

The Emergence of Retail Agriculture: Its Outlook, Capital Needs, and Role in Supporting Young, Beginning, and Small Farmers

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Abstract

Young, beginning, and small farmers are increasingly participating in consumer-oriented marketing activities across the U.S. Lower overhead, smaller start-up costs, higher customer contact, land stewardship, and entrepreneurship are factors affecting their motivations to engage in local and regional food systems, direct marketing, organic production, and value-added agriculture. We offer that one meaningful way to interpret these trends is based upon the widespread use of product and marketing channel diversification. We call the combination of these activities “Retail Agriculture” and have developed a market-oriented narrative to help facilitate the policy development needed to support this sector’s growth. Specifically, policies are needed to increase information on the sector, assess its risks and credit needs, and ensure access to

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credit, especially for new and beginning farmers.

Keywords

local and regional food systems – value-chains – credit access – policy – beginning farmers – new farmers – young farmers – direct sales – Census of Agriculture – Farm Bill – framing

Introduction

Growing attention to local and regional food systems, the organic sector, and young and beginning farmers has resulted in a proliferation of government, industry, academic, and practitioner publications that offer snapshots on these issues. Despite the proliferation of mostly government data sources, the Census of Agriculture, Agricultural Resource Management Survey (ARMS), and the Food Environment Atlas still collect very limited data on these issues. Often data is confined to direct-to-consumer marketing, organic production and sales, use of Community Supported Agriculture (CSA), farm to school project locations, and some producer demographics.

A lack of information on these sectors of agriculture can impede private credit availability and access. New farmers and potential farmers coming from non-agricultural backgrounds and educations may not be accessing federal programs designed to assist producers with financing and management – a common trend among beginning farmers (Ahearn & Newton, 2009, pp. 15-16). Lack of information about federal programs may be a contributing factor to: organic demand outpacing organic farming production and new farm starts (Dimitri & Oberholtzer, 2009,

pp. 10-13); lower than anticipated upstream supplier development (e.g. organic seed production; limited allocation of research funding; challenges in accessing credit among farmers (Cocciarelli, Suput, & Boshara, 2010) and supply chain businesses (e.g. small livestock slaughter facilities)(Food and Water Watch, 2009); and regulations that do not recognize the sector's unique characteristics (e.g. food safety). The public policy responses to the emerging cluster of value-chains, local and regional food systems, and direct to consumer marketing is fragmented. Existing USDA lending authorities designed to serve some of these needs are subject to unsuitable urban/rural distinctions. Establishing a common language may help address these challenges by providing coherent intellectual and public policy framing for these trends.

The primary purpose of this article is to examine the involvement of farmers in a variety of consumer-oriented agricultural marketing arrangements. The report was commissioned by the Farm Credit System's trade association, the Farm Credit Council, in order to better understand the business environment faced by young, beginning, and small farmers who utilize local and regional food systems, organic production, Community Supported Agriculture, direct-to-consumer sales, value-added, and other similar, entrepreneurial forms of agricultural production and marketing.

The secondary purpose of the report is to communicate its findings in a narrative format that will contribute to the knowledge base of the 12,000 Farm Credit employees located in 1,100 branch offices at 84 independently operated local Farm Credit associations around the country. For example, loan officers who may have little direct experience with value-added or local food systems should have access to the best available data on the emerging business models of the

Retail Agriculture sector in order to serve the needs of potential borrowers.

Developing a Market-Based Narrative

A central and recurring theme in agricultural policy is that of the market (Brasier, 2002; Lehrer, 2008). Values associated with this narrative construction are linked to deeply-held American ideals of social and economic progress. Such frames include *prosperity* (e.g. economic and social progress), *opportunity for all* (e.g. independence, self-reliance), *equity* (e.g. fairness, access, legitimacy), and *legacy* (e.g. land stewardship, young and beginning farmers). These frames are often linked to values for rurality, agrarian virtue, and authenticity (Auburn et al., 2005; FrameWorks; Institute, 2005, 2008; Simon, 2009; The Minnesota Project, 2006). We utilize a combination of these narrative metaphors and frames to construct a policy discourse that we hope will resonate with many agricultural professionals, interest groups, policy makers, and media with an aim to elevate, legitimize, and improve the economic viability of an agricultural sector once considered “alternative.”

A discursive realignment is necessary when data shows that formerly “alternative” agricultural practices are popular, economically significant, and unconfined to any type of product or any specific region. For example:

- Direct to consumer marketing is the fifth most popular activity among farmers, including those with farming as a primary and secondary occupation (Figure 1).
- Estimated farm sales of organic products, direct to consumer sales, and “local” food sales

combined may exceed the combined sales of cotton and rice,²

- Livestock farms make up three out of five of all farms with direct to consumer sales (Steve Martinez et al., 2010, pp. 20-21),
- All but one of the top ten states with the fastest farmers market growth in 2010 were in the Midwest (Table 1),
- Nine out of ten counties have at least one farm involved in Community Supported Agriculture (Figure 2), and
- Forty percent of beginning farms are located in metropolitan counties (Figure 3).

² Organic, direct, and “local” sales combined are estimated at \$8 billion (Lev & Gwin, 2010; National Agricultural Statistics Service, 2007, 2010a; Packaged Facts, 2007) Organic and direct sales combined are \$4.1 billion (National Agricultural Statistics Service, 2007, 2010a). (The 2008 Organic Production Survey indicates a higher level of sales from fewer farms than the Census of Agriculture in 2007 – probably an underestimate of Organic farm sales – an issue discussed in detail in the Policy Recommendations section). There may be a relatively insignificant 7% overlap between direct to consumer sales and Organic sales from the farm (Lev & Gwin, 2010). By comparison, in 2007, sales from cotton farms were \$4,898,608,000 and rice farms were \$2,020,231,000 – a total of \$6,918,839,000. Thus a low estimate puts direct and organic sales near par with rice sales and a higher estimate including “local” sales, which may still be an underestimate, is higher than the combined sales of cotton and rice.

Figure 1. Rank of farming activity, including market types, by farming as primary or other occupation

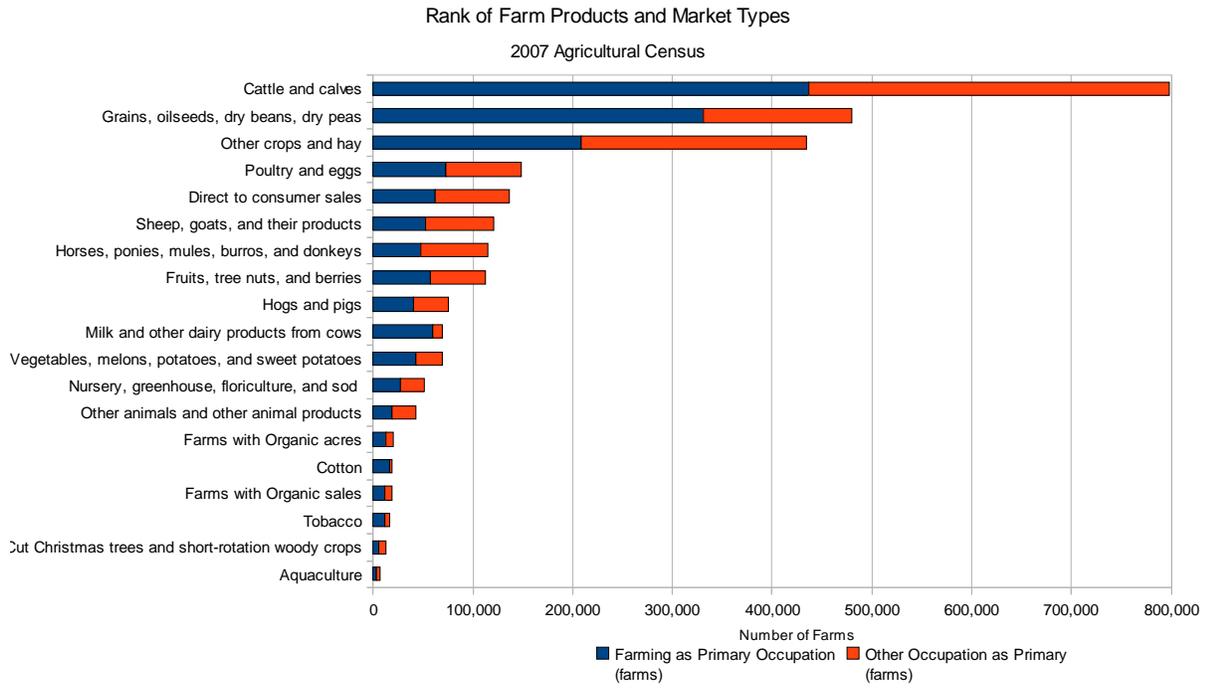
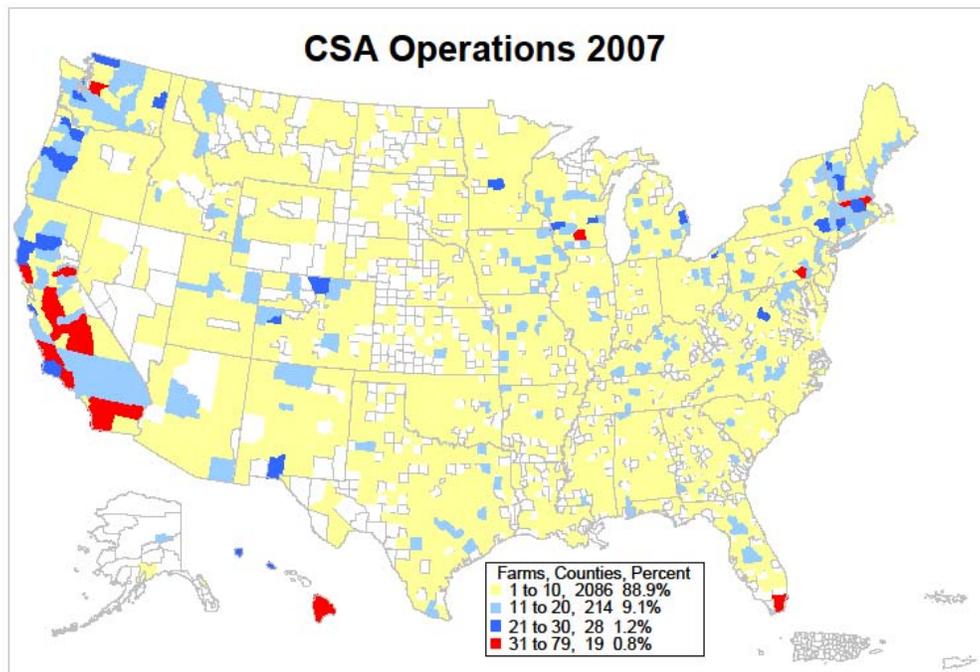


Table 1. Top ten states for farmers market growth between 2009 and 2010 (Wasserman, 2010)

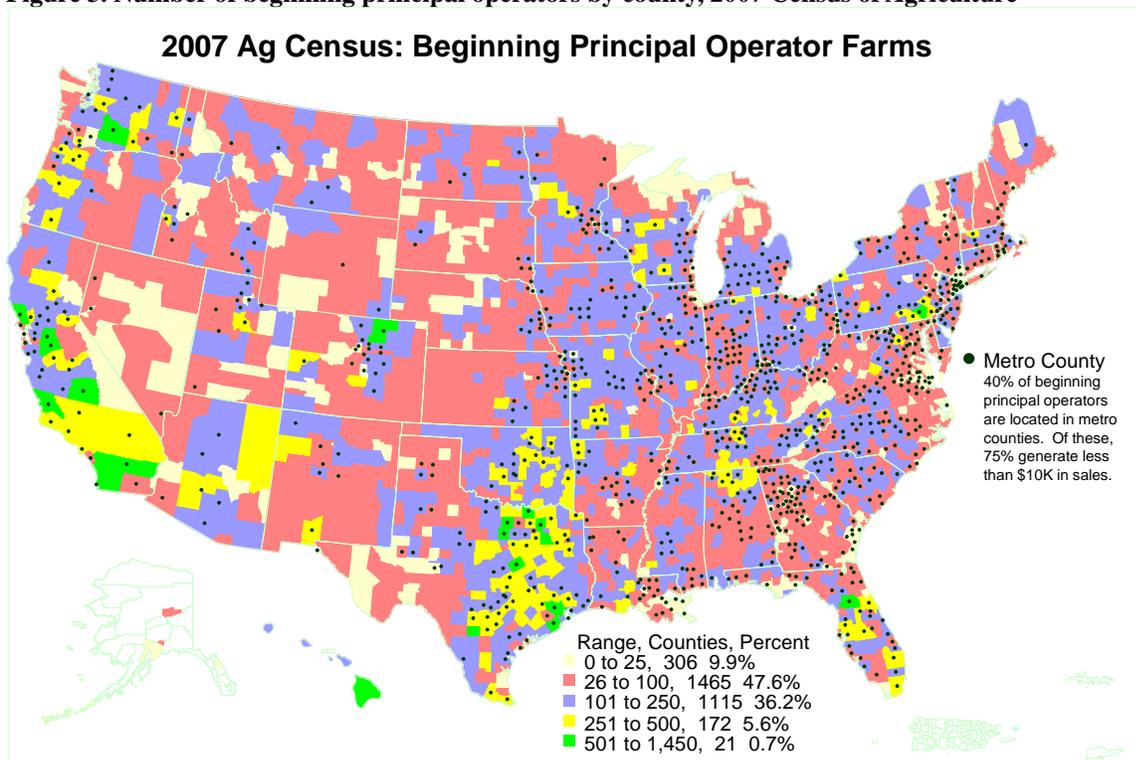
State	Market Growth Percent
Missouri	77%
Minnesota	61%
Idaho	60%
Michigan	60%
Indiana	47%
South Dakota	46%
Arkansas	41%
Washington	37%
Ohio	36%
Oklahoma	31%

Figure 2. Community Supported Agriculture (CSA) farms by county, 2007 Census of Agriculture



Loc: Hays/AlanGary/USCounties_CSA2007_shade

Figure 3. Number of beginning principal operators by county, 2007 Census of Agriculture



Why a Narrative Using the Term “Retail Agriculture”?

