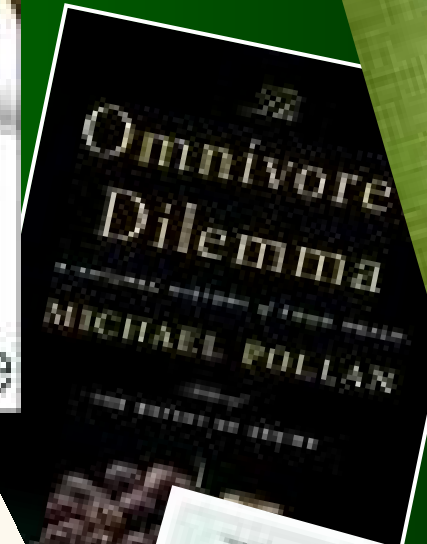
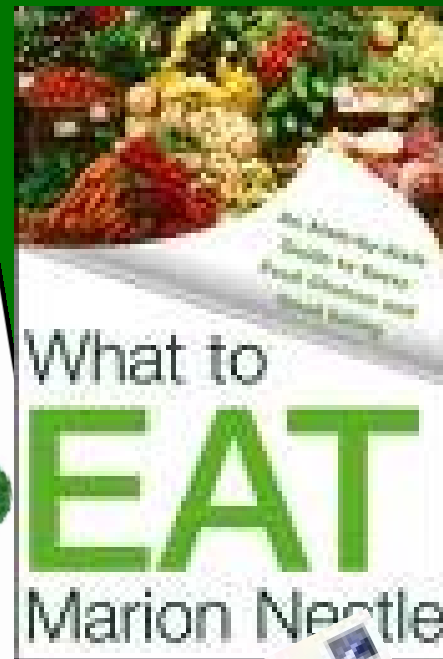
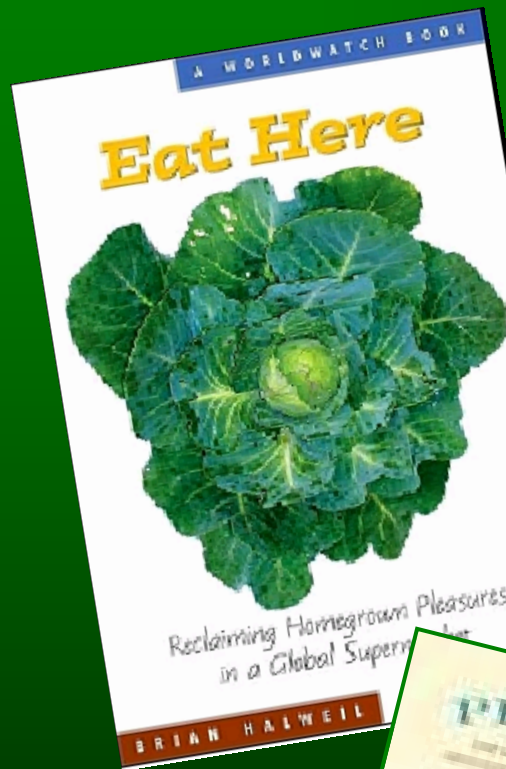


A photograph of two women in a greenhouse. The woman on the left is smiling and holding a basket of produce. The woman on the right is also smiling and holding a green pepper. They are surrounded by various plants and vegetables. The text "Local Food Diet and Health Considerations" is overlaid in large yellow letters.

Local Food Diet and Health Considerations

Jennifer L. Wilkins, PhD, RD
Division of Nutritional Sciences
Cornell University

CaRDI ~ “Local Foods II” ~ Tupper Lake, NY
Friday April 18th, 2008



Presentation Outline

- Consumer Interest
- Food Systems and Health
- Consumer Implications

“Locavore”

- 2007 Oxford American Dictionary Word of the Year
- Conceived in San Francisco, CA
- "a group of concerned culinary adventurers... making an effort to eat only foods grown or harvested within a 100 mile radius of San Francisco..."

“Food Miles”



