

Multi-Scale Climate and Environmental Change Conference

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Cultivating Food Systems for a Changing Climate?

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Research Project

(April 1, 2015 - December 31, 2016)

“Adaptive Capacity in Local Food Systems:
Analysis of farmers’ markets in the Eastern
Townships”

Is there an emergent local food system in the Eastern Townships?

- Q1:** What is a *local food system*?
- Q2:** Is it *emerging* in ET?
- Q3:** *Why* is it emerging?
- Q4:** *Adaptive capacity*: The emerging local food system as adaptation to climate change?

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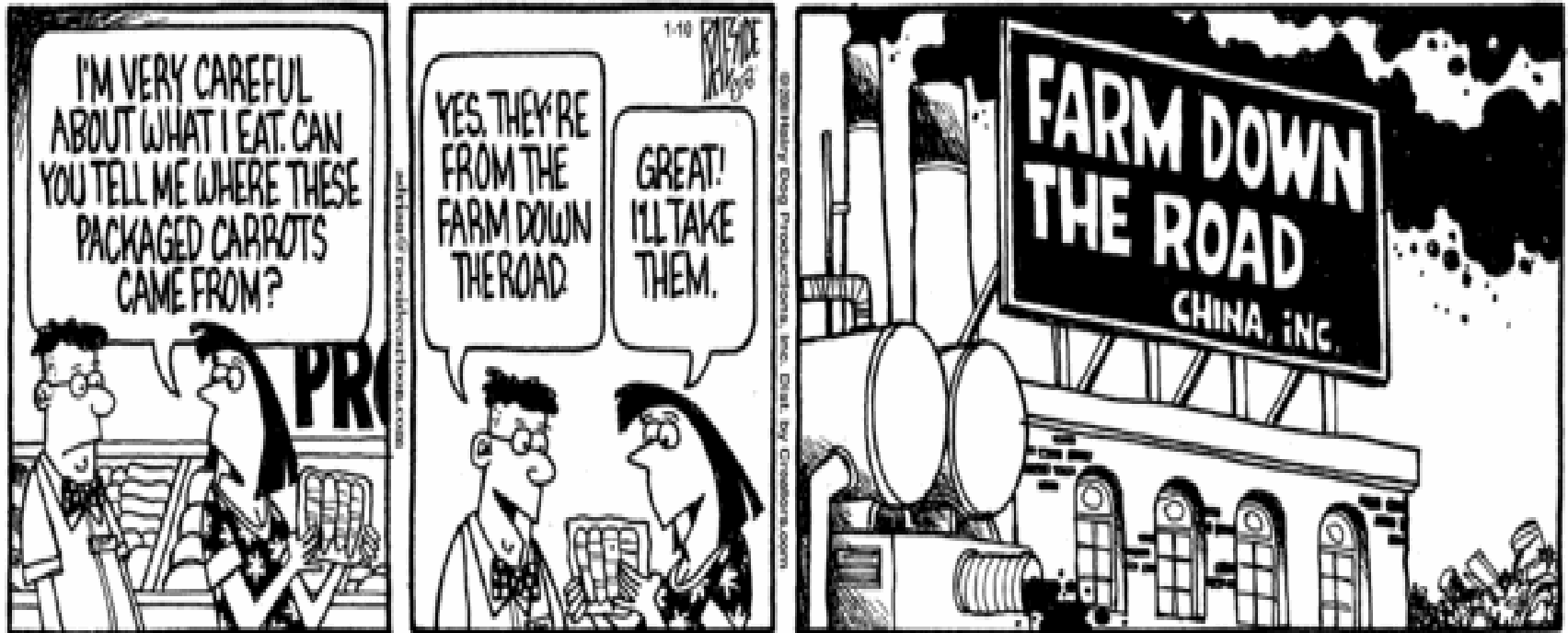
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Q1: What is a local food system?

- "complex **networks of relationships** between actors including producers, distributors, retailers, and consumers **grounded in a particular place.** " (Dunn et al., 2011, 46).
- Local = More than just distance

The marketing of local



MNN.com > Leaderboard

Walmart goes local with produce

Walmart has been working since 2010 to double the amount of locally grown produce in its stores by buying more from growers in state.

Content provided by Walmart



Thousands of tourists flock to Lane Southern Orchards in central Georgia every year to stroll the orchards, watch employees pack fruit and, of course, taste the sweet, juicy peaches the farm has produced for more than 100 years. Those same peaches -

Presented by



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IF IT'S IN YOUR LIFE, IT'S ON OUR TRAINS

Trains play a significant role in your everyday life. But what would happen if rail transportation didn't exist?