We call the assembly of these trends and behaviors “Retail Agriculture.” It is characterized by agricultural producers differentiating their products by characteristics that are recognized by the end purchaser. This differentiation may occur by product type, production method, value-adding, branding/product information, marketing channel diversification, or a combination of these strategies. Generally, Retail Agriculture producers are of a smaller scale that is poorly suited for the production of undifferentiated commodities. Often producers take on some of the responsibilities of distribution and retailing. However, for-profit, cooperative, non-profit, public institutions (e.g. public markets, schools, universities) and farmer-led marketing alliances are also involved in getting the products of Retail Agriculture to market. The conceptual importance of a term like “Retail Agriculture” may be akin to the concept of “Small Business,” which

legitimized the unique needs of small and medium enterprises in the general business literature and policy discourse.

By shifting how we understand agriculture from commodity type and sales class to market-orientation we may portray a more meaningful way of making distinctions in farm classification and in designing farm policies (Lev & Gwin, 2010). The influence of the market may offer more explanatory power in how we classify and understand farmers than through structural characteristics, such as sales class (O'Donoghue, Hoppe, Banker, & Korb, 2009). In the past, the Economic Research Service has broken from rigid definitions based upon farm structure. For example, to capture a trend towards retirement farms, farming as a secondary occupation, and farmland fragmentation, the designation of "lifestyle farms" was applied to nearly 800,000 part-time farm operations. We argue that a similar break is necessary to understand the producers and markets that make up Retail Agriculture.

This narrative structure allows us to relate data from a wide range of publications – a feature many recent overview publications have not demonstrated. For example, during 2008-2010 the USDA and others have published a number of large-scale research papers on changes in the food system including: the local foods sector (Day-Farnsworth, McCown, Miller, & Pfeiffer, 2009; Steve Martinez, et al., 2010), the structure of the local foods sector (King et al., 2010; Micahel Shuman, Barron, & Wasserman, 2009), development of food hubs (Barham & Bragg, 2010; Dreier & Taheri, 2008), small slaughterhouse availability (Food and Water Watch, 2009; Food Safety Inspection Service, 2010), the food environment (Economic Research Service, 2010b), trends in the organic sector (Dimitri & Oberholtzer, 2009), the structure of the organic sector

(Dimitri & Oberholtzer, 2008; Greene et al., 2009), and new and beginning farmers (Ahearn & Newton, 2009). Our intent in this review is to use a generalist's approach to illuminate the sector we call Retail Agriculture.

Limitations

First, since our primary goal was to communicate to a non-academic audience the findings of existing data in a compelling framework, we did not aim to further qualify or analyze most of the government reports and academic publications. Second, we sought to evaluate the merits of the issues primarily on economic and business grounds, and occasionally by factors related to the social structure of agriculture, such as age. Third, we recognize that there are other valid ways to form a business and policy case for the Retail Agriculture sector and others will have valid perspectives to contribute. Within these limitations, especially relating to the first point, weaknesses in our analysis likely indicate areas where future research is needed. There are footnotes indicating areas where there are critical concerns with the research. For example, "direct-to-consumer marketing" as collected in the Census of Agriculture can only be a proxy for a portion of local and regional product sales (Lev & Gwin, 2010). As a second example, the organic sales data varies widely between the 2007 Census of Agriculture and 2008 Organic Production Survey due to differences in the survey samples. The vagaries of available data are a key concern because policymakers and interest groups may base future policy proposals on the same data we used, which in our opinion should be used with caution and restraint.

The Emergence of Retail Agriculture

The growth in the local and regional food marketing, organic production, and other marketing-oriented forms of agriculture is a response to changing consumer trends in food demand. This new Retail Agriculture is a product of increasingly heterogeneous and sophisticated consumer tastes (Food Marketing Institute, 2009; Steidtmann, 2005). Agriculture's responsiveness to these changing consumer demands is most frequently observed via the growth in farmers markets (U.S. Department of Agriculture Market Services Division, 2010), Community Supported Agriculture (Steve Martinez, et al., 2010, pp. 7-10), and other direct-to-consumer marketing arrangements (Steve Martinez, et al., 2010, p. 13); rising sales of natural, organic, local, and other specialty foods in grocery stores (Steve Martinez, et al., 2010, p. 13), and purchases of locally and regionally-source products by food service providers at public schools, universities, hospitals, and restaurants (Steve Martinez, et al., 2010, p. 12; National Restaurant Association, 2010).

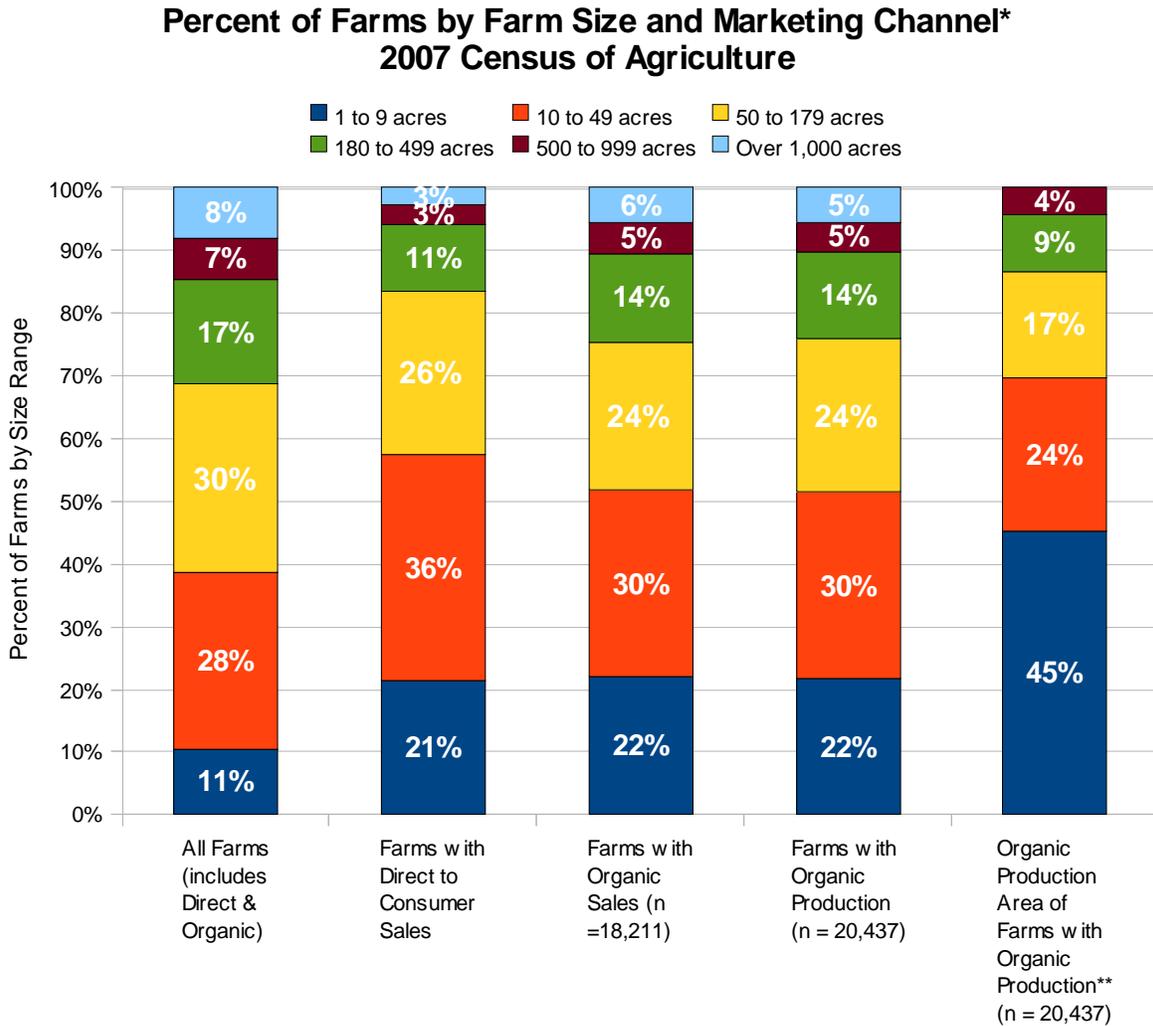
Combined local and organic food sales (if not overlapping), may well represent \$31 billion in food sales in 2010 (Organic Trade Association, 2010; Packaged Facts, 2007) – just over 5% of the U.S.'s \$600 billion in annual food sales (Economic Research Service, 2010a) for at home preparation. Seven out of ten major national retailers sell locally produced products, including Safeway (30% of its produce is local) and Wal-Mart (\$400 million annually) (Steve Martinez, et al., 2010, p. 13). Nine out of ten restaurants and three out of ten quick-service operators serve locally-sourced foods (Steve Martinez, et al., 2010, p. 12; National Restaurant Association, 2010). And about 14% of public school districts made local food purchases in 2009, up from 2.7% in 2004, indicating both commitment and affordability (National Farm to School Network,

2010). Most of the product volume is moved through main-stream channels including supermarkets (Greene & Dimitri, 2009), food processing (Dimitri & Oberholtzer, 2009, p. 6), and food service (School Nutrition Association, 2009) however producers utilize a variety of marketing channels (Diamond, Barham, & Tropp, 2008; National Agricultural Statistics Service, 2010b).

The farmers and ranchers seeking to meet these demands of the Retail Agriculture market often utilize familiar small business strategies, innovative information technologies, and scientifically-researched production practices. Their businesses rely upon differentiated marketing and distribution channels supported by an array of new technologies (e.g. logistics software and online order management,³ internet-based marketing and promotion, and computer-based record-keeping) and new research-based growing techniques (e.g. Management Intensive Grazing, Integrated Pest Management, Relay and Inter-cropping, and hoop-house season extension). Generally, farms best able to meet this type of demand are small and medium-sized operations (see Figure 4) (Diamond, et al., 2008; King, Hand, et al., 2010; Steve Martinez, et al., 2010). The U.S. Bureau of Labor Statistics predicts that of all sectors of agriculture “small-scale, local farming, particularly horticulture and organic farming, offer the best opportunities for entering the [farming] occupation” over the next decade due to opportunities in direct to consumer marketing, Community Supported Agriculture, and collective marketing (Bureau of Labor Statistics, 2010).

3 For an example, see Farmigo, a software program which allows a Community Supported Agriculture to operate an online purchasing system: <http://www.farmigo.com/>.