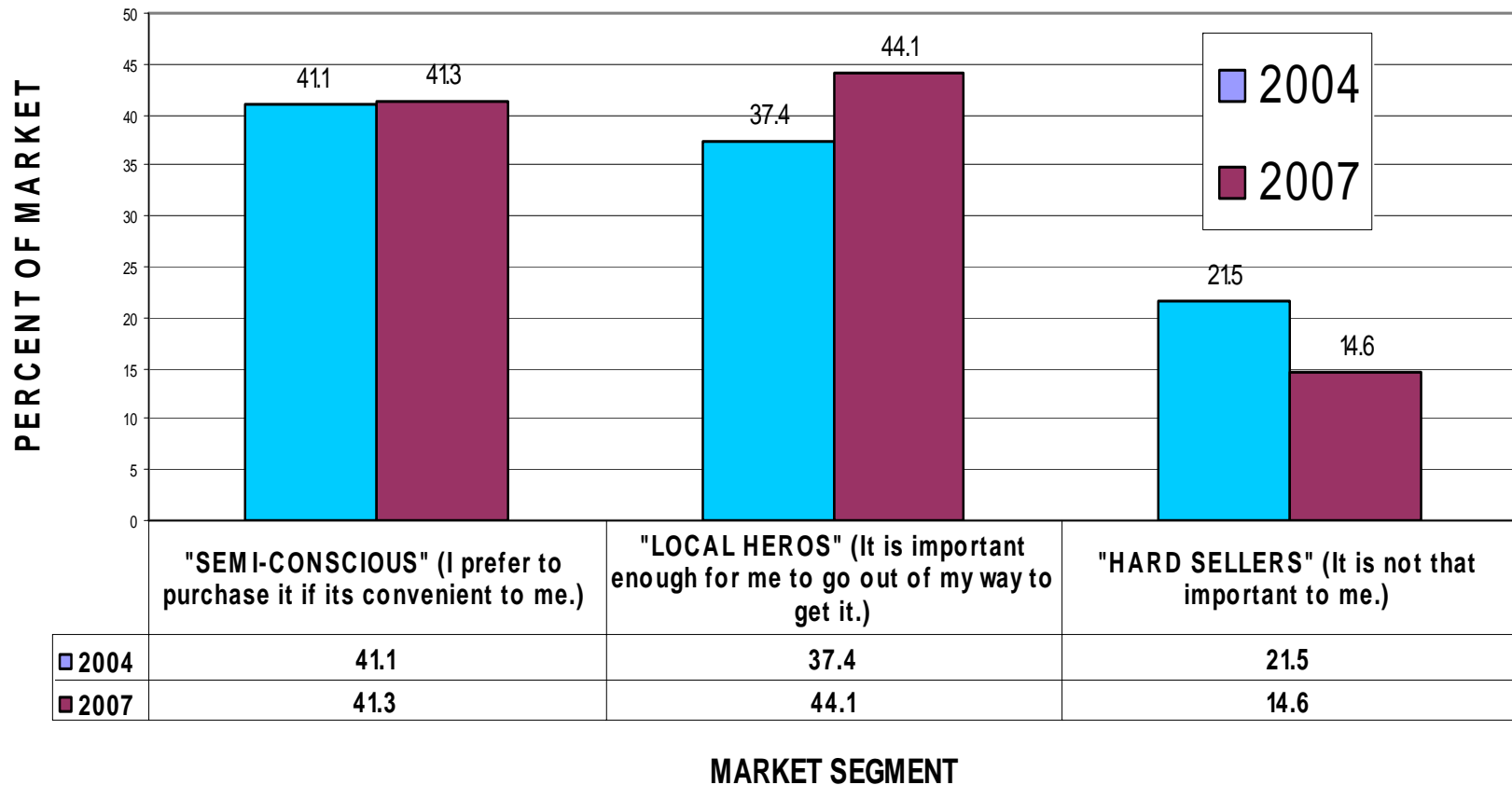
‘Food Miles’ coined by Tim Lang, Professor of Food Policy, City University’s Centre for Food Policy, London

Local vs. Imported Produce

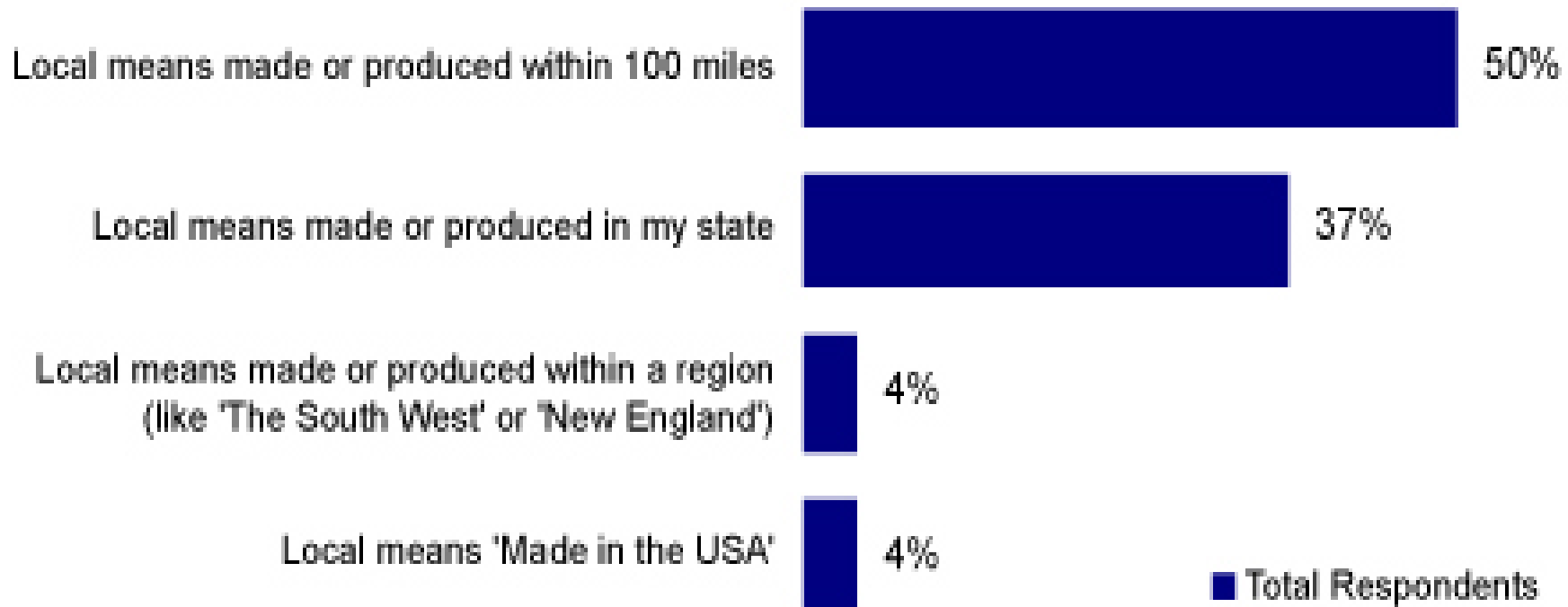
- Northeast Consumers:
 - Local produce is fresher (88%)
 - Local produce looks better (60%)
 - Local produce tastes better (62%)

Wilkins, Bokaer-Smith, Hilchey. 1996. "Local Foods and Local Agriculture: A Survey of Attitudes among Northeastern Consumers". A Survey of Northeast Consumers

Empire State Poll Results



Local Food: What does it mean?



