

*APHA 135th Annual
Meeting
November 7, 2007*

**Farm & Food Policy:
Contributions to
childhood obesity and
non-infectious
diseases**

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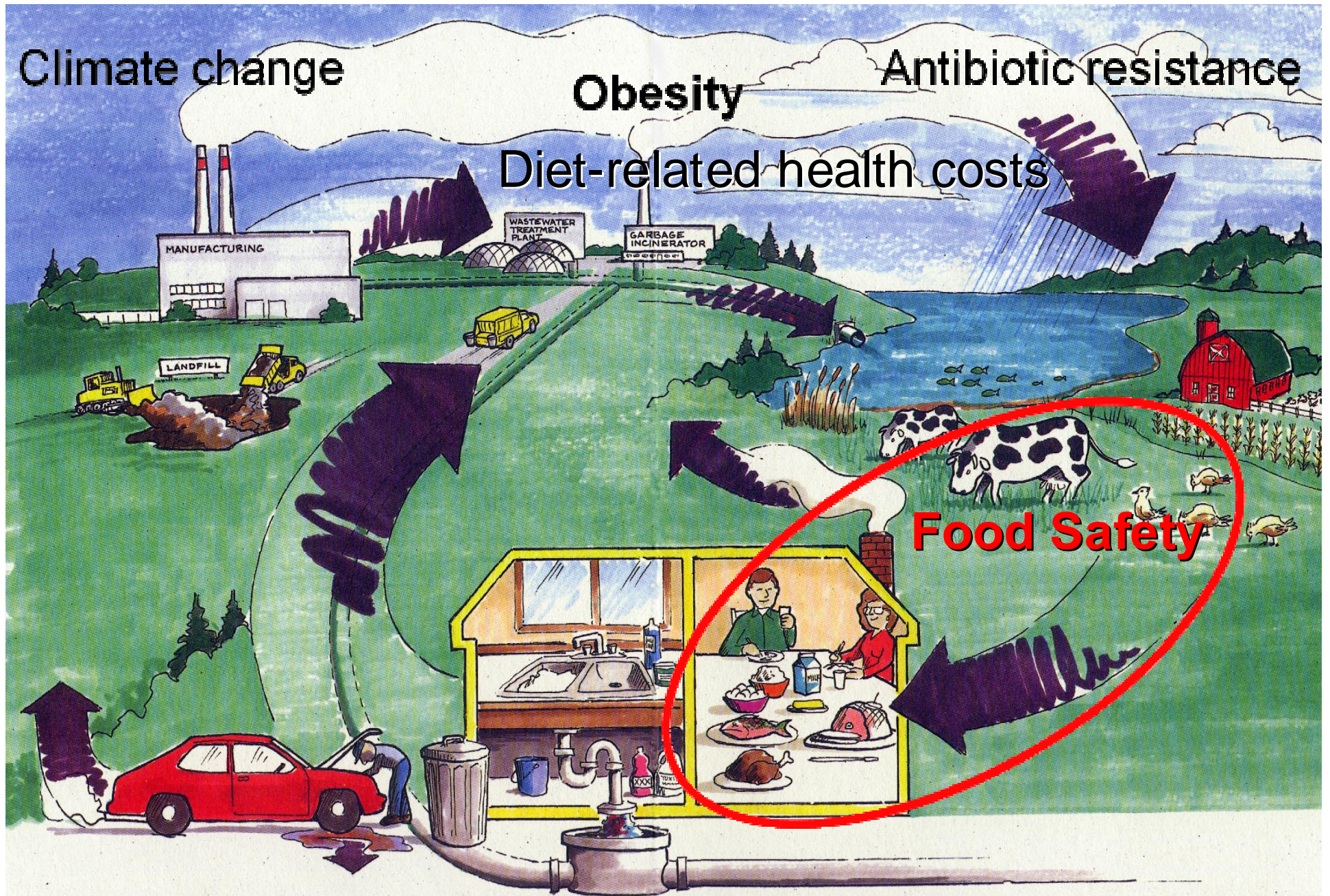
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www.HealthObservatory.org

Climate change

Obesity

Antibiotic resistance

Diet-related health costs

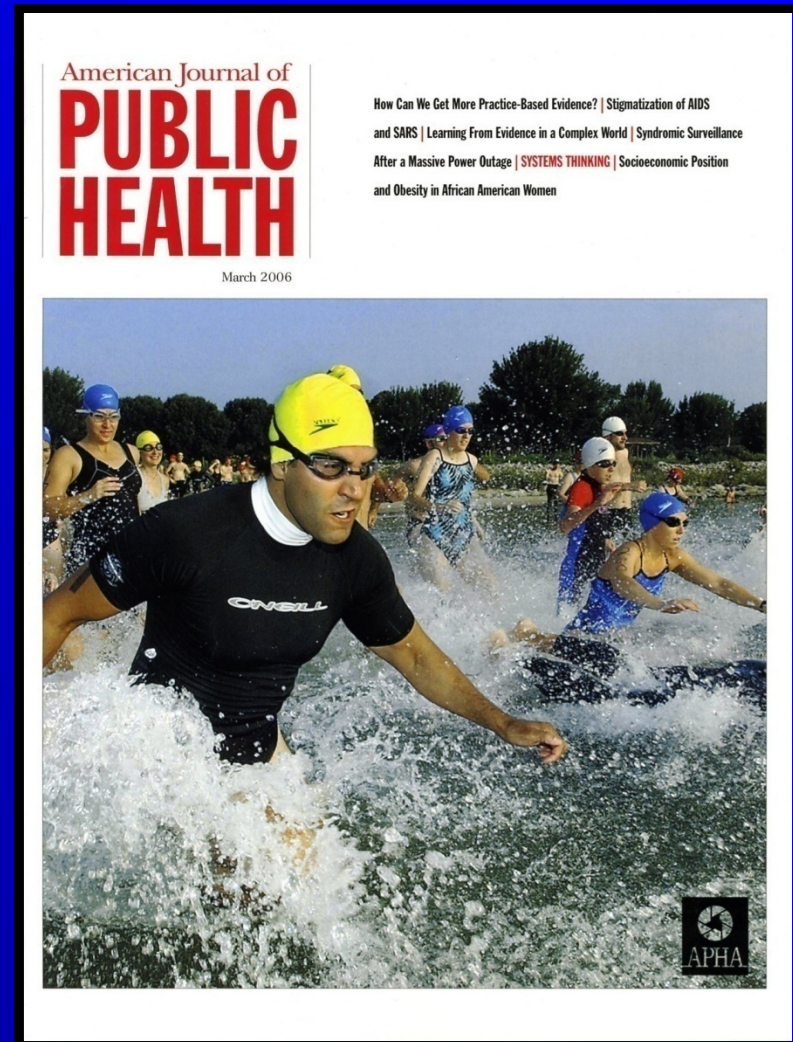


21st century challenges to the food system

Systemic public health issues demand thinking in systems

- ❑ A relational perspective
- ❑ Nonreductionist
 - ✓ Multidisciplinary
- ❑ Dynamic across time

McLeroy K. 2006. *Editorial – Systems Thinking*. *AJPH*



Resistant bacteria (MRSA) are part of an (ecological) system

Just released is the first study to show North American pig farms (45%) and farmers (20%) commonly carry MRSA.

Khanna, T., et al, 2007. *Veterinary Microbiology*(2007)

In Europe, MRSA shown to be transmitted from pigs to farmers, their families, veterinarians, and hospital staff treating farm-infected patients.

No U.S. monitoring for MRSA in livestock farms which, due to heavy antibiotic use, can select for abx-res bacteria, like MRSA

Sources: de Neeling et al., 2007. *Veterinary Microbiology*; Ekkelenkamp MB et al. 2006. *Nederlands tijdschrift voor geneeskunde*; Hanselman et al. 2006. *Emerg Infect Dis*; Huijsdens et al., 2006. *Annals of Clinical Microbiology and Antimicrobials*. Voss A et al. 2005. *Emerging Infectious Diseases*; Witte W et al. 2007. *Emerg Infect Dis*.

Redefining nutrition – a systems approach

A. The Giessen Declaration

Public Health Nutrition 2005; 8(6A): 117-120

- ✓ “Now is the time for the science of nutrition... to meet the challenges and opportunities faced by humankind in the 21st century.”