Figure 4. Distribution of farm size by percent of total farms by marketing channel



*Organic farms may not always sell all product into organic markets and may have less than their total acres in certified organic production

**Data not differentiated above 500 acres or more

How Retail Agriculture is Different

When compared to conventional agricultural production and marketing, farmers and ranchers engaged in this entrepreneurial Retail Agriculture sector are generally:

- **Oriented toward consumer demand rather than processor/integrator oriented**
 - Examples: Community Supported Agriculture, Certified Organic production, and marketing alliances such as the 150 farmers involved in Good Natured Family Farms in the Kansas City Region(*Hearing to review access to healthy foods for beneficiaries of Federal nutrition programs and explore innovative methods to improve availability*, 2010).
- **Diversified in agricultural production instead of specialized**
 - Examples: farmers' market vendors which may sell 30 varieties of produce and include livestock operations to provide farm nutrients and diversify product offerings
- **Highly-diversified in marketing arrangements**
 - Examples: In the Organic sector, the top five marketing channels for producers are: Processors/Millers (29%), Distributors/wholesalers (27%), Grower Co-ops (10%), Direct to Consumer Sales (10%), and Conventional Supermarkets as wholesale (7%).(National Agricultural Statistics Service, 2010b)
- **Utilize different business models but are viable and profitable**
 - Example: Average annual sales of “commercial” Organic and Direct to Consumer farms (those with annual sales over \$50,000) are comparable to the average of all farms' sales (Table 2).
- **Work around a less well-developed distribution system, as well as other supporting infrastructure and policy**
 - Example: “Although demand exists for locally and regionally produced foods, producers in many parts of the country have difficulties finding markets and processing facilities as well as and establishing distribution channels.” (Managers on

the part of the House and the Senate for H.R. 2419, 2008, p. 129)

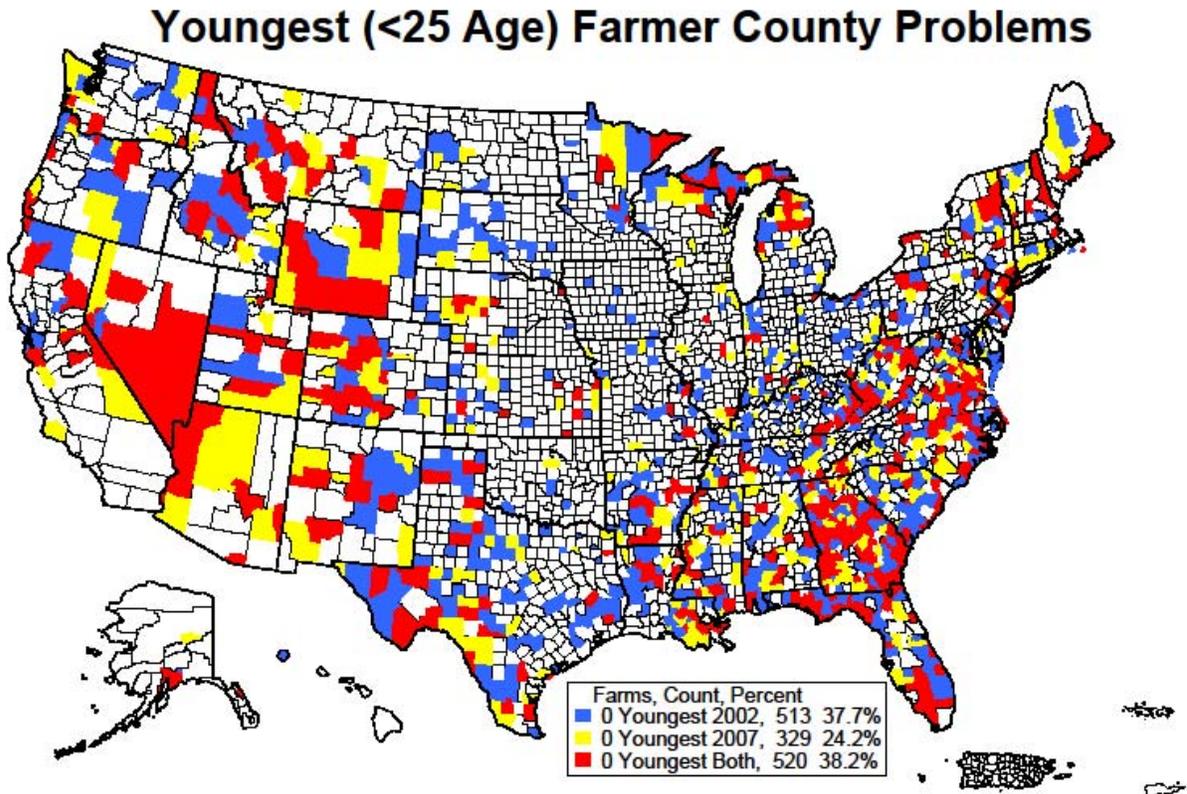
- **Gain efficiency by intensive layering of multiple related businesses into farm operations**
 - Example: Of farms with direct to consumer sales, each additional entrepreneurial activity (e.g. custom work, agritourism, organic production, etc.) increased farm income by about \$9,000 for each additional activity (Steve Martinez, et al., 2010, p. 22).
- **Scale up by adding new farms in direct-to-consumer markets and network many medium farms to access larger-volume markets**
 - Example: Markets with direct to consumer relationships (e.g. farmers markets, restaurant sales) are more likely to meet increasing demand through the addition of new vendors, while intermediated supply chains which rely on product aggregation can grow internally through logistics, transportation, and processing efficiencies (King, Hand, et al., 2010, p. 67).
- **Implement new production techniques and information technology to boost profitability**
 - Examples: Hoop house season extension, logistics software, processing innovations such as flash-freezing, and creative marketing strategies to lower the marketing, distribution, and processing costs for the farmer. (Conner, 2010)
- **Promote community among farmers and non-farmers and across groups of shoppers in urban and rural areas.**
 - Examples: Farmers interactions with shoppers at farmers markets can promote agricultural awareness and contribute to sales as well as provide a meeting place for

community residents (Feagan & Morris, 2009; Hunt, 2007; Project for Public Spaces, 2003). Consumer-producer buying partnerships, like the Oklahoma Food Cooperative, facilitate sales as well as facilitate interaction between urban, rural, farmer, and low-income groups.

Table 2. Average farm sales by marketing channel

Average Farm Sales by Sales Class and Marketing Channel (in dollars) 2007 Census of Agriculture						
Sales Class	All Farms		Farms with Direct Sales		Organic Farms with Organic Sales	
	Average Sales per Farm	Number of Farms	Average Direct Sales per Direct Farm	Number of Farms with Direct Sales	Average Organic Sales per Farm	Number of Farms
<\$10,000	\$2,030	1,271,735	\$1,877	119,004	\$2,550	10,220
\$10,000 - \$49,999	\$20,778	437,774	\$20,408	13,935	\$23,606	3,833
Over \$50,000	\$576,524	495,283	\$181,412	3,878	\$383,014	4,158
Average across all sales classes	\$134,807	2,204,792	\$8,853	136,817	\$93,850	18,211

Figure 5. Counties without farmers younger than 25 in 2002 and 2007 from the 2002 and 2007 Censuses of Agriculture



Demographic Changes & Multiple Pathways to Farming

The increase in Retail Agriculture comes at a time of significant changes in agriculture, many of which are due to longer-term demographic changes. The farm population is aging as the baby boomers mature and their children begin to enter into agriculture. Many rural and agricultural communities continue to witness population declines and decreasing numbers of young farmers

(Figure 5), while counties near to metro areas see farmland fragment into smaller sized farms or be removed from agricultural production entirely.

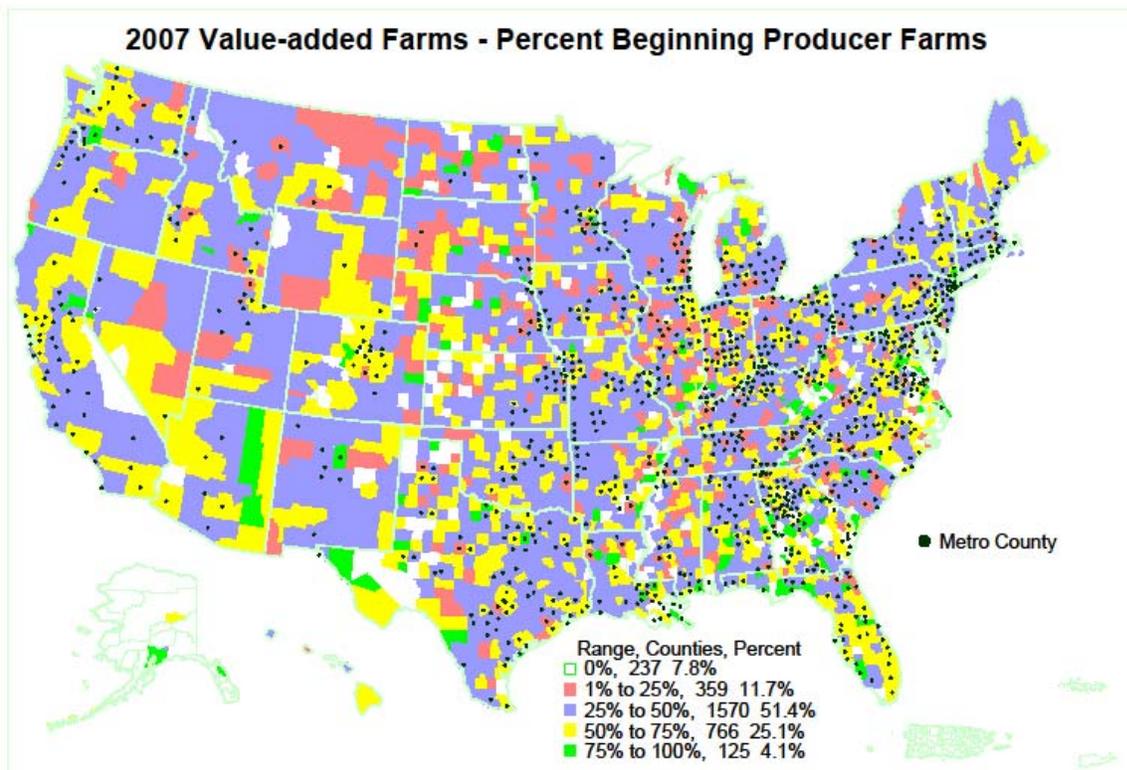
Other cultural changes are underway. Forty percent of beginning farms are in metro counties and (Figure 3) new farmers are more likely to be college educated than current farmers. About three in ten of beginning farmers on farms with production (29%) have completed a 4 year college degree, compared to about two in ten of established farms with production (23%) (Ahearn & Newton, 2009, p. 7)⁴. With one in three beginning farmers over the age of 54, many beginning farmers are coming from occupations outside of agriculture (Ahearn & Newton, 2009, p. 7). Land-grant university educations are no longer prerequisites for agricultural careers. Beginning farmers are more likely to be female, non-White, or Hispanic than established farm operators (Ahearn & Newton, 2009). For example, beginning farms with production are more than twice as likely to have non-white principal operators (12%) than established farm principal operators (6%). Beginning farmers across the U.S. are involved in value-added agriculture (Figure 6), as are young farmers (Figure 7). Many beginning farmers are engaged in direct-to-consumer sales (Figure 8) and Community Supported Agriculture (Figure 9).

Many young and beginning farmers find that these Retail Agriculture markets require relatively low start-up capital needs, have low overhead, and need a relatively small land base. For example, two out of five farms with direct sales are operated by beginning farmers (Steve Martinez, et al., 2010, pp. 18-20), twice the average of farms being operated solely by a beginning farmer (21% of all farms in 2007) (Ahearn & Newton, 2009, p. 3). Additionally,

⁴ The terms “farms with production” and “established farms” are not defined in the source report (Ahearn & Newton, 2009).

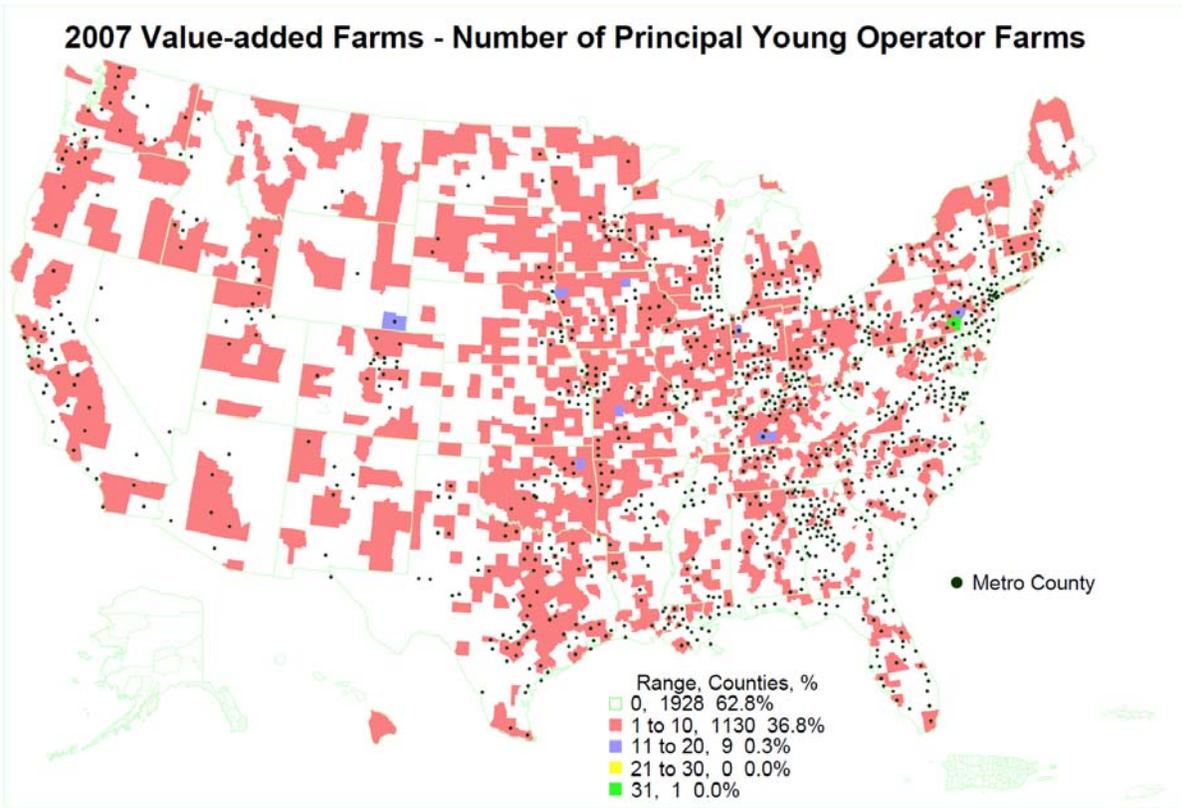
young and beginning farmers alike are often motivated to take up these types of agriculture due to the increased interaction with customers and land stewardship goals (Dimitri & Oberholtzer, 2009; King, Hand, et al., 2010). Customer interaction is seen as an important motivation for participating in farmers markets (M. E. Hughes & Mattson, 1992; Hunt, 2007; King, Hand, et al., 2010). In summary, a newer generation of young, beginning, and smaller-sized farm operators are attracted to a very entrepreneurial (Steve Martinez, et al., 2010), high-margin (King, Hand, et al., 2010) form of agricultural marketing and production.