Local Food: What does it mean?

- A healthier lifestyle and a way for consumers to indulge in gourmet food experiences
- Traveled shorter distances
- Fresher
- Less pesticides
- Higher quality
- More authentic than “mass produced” or imported

Local Trumps Organic

- For a growing number of consumers, local is more important than organic
- 55%: “locally grown” affected their food purchases
- 38% “organically grown” influenced food choices

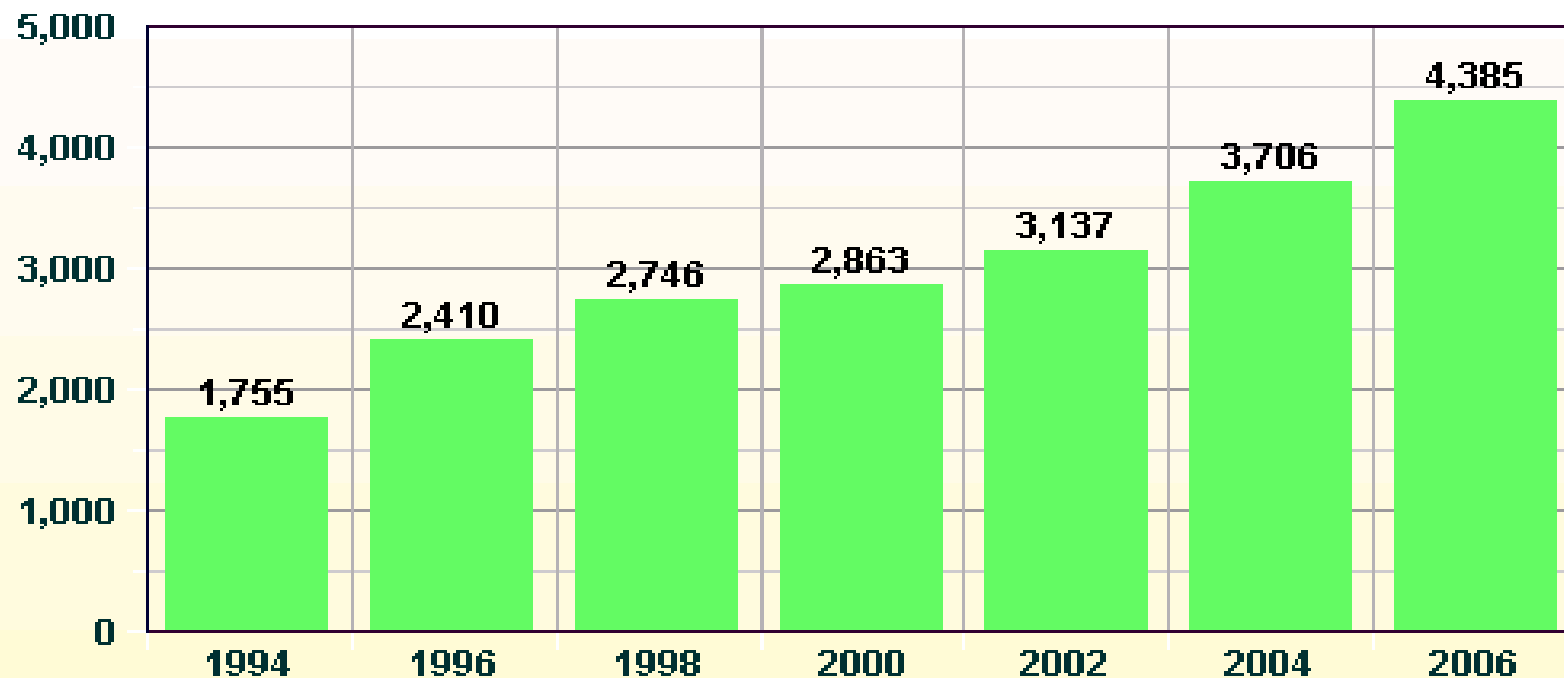
Narrow, Broad Views of Organic

- Foods grown without use of conventional chemical-based pesticides or fertilizers
- Short hand for:
 - "better tasting"
 - "healthier"
 - "more real"
 - "less processed"
 - "fresh"
 - "local"
 - "sustainable"

http://www.hartman-group.com/products/HB/2006_11_01.html

U.S. Growth in Farmers Markets

Number of Operating Farmers Markets



**18.32 %
Increase**

Community-Based Food Systems

- *“Locally owned and controlled, environmentally sound and health promoting.” (WKKF)*
- Community Supported Agriculture Farms
- Community Gardens
- Small Scale Food Processing
- Community Kitchens
- Farm to Table
- Farmers’ Market Nutrition Program, Food Stamps