B. American Dietetics Association

Healthy Land, Healthy People.

A Primer on sustainable food systems

www.eatright.org/cps/rde/xchg/ada/hs.xsl/governance_11647_ENU_HTML.htm



Systems thinking Understanding *industrialized* agriculture

29% of all US farmland

Wise T. 2005. <http://ase.Tufts.Edu/gdae>

Intensive, confined
meat production



**“Productionist,”
yield-focused
agriculture**

Sources: Horrigan et al. 2002. *EHP*;
Walker et al. 2005. *Public Health
Nutrition*; Lang and Heasman 2004.
Naylor et al. 2005. *Science*.

Understanding industrialized agriculture

Obesity – one among many concerns

Reduced soil quality

Less resilient agriculture

Worker impacts

Concentration of ownership

Poorer rural communities

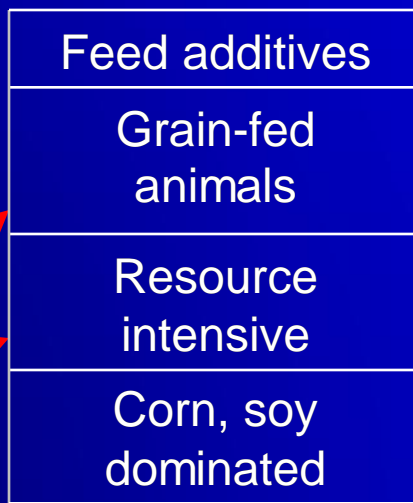
Reduced access to fresh produce

Stressed, unhealthy animals

Antibiotics, nitrates in groundwater

Pathogen spread (E coli O157:H7)