Figure 6. Percent of farms at the county level with value-added activity and a beginning farmer as part of the farm operation (counts and rightmost percents represent counties)



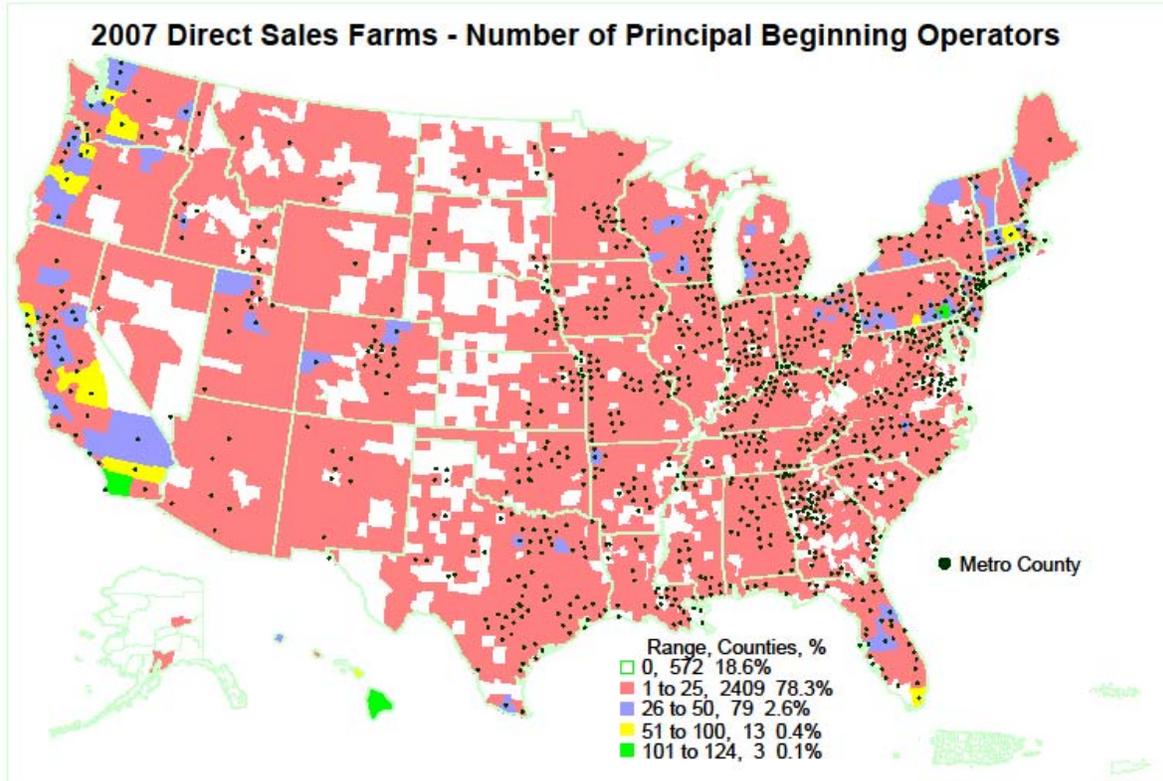
Compiled by The Farm Credit Council from the 2007 Ag Census

Figure 7. Number of young principal operators by county (aged under 35) involved in value-added (counts and rightmost percents represent counties)



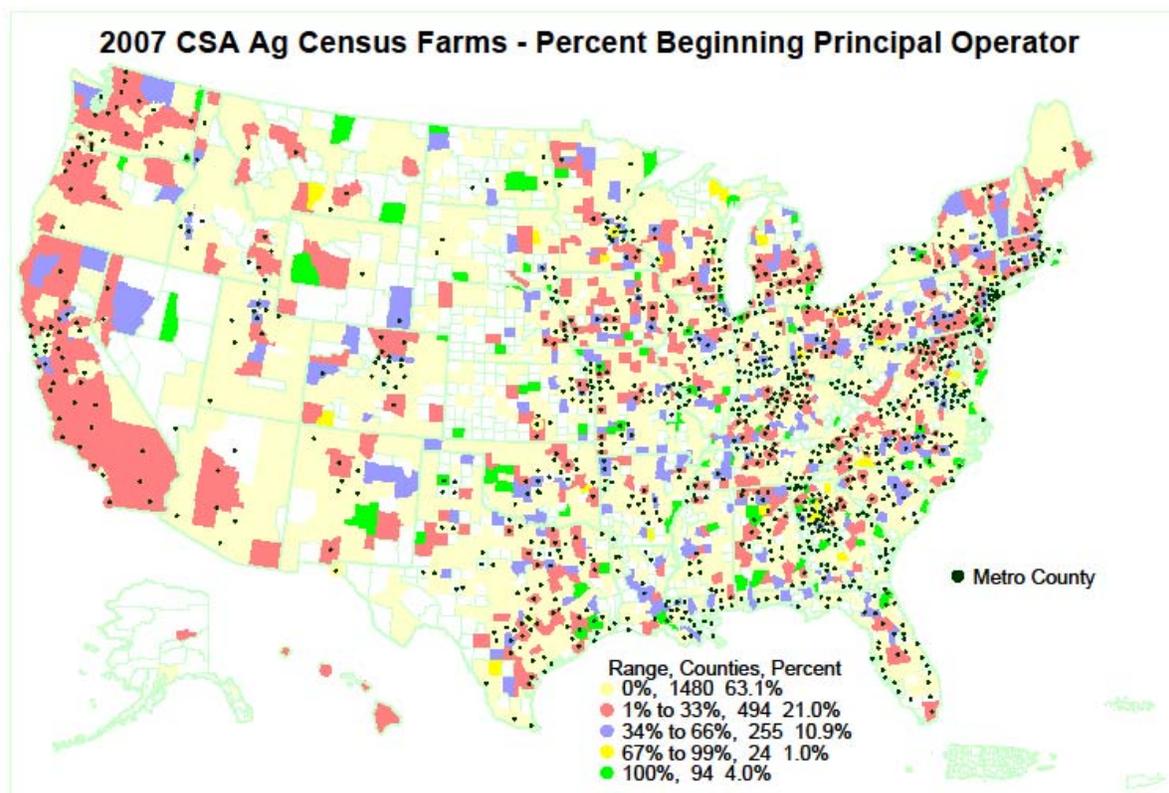
Compiled by The Farm Credit Council from the 2007 Ag Census

Figure 8. Number of farms at the county level with direct-to-consumer sales with a beginning principal operator (counts and rightmost percents represent counties)



Compiled by The Farm Credit Council from the 2007 Ag Census

Figure 9. Percent of farms at the county level with CSA sales operated by a beginning farmer (counts and rightmost percents represent counties)



Compiled by The Farm Credit Council from 2007 Ag Census Data

Changes in the Internationally-linked Marketplace

The nature of agricultural production is also changing, due to continuing agricultural productivity gains and greater global demand for food and fiber. Increased agricultural trade and production from developing countries like Brazil and China have elevated the competitive pressure on US commodity production. In addition, world demand for commodities that can be

used for renewable energy production has spurred new investment in crop varieties, improved production techniques, and brought formerly idled land back into agricultural production. Simultaneously, the input costs of agriculture have increased, especially for inputs using energy-intensive manufacturing methods. The combination of these factors has eroded the economic viability of commodity agriculture production for many mid-sized agricultural producers. In response, these producers seek to acquire more farmland by lease or purchase in order to improve their economies of scale, exit, or down-size their operations to limit capital expense or land base (Gale, 2002; Hoppe & Korb, 2006).

With the enormous opportunities pursued by conventional agriculture through trade, energy, improved crop varieties, and large scale requirements for profitable agricultural commodity production (which typically has a 1-2% profit margin (Blank, 2002)), a gap was left open in the marketplace for producers able to pursue highly-differentiated products and consumer-oriented marketing strategies.

A Gap in the Food System Leads to an Opportunity for Agricultural Retailing

The timing of this gap's emergence and expansion coincided with broader trends of increasingly fragmented consumer tastes in all products, including food. Retailers and food manufacturers alike have responded to this trend by increasing their introduction of new product lines, such as the emphasis on healthy, natural, and organic (Stephen Martinez, May 21 2010). Simultaneously, competition in the retail grocery sector has increased – a sector, which like agricultural commodities, is also known for its thin profit margins – since the arrival of warehouse stores,

buying clubs, and super-centers (S. W. Martinez, 2007). To control costs, grocery retailers increasingly sourced products from large-volume, low-cost national and international food purveyors (Brooks, Regmi, & Jerardo, 2009, p. 3). This created a window of opportunity for some producers of fresh products to bypass normal retail and distribution supply chains and sell products directly to consumers. The consistency of this demand has facilitated the development of 898 year-round farmers markets (an increase of 17% from 2006), many of which are located in northern regions (Jones-Ellard, 2010).

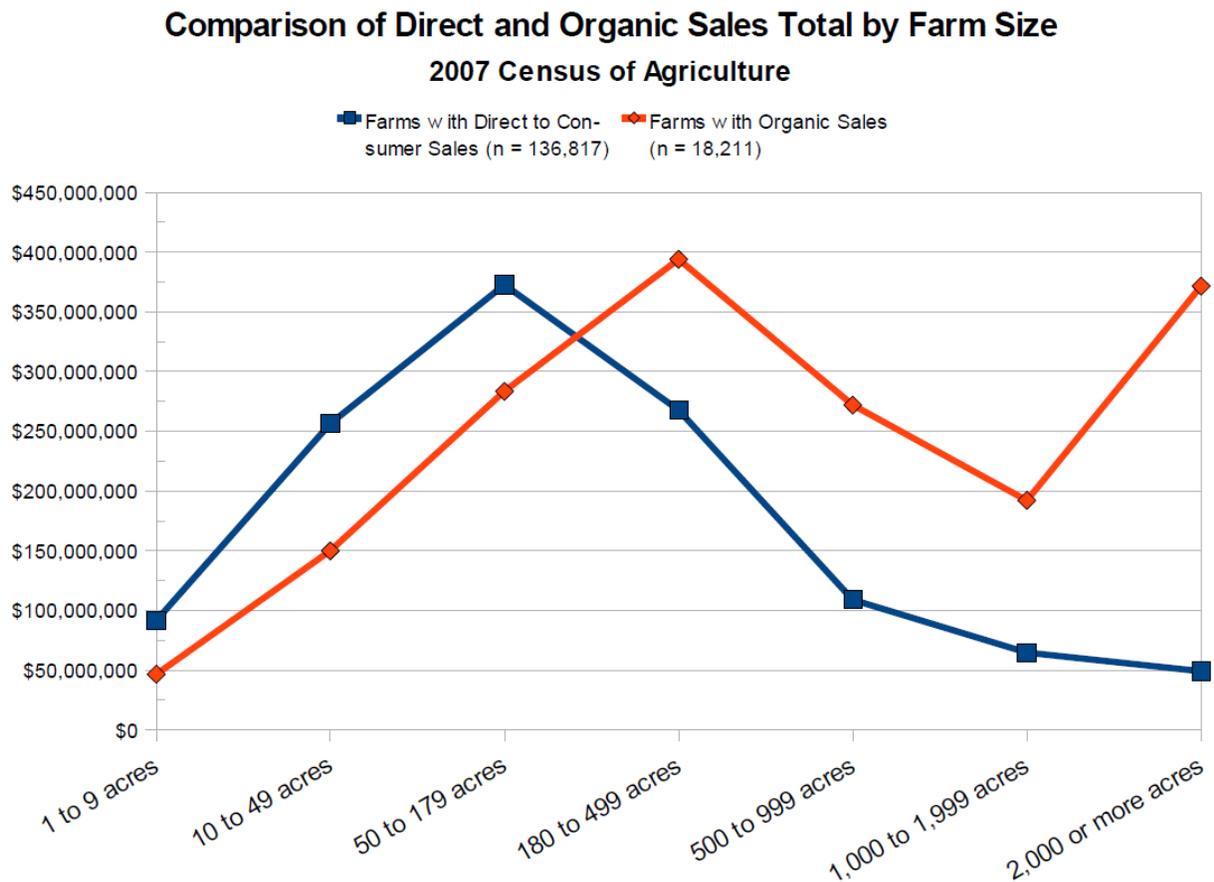
Thus, the opportunity for small and medium sized farm operations to diversify their operations to exploit this gap has coincided with a consumer trend of increasingly diversified food preferences. These two coinciding trends seem to amplify each other due to the unique marketing focus established through direct-to-consumer relationships, which gives producers quick and immediate feedback to consumer buying preferences. For example, organic certification, once the “gold standard” of quality for consumers⁵ has yielded to other characteristics, such as local, grass-fed, pastured, and other characteristics (Greene, et al., 2009). Likewise, mainstream retailers incorporate product innovations from these direct markets, such as heirloom tomato and apple varieties, purple colored carrots, blue potatoes, and regionally sourced products.

