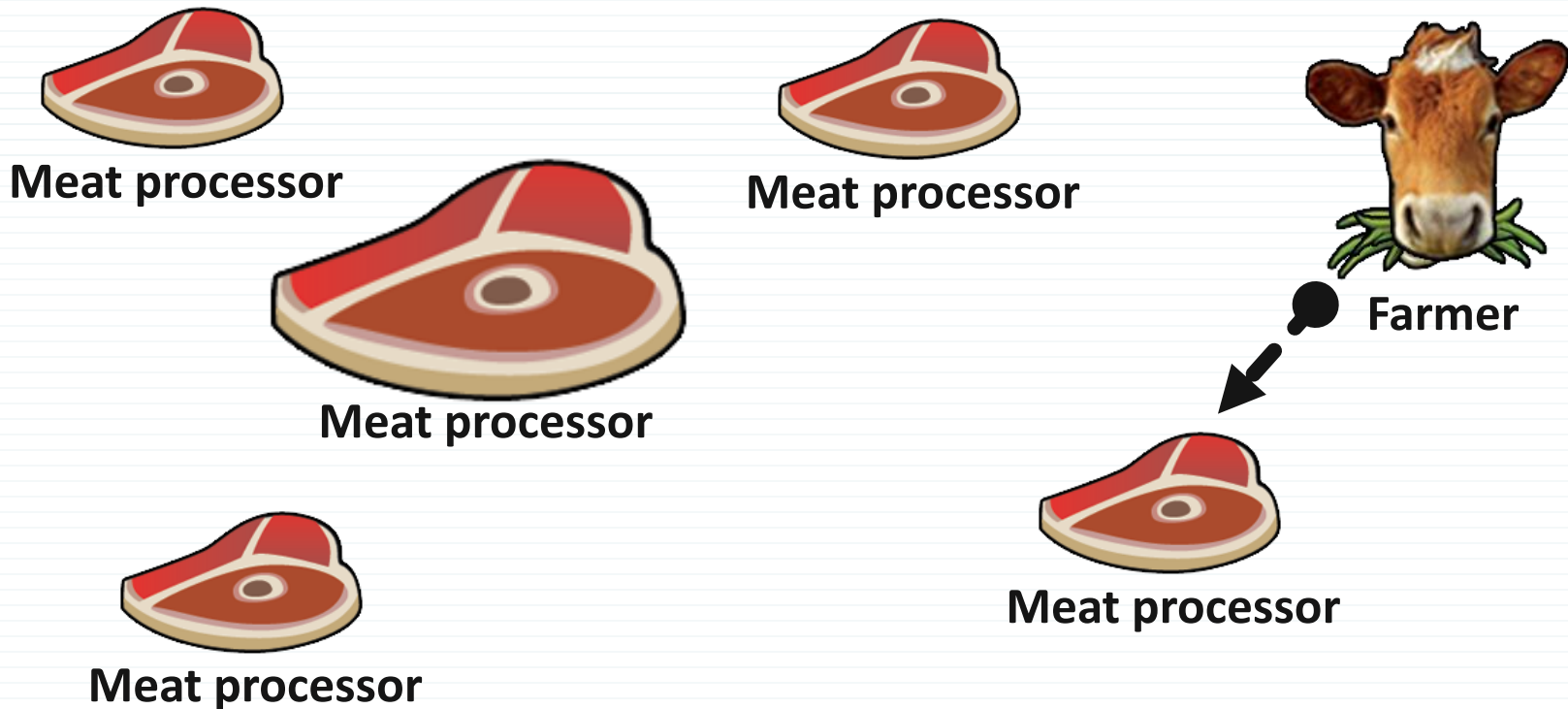


Kim B. Johns Hopkins Center for a Livable Future; 2010.

Consolidation and other trends

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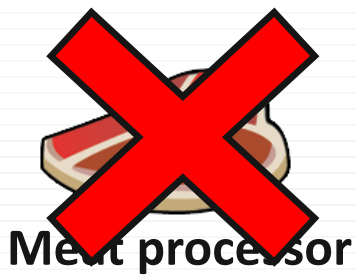


Kim B. Johns Hopkins Center for a Livable Future; 2010.