Industrialized agriculture



Food safety

(Antibiotic resistant) bacteria on meat

Climate change

Obesity

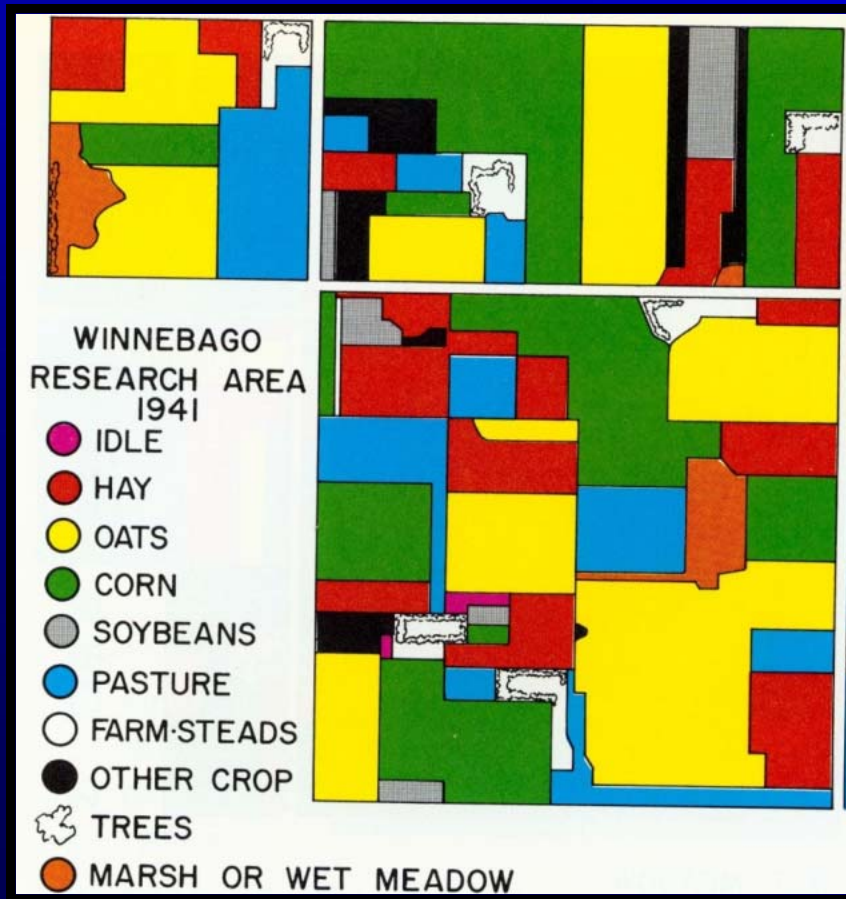
Metabolic syndrome

Inflammation, n-6 excess

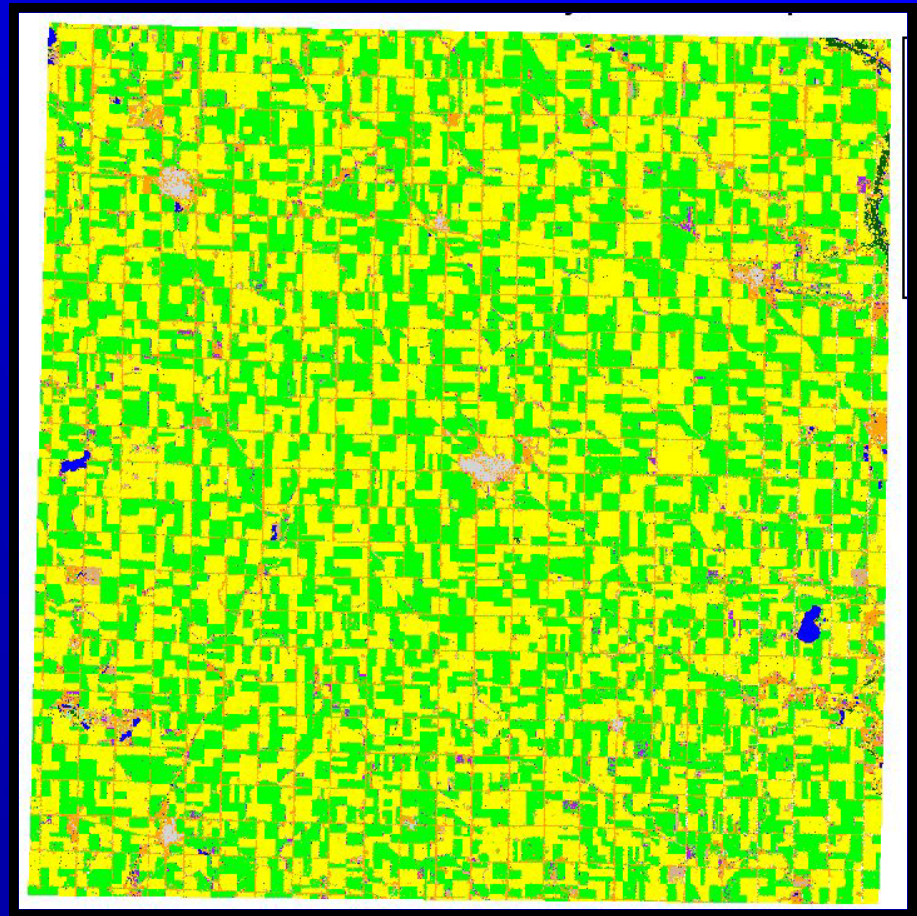
Understanding industrialization

Diverse, resilient → Specialized monocultures

1941, Winnebago Study Area, NE Iowa



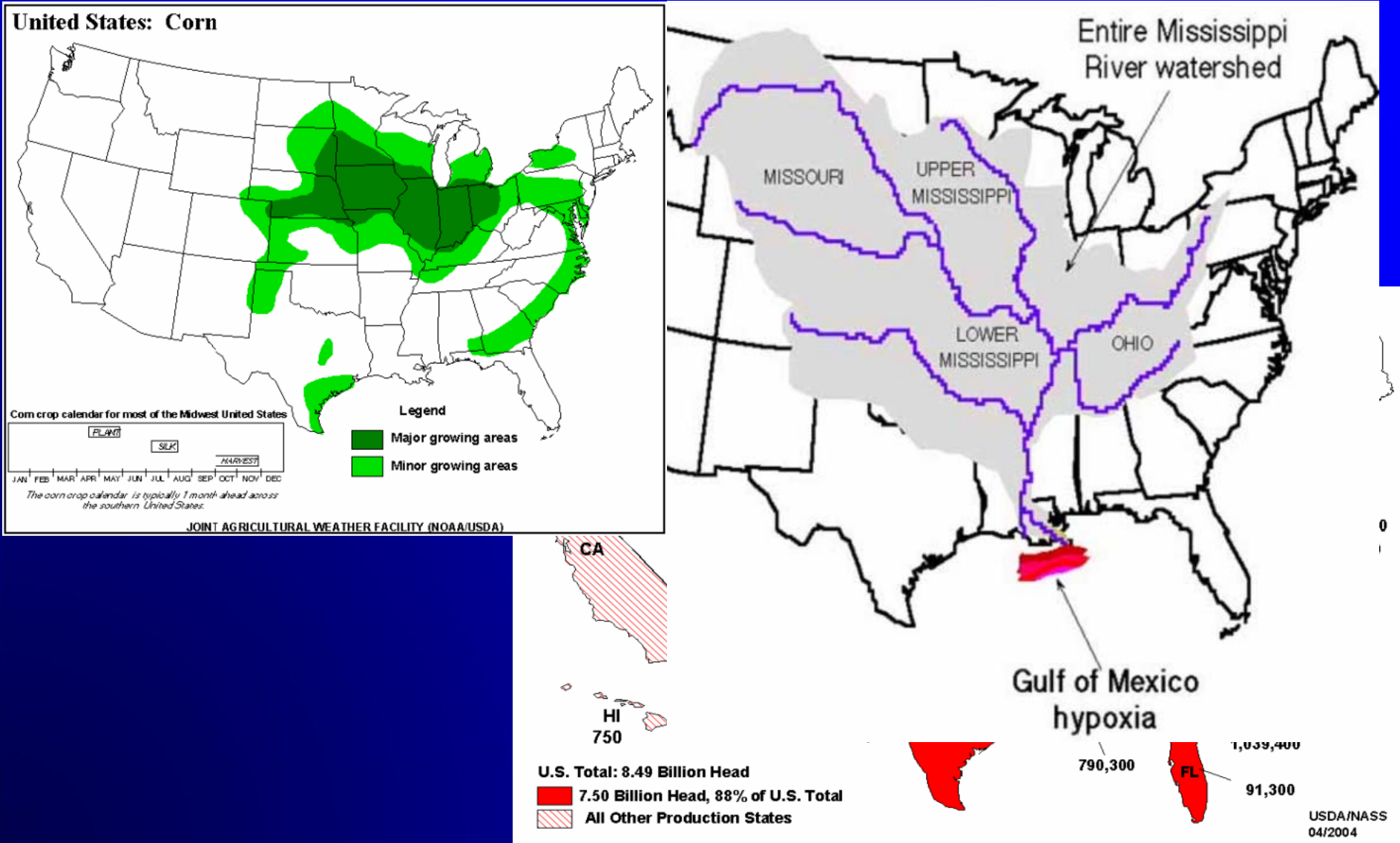
2004, Pocohontas County, Iowa



Fischer WA 1974. ISU Library, Ames

Understanding industrialization

Geographically dispersed → Concentrated



Understanding industrialization

Resource conserving → Resource intensive



- ❑ “Thirsty” monocultures
- ❑ Energy intensive
(Horrigan et al. 2002; Pimental et al. 1996)
 - ✓ Pesticides
 - ✓ Fertilizers
 - ✓ The average U.S. farm uses 3 kcal of fossil fuel energy in producing 1 kcal of food energy.
- ❑ Antibiotic intensive (Mellon M. 2001, Union of Concerned Scientists)

Drivers of industrialization

Technology + Faulty Price Signals + Policies



USGS, http://rockyweb.cr.usgs.gov/outreach/images/LandCover_11x14.pdf

a tendency to commodity overproduction....

**Regardless of price,
commodity farmers
will try and grow more**

- Aesthetics
- Uncontrollable variables (weather)
- Few farming options
- Single producers have zero impact on market price



Source: Darryl Ray. University of Tennessee,
Agricultural Policy Analysis Center.

Policy response to overproduction

Discourage or

Encourage

Pre-1974

1974 to Today

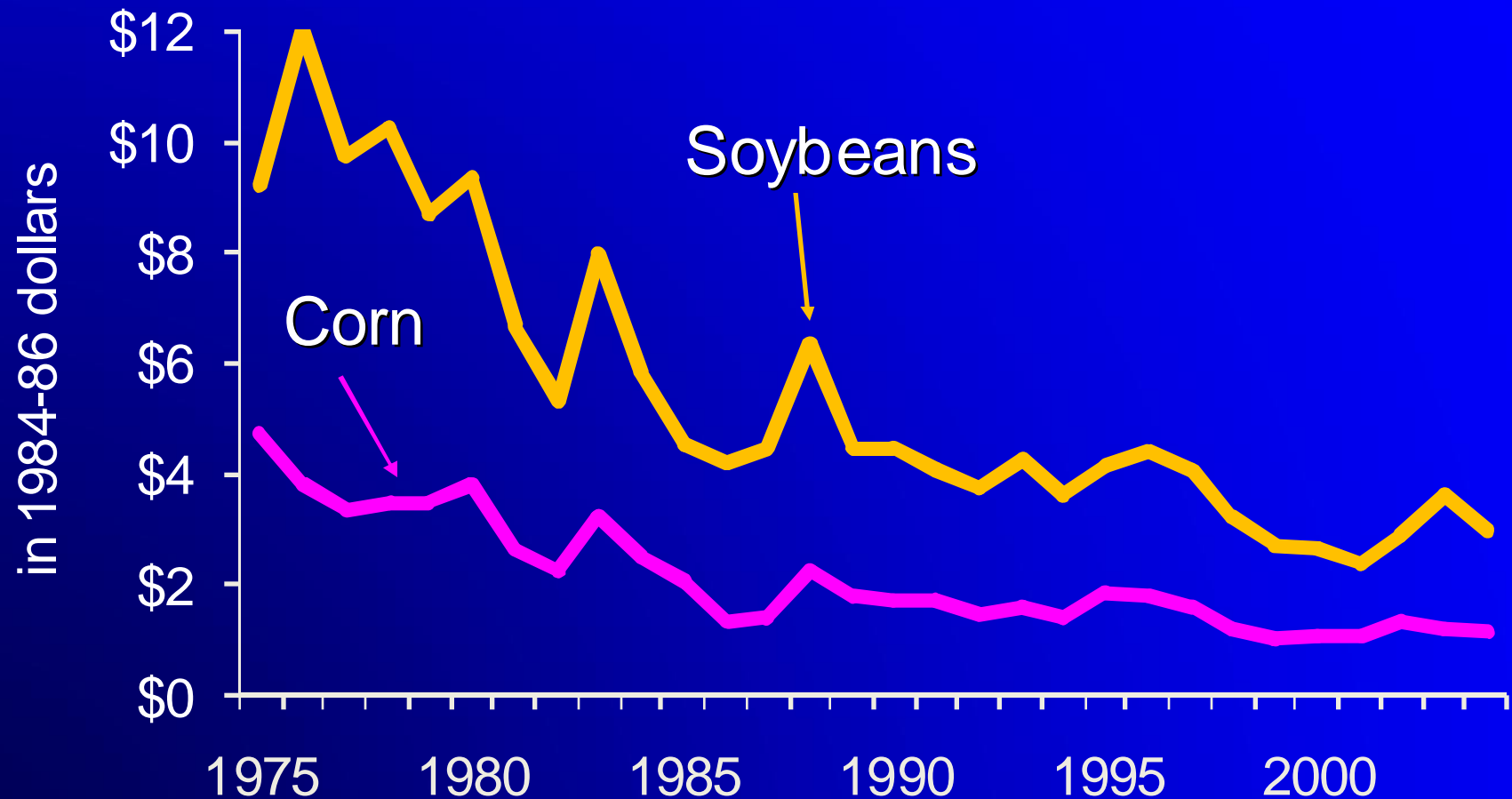
- ❑ Supply managed
- ❑ Stable prices = “minimum wage”
- ❑ No direct payments to farmers needed

- ❑ Sec. Earl Butz
- ❑ Overproduction encouraged (“fence row-to-fence row” or “cheap food” policy)

Sources: Muller M et al. 2007.
www.HealthyEatingResearch.org;
Krebs AV. 1992. The Corporate Reapers: The Book of Agribusiness. Essential Books: Washington, DC

Policy impacts

Overabundant, often low-priced corn, soybeans



Source: [USDA ERS Web site](#)

U.S. farm policy & obesity: What're the links?