This amplified consumer-driven trend towards Retail Agriculture has provided a critical, profitable market for many small and mid-sized agricultural producers. However, scaling up production to access higher volume marketing channels often means that producers must be involved in creating the requisite processing and distribution systems. Access to infrastructure

5 Consumer research studies have contradictory findings about the importance of education levels, income, and ethnicity in predicting organic purchases (Dimitri & Oberholtzer, 2009, pp. 3-5) despite their generally higher prices.

has been a critical component of the success of organic products, allowing medium and larger sized farms to enter the market (Figure 10). But infrastructure access is still a challenge for many producers involved in local and regional food distribution and marketing, especially as three out of five producers with direct to consumer sales raise and sell livestock products that require processing before the products can be sold (Steve Martinez, et al., 2010, pp. 20-21).

Figure 10. Comparison of direct to consumer and organic sector total farm sales by farm size range in 2007



The businesses that are filling this supply chain gap have a variety of ownership structures (Micahel Shuman, et al., 2009), utilize a variety of business models (Hand, 2010), are located in urban and rural areas (Table 3), and benefit urban and rural growers (Steve Martinez, et al., 2010). From a summary of a sample of case studies we illustrate the breadth of these enterprises.

For example, half (50%) were organized as non-profits and three out of twelve were cooperatives (Table 3 and 4). However, our review is limited by the lack of comparable data across case studies. Even with this limitation and a small sample, a variety of retailing, processing, packaging, and distribution models for grains, produce, and livestock products can be observed.

Table 3. Table summarizing characteristics of local and regional food marketing enterprises from multiple sources

Business or Service Type	Name & Location	Ownership Type	Financial Measure	Job Impact	Number of Farmers Impacted	USDA Rural/ Non-Rural?	Products	Primary Buyers
-Aggregator -Packer -Distributor	Appalachian Harvest Network (Micahel Shuman, et al., 2009) <i>Abingdon, VA</i>	Non-profit	\$515,000 <i>annual revenue 2008</i>	35	Over 50	Rural Eligible	Organic produce (30 types), free range eggs, grass-fed lamb	650 Retail grocery stores; local colleges
-Aggregator -Packer -Distributor	Indian Springs Farmers Cooperative (Micahel Shuman, et al., 2009) <i>Petal, MS</i>	Producer Co-op	\$300,000 of producer sales*	Up to 11	About 30	Rural Eligible	Produce (peas, greens, peppers, watermelon, etc.)	1-4 Retail stores, wholesale brokers, restaurants
-New Farmer Incubator -Distributor -CSA -Composting	Intervale (Micahel Shuman, et al., 2009) <i>Burlington, VT</i>	Non-profit	\$2,154,874 <i>annual revenue 2008</i>	14	About 12	Rural Eligible	Organic produce and livestock	Direct sales, restaurants, City contract for composting
-Butcher & Meat Processor	Lorentz Meats (Micahel Shuman, et al., 2009) <i>Cannon Falls, MN</i>	C-Corp	About \$4 million <i>Annual revenue 2008</i> ; Products processed worth over \$14 million	45	Two large co-ops: CROPP and Thousand Hills Cattle; plus 400 other farmers	Rural Eligible	USDA certified processor for beef, bison, pork, elk	CROPP (Organic Valley), Thousand Hills Cattle (co-op), direct to consumer farmers
-Consumer-Producer Buying Co-	Oklahoma Food Cooperative (Co-op	\$780,829 <i>Annual revenue</i>	1 FT, 4 PT	Not known	Urban Location	2,131 items, including produce, meat,	Estimated to be 7,000

op	Micahel Shuman, et al., 2009) <i>Oklahoma City & State-wide</i>		2008				and value-added	
-Bakery -Restaurant -Creamery -Coffee Roaster -Mail Order -Consultancy	Zingerman's (Micahel Shuman, et al., 2009) <i>Ann Arbor, MI</i>	C-Corps & LLCs	\$27 million <i>Annual sales 2007</i>	525	Not known, most food products sourced locally	Urban Location	Value-added	Deli, Restaurant, grocery sales, catering, training, mail order
-Community Kitchen Incubator	Nelson Farms at Morrisville State College(Evans, 2007) <i>Cazenovia, NY</i>	Non-profit	\$2 million <i>Value of products sold 2005</i>	25	300 food entrepreneurs (not all farmers)	Rural Eligible	Baked goods, processed and preserved foods, other value-added	Direct, restaurant & store sales; brand development & sales
-Community Kitchen Incubator -Food Manufacturing Facility -Loan Provider	ACENet (Fisher, 2005) <i>Athens, OH</i>	Non-profit	\$1.4 million <i>annual economic impact 2005</i>	250	111 food enterprises	Rural Eligible	Baked goods, processed and preserved foods, other value-added	Direct, restaurant & store sales; brand development & sales
-Meat processor	Lake Geneva Meats(Lake Geneva Country Meats, 2006) <i>Lake Geneva, WI</i>	For-profit	Not Known	20	Not Known	Rural Eligible	Beef, pork, lamb, buffalo	USDA certified beef, pork, lamb, buffalo
-Local Food Buying Network -Farmer-Chef Collaborative	Vermont Food Network <i>State-wide</i>	Non-profit	No sales	Not Estimated	93 farms, 3 co-ops	Internet-based; some members urban & rural	Meat, produce, dairy, value-added	Over 89 chefs, 4 distributors, 19 institutions
-Retail Co-ops -Distributor	La Montanita Co-op(Barham & Bragg, 2010) <i>Multiple locations</i>	Non-profit co-op	\$2.7 million <i>in local food sales only 2009 (20% of total)</i>	Over 200	Over 700 farmers;	1 of 4 retail sites eligible; warehouse not eligible	1,100 local products	Retail stores; regional distributor for CROPP

-Aggregator -Distributor -Meat Processor -Trademark Brand -Farm	Good Natured Family Farms (<i>Hearing to review access to healthy foods for beneficiaries of Federal nutrition programs and explore innovative methods to improve availability, 2010</i>) Benson, KS; Warehouse in Kansas City, KS	For-profit; market-ing alliance	About \$4 million annually 2010 (all local)	30	150	HQ Eligible; Ware-house not eligible	Meat, produce, dairy, value-added	29 retail stores including warehouse stores; farm to school; corporate CSAs
Summary Table			Financial	Jobs	Farms	Locations		
Average			\$4,485,070	105	218	<ul style="list-style-type: none"> • 7 out of 12 Rural eligible • 5 out of 12 with Urban locations which may not be rural eligible 		
Maximum			\$27,000,000	525	700			
Minimum			\$300,000	5	12			

Table 4. Table showing how average impacts were calculated

Estimates Used to Calculate Average Impacts				
Name	Ownership Type	Financial Measure	Job Impact	Number of Farmers
Appalachian Harvest Network	Non-profit	\$515,000	35	50
Indian Springs Farmers Cooperative	Producer Co-op	\$300,000	11	30
Intervale	Non-profit	\$2,154,874	14	12
Lorentz Meats	C-Corp	\$4,000,000	45	600
Oklahoma Food Cooperative	Producer and consumer co-op	\$780,829	5	
Zingerman's	C-Corps & LLCs	\$27,000,000	525	
Nelson Farms	Non-profit	\$2,000,000	25	50

ACENet	Non-profit	\$1,400,000	250	
Lake Geneva Meats	For-profit		20	
Vermont Food Network	Non-profit			150
La Montanita Co-op	Non-profit cooperative	\$2,700,000	200	700
Good Nutured Family Farms	For-profit; marketing alliance	\$4,000,000	30	150
		Financial	Employees	Farmers
Average		\$4,485,070	105	218
Maximum		\$27,000,000	525	700
Minimum		\$300,000	5	12

With greater reward to the producer come greater costs. Producers retain about 80-100% of the retail price by direct marketing to consumers (King, Hand, et al., 2010, pp. v, 54) and 33-60% in intermediated supply chains (King, Hand, et al., 2010, p. 54). This is higher than the average retail price spread of 19% (Elitzak, 2008). The trade-off is increased distribution and retailing effort by producers (King, Hand, et al., 2010) and sometimes greater effort on buyers sourcing local and regional products (Strohbehn, 2006). For some markets, such as organic where producers generally receive higher than average prices for their products (Greene, et al., 2009), only about 9-12% of the retail price is retained by producers.⁶ Generally, small and medium volume operations have found success in these differentiated markets, although access to processors and appropriately-scaled distribution services is a challenge.

With livestock farms making up 3 out of 5 farms with direct-to-consumer sales (about 7% of all livestock producers) the availability of small-scale processors is critical (Steve Martinez, et al.,

⁶ In 2007, Organic farm sales were \$1.9 billion and retail sales were estimated at \$21 billion (National Agricultural Statistics Service, 2007; Organic Trade Association, 2009). In 2008, organic farm sales were about \$2.9 billion (National Agricultural Statistics Service, 2010a) and retail sales were estimated at \$24.6 billion (Organic Trade Association, 2009).

2010, pp. 20-21). Regional processing capacity shortages (Food and Water Watch, 2009; Steve Martinez, et al., 2010; Zezima, 2010) and higher per pound inspection costs for small plants (4-8 ¢/.lb compared to 1-2 ¢/.lb for large plants (Economic Research Service, 2009, p. 46)) may limit producer market access (Food and Water Watch, 2009, pp. 5, 12). Small meat processors are still declining nationwide (112% decline from 1977 to 1996 and a 20% decline from 1998 to 2007 (Omidvar, Brewin, & Carlberg, 2006)) due to higher inspection costs (as noted above), competition from large-volume plants, lack of business transition plans for older operators, and a lack of trained workers (Food and Water Watch, 2009, pp. 3, 5, 6, 8, 12-13; Steve Martinez, et al., 2010, p. 27). Processing, packaging, distribution, and food safety is no less important for the produce sector, where two out of five vegetable farms and one out of five fruit farms make direct sales (Steve Martinez, et al., 2010, pp. 20-21). Indeed, the fixed costs of regulation can limit firm entry (Food and Water Watch, 2009) and firm growth (King, Hand, et al., 2010, p. 32) in meat processing, leafy green, and other sectors (Steve Martinez, et al., 2010, p. 25).⁷

Processor and distributor locations follow no rule as to whether they are sited in urban or rural areas and there can be regional gaps in infrastructure availability, scale, and capacity to process highly differentiated products. Organic product handlers are more likely to be located in urban-influenced ZIP codes than rural areas (Figures 11 and 12). And while no complete map of enterprises involved in local and regional food distribution is available, a Google Map shows locations and ownership types of over 50 enterprises ("National Distribution Models," 2008-

⁷ Another Economic Research Service report concluded that “fixed costs for compliance with regulatory and operating standards ... are not currently viewed as a major constraint on the ability of low-volume local food products to use mainstream supply chains” (King, Hand, et al., 2010, p. 66). However, in the ERS team’s study, they only observed firms who were successfully operating within current regulatory frameworks. As they did not observe firms in pre-operation planning phase or observe firms which had closed, this conclusion can not be extrapolated further and should not be considered as a conclusion which can be applied elsewhere – especially as other internal ERS and external researchers have observed otherwise (Food and Water Watch, 2009, pp. 6, 14-15, 26-31; Steve Martinez, et al., 2010, p. 25).

2010). The complexities of logistics and business management of these enterprises is a challenge as is accessing investment capital (Day-Farnsworth, et al., 2009).

