Journal of Rural Studies 54 (2017) 314–325

Contents lists available at ScienceDirect

Journal of Rural Studies

journal homepage: www.elsevier.com/locate/jrurstud

Visualizing the social and geographical embeddedness of local food systems

Catherine Brinkley

Community and Regional Development, Department of Human Ecology, College of Agriculture and Environmental Sciences, University of California, Davis, United States

ARTICLE INFO

Article history:
Received 5 November 2016
Received in revised form
28 June 2017
Accepted 30 June 2017

Keywords:
Direct marketing
Farm-to-fork
Soil-to-soil
Agricultural economics
Farmers' market

ABSTRACT

Re-localizing food distribution is expected to geographically concentrate social and economic capital toward values that are beneficial to both consumers and producers. Yet, both the theory of how communities benefit from purchasing local food and the practice of promoting local food lack foundational empiric evidence that makes spatially explicit the procurement typologies and the communities that are connected. This research pilots a method for understanding the geographic patterns of local food supply chains in relation to the social networks formed through farm tours, byproduct sales, farm-to-farm collaboration, and donations to the local food bank. This method is expected to improve both the theory and practice of re-localizing food systems, thereby helping scholars and policymakers to identify and correct for inequities while also recognizing successful practices and opportunities in situ. Findings are based on a novel dataset from Chester County, Pennsylvania encompassing 1089 connections between 117 farms and 637 locations. Farms primarily engage with one marketing typology. The most common marketing practices are wholesale distribution and direct-marketing to consumers through farmers' markets; both market typologies have an average reach of over 50 km. Central to the social network, is a third typology characterized by sales to restaurants, collaboration amongst farms and participation with local food bank programming. Interviews with policymakers and market managers ground-truth and relate findings to state and local regulations.

1. Introduction: *The rise of local food in policy and practice*

Encouraged by consumer preference for local foods (Yue and Tong, 2009; Feldmann and Hamm, 2015) and willingness to pay more than double the price for local products (Darby et al., 2008), both large and small-scale farming is increasingly turning to direct markets through you-pick operations, farm stands, farmers' markets, and Community Supported Agriculture (CSA). Currently, nearly 7% of U.S. farms are involved with direct marketing with an 8% increase in sales since 2007 (USDA NASS, 2012 Census of Agriculture). The federal government began tracking the number of farmers markets in 1994 and CSAs in 2007. The number of farmers' markets has more than doubled in the past decade, rising to 8284 in 2014 from 3706 in 2004 (ERS, 2014). Local food is also increasingly promoted through food hubs and sales to restaurants and grocery stores (Starr et al., 2003; Ilbery and Maye, 2005; Horst et al., 2016). Numerous practitioners of planning, land-use management, policy and economic development encourage local food programming (Feenstra, 1997; Murdoch, 2000; Myers, 2004). 'Buy Local' campaigns have been codified in every state with branding (Onken and Bernard, 2010) and are buoyed through formal and informal economic development support in comprehensive planning documents.

With its growing popularity, the local food movement is expected to change both consumers and farmers. The movement often emphasizes 'weak social ties' (Granovetter, 1973) created through food as bringing together novel constituents for political persuasion which combines purchasing power with the 'soft power'(Nye, 2004) of a social movement. Where markets *should* emphasize the highest financial returns, economic sociologists have noted their non-economic logic (Polanyi, 1968), terming them 'embedded' in both geographies and social value systems (Granovetter, 1985). Hinrichs (2000) states that part of what direct marketing producers sell is "social connection. Local embeddedness itself then becomes some of the value added in the farmers' market experience" (p. 299). Embeddedness describes the non-economic logic of how markets yoke together two separate

E-mail address: ckbrinkley@ucdavis.edu.

http://dx.doi.org/10.1016/j.jrurstud.2017.06.023
0743-0167/

geographies through shared economies and social values (Fig. 1).

This research asks: what is the extent and orientation of embeddedness in the local food system? First, a literature review demonstrates the current understanding in the field and the need for new methodologies to help test theories of embeddedness within local food systems. Namely, the local food movement is expected to transmit values through proximate economic and social networks. But which communities are connected, and across which local marketing strategies? In response to this question, I pilot a method for mapping the local food system socially and spatially. Document review and program director interviews help to verify and explain the findings as well as their consequences for food systems planning and economic development.

2. Literature review

2.1. Establishing the local food system as a theory of social change

Local food activists have reconceptualized food supply chains as a means of spatially distributing social values by leveraging economic capital. The values encompassed by the food system are exemplified by the over 300 different labelling schemes which promote fair labor, sustainable land-use, and animal welfare practices to name a few (O'Hara and Stagl, 2001; Howard and Allen, 2010; Grunert et al., 2014). Yet, only a few global corporations control distribution, connecting consumers to producers (Heffernan, 1998; Howard, 2009). This bottleneck in supply chains reveals an important lever for altering geographies and financing shared value systems. Renting et al. (2003) asserts that shortening the supply chain by decreasing the number of intermediaries involved in production, distribution, processing and purchasing should clarify the values and geographies involved. In sum, geographically explicit, personal relationships between producers and consumers are expected to raise awareness about social, economic, and environmental effects of food consumption by tightening feedback loops which concentrate economic and social capital toward values-based goals (Francis et al., 2003; Sage, 2003; Sundkvist et al., 2005).