2007 Farm Bill?

[USDA's Farm Bill Gateway](#)

side by side

- Title I**
[Commodity Programs](#)
- Title II**
[Conservation](#)
- Title III**
[Trade](#)
- Title IV**
[Nutrition Programs](#)
- Title V**
[Credit](#)
- Title VI**
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[Research & Related Matters](#)
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[Miscellaneous](#)

- A. Commodity (Subsidy) Programs:** Income support for wheat, feed grains, upland cotton, rice, and oilseeds provided through 3 programs: direct payments, counter-cyclical payments, and marketing loans. (**\$16B/yr ave**).
- B. Nutrition Programs:** Food Stamp Program (**\$32.8B in 2006**); Commodity distribution programs “provide needy persons with access to a more nutritious diet”; Emergency Food Assistance Program.
- C. Research Title:** Reauthorizes and establishes new agricultural research and extension programs. (**\$850 per year**). Plus Initiative for Future Agriculture and Food Systems (**\$200 million in 2006**).

Prices and the “default” food environments we have created

- ❑ The higher the relative cost of produce, the greater is excessive weight gain in young children

Sturm & Datar. 2005. Public Health

- ❑ Unhealthy (calorie-dense, nutrient poor) foods on average are cheaper

Drenowski & Spencer. 2004. AJCN

- ❑ Unhealthy diets = more “affordable”

Darmon et al. 2004. Public Health Nutrition

The Wingspread Conference on Childhood Obesity, Healthy Eating & Agricultural Policy (March 2007)

Objectives

1. To identify areas for policy analyses and research
2. To begin crafting obesity-prevention recommendations related to federal agricultural and food policies

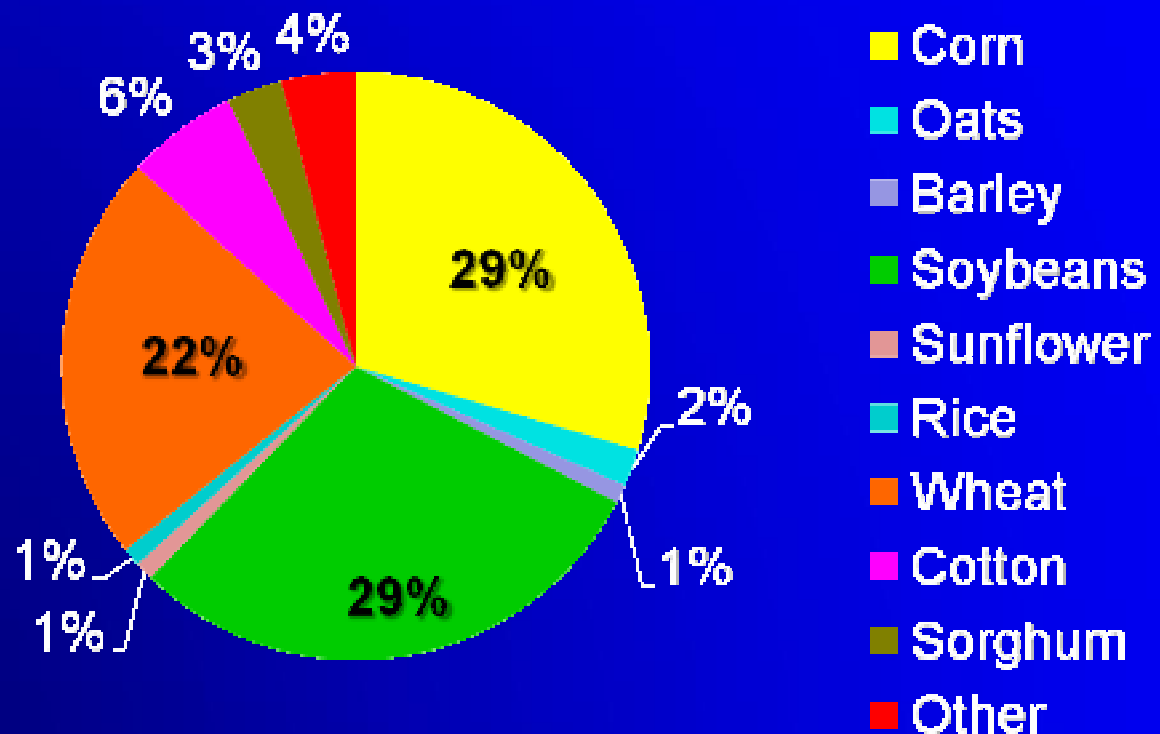
Sponsors

- Robert Wood Johnson Foundation's Healthy Eating Research Program
- Institute for Agriculture & Trade Policy
- W.K. Kellogg Foundation
- Rudd Center for Food Policy and Obesity
- The Johnson Foundation