Figure 11. Certified Organic handlers and farms in 2010 in rural ZIP codes from data provided by the USDA National Organic Program

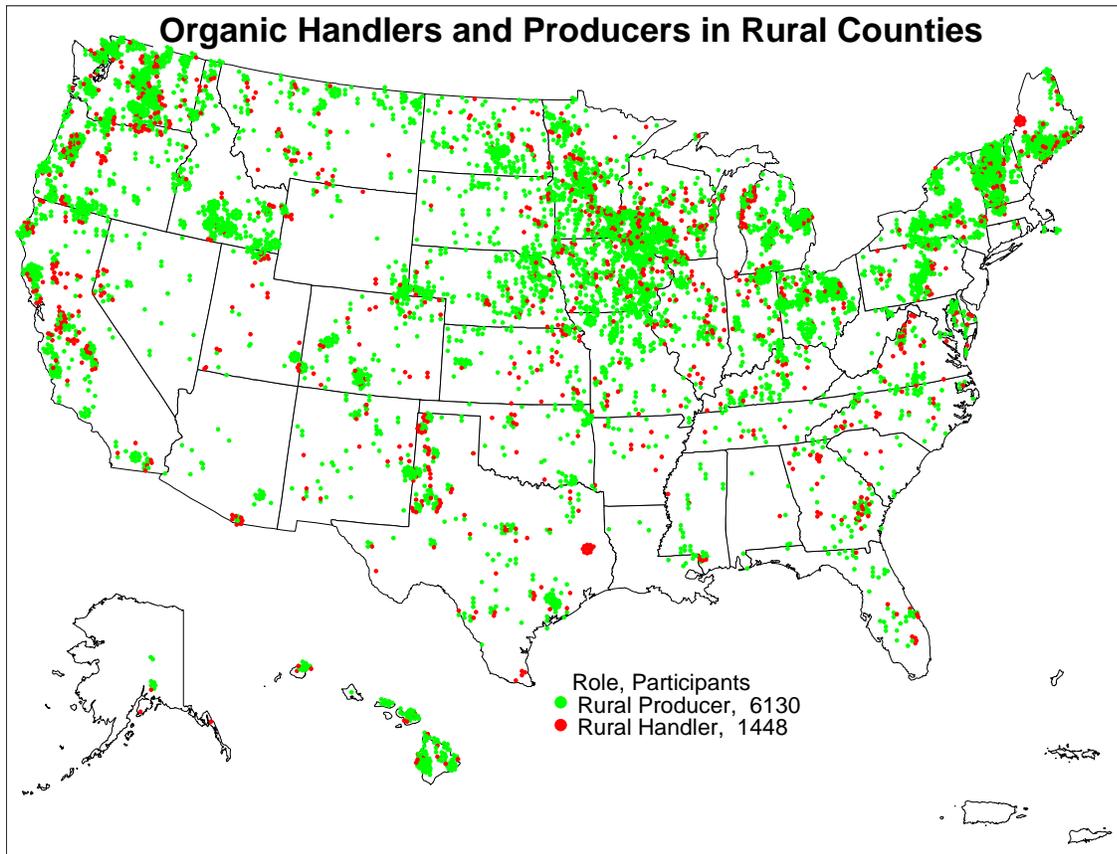
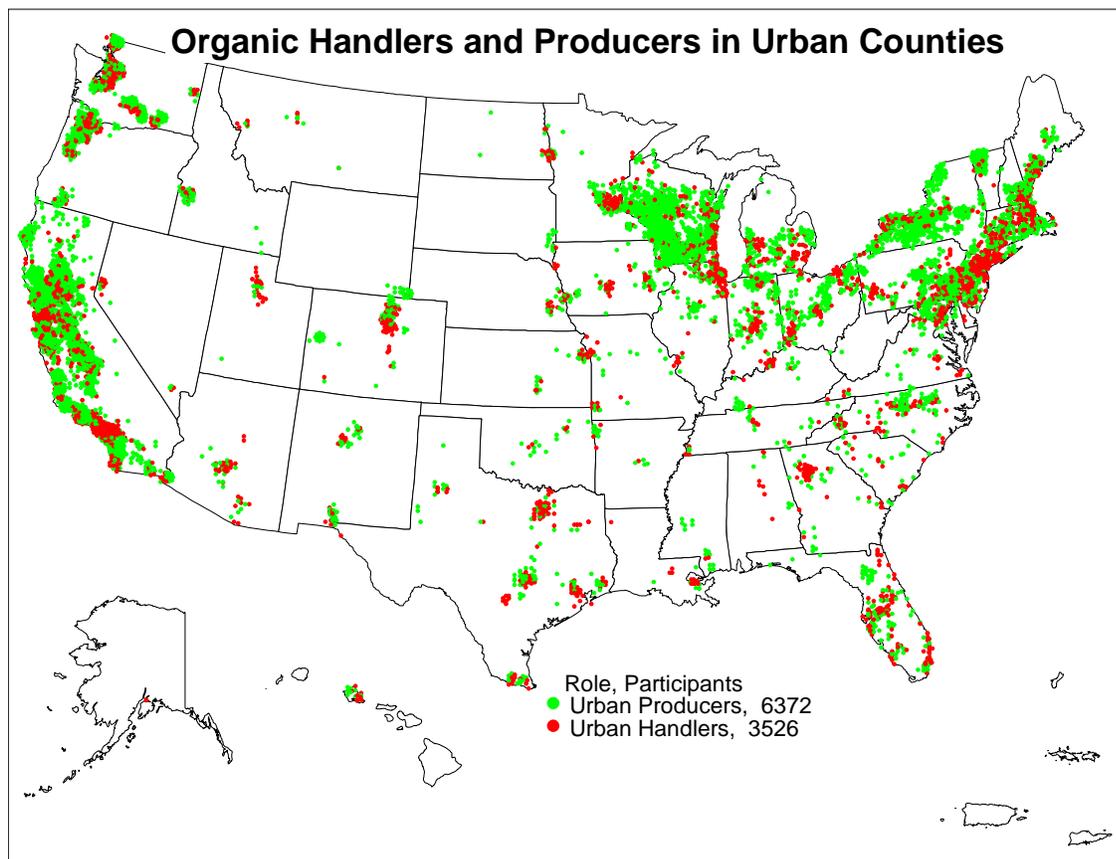


Figure 12. Certified Organic handlers and farms in 2010 in urban ZIP codes from data provided by the USDA National Organic Program



Financing & Assessing Economic Impacts

Inadequate access to capital may be limiting the efficient development of processing and distribution systems necessary for Retail Agriculture's growth. For example, a rural farmer cooperative in Mississippi required seven years of fund-raising to develop a \$500,000 packing facility (Micahel Shuman, et al., 2009, pp. 62-67) and a food processor required two years to find financing for a \$150,000 machine to crinkle-cut carrots into bite-sized pieces for New York City Public Schools (Severson, 2007). Slaughterhouses, a necessary infrastructure for livestock producers to participate in Retail Agriculture, often have start-up costs that are \$2 million or

higher, limiting growth sector growth (Food and Water Watch, 2009, p. 12). While USDA Rural Development Business and Industries loan guarantees can help close credit gaps, their 20% loan limit on construction costs may be impractical and one contributing barrier (Food and Water Watch, 2009, p. 12). Additionally, federal securities regulations and state laws can limit small business investing (Mitchell, 2010).

As was the case with USDA Organic, the creation of a common marketing standard may reduce the risk and uncertainty of investing in a new market (Dimitri & Oberholtzer, 2009). Value chains may serve to establish a brand or sense of collective value for a variety of products produced to a certain standard (as some products are sold to Chipotle restaurants). Yet, products sold on a local or regional basis often lack a common marketing standard and instead respond to the variety of ways that consumers relate to a local or regional product (Hand & Martinez, 2010; S. W. Martinez, 2010; Onozaka, Nurse, & McFadden, 2010) Many enterprises have responded to these demands with products that consumers can identify as local, regional, or imbued with other desirable characteristics while meeting the volume demands for supermarkets (ranging from 29 to over 600 stores (King, Gómez, & DiGiacomo, 2010). Unfamiliarity and greater complexity rather than lack of success may be factors that challenge their creditworthiness compared to the average farm or food business (*Hearing to review access to healthy foods for beneficiaries of Federal nutrition programs and explore innovative methods to improve availability*, 2010; Scorsone & Weiler, 2004; Sherrick, Barry, Ellinger, & Schmitkey, 2004).

A range of potential economic impacts across the US have been identified on a city, region, or state basis with a variety of goals and methods:

- visionary studies identifying potential economic impacts of behavior changes (Appalachian Sustainable Agriculture Project, 2007; Benson & Bendfelt, 2007; Cantrell, Conner, Rickcek, & Hamm, 2006; Eson, 2008; Kane, Wolfe, Jones, & McKissick, 2010; McDermott, 2006, p. 115; Michael Shuman, 2008; Sonntag, 2008; Swenson, 2006, p. 18),
- “food shed” analyses which aim to link food marketing and distribution flows within a spatial context (American Farmland Trust, 2009; Delaware Valley Regional Planning Commission, 2011),
- detailed analyses of multiple project alternatives for economic development purposes (see Table 5 as an example) (Market Ventures Inc. / Karp Resources, 2008; Sharp, Webb, & Smith, 2009),
- economic multiplier effects (Enshyan, 2008, p. 33; Henneberry et al., 2008; Otto & Varner, 2005),
- import substitution models (Swenson, 2006),
- estimated direct and/or induced economic impacts (D. W. Hughes, Brown, Miller, & McConnell, 2008; PolicyLink, Trust, & Fund, 2010),
- observed economic impacts⁸ (Farmers Market Federation of New York, 2006, p. 9) (Food and Water Watch, 2009, p. 39; Strohbehn, 2006),
- employment estimates (King, Hand, et al., 2010; Ragland & Tropp, 2009), and
- spillover effects of local food activities (Lev, Brewer, & Stephenson, 2003).

Comparability is limited by the variety of study methods, assumptions, and local economic contexts, which affect estimates for economic multipliers and import substitution. Most of these analyses are *prospective*. Few studies are based on direct observations. Those that are based on

⁸ The sales of many farmers markets are published in press releases or in articles by local media. To the authors’ knowledge, these sources have not been used in a systemic analysis of farmers market sales.

direct observation often have relatively small sample sizes and are limited in geographic scope.

One direct-observation survey of ten restaurants in Iowa found that local products can result in *costs savings* based upon average per pound costs of all foods (\$3.80 per pound compared to \$4.30 per pound for products from a national vendor) (Strohbehn, 2006, p. 1). Others have shown that beef sold through intermediated chains can yield a farm price 3-10 times the average price per head (King, Hand, et al., 2010, pp. 38-39), that apples sold locally through farmers markets can yield higher than average producer revenues and reduce consumer costs compared to a mainstream market (King, Hand, et al., 2010, pp. 9, 10, 12), and that local and regional food systems maintain local employment and economic impacts (King, Hand, et al., 2010, p. 57). The last point suggests that the many studies indicating a potential net economic impact from local and regional food systems (even when accounting for displacement effects) have some basis in observed outcomes.

While many of these studies aim to inform public policy, some policymakers have acted (successfully) on policy *prior to* the development of these studies ("Food Outreach and Opportunity Development for a Healthy America Act of 2007," 2007; Greening Food Deserts Act," 2010; Local Food and Farm Support Act ", 2007).⁹ This suggests that policymakers use other sources of information, such as direct constituent input, to make policy decisions.

Outreach may be a critical compensating factor for informing policymakers in areas with limited published information, as was seen in the 2008 Farm Bill and may be the case in the next Farm

⁹ Some policies proposed in the two 2007 bills mentioned were implemented in the Food, Energy, and Conservation Act of 2008: the Value-Added Agricultural Product Market Development Grant program, Congressional funding for the Farmers Market Promotion Program, a local and regional food enterprise priority in the Rural Business and Industries Loan Guarantee, and a Healthy Urban Food Enterprise Development Center.

Bill. In other words, to inform policy in the face of data gaps, advocates may do well to focus on outreach activities, at least initially, until data collection and reporting closes those information gaps. Economic impact studies may have more *impact* on other audiences (e.g. local economic development leaders, university researchers, the media, the public, etc.).

Table 5. Summary of economic development proposals prepared for the Economic Development Department of Louisville Metro Government (Market Ventures Inc. / Karp Resources, 2008)

Activity	Investment Costs (3 years)	Anticipated 3-Year Return to Farmers	Investment Return Ratio
Permanent Downtown Public Market	\$11,000,000	\$15,300,000	1.4
Meat and Poultry Processing Facility	\$5,000,000	\$15,225,000	3.0
Farmers' Market Coordination, Management Improvement, and Marketing	\$900,000	\$5,400,000	4.2
Aggregation Points for Local Food Distribution	\$795,000	\$3,300,000	4.2
Restaurant Purchasing Increases & a "Public Interest Broker"	\$450,000	\$2,250,000	5.0
Doubling of Community Supported Agriculture Sales	\$450,000	\$789,000	1.8
Agritourism Promotion	\$450,000	\$600,000	1.3

Does the Dearth of Data for Retail Agriculture Limit its Economic Potential?

Insufficient information regarding this sector's performance can unnecessarily increase the perception of sector risk, hamper private sector investments, and negatively influence new entrants to the sector (Hou, 2006; Scorsone & Weiler, 2004). There are several accounts that public and private financing for Retail Agriculture is limited (Cocciarelli, et al., 2010; Day-Farnsworth, et al., 2009; *Hearing to review access to healthy foods for beneficiaries of Federal nutrition programs and explore innovative methods to improve availability*, 2010; Managers on the part of the House and the Senate for H.R. 2419, 2008). This is not uncommon as businesses seeking debt financing in an emerging sector of agriculture may face several challenges in the

credit market.