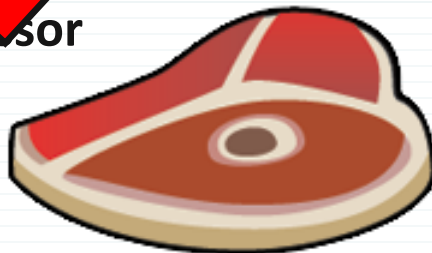
Consolidation and other trends

No place to process

Smaller producers lost access to nearby processors



Farmer



Meat processor

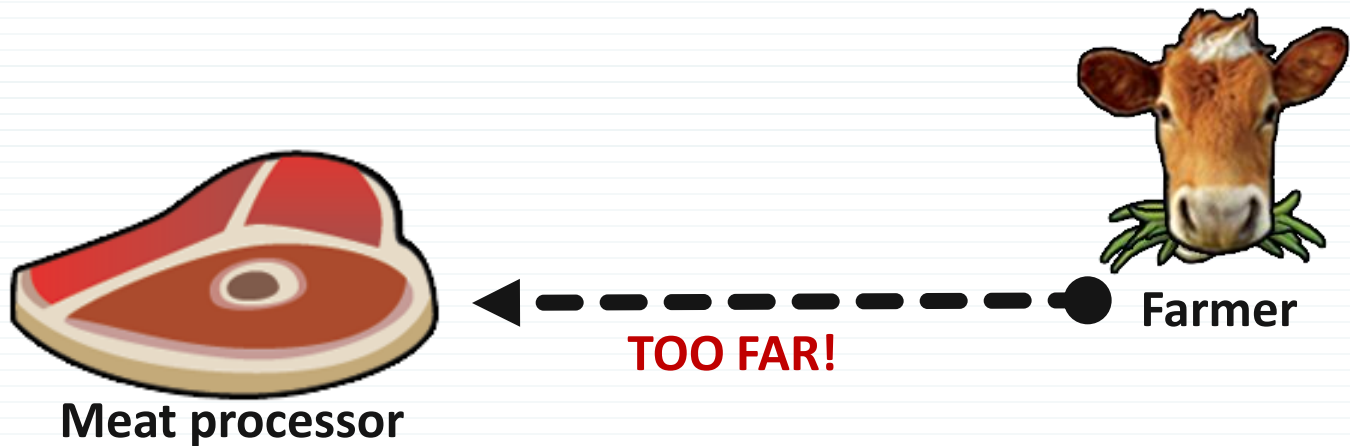


Kim B. Johns Hopkins Center for a Livable Future; 2010.

Consolidation and other trends

No place to process

Smaller producers lost access to nearby processors



Kim B. Johns Hopkins Center for a Livable Future; 2010.



Overview

Introduction

Why food is transported

Industry consolidation

- **Food miles, energy and climate change**

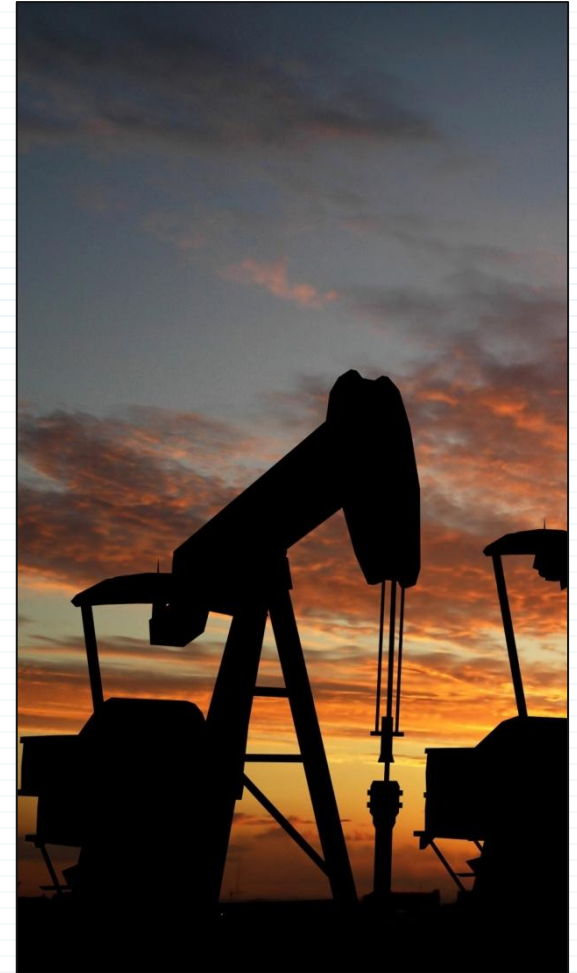
Local food systems

Regional food systems

Reflection

Food miles, energy and climate change

Climate change, peak oil



Left, center: U.S. Global Change Research Program. www.globalchange.gov. Other image copyright.