www.HealthyEatingResearch.org

Farm policy impacts what is grown

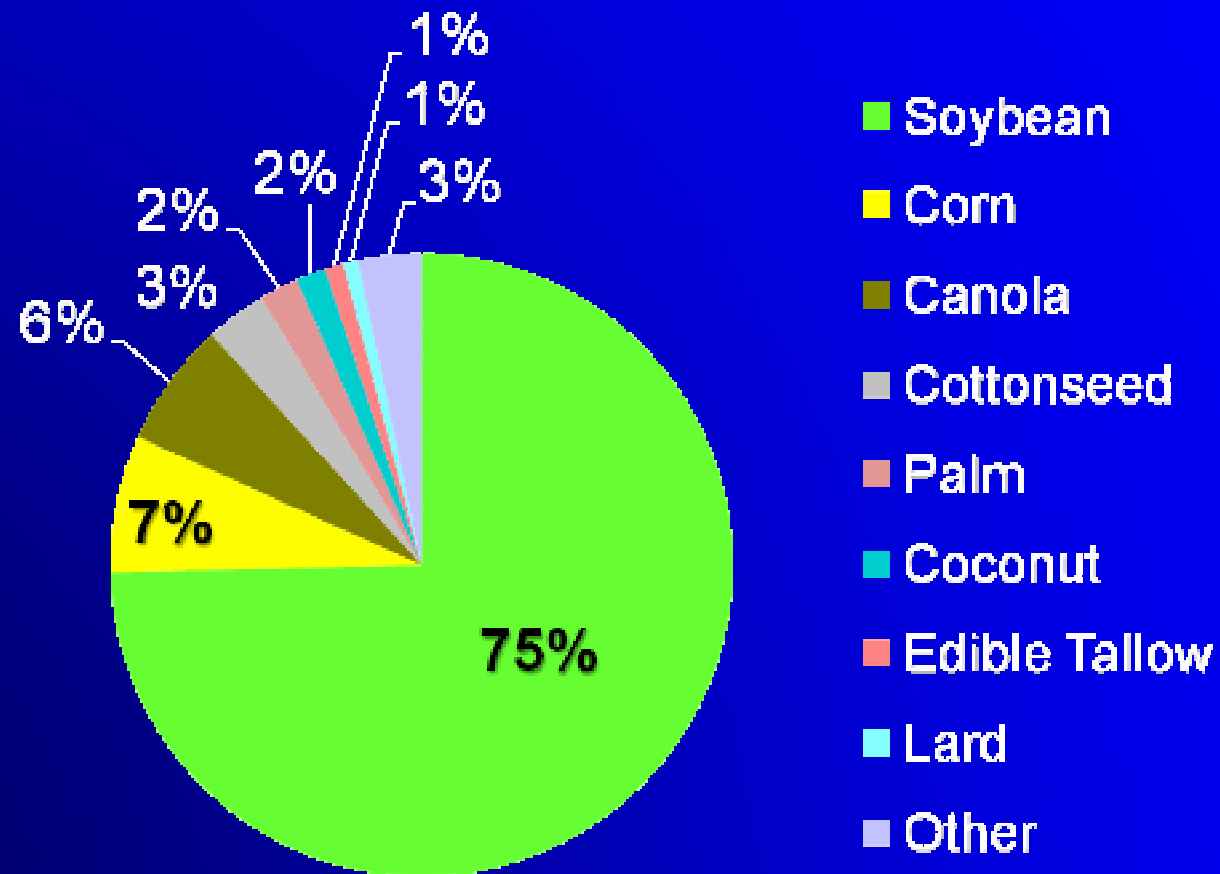
U.S. Crop Area Planted 2006



Source: USDA Economic Research Service

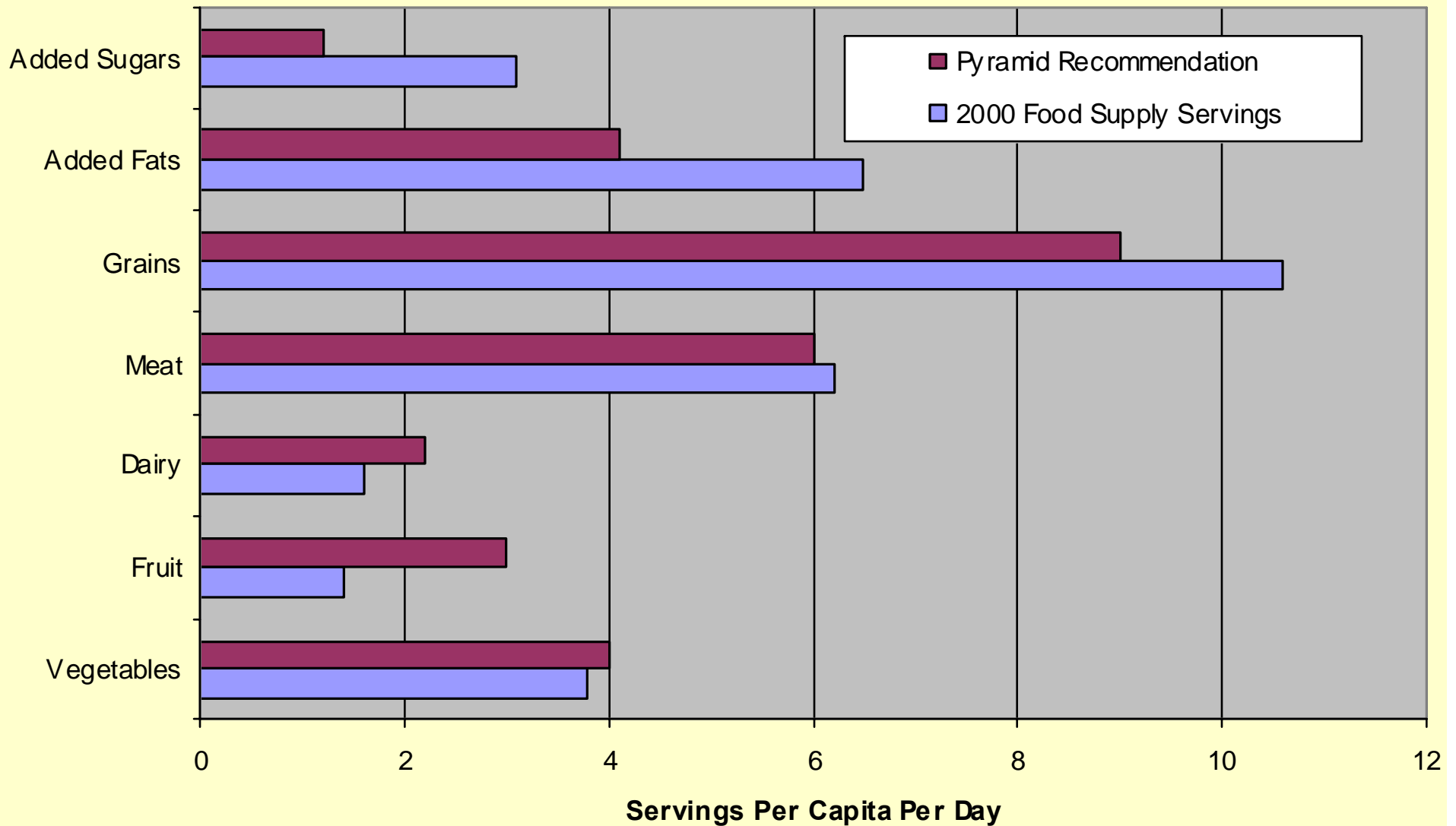
What we grow impacts what we eat

U.S. Fats & Edible Oil Consumption 2006



Source: U.S. Census Bureau

Americans over-consume exactly the food groups our policies help to overproduce

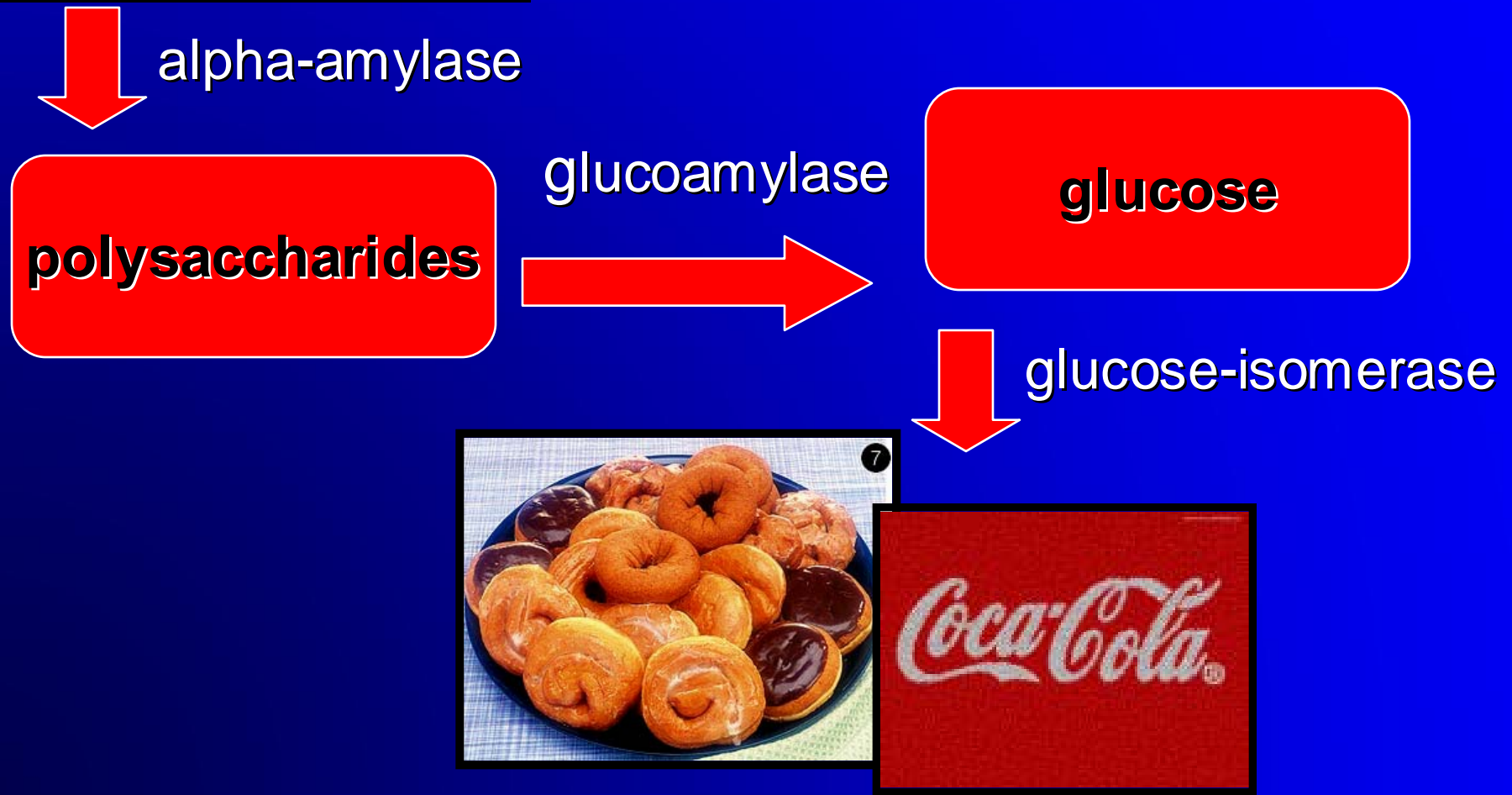


Source: USDA ERS *FoodReview*, Vol. 25, Issue 3.