1. **Informational Bias.** Lenders are unfamiliar with the sector, its economic potential, and its seasonal production cycles where equipment may idle 11 months out of 12 months (Scorsone & Weiler, 2004).
2. **False Perception of Riskiness.** Lenders lack reliable information on the sector's performance to assess credit worthiness (Scorsone & Weiler, 2004).
3. **High Opportunity Costs.** Businesses involved in local and regional food distribution and marketing may not compete well against other, more familiar business models and activities which have lower loan evaluation costs (Barry & Ellinger, 1997; Felenstein & Fleischer, 2002; Hou, 2006; Scorsone & Weiler, 2004; Temkin, Theodos, & Gentsch, 2008).
4. **Low Rate of Return on Small Loans.** The effort to process loan applications and loan guarantee applications for small loans has a lower rate of return than for larger loans (Felenstein & Fleischer, 2002; Hou, 2006; Scorsone & Weiler, 2004).

As the vast majority of rural and small business lending is carried out by the private sector, and policies have been created to address these perceived market needs. A relatively well-evolved policy environment exists to support farmer access to credit (e.g. Farm Services Agency, the Farm Credit System; and secondary markets through Farmer Mac and the Federal Home Loan Bank System). However, financing gaps may exist for rural, small, and food-related businesses even with support from the Small Business Administration and USDA Rural Development. Access to small business credit, especially in rural areas, is still limited (Barry & Ellinger, 1997;

Felstein & Fleischer, 2002; Hou, 2006; Temkin, et al., 2008) and may have worsened since the recession (Buttonwood, 2010). Limited private credit access for rural small businesses can be compounded by oversubscribed public credit from the Small Business Administration and USDA Rural Development programs (Temkin, et al., 2008).

The performance of at least one public policy designed to address the needs of enterprises involved in local and regional food distributions is unclear: a Congressional Hearing on rural development indicated that perhaps as much as 14% of the USDA Business and Industries Loan Guarantee was utilized by local food enterprises (*Hearing to Review Rural Development Programs in Advance of the 2012 Farm Bill* 2010). While USDA is collecting this data, it has not yet made the data publically available, so this claim cannot be verified (Canales, 2010).

As for private capital access, research by the Project for Public Spaces in 2003 found that four-fifths of farmers market vendors rely on personal savings for financing their operations. Personal loans (15%) and credit cards (10%) were used less frequently (Project for Public Spaces, 2003, pp. 33-34). It may be that the capital required for selling at a farmers' market is relatively small, so this data should be interpreted cautiously, especially as other marketing relationships within Retail Agriculture, such as farmer marketing alliances, may have much different capital needs. Further information on capital needs for farm-related, rural, and small businesses dealing in locally and regional produced foods is not available. Limited sector-based information on rural credit needs is common across most all sectors (Partridge, Olfert, & Ali, 2009, pp. 9-10, 16, 17; Stauber).

Policy Recommendations

Perhaps the clearest and most politically feasible policy recommendations are those which make changes to existing programs and proposals for modest funding changes. In this section we focus on the public sector role in improving our knowledge of Retail Agriculture. We identify what is working, what needs improvement, and where entirely new data collection initiatives are needed.

Often, reporting on data from relatively small groups of producers can raise concerns about sample validity and confidentiality management. This is the case with the ARMS and some ERS studies. Yet, data on sub-groups of producers, from robust sources like the Census of Agriculture, can illustrate sharp demographic differences in contrast with other forms of agriculture (as in Table 6 and Figures 13 and 14) as well as differences within groups of producers (as in Table 2) that would otherwise be obscured without segmentation. For example, Table 6 shows that organic agriculture had a positive growth rate as a primary occupation from 2002 to 2007 even though the net growth was from only 4,234 farms. However, this level of data cannot show whether these are conventional farmers switching to organic, part-time farmers becoming full-time, or people entirely new to farming. The National Agricultural Statistics Service (NASS) can analyze these “microdata” from the Census of Agriculture for patterns that outside researchers cannot.

Classifying farms not by what they produce or their structure but by how different marketing options (and different markets, literally) influence operator management decisions can provide

more meaningful farm classifications as it offers some explanatory power for *why* farms differ in structure, sales class, and operator characteristics. This is a necessary step to better understand the risks and needs associated with Retail Agriculture, especially for beginning farmers participating in the sector.

Table 6. Percent of change of principal operators by age range from 2002 to 2007 by marketing channel, from the Census of Agriculture

Farming as Main Occupation							
Rate of Change 2002-2007	Under 25	25 to 34	35 to 44	45 to 54	55 to 64	Over 65	Rate of Change
All Farms	-74.4%	-34.4%	-94.1%	-33.9%	-8.5%	-6.8%	-18.8%
Direct Farms	-40.5%	-7.9%	-72.1%	-13.4%	19.4%	15.0%	-2.2%
Organic Farms	-19.0%	51.0%	17.8%	38.8%	51.1%	9.4%	52.8%
Net Change 2002-2007	Under 25	25 to 34	35 to 44	45 to 54	55 to 64	Over 65	Net Change Total
All Farms	-4,455	-15,359	-91,730	-71,462	-22,004	-25,355	-230,365
Direct Farms	-159	-247	-5,242	-1,998	3,344	2,891	-1,411
Organic Farms	-15	514	313	1,388	1,821	213	4,234
Farming as Other Occupation							
Rate of Change 2002-2007	Under 25	25 to 34	35 to 44	45 to 54	55 to 64	Over 65	Rate of Change
All Farms	-10.7%	25.7%	-3.4%	18.1%	32.5%	43.8%	33.8%
Direct Farms	-22.3%	37.1%	6.4%	28.4%	39.8%	38.7%	40.5%
Organic Farms	-6.7%	58.7%	31.4%	53.6%	61.2%	43.9%	105.9%
Net Change 2002-2007	Under 25	25 to 34	35 to 44	45 to 54	55 to 64	Over 65	Net Change Total
All Farms	-629	15,997	-5,758	64,199	109,187	123,179	306,175
Direct Farms	-79	1,575	908	7,562	7,668	3,861	21,495
Organic Farms	-2	252	385	1,545	1,565	460	4,205

Addressing the Dearth of Data

Good Practices Already in Place

Farmers Markets. The Market Services Division of USDA, the Branch responsible for managing the Farmers Market Promotion Program, provides an annual estimate of the number of farmers markets operating in the US. Additionally, this Division also tracks the number of year-round farmers markets, conducts a survey of farmers market managers approximately biennially, facilitates the public-private Farmers Market Consortium, and collaborates with other agencies and stakeholders on research (e.g. on food hubs and the geographic locations of farmers markets) (Barham & Bragg, 2010; Economic Research Service, 2010b). Historically, the antecedent unit provided technical assistance to markets, published maps and lists classifying markets by type and purpose (e.g. retail, wholesale, terminal), and collected photographs of markets operating in the US as far back as 1946 (Wann, Cake, Elliot, & Burdette, 1948). However, increasing program management demands for the Farmers Market Promotion Program, which grew ten-fold in funding from \$1 million 2007 to \$10 million in 2011, can divert staff away from research and technical assistance for other marketing channels (a conservative estimate for sustaining the Market Service Division's research and outreach efforts may be \$500,000 per year). Funding could be redirected internally by USDA as an authorization for mandatory funds by Congress is lacking,

Case Studies to Describe Supply Chain Structure. The Economic Research Service and Market Services Division (MSD) have been active in publishing case studies on the structure of

local, regional, and organic supply chains (Barham & Bragg, 2010; Dimitri & Oberholtzer, 2009; Greene, et al., 2009; King, Hand, et al., 2010). For example, the MSD is collaborating with the Project for Public Spaces and the Wallace Center at Winrock International on a regional food hub inventory and analysis. Qualitative studies like these, which are often based upon unique access to federal information sources (e.g. Census of Agriculture, ARMS, Organic certifiers) provide insight into producer and business decisions that longitudinal data sets do not allow. These two branches of USDA are well-positioned to: develop case studies in areas that have gaps, synthesize findings across case studies from government and non-governmental sources (perhaps through a meta-analysis), and to place findings in context with the time series and longitudinal datasets that are uniquely available to them. One of these gaps includes a comprehensive understanding of the range of economic, employment, and land-use impacts of local and regional food systems. Further research into these areas could be conducted by ERS, MSD, and NASS, which have a history of cooperative agreements for collaborative research. While the USDA can pursue these activities within existing authorities, mandatory funding from Congress would be required to secure this as a priority.

ERS Food Environment Atlas. This high-profile tool is easily accessible to the public and was influential in the development of the White House's Childhood Obesity Task Force Report (Task Force on Childhood Obesity, 2010). Based upon information provided in the Food Environment Atlas, the White House developed a set of policy proposals, including a Healthy Food Financing Initiative to match private investments for grocery stores. ERS continues to add data to the Atlas (e.g. SNAP program usage from the Food and Nutrition Service Office of Research and Analysis) at more localized levels (e.g. counties). While the tool is still being refined (e.g.

relating multiplying layers of data simultaneously remains difficult), it has become a good example of inter- and intra-agency collaboration in public data provision.

The Organic Data Collection Initiative. With a relatively modest allocation of mandatory funding authority (\$5 million between Fiscal Year 2008-2012) by Congress (National Sustainable Agriculture Coalition, 2011), the initiative raised the profile of organic data needs at USDA and provided targeted funds for the collection of data on an emerging sector. A Congressional authorization of a specific funding source for data collection in a targeted sector may be a good model for increasing the priority of data collection, as it avoids the potential for Appropriator or Administration budget cuts.

Areas for Improvement

Introduce Marketing Channel-oriented Reporting. Markets influence producer decisions, however the Census of Agriculture and most USDA reports treat all products and producers of the products as the same. A producer of beef for the national market, for export, for a farmers market, and for direct sales to restaurants are likely responding to different price signals and different types of consumer preference. For example, seventeen separate marketing channels were observed in the organic market (National Agricultural Statistics Service, 2010b). NASS could publish a report on farm and operator characteristics by marketing channel based upon what is already collected from the Census of Agriculture on direct to consumer sales, Community Supported Agriculture, and Organic sales and production. The ERS Local Food Systems Report (2010) shows that such analyses are possible in two figures, Table 7 and Figure

6, where direct-to-consumer sales are broken down by product type, farm sales class, and urban and rural locations. Also, the ARMS can be used to compare wholesale and fresh market prices for vegetables (only), and the Agricultural Marketing Service publishes nearly daily wholesale and terminal market prices (including for organic products) farmers markets from fifteen markets in the U.S. (Agricultural Marketing Service, 2011; Economic Research Service, 2010c). Both are underutilized data sources.

Published Ranges on Sales Classes in the Census of Agriculture should be equalized Across Market and Product. For example, the published high-range of direct to consumer sales and organic sales is \$50,000 while the upper-range for other types of agriculture is over \$1 million (the highest is \$5 million and over). This limits the comparison of sales class across marketing options and obscures the economic performance of higher-selling farms (as in Table 2). NASS should increase the sales class ranges for farms involved in direct to consumer sales, organic sales, agri-tourism, and Community Supported Agriculture to facilitate comparisons with other types of agriculture. This can be addressed by NASS introducing a dedicated summary table in the Census of Agriculture for Retail Agriculture and by increasing the sales class ranges in the Organic Summary Table.

Follow-on Surveys to the Census of Agriculture Provide Depth but Lack Comparability.

The current practice of NASS is to utilize follow-on surveys of Census respondents involved in emergent areas of agriculture. A follow-on survey was proposed for local food systems in the 2012 Census (Advisory Committee on Agriculture Statistics, 2009) and an Organic follow-on survey was conducted in 2008. This Organic Production Survey was based on a sample from the

National Organic Program list of certified Organic farms instead of the self-selected list of organic farms in the Census. While Organic Production Survey provided a rich picture of organic agriculture, by using a different sampling technique and by being conducted a year after the Census, it lacks comparability with the Census data, a factor noted by NASS (National Agricultural Statistics Service, 2010c). For example, in 2008, 4,435 *fewer* organic producers responded to the questionnaire, but sales were \$1.45 billion *higher* compared with the 2007 Census of Agriculture (see Table 7). While NASS indicates that its survey responses represented coverage of larger farms, there are several unaddressed questions (National Agricultural Statistics Service, 2010c). Does a targeted organic survey influence greater respondent feedback among high-sales producers? Did over 5,000 farms with organic sales under \$10,000 stop producing certified organic products between 2007 and 2008? Did producers with lower sales have difficulty or less incentive to complete the eight-page Organic Production Survey?

ERS and NASS could collaborate to identify why lower-sales producers were under-represented in the 2008 survey and higher-sales producers were under-represented in the 2007 Census by examining microdata that is linked between the two surveys by unique identifier codes. Even if these questions are addressed, a follow-on survey still lacks comparability across sectors and has serious concerns about its reliability, especially when its results differ so widely across a one-year interval.