Food miles, energy and climate change

Food miles



Images copyright.

Food miles, energy and climate change

Measuring food miles, energy, emissions

- Things to consider:

Measuring food miles, energy, emissions

- Things to consider:
 - Mode of transport
 - Weight
 - Distance
 - Multiple ingredients
 - Animal feed
 - Animals

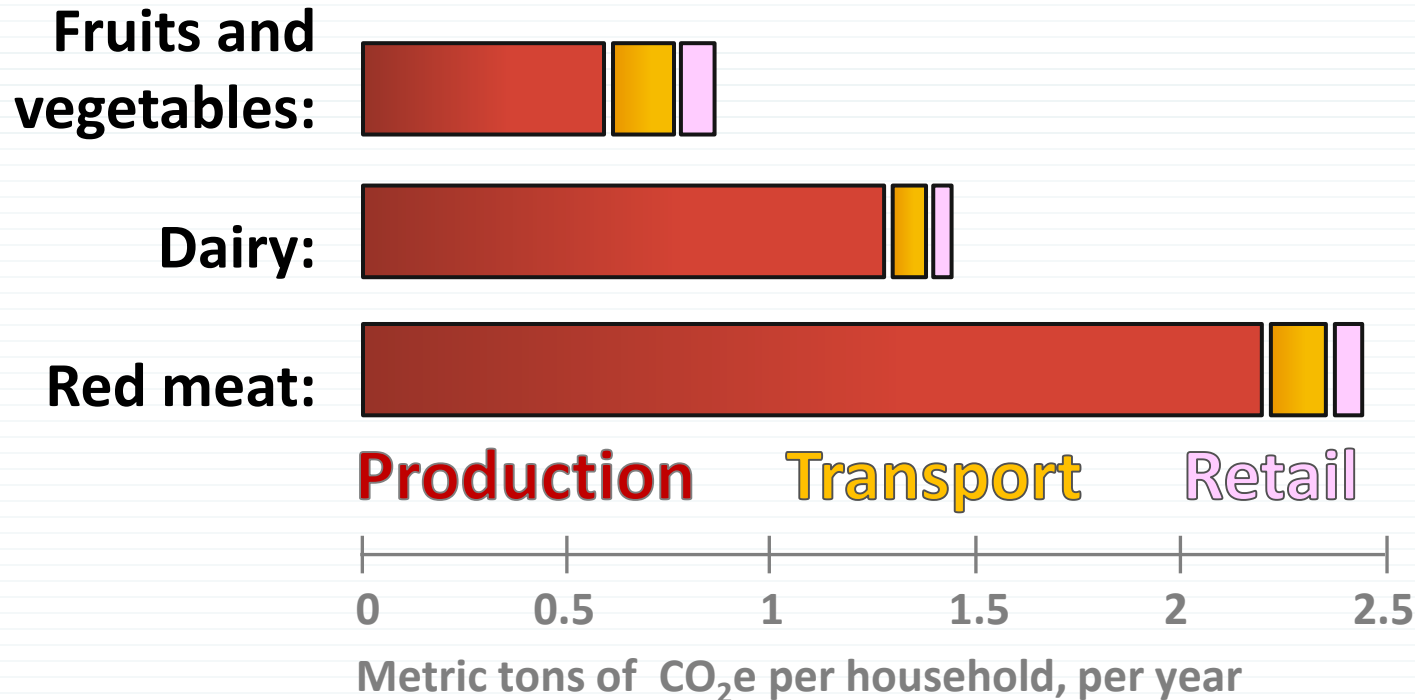
Measuring food miles, energy, emissions

- **Energy use:**
Kilocalories (kcal)
- **Greenhouse gas emissions:**
Grams of carbon dioxide equivalent (g CO₂e)
- **Weight × distance:**
Kilogram-kilometers (kg-km)