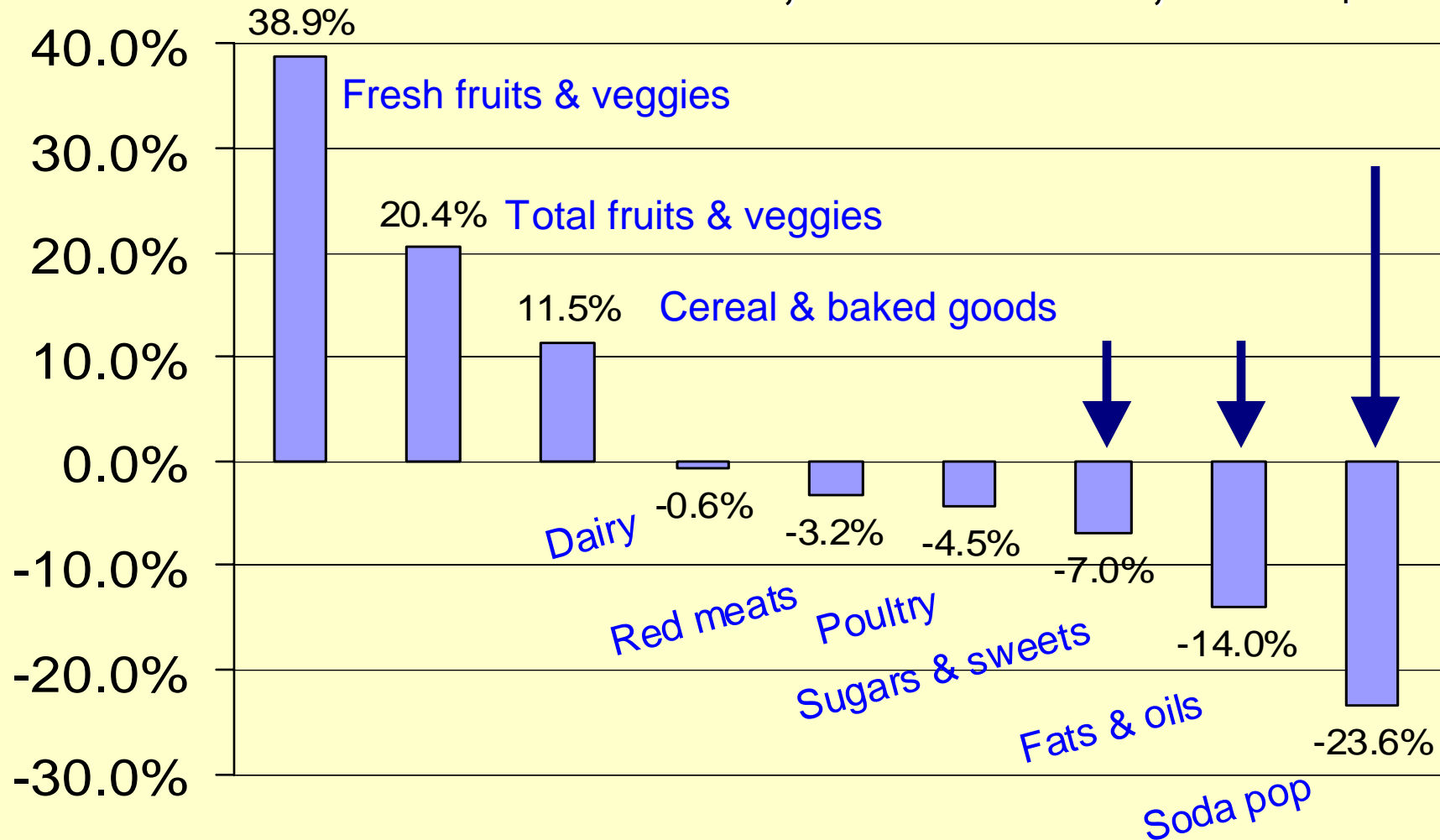
Policy impacts

Research, investment to use overabundant corn, soy



Less healthy foods have gotten cheaper over time, healthy foods more expensive

Increase in Food Prices, 1985 –2000, Real \$



Source: IATP, using data from FoodReview, Vol 25, Issue 3, USDA

Policy impacts

Low-priced grains and grain-fed meat



- ❑ Surplus grains are fed to livestock, constituting meat producers' largest cost item.

- 55-65% of U.S. corn

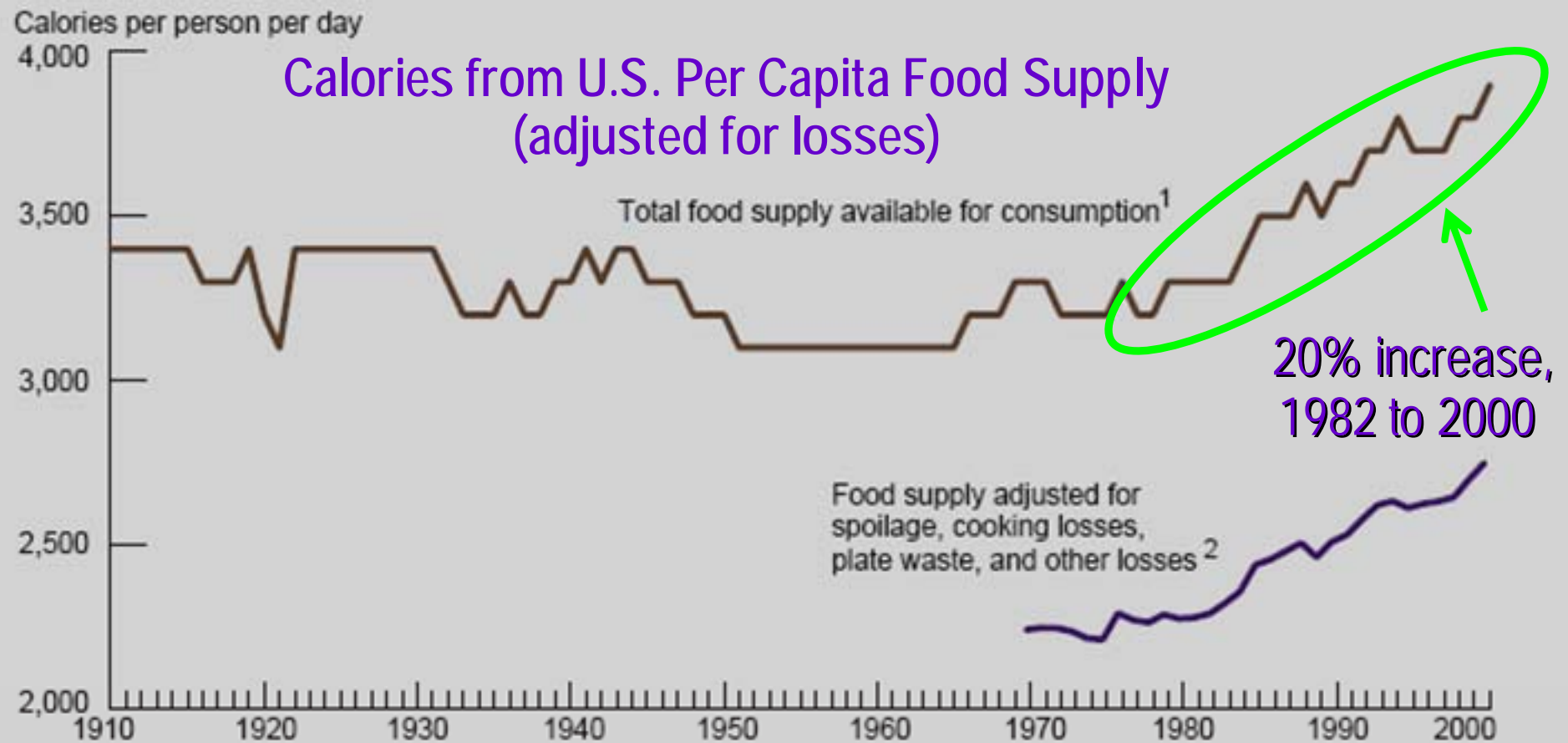
- 45-50% of soybeans

Wise T. 2005.<http://ase.Tufts.Edu/gdae>

- ❑ Overly cheap feed grains indirectly subsidize grain-fed meat production.