LET'S FIND OUT



“Local” = within a province & 50 kms across border



“Local” = within 50 kms of the market

Q2: Is it *emerging*?

Evidence – the # and impact of:

- Farmers' Markets 
- Community-Supported Agriculture (CSAs) 
- Community Gardens 

Q3: *Why* are local food systems *emerging*?

Survey Responses

The attraction to local food is varied:

- **For customers:** flavour, nutrition, safety, ecological, social reasons
Connection to the farmer is #1 reason
- **For vendors:** entrepreneurial opportunities, higher revenues, less overhead costs, more joy..... Connection to customer is #1 reason

General themes:

- **Connection:** Rebuilding the **foodshed** and appreciating the “**terroir**”
 - drawing closer connections between food purchasing choices and ecological & social conditions in which the food is grown
- Rejection of **lack of transparency** in global food supply chains
 - We know little about social and ecological conditions our food comes from
 - Origins and travel distances raise questions about sustainability and quality
 - Rejection of geographically-anonymous food

Local food is about Connection & Transparency a lot more than distance

- *“people want to travel to the country and meet the farmer that grew or raised their food, see the land where it was produced, and feel a connection with that process”. (Duram 2010, 236)*
- Open-farm policy



February 27, 2015



Joel Salatin, Polyface Farms
Swoope, Virginia



Connection and Transparency?