Food miles, energy and climate change

Emissions from transport, in context

- GHG emissions from produce, dairy and red meat consumed in U.S. households:

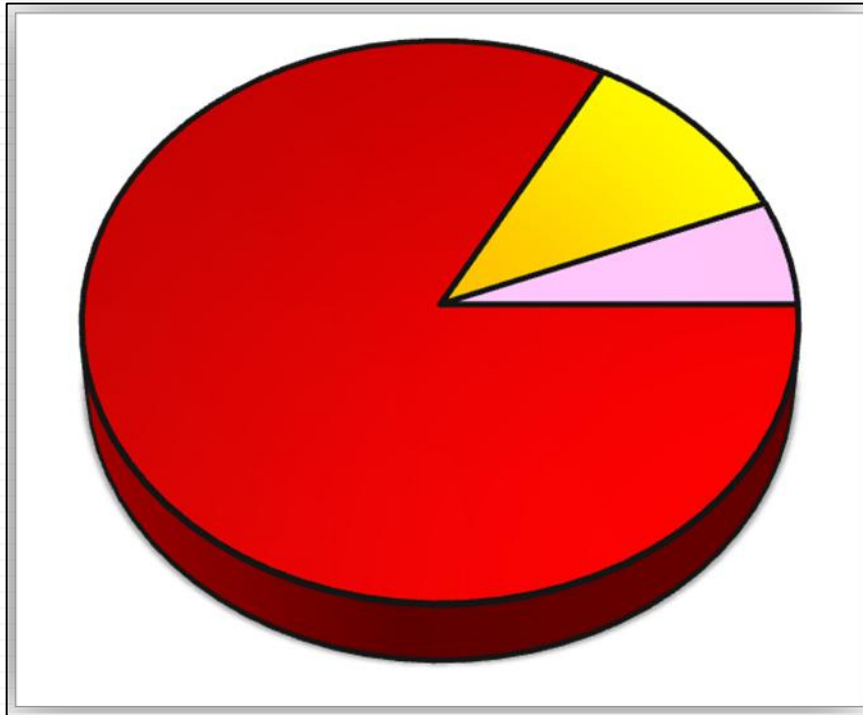


Adapted from: Weber CL, Matthews HS. Food-Miles and the relative climate impacts of food choices in the United States. *Environmental Science and Technology*. 2008;42(10), 3508-3513.

Food miles, energy and climate change

Emissions from transport, in context

- Total GHG emissions food consumed in U.S. households:



Production (83%)

Transport (11%)

Retail (6%)

Adapted from: Weber CL, Matthews HS. Food-Miles and the relative climate impacts of food choices in the United States. *Environmental Science and Technology*. 2008;42(10), 3508-3513.



Overview

Introduction

Why food is transported

Industry consolidation

Food miles, energy and climate change

- **Local food systems**

Regional food systems

Reflection

Local food systems

Definitions

- Produced within 100-250 miles of the buyer
- Or, sold directly from farmer to consumer