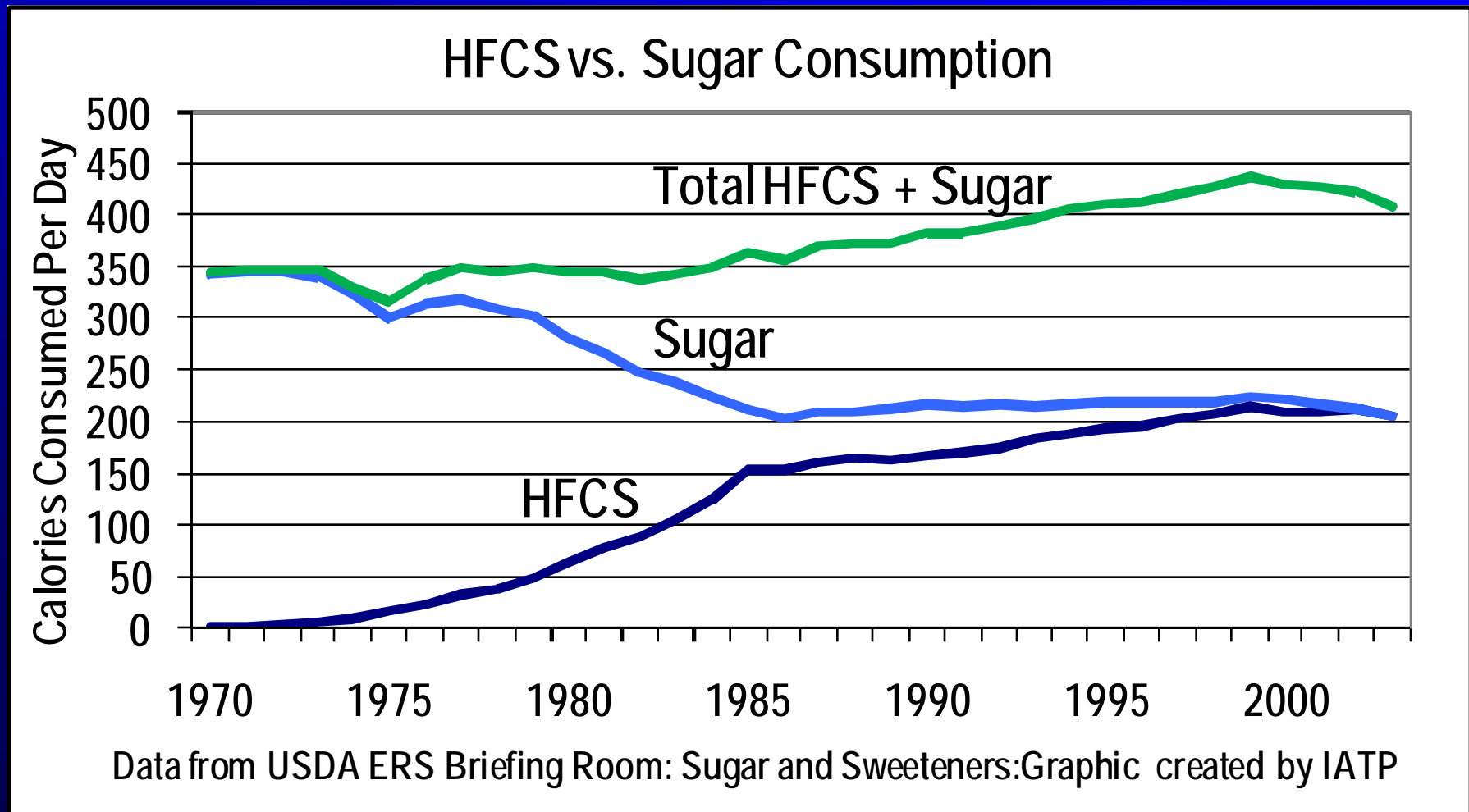


“A big jump in average calorie intake between 1985 and 2000 without a corresponding increase in the level of physical activity (calorie expenditure) is the prime factor behind America’s soaring rates of obesity and Type 2 diabetes.” – Putnam J et al. 2002. *Food Review*

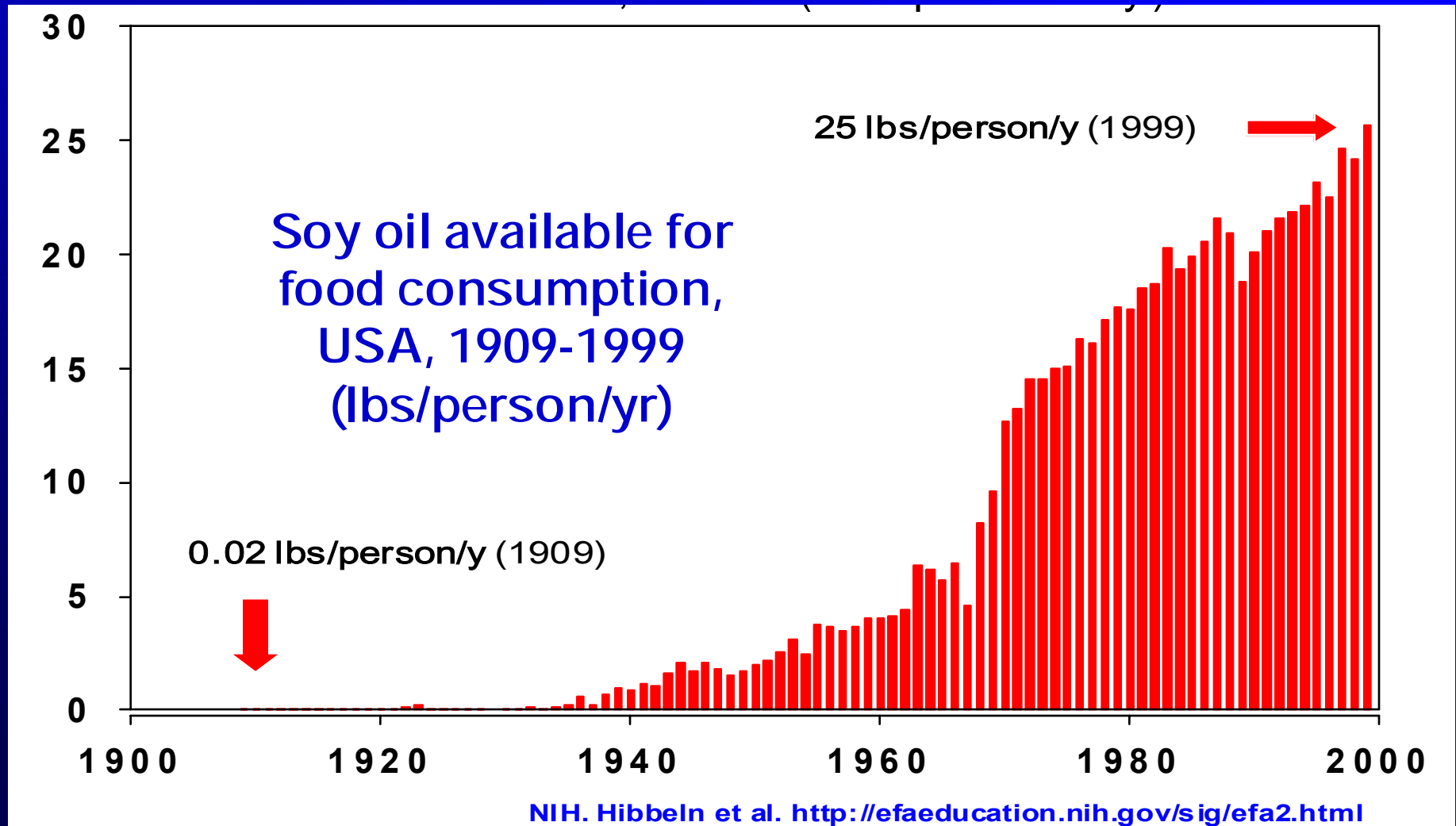


Of 300-calorie excess, relative to 1985

- ❑ Added sweeteners account for 23 percent (Putnam et al. 2002)
- ❑ All additional sweetener consumed has been HFCS