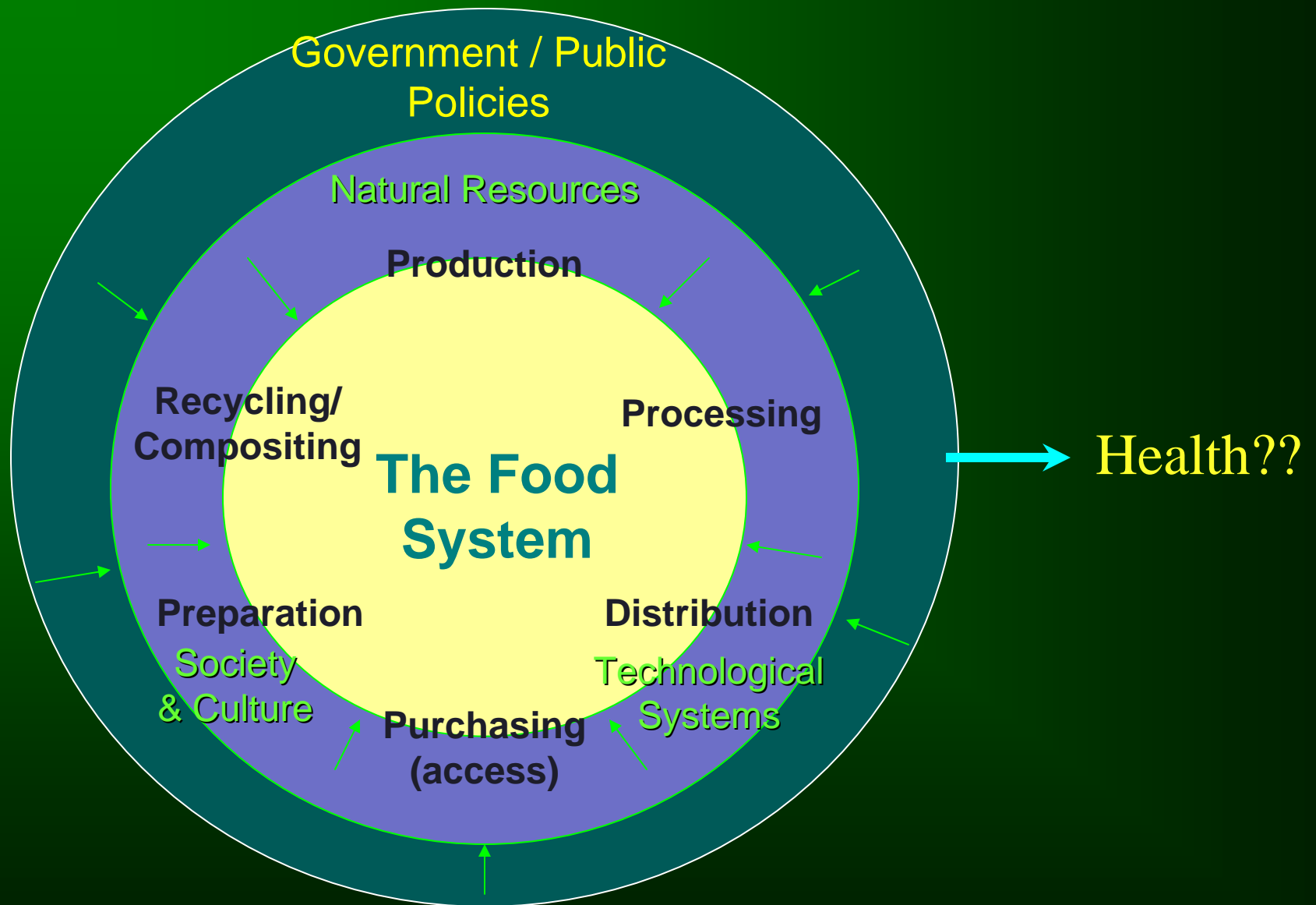


The late Robin Van En (right) and other Indian Line members divide shares following a harvest

<http://www.ams.usda.gov/farmersmarkets/FarmersMarketGrowth.htm>

Growth in Local Food Sales

- Nationally, local food is one of few growth sectors in the food industry.
- “Local produce will become a \$7 billion business within the next four years as supermarkets, restaurants, schools, and corporate cafeterias begin buying their fruits and vegetables closer to home.”