Hinrichs (2000) cautions that even the shortest supply chains, such as direct marketing from farms to consumers, can have varied power structures. Namely, farmers often travel to cities for farmers' markets, while consumers travel to farms in which they own a share of the commodities produced in the CSA model. Hinrichs asserts that while both supply chain typologies emphasize direct, local consumer relationships with farmers, the resulting geo-social embeddedness of the network and the values it promotes will fundamentally differ.

In addition, local values-based supply chains are not limited to direct-marketing. Nearly 50,000 farms in 2012 sold some or all of their products directly to retail outlets such as restaurants, grocery stores, schools, hospitals, or other businesses that in turn sold to consumers (USDA). Intermediaries between farms and consumers can also play important roles in food system-based social change. For example, chefs, like Alice Waters of Chez Panisse in California, are often seen as the forefront of the local food movement where they change consumer demand for certain types of local food. In the process, their search for ingredients resulted in direct contracts with farmers to grow specific products using agroecological methods (Starr et al., 2003). Similarly, farm-to-school programming is conceptualized as a means of encouraging healthy eating, transferring farming education to the next generation, and preserving local farming land-uses (Vallianatos et al., 2004; Joshi et al., 2008; Bagdonis et al., 2009). Sonnino (2010) finds that school food reform in the UK gave small producers access to new income streams while offering students food that is more nutritious. Similar rationales underpin the motivations behind promoting regional food hubs (Horst et al., 2016). Planning practitioners have also noted that public procurement anti-hunger efforts that champion local food have had a successful track record of protecting farmland, spurring rural economic development and increasing urban food security in Canada (Riches, 1999) and Belo Horizonte, Brazil (Rocha, 2001; Rocha and Lessa, 2009).

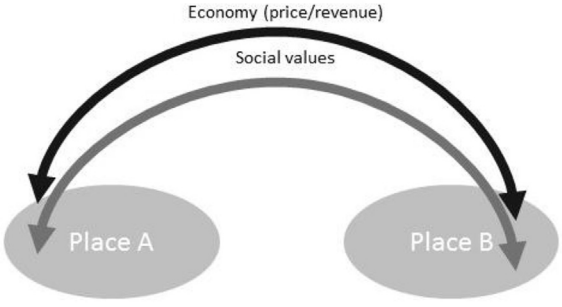

Fig. 1. Graphic explaining the embeddedness of markets which leverage shared social and economic values to alter geographies.

Most importantly, the geo-social embeddedness of food systems may not be driven solely by food purchases. In addition to supplying food, farms serve numerous socio-ecologic functions for urban users and nearby communities (Brown and Miller, 2008). In 2012, over 33,000 farms listed income from agritourism and recreational services such as farm tours, hayrides, school visits, and other activities (USDA). A review of the mission and vision statements from 130 nationally accredited farmland preservation agencies notes that ecosystem, social and cultural services are among the top reasons for preserving farmland, ranking far above food supply (Brinkley, 2012). Peri-urban agriculture plays an important role in waste cycling and wildlife habitat (Smit and Nasr, 1992; Assaad, 1996; Furedy et al., 1999; Lydecker and Drechsel, 2010; Drechsel et al., 2015). The geographical range, orientation and power dynamics involved in such non-food functions have yet to be assessed (Brinkley, 2012). In short, the many highly-valued social and ecological services that farms provide have not been defined spatially or related to marketing practices, though it is these very orientations that are important to theories of localization and its role in the practices of farmland preservation and management.

2.2. The local food system and values of social justice?

Last, production, relationships and proximity do not necessarily beget mutually beneficial feedback loops between environmental and social justice objectives. Food insecurity in farm workers is more than triple the national household average in multiple areas of the country (Quandt et al., 2004; Weigel et al., 2007; Hill et al., 2011; Wadsworth et al., 2016).

Naturally, markets will gravitate toward more wealthy and powerful communities that are better positioned to help farmers achieve their end goals of profitability and secure farm tenure. Indeed, there is evidence that many direct marketing networks target consumers in the wealthiest neighborhoods. Farms involved in direct marketing are more likely to be located in the Northeast or the West Coast, near densely populated urban markets in areas with high median home values (Brown and Miller, 2008; Low and Vogel, 2011). Schupp (2016) finds that farmers markets locate in areas where the neighborhood population has attained higher education levels and a higher percentage identify as white than the national average. Direct market customers are more likely to be