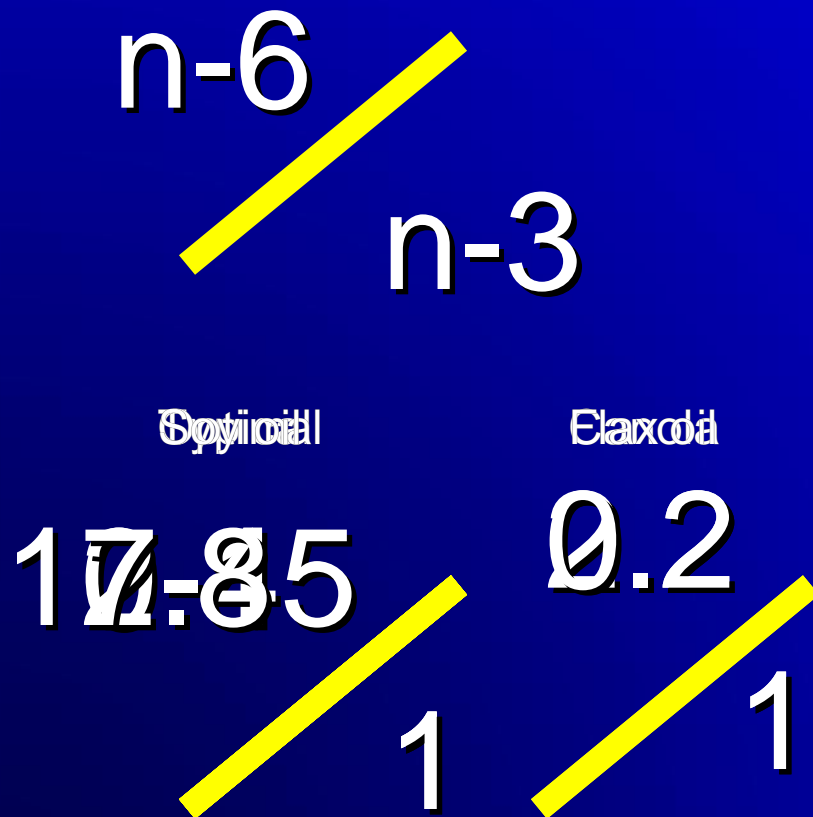


10% of total calories are as linoleic acid (LA), Hibbeln estimates



Potential impacts

Inflammation-related chronic disease

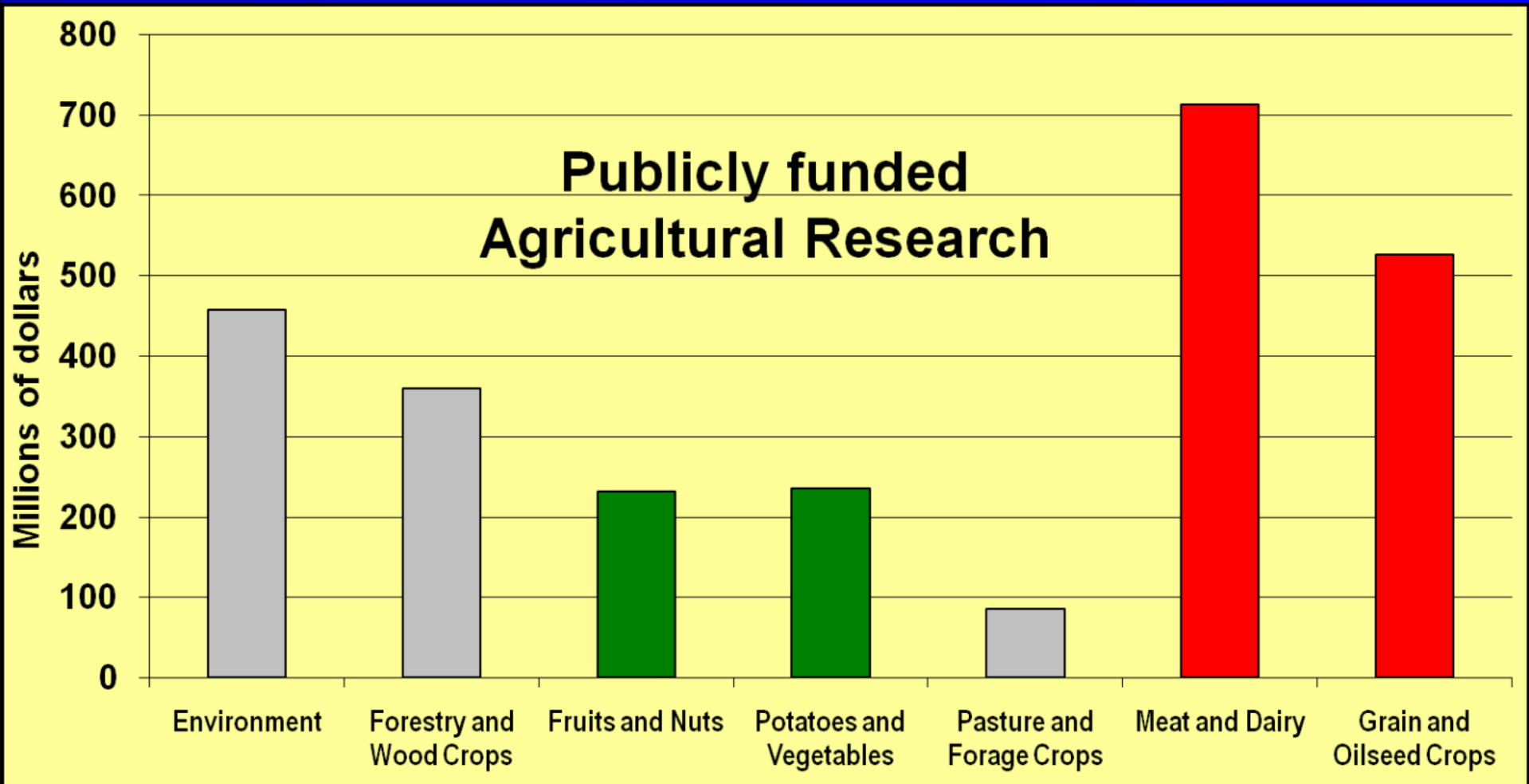


Optimizing the balance of essential fatty acids in the diet may help reduce chronic inflammation.

Inflammation is a core disease process common to diet-related disease such as cardiovascular disease, diabetes, and stroke.

Source: Hibbeln JR, Lamoreaux ET, Lands WEM (undated). Presentation: Quantitative changes in the availability of fats in the U.S. food supply during the 20th century Laboratory of Membrane Biochemistry and Biophysics, National Institute on Alcohol Abuse and Alcoholism. Accessed May 21, 2006 at <http://e faeducation.nih.gov/sig/food.html>.

Wingspread Summary: Conclusions



Source: National Research Council. 2002. *Publicly Funded Agricultural Research and the Changing Structure of U.S. Agriculture*



Healthy Eating Research: Building Evidence to Prevent Childhood Obesity

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www.HealthyEatingResearch.org

Wingspread Summary: Conclusions

**A more health-conscious food system also
would yield benefits to farmers, communities
and the environment.**

[Wingspread Conference Summary](#)

[Wingspread Agenda](#)

[Wingspread Participant List](#)



■ Congress' Switchboard: (202) 224-3121

Advocating for a Healthy Farm Bill

- ❑ **USDA Fresh Fruit and Vegetable Snack Program.** Fund expansion of the to all 50 states. Mandatory funding of \$300 million/year would provide snacks to schools in all 50 states.
- ❑ Increase funding in **DOD Fresh Fruit and Vegetable program** , the primary vehicle enabling schools to serve more fresh produce in school lunches.
- ❑ Fund the **Healthy Food Enterprise Development** program, which would provide grants and loans to support entrepreneurial local agriculture producers.
- ❑ Update USDA nutrition standards ensuring “competitive” vending and other foods in schools are healthy.

Acknowledging

- Center for a Livable Future. Johns Hopkins University Bloomberg School of Public Health.
- Healthy Eating Research, University of Minnesota, www.HealthyEatingResearch.org
- Darryl Ray, University of Tennessee, APAC (Agricultural Policy Analysis Center), <http://apacweb.ag.utk.edu/>
- Tim Wise, Tufts University, Global Development and Environmental Institute, <http://ase.tufts.edu/gdae/>