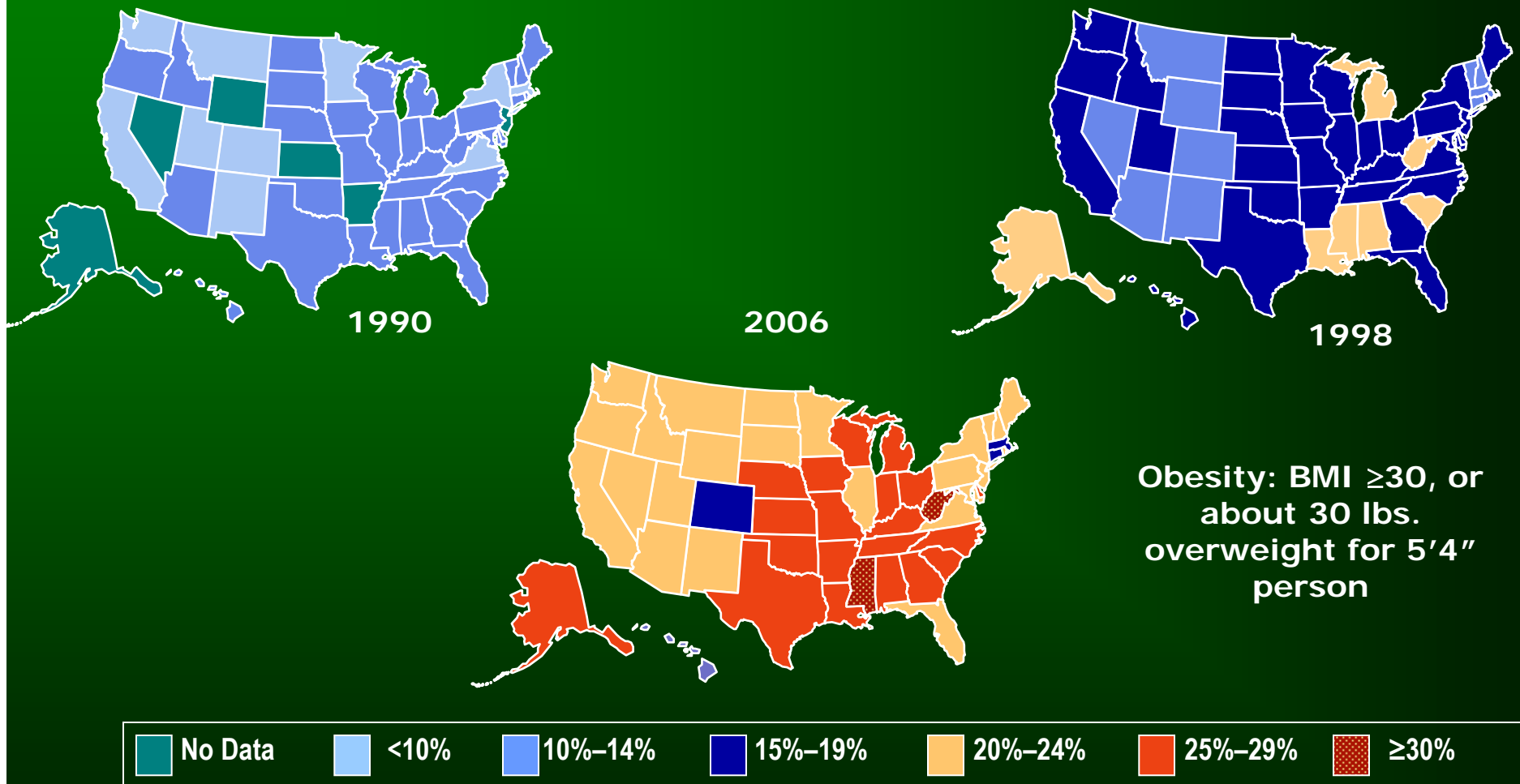


Nutrition and Health

- Obesity
- Diet Quality
- Diet related diseases
- Food Insecurity

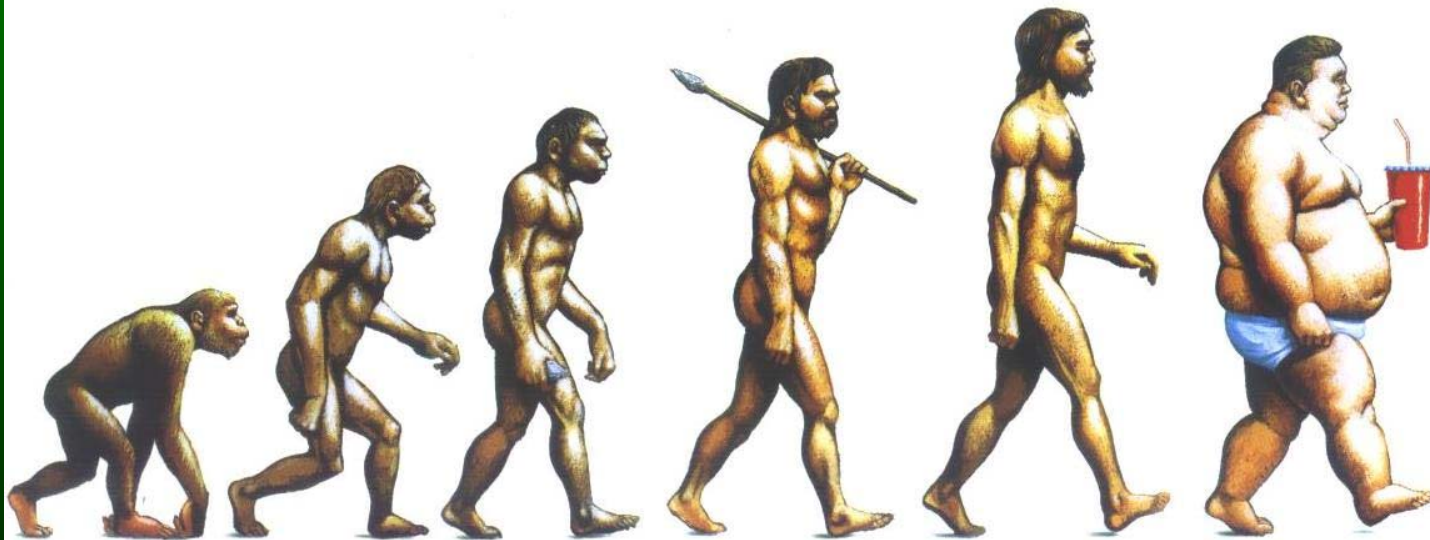
Obesity Among U.S. Adults

BRFSS, 1990, 1998, 2006



DHHS Center for Chronic Disease Prevention and Health Promotion. U.S. Obesity Trends 1985–2006 <http://www.cdc.gov/nccdphp/dnpa/obesity/trend/maps/>

The shape of things to come



Typical American Diet

- Too high in saturated fat, sodium, and sugar
- Too low in fruits, vegetables, whole grains, calcium, and fiber
- 2% of children meet Food Guide Pyramid serving recommendations

Diet, Morbidity and Mortality

- Diet contributes to four of the six leading causes of death
 - heart disease
 - diabetes
 - obesity
 - hypertension
 - stroke
 - osteoporosis