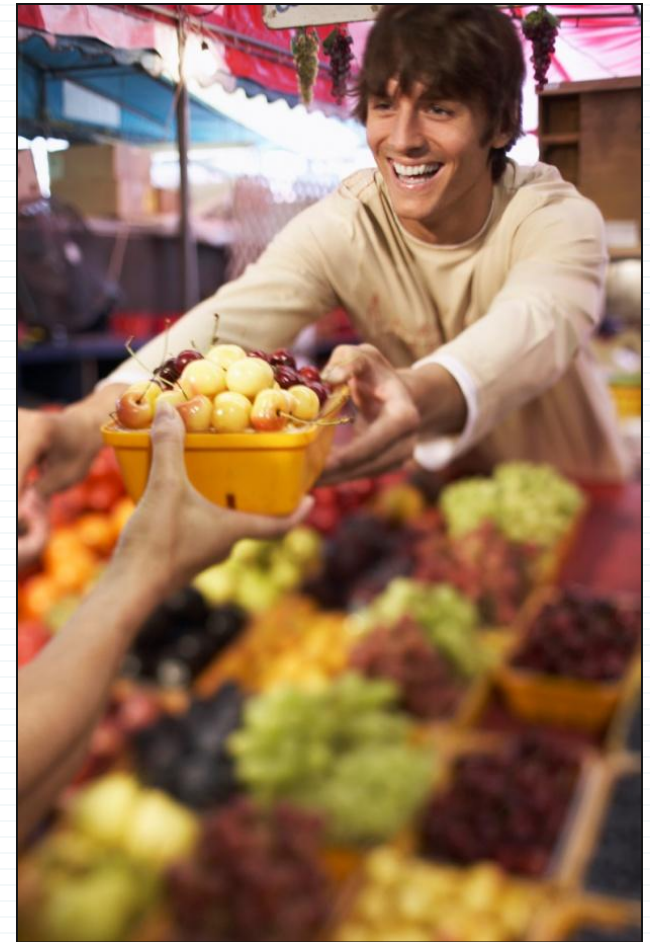


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Local food systems

Potential benefits

- Producer-consumer relationship
- Food produced for flavor, not durability
- Freshness
- Stronger local economies
- Preserve local cooking traditions

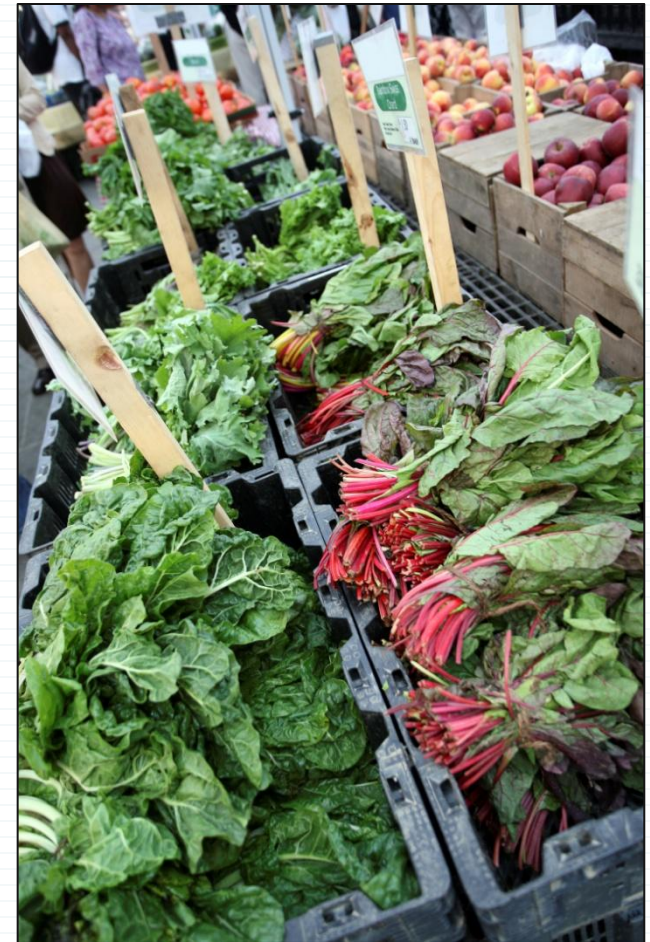


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Local food systems

Is local always better?

- 100 miles may not provide enough quantity, variety
- Local does not imply harmful production practices are not used
- Shorter transport distances don't always equate with less fuel use or fewer GHG emissions



Overview

Introduction

Why food is transported

Industry consolidation

Food miles, energy and climate change

Local food systems

■ **Regional food systems**

Reflection

Regional food systems

Definition

- Broader than local but includes local
- Geographic, cultural or political boundaries



Overview

Introduction

Why food is transported

Industry consolidation

Food miles, energy and
climate change

Local food systems

Regional food systems

■ **Reflection**

Reflection

What is the optimal scale of distribution?

Some suggest the optimal scale of food distribution is one that:

- Supports sustainable production
- Provides adequate food supply
- Offers variety of food options
- Keeps economic returns within an area

Reflection

What is the optimal scale of distribution?

- Local, regional or global?
Which foods?
- Who will produce it?
- Benefits?
- Challenges?
- How to reduce impacts of long distance transport?



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