Local Food: What's the Big Deal?

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Presentation Outline
- Growth of local foods market
- Examining local foods
  - Narrowly and broadly
- Converging food system issues
- Land Grant University’s role

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

Empire State Poll Results

Defining Local: Proximity

Importance of Local

- 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


“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..."

Local Food Campaigns

- 100-Mile Diet
- Food Routes
- Farm to Cafeteria
  - Farm to Cornell
  - Slow Food Cornell
  - CU Dining Local Foods Advisory Council
- Cooperative Extension
  - Local Food Coordinators
  - Local Food Advisory Committee

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 Cafeteria Projects

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.”

Packaged Facts, 2007
Examining Local Food
Narrow and Broad Claims and Evidence

Local Food Claims
• Environmental
• Health
• Taste and Freshness
• Social
• Economic
• Safety and Security

Claim: Lower “Food Miles”
• “Distance food travels from where it is grown or raised to where it is ultimately purchased by the consumer or end-user”


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

Claim: Lower Food Miles

Conventional Market:
~1500 miles

Local Market:
~50 miles

Average distance to reach Chicago:
1,518 miles (1996)
1,245 miles (1981)

http://www.leopold.iastate.edu/pubs/staff/ppp/food_mil.pdf

Claim: Lower Food Miles

Local Conv.

Apple 61 miles 1726 miles
Spinach 36 miles 1800 miles

http://www.leopold.iastate.edu/pubs/staff/ppp/food_mil.pdf
Claim: Lower Fuel Use and Greenhouse Gas Emissions

• Conventional system: 4 - 17 times more fuel than the Iowa-based regional and local systems
• Conventional system: released from 5 - 17 times more CO₂


GHGs: Transport Mode Matters

• Shipping is better than trucking, which in turn is better than air freight
• Packaging matters, too

Comparative Cargo Emissions

Impact of Transportation

• “The greatest climate impact from the wine supply chain comes from transportation.”
  – delivery of agrichemicals, barrels, and bottles
  – primarily during shipment to the customer
  – unrefrigerated container shipping is most efficient
  – air cargo >11 times the emissions of container shipping

Food Systems Perspective

Carbon Footprint

• 2006 Oxford American Dictionary Word of the Year: "Carbon-Neutral"
Carbon Footprint
= 15g

Calculating the carbon footprint of a packet of Walkers Cheese & Onion Crisps:
✓ Map key stages in supply chain
✓ Looking at energy consumption in each
✓ Adding up the carbon emissions

1: Our raw materials: Potatoes, sunflowers and seasoning
2: Manufacture: Producing crisps from potatoes
3: Packaging our crisps
4: Distribution: Bringing our crisps to you
5: Disposal of the empty packs

“Luxus” Consumption

• “Food waste and over-consumption leading to storage of body fat, health problems, and excess resource utilization.”
• Increases in U.S. per capita food availability between 1983 and 2000 required:
  – ~ acre of land and fishing area per person
  – > 3 % of total US energy consumption

Claim: Fresher, More Nutritious

• Factors that reduce quality in post-harvest period:
  – 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
  – For some, exposure to ethylene gas

Factor: Post-Harvest Handling

Higher than optimal temperature rates
↓
Higher respiration rates
↓
Greater quality degradation

Claim: 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)

Carbon “Foodprint” Factors

• How often one shops
• How one gets to the grocery or farmers’ market
• How food is processed/packaged
• How food is stored
• How one cooks
• How food is produced

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↓
Higher respiration rates
↓
Greater quality degradation
**Factor: Ripeness**

Blackberries

<table>
<thead>
<tr>
<th>Stage picked</th>
<th>Anthocyanins (per 100 gms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>74 mg</td>
</tr>
<tr>
<td>Ripe</td>
<td>317 mg</td>
</tr>
</tbody>
</table>


**Factor: Variety**

- Conventional markets favor yield, growth rate, and shipability
- Commercial traits often come at a cost: nutritional quality
- Fruit and vegetable varieties differ in appearance and taste, as well as their vitamin, mineral, and phytochemical content
- Farmers producing for a local and direct market likely to prioritize taste and nutritional quality over durability when making varietal decisions.

**Claim: Local Food Is Good for the Local Economy**

- 18-month study: job-building potential of helping MI farms sell more fruits and vegetables into fresh produce markets.
- 1,889 new jobs across the state and $187 million in new personal income.

C.S. Mott Group, MSU. Sept. 2006

**Potential: Share of Total Regional Food Expenditures (North Country, NY)**

- Per capita food expenditure (U.S.): $2,245
- Population of North Country: 416,974
- Total Regional food expenditure: $936,106,630
- Direct Food Sales: $3,377,000
- Direct Food Sales share of total food bill: 0.3607%
- Per capita fruit & vegetable expenditure: $208
- Total regional fruit and veg expenditure: $86,730,592
- Direct Food Sales: $3,377,000
- Direct Food Sales share of total produce bill: 3.8937%

2002 Data compiled by CalRDI staff. Source: www.ers.usda.gov/briefing/consumption/Expenditures.html

**Potential Regional Economic Impact**

**Economic Impact (2002)**

<table>
<thead>
<tr>
<th>Economic Impact</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002 Regional Direct Sales</td>
<td>$3,377,000</td>
</tr>
<tr>
<td>2004 Retail multiplier*</td>
<td>1.7</td>
</tr>
<tr>
<td>2002 Economic Impact of Direct Sales</td>
<td>$5,740,900</td>
</tr>
</tbody>
</table>


**Economics of Meeting Nutrition Goals Locally**

- Four Scenarios
- Iowans eat 5 servings of fresh fruits and vegetables/day, for three months these are grown by Iowa farmers, half of the produce items were directly marketed.
- Economic Impact:
  - $331.2 million in total economic output
  - $123.3 million in total labor income
  - 4,484 total jobs in Iowa

Pirog, Tagtow, and Adams. The Economic Impacts of Increased Fruit and Vegetable Production and Consumption in Iowa: Phase II. The Leopold Center. 2006
Local Food: Self-Reliance?