Today's Nutrition Paradox: Overfed and Undernourished

	Recommended	Reported
Food Group	(#/wk)	(#/wk)
Grains	12.26	10.58
Vegetables	31.56	13.31
Fruit	24.48	11.40
Milk Products	42.39	18.81
Meat/Beans	13.29	13.31
Fats/Sweets	6.63	38.65

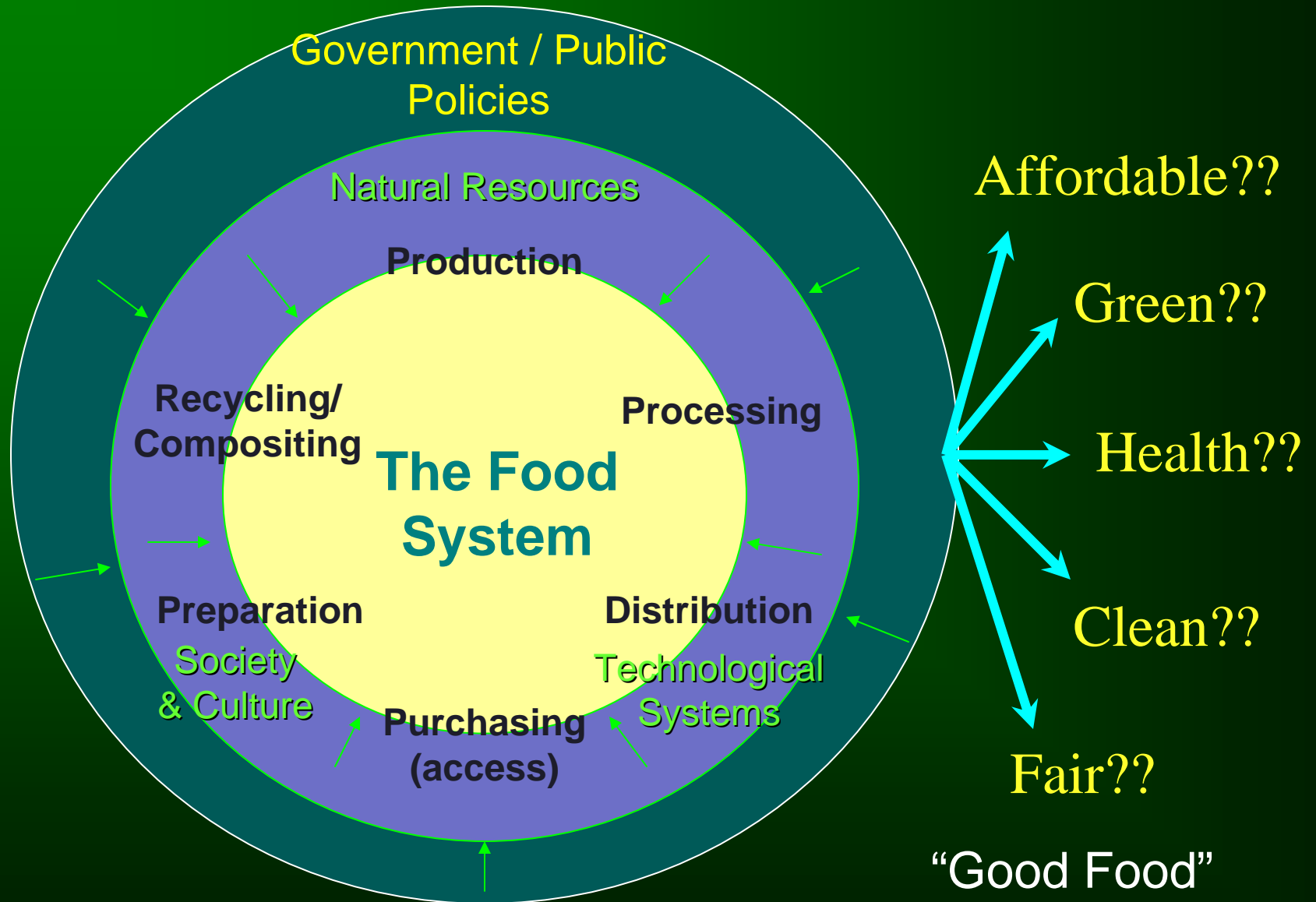
Food Insecurity

Today, one in every five Americans participates in at least one food and nutrition assistance programs. In 2006, > 60 percent of USDA's budget supports 15 programs.