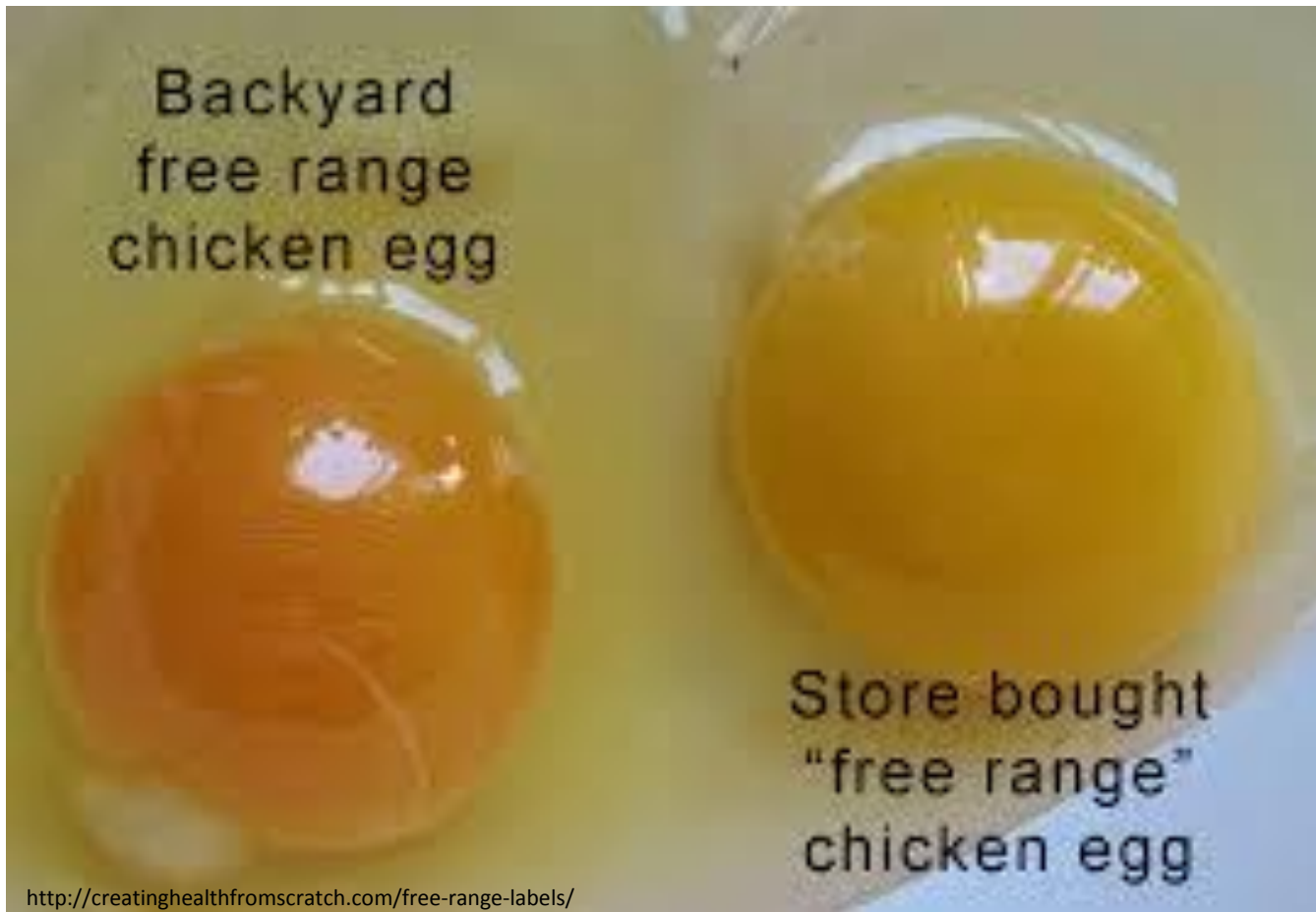
Food labels are not sufficient

- Food labeling laws – nutrition and safety issues
- Proliferation of new marketing terms with dubious meanings:
 - “Free-range”



http://en.wikipedia.org/wiki/Free-range_eggs

Those who grow their own, or know their farmers, are not easily deceived



Q4: Local food as climate adaptation?

(warning: highly speculative)

Criteria for adaptive capacity:

- **Diversity** vs monoculture = decreased exposure/vulnerability
- **Redundancy** (products, markets) vs efficiency = increased resilience
- **Flexibility** vs rigidity in institutions, modes of production
- **Self-organization** vs imposed arrangements = **empowerment** vs dependency
- **Connectivity** within the community = **interdependence**
- **Capacity to learn:** Knowledge transmission about food, process, access...



Adaptation?

Research into resilience design criteria for agroecological systems

Resilience Design Criteria	Associated Sustainable Agriculture Practices	Sustainability Indicators	Resilience Design Criteria	Associated Sustainable Agriculture Practices	Sustainability Indicators
Ecologically self-regulated	Farm maintains diverse annual plant cover and incorporates perennials, provides habitat for beneficial organisms and aligns production with local ecological conditions	Soil Quality, Balanced Nutrient and Carbon Budget, Energy and Water Efficiency, Pest Pressure	Builds human capital	Investment in infrastructure and institutions to support community-based education, research and development, and local businesses, support for social events in farming communities	Time for Family Activities, Family Education, Farm Succession Plan, Local Sales, On-farm Jobs, Local Purchases, Community Cooperation, Local Identity
Functional and response diversity	Diverse crop rotations, integrated and pasture-based livestock production systems, composting, alternative energy production, water harvesting	Soil Quality, Balanced Nutrient and Carbon Budget, Energy and Water Efficiency, Pest Pressure	Reflective and shared learning	Extension and advisory services for farmers; collaboration between universities, research centers and farmers; cooperation and knowledge sharing between farmers; record-keeping; baseline knowledge about the state of the agroecosystem	Cooperation with Other Farmers, Community On-farm, Family Education
Spatial and temporal diversity	Farm landscape is a mosaic pattern of managed and unmanaged land, diverse plant types and livestock are cultivated across space and time, diverse crop rotations integrated with livestock	Biodiversity	Honors legacy	Maintenance of heirloom seeds and engagement of elders, incorporation of traditional cultivation techniques with modern knowledge	Local Identity
Appropriately connected	Collaborating with multiple producers, suppliers, markets and farmers; farm design that encourages response diversity	No comparable indicators	Globally autonomous and locally interdependent	Less reliance on commodity markets and reduced external inputs; more sales to local markets, reliance on local resources; existence of farmer co-ops, close relationships between producer and consumer, and shared resources such as equipment	Local Sales, Local Purchases, Community Cooperation, Community On-farm
Exposed to disturbance	Management that accepts some controlled disturbance from weather variability, nutrient variability and pests in order to discover robust crops, livestock and production system configurations	No comparable indicators	Reasonably profitable	The people involved in agriculture earn a living wage, a reasonable return on invested capital, have the resources needed for health-care, education, family activities and retirement; farm work brings a feeling of satisfaction to the people working on the farm	Total Family Income, Time for Family Activities, Family Health, Satisfaction from Farming, Farm Succession Plan
Coupled with local natural capital	Farm builds soil quality to maintain healthy water and mineral cycles, has little need to import water or nutrients, or export waste	Soil Quality, Balanced Nutrient and Carbon Budget, Energy and Water Efficiency			
Socially self-organized	Farmers and consumers are able to organize into grassroots networks and institutions such as co-ops, farmers' markets, community sustainability associations, community gardens and advisory networks	Participation and Cooperation in Community			

Source; Lengnick, L. 2015. Resilience Design Criteria for Agroecosystems (Table 9.1, page 286)

Thank you!