- B.C. farmers produce 48% of all foods consumed
- When comparing current production to Food Guide to Healthy Eating, food self-reliance drops to 34%.

Self Reliance: NY Example

- Research Questions:
  - How does the consumption compare with USDA Food Pyramid?
  - How does production compare with consumption?
  - How does production compare with recommended intake?

Production vs Recommendations: Vegetables in New York

<table>
<thead>
<tr>
<th>Vegetable Type</th>
<th>Current Production</th>
<th>Pyramid Recommendations</th>
<th>Share of Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Servings/day</td>
<td>Servings/day</td>
<td>Percent</td>
</tr>
<tr>
<td>Dark green &amp; deep yellow</td>
<td>0.1</td>
<td>1.4</td>
<td>10%</td>
</tr>
<tr>
<td>Dark green &amp; leafy</td>
<td>0.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Deep yellow</td>
<td>0.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Starchy vegetables &amp; legumes</td>
<td>0.7</td>
<td>1.4</td>
<td>50%</td>
</tr>
<tr>
<td>Potatoes</td>
<td>0.3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dry beans, peas, lentils</td>
<td>0.1</td>
<td>0.5</td>
<td>19%</td>
</tr>
<tr>
<td>Other vegetables</td>
<td>0.8</td>
<td>1.4</td>
<td>56%</td>
</tr>
<tr>
<td>Cabbage</td>
<td>0.3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Onions</td>
<td>0.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL VEGETABLES</td>
<td>1.6</td>
<td>4.2</td>
<td>38%</td>
</tr>
</tbody>
</table>

Source: Peters, Bills, Wilkins and Smith (Table 7)

Is Local Food Safer?

- “Food that spends large amounts of time in transit, changes hands multiple times, and is processed in huge batches provides nearly unlimited opportunities for contamination, on a scale impossible with a shorter, more decentralized food chain.” (Brian Halweil, Eat Here)
- Smaller, more localized production and processing systems are not immune to contamination.
- But problems would be localized, easier to trace, and have less widespread consequences.

Claim: Local Food is Safer

Associated Press: Spinach in Salinas, California, Sept. 2006

Beef Recall

Feb 17, 2008 Recall of 143 million lbs of beef

Vulnerability

“For the life of me, I cannot understand why the terrorists have not attacked our food supply because it is so easy to do.”

Tommy Thompson
December 6, 2004

“34,000 member families standing behind the production of food, ornamentals and environmental quality.”

Farm Bureau of New York State

Converging Food System Issues
- Health
- Food security
- Food safety
- Peak oil
- Global warming
- Viability of family farms
- Power and Control

Concentration and Corporate Control
- Concentration Ratios
  - Beef 81% (CR4)
  - Pork 59% (CR4)
  - Soybean Crushing 80% (CR4)
  - Flour Milling 55% (CR3)
  - Retail 48% (CR5)
- Processing
  - 85 percent of all processing vegetables grown under contract
  - 10 largest food companies account for more than half of all food products
- Retailing
  - 46% (CR5)

Peak Oil
- The point at which we have extracted half of all oil that has ever existed in the world
- The half that was:
  - the easiest to get
  - the most economically obtained
  - highest quality
  - cheapest to refine

Peak Oil and Food
“The crisis in agriculture will be one of the defining conditions…. We will simply have to grow more of our food locally. The crisis will present itself when industrial farming, dependent on massive oil and gas ‘inputs’ at gigantic scales of operation, can no longer be carried on economically.”

Local Food. What’s the Big Deal?
- 1940s-50s
  - Nutrient deficiency
- 1970s-mid 1980s
  - Public health
  - Community nutrition
  - Dietary goals: diet/disease connection
- 1985
  - Hunger, food security
  - Food systems
- 1995
  - Ecology
  - Food democracy
  - Food rights
- 2000
  - Food sovereignty
  - Food ‘wars’
**Food Wars**

- Agricultural Revolution
- Industrialization of Food
- Chemical Revolution
- Transportation Revolution
- Productionist Paradigm
- Life Sciences Integrated Paradigm
- Ecologically Integrated Paradigm


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**New “Localism”**

- Build direct local links/infrastructure
- Respects people’s food preferences and tastes
- Embraces wider social and community context
- Skill based - local people involved in providing and delivering solutions
- Connects to wider issues and topics beyond food, eg environmental stewardship
- Focuses on people’s health and well being and improving the nutritional quality of diets

Lang and Heasman, 2004

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**Land Grant University Role in Local Foods**

- Promote critical thinking
- Clarify the Issues & Questions
- Engage all 3 missions
- Broaden the Context
- Engage stakeholders in open dialogue of critical questions
- Develop community-level capacity for food system assessment and planning
- Foster Food Citizenship

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**Thank You**

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