USDA/ERS, Food Assistance Landscape for FY 2006. Feb. 2007

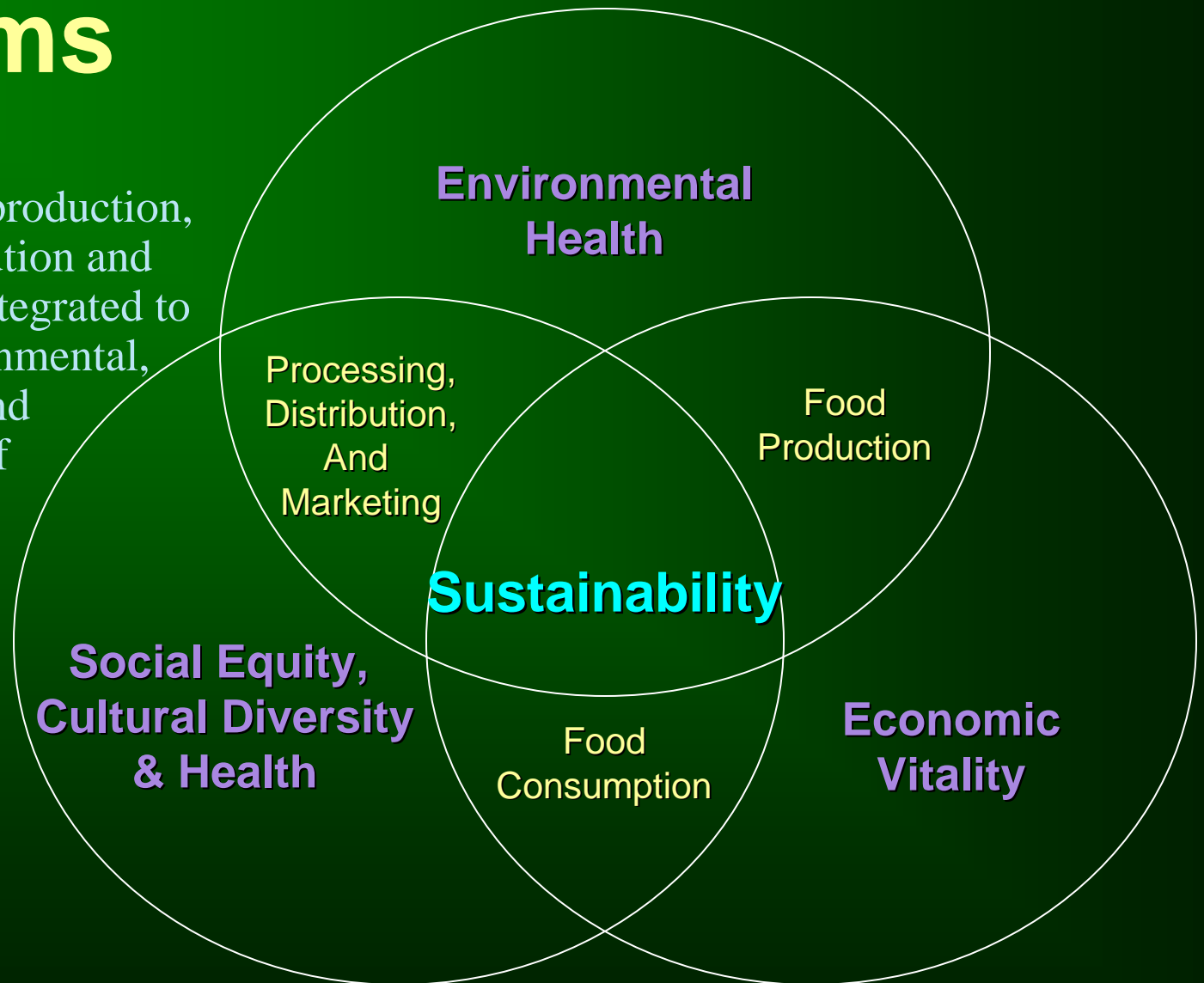


Food System Goals: Beyond Health



Community Food Systems

“Sustainable food production, processing, distribution and consumption are integrated to enhance the environmental, economic, social and nutritional health of a particular geographic location.”



(Garrett and Feenstra. *Growing a Community Food System*. Community Ventures – Partnerships in Education and Research. A Western Regional Extension Publication. June 1999. WREP0135.)

Sustainable Diets

- Sustainable diet: “one that would not only be healthful but be *conservative*, that is, not wasteful of natural resources. One that would provide economic benefits to **more**, rather than fewer people and would strengthen rather than weaken communities.”
- “A diet composed of foods chosen for their contribute not only to health, but also to the sustainability of the U.S. agricultural system.”

(Gussow and Clancy. Dietary Guidelines for Sustainability. *J Nutr Ed* 18:1-15, 1986)

Categories of Local Food Claims

- Health
- Taste and Freshness
- Economic
- Environmental
- Social
- Safety and Security

Local Food: Fresher, More Nutritious?

- “It is fresher than anything in the supermarket and that means it is tastier and more nutritious”
 - (Local Harvest 2006)
- “Because foods begin losing nutritional content at the moment of harvest, fresher local foods retain more nutritional value”
 - (Iowa State University Extension 2005)
- “Local food is fresher, more nutritious, and tastes better than food picked before it’s ripe and shipped long distances”
 - (Land Connection 2006)

Post-Harvest Factors

- Harvest at the incorrect maturity stage
- Careless handling: harvest, during packing, shipping
- Poor sanitation
- Delays to cooling or sub-optimal cooling
- Shipping/storage above or below optimal temperature
- Lack of proper relative humidity

Post-harvest Handling

Higher than optimal temperature rates



Higher respiration rates



Greater quality degradation

Ripeness Matters

Blackberries

Stage picked	Anthocyanins (per 100 gms)
Green	74 mg
Ripe	317 mg



Siriwoharn et al. 2004. *J. Agric. Food Chem.*, 52 (26), 8021 -8030, 2004. 2004 American Chemical Society
Influence of Cultivar, Maturity, and Sampling on Blackberry (*Rubus* L. Hybrids) Anthocyanins, Polyphenolics,
and Antioxidant Properties

Variety Matters

- Conventional markets favor yield, growth rate, and shipability
- Cost of Commercial traits: nutritional quality. [\[i\]](#)
- Varieties differ in appearance and taste, as well as their vitamin, mineral, and phytochemical content. [\[ii\]](#), [\[iii\]](#), [\[iv\]](#)
- Farmers selling direct likely to prioritize taste and nutritional quality over durability when making varietal decisions.

[\[i\]](#) Halweil B. Critical Issues Report. The Organic Center. September 2007

[\[ii\]](#) Howard LR, Pandijaitan N, Morelock T, Gil MI. *J Agric Food Chem.* 2002; 50: 5891–5896.

[\[iii\]](#) Liu M, Li XQ, Weber C, Lee CY, Brown J, Liu RH. *J Agri Food Chem.* 2002; 50 (10): 2926–2930.

[\[iv\]](#) Kopsell DA, Kopsell DE. *Trends Plant Sci.* 2001; 11(10): 499–507.

Is Local More Nutritious?

✓ It Depends

- Point of comparison
- Control for all variables except source
 - Variety, Post-harvest handling
 - Time in transit will likely vary
- Or consider entire diet
 - Based on local foods
 - Based on conventional availability

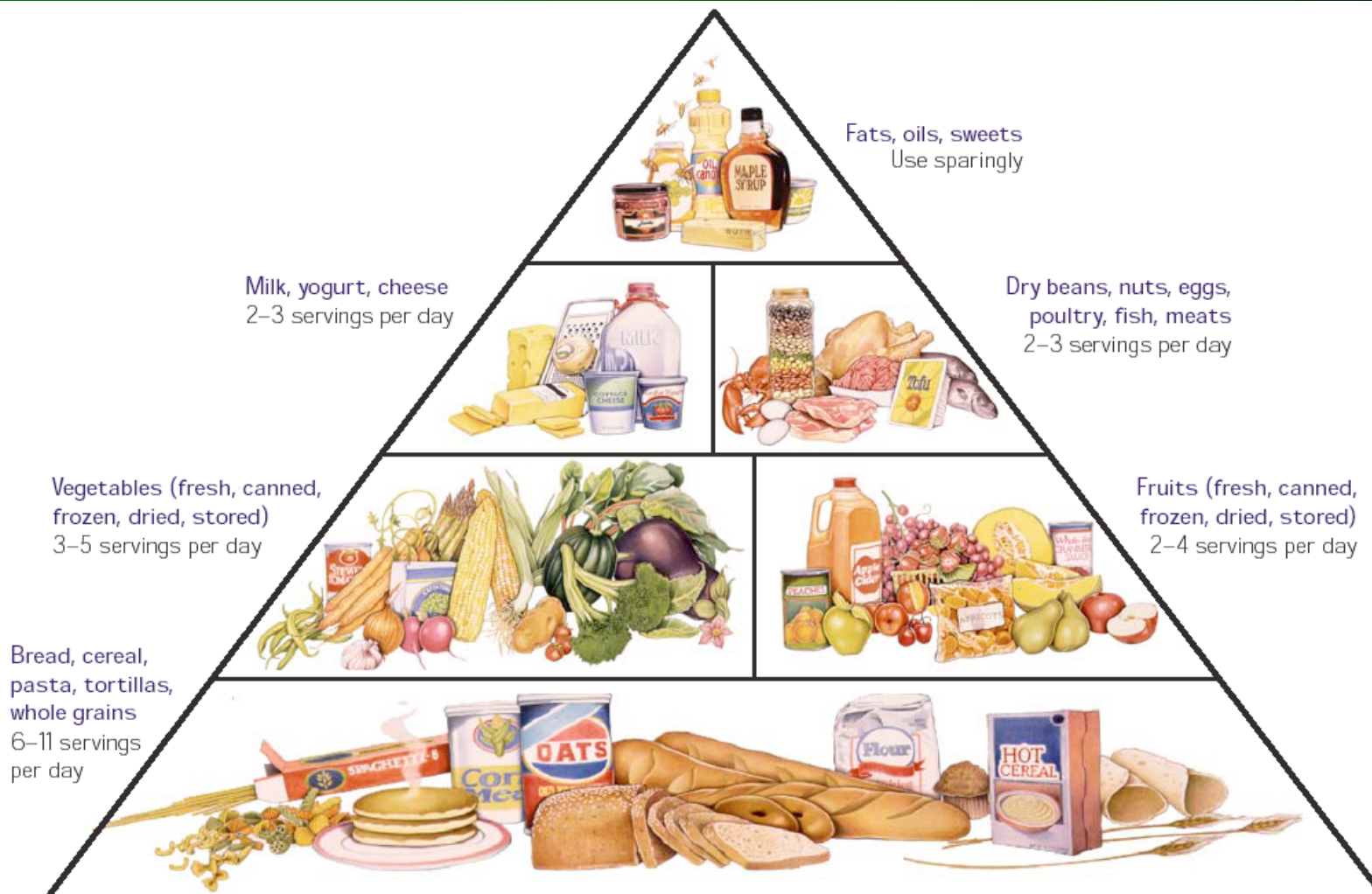
Response from Nutrition Education

- Incorporate community food systems, food security issues into nutrition and dietetics education
- Integrate food system considerations into professional practice
- Imbed cost considerations into dietary advice
- Contextualize dietary advice
 - Regional, state, provincial food guides
 - Dietary guidelines enable seasonal and form variation

Objectives of a Regional Food Guide for the Northeast

- Increase awareness of and participation in the NE food system.
- Promote healthful, enjoyable, and local seasonally varied diets.
- Increase diversity of crops and animals produced in the region.
- Enhance Agricultural sustainability in the NE: environmental, economic, community.

Northeast Regional Food Guide



(Number of servings is based on the Food Guide Pyramid, USDA 1992.)

Link Between Health and the Food System

- Promote critical thinking
- Include environmental, social, and economic implications into nutrition education
- Increase capacity for Food System Assessment
- Foster Food Citizenship



Thank You



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