Thus, a follow-on survey may be useful for profiling a sector in depth, as the Organic Production Survey does, especially with regard to state-level participation in organic production and the variety of organic marketing channels. *However, follow-on surveys are not a substitute for the*

level of comparability offered by time-series data collected across sectors and product types as offered in the Census of Agriculture. A choice between a less-costly follow-on survey and more costly Census questions is a trade-off between depth with little comparability and little depth but wide comparability.

Table 7. Comparison of organic sales from the 2007 Census of Agriculture and 2008 Organic Production Survey.

Comparison of Organic Farm Sales in the 2008 Organic Production Survey (OPS) and 2007 Census of Agriculture						
Farms Sales Class	2008 OPS Farms	2008 OPS Sales	2007 Census Farms	2007 Census Sales	Farms – Percent Difference OPS vs. Ag. Census	Sales – Percent Difference OPS vs. Ag. Census
<\$10,000	4,862	\$15,581,000	10,220	\$26,056,000	-52%	-40%
\$10,000 - \$49,999	3,218	\$81,428,000	3,833	\$90,483,000	-16%	-10%
\$50,000 and over	5,696	\$3,067,985,000	4,158	\$1,592,573,000	37%	93%
Average sales	-	\$229,747	-	\$93,850	-	145%
Average sales over \$50,000	-	\$538,621	-	\$383,014	-	41%
Total	13,776	\$3,164,994,000	18,211	\$1,709,112,000	-31%	42%

Increase Reporting on Beginning Farmers and New Farmers. Tracking which farms are operated by a beginning farmer (defined as a ten-year period), farms that have a beginning farmer as a junior partner, and farms that are newly created enterprises is inherently difficult. The Census questionnaire allows respondents to indicate the number of years on their “present farm” and a “new” entrant can include farms which may be owned and operated by the same farmers but which are organized as a new business entity. While NASS does code each questionnaire it receives with a unique code linked to a “farm” it is nearly impossible to account for changes in farm ownership, business reorganizations, and leasing arrangements. However, a majority of beginning farmers and “new” farms can be identified, as the Economic Research Service has done with its reports on beginning farmers (Ahearn & Gibbs, 2009; Ahearn & Newton, 2009) and farm exits (Gale, 2002; Hoppe & Korb, 2006). Some of this research relies

entirely on data from 1997 and earlier (Ahearn & Newton, 2009, p. 15; Gale, 2002).

As the average age of farmers continues to increase, the characteristics of young, beginning, and new farmers are particularly important to understand – especially if federal resources designed to address farm risk continue to be under-utilized by some of these groups. NASS (potentially in partnership with the ERS) can improve our understanding on new and beginning farms by

- Publishing a Summary Table in the Census of Agriculture by Years of Experience (similar to the Summary Table by Age), which will allow greater access to this information,
- Publishing a report on beginning farmers and new entrants with each Census of Agriculture, which should include analyses performed on Census microdata, and
- Conducting regular follow-on surveys from the Census of Agriculture that go into more depth on the motivations and characteristics of beginning farmers than possible with the sample size of the ARMS (Ahearn & Newton, 2009, p. 15).

Figure 13. Percent of principal operators with farming as main occupation by age range and marketing channel 2002 and 2007

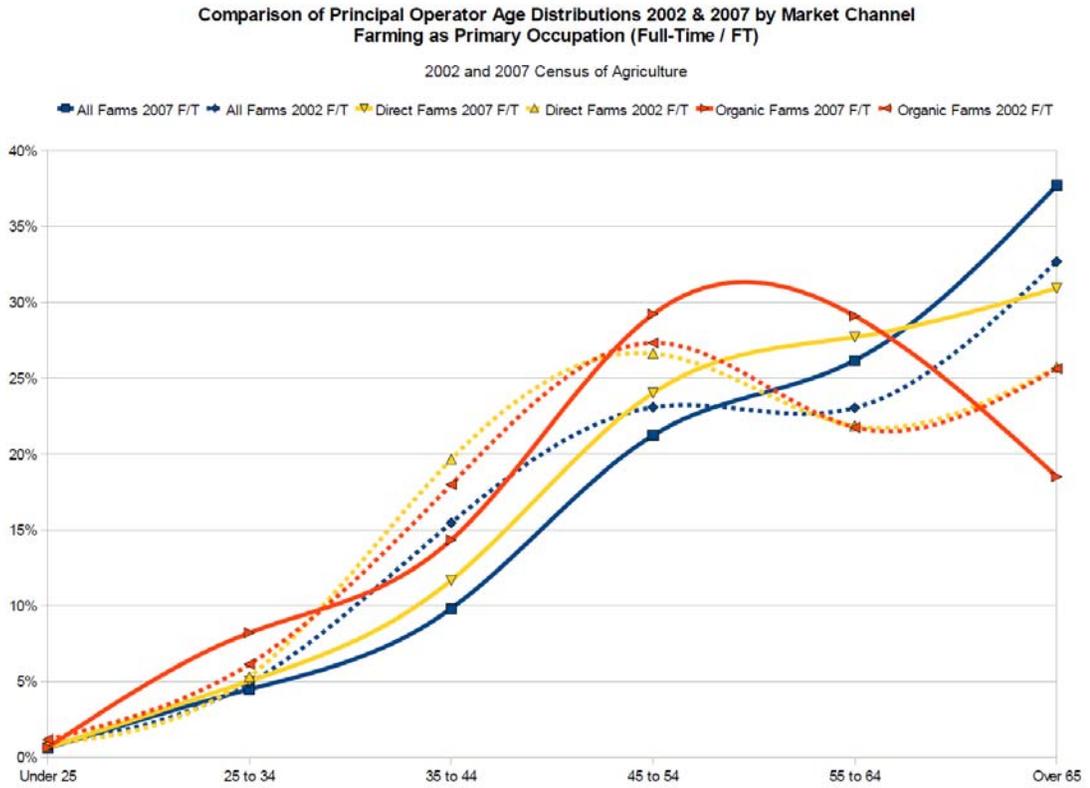
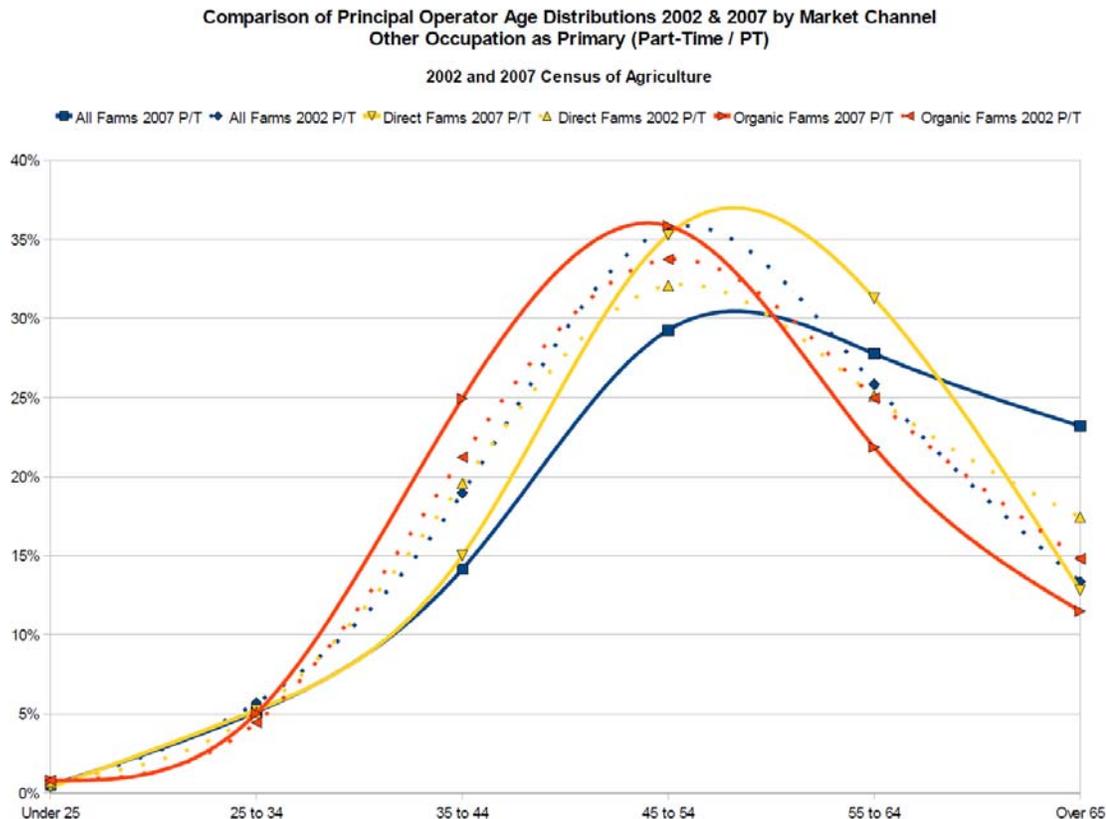


Figure 14. Percent of principal operators with farming as other occupation by age range and marketing channel 2002 and 2007



Areas Requiring New Efforts

A limited number of new questions in the Census of Agriculture may be more cost-effective than follow-on surveys and expansions in the ARMS. With more than 130,000 farms involved in direct-to-consumer sales and one Census of Agriculture question related to the topic, it may be time to further differentiate direct marketing practices. Community Supported Agriculture (CSA) was included in 2007, however CSA is likely a less popular form of retail trade than selling at one of the 6,100 farmers markets in the U.S. More data is needed on more marketing channels. Products sold directly from the farm, at a farmers' market, via a CSA,

directly to a retail grocery store, and the sales of non-food products made directly to consumers would provide a more comprehensive sense of what constitutes direct-to-consumer marketing. While NASS is developing a follow-on survey on local food systems for the 2012 Census (Advisory Committee on Agriculture Statistics, 2009), new Census questions cannot be introduced until the earliest of 2017.¹⁰ It is possible that the ARMS could be adapted to track local and regional food sales in the mean time, however the survey sample size and sample weight towards commodity farms may result in (misleading) underestimates.

Identify why there is Low Participation of Beginning Farmers in USDA Programs. Needs of beginning farmers are explicitly addressed in some USDA programs (e.g. in the Natural Resources Conservation Services and the Value-Added Market Development Grant Program). However, beginning farmer participation in some programs, such as commodity programs and federal crop insurance, beginning farmer participation is about half the level of established farmers (Ahearn & Newton, 2009). Tracking beginning farmer use of credit and sources of credit is also problematic due to sample size restrictions in the ARMS (Ahearn & Newton, 2009, p. 15). A targeted study comparing the effectiveness of different mechanisms to allow beginning farmers access to resource-limited programs – program set-asides, targeted participation levels, and mandates – could help guide agricultural policy analysts towards the most effective policy mechanisms.

¹⁰ By comparison, the Census has collected data on organic practices since 2002 – the same year the USDA Organic standard was fully implemented. It is not clear why NASS only added CSAs for the 2007 Census and not a question about sales at farmers markets when the number of markets had grown by more than 100% between 1994 and 2004 (U.S. Department of Agriculture Market Services Division, 2010). Nor is it clear why NASS has forgone opportunities to include more Census questions on local food systems when it was quick to include questions about organic agriculture.

Credit & Finance

The limited availability of credit for developing the Retail Agriculture supply chain, such as food hubs, small slaughterhouses, mid-tier value chains, product aggregators, and public markets was noted in the Food, Energy, and Conservation Act of 2008 through a priority established in Section 6015 for local and regional food enterprises to access the Rural Business and Industries Loan Guarantee program. The ability of this program to supply these credit needs has not been assessed. While we offer recommendations on how credit availability and gap estimates could become part of USDA's rural and agricultural investment strategies, we also suggest developing Retail Agriculture financing options for the local food supply chain in the 2012 (or 2013) Farm Bill.

Assess Credit Demand, Availability, and Access. Sample size limitations in the ARMS prevents analysis of beginning farmer credit use of Farm Services Agency programs and the Farm Credit System (Ahearn & Newton, 2009) and non-farmer owned credit needs are not tracked at all. An analysis of both the farmer and rural and urban non-farmer supply chain credit access is needed. The Risk Management Agency could carry out such an analysis, however, a second agency such as ERS or the National Institute of Food and Agriculture may be needed to pursue the non-farmer supply chain analysis. Engaging stakeholders (e.g. farmers, value-chain coordinators, food hub operators, lenders, NGOs, etc.) in the planning process would help target the report's goals and outcomes. This research could occur in two stages 1) establishment of a data collection method and an initial report and 2) reporting carried out at a regular interval. Regular reporting may require Congressional authorization.

Utilize Data from USDA Programs as Proxy Data for Credit Demand. Analyzing data on public credit demand – perhaps from the use of the Section 6015 provision of the Rural Business and Industries Loan Guarantee and the Community Facilities program – may offer a proxy for private credit demand and the relationships between private and public sector credit demands. Such analyses could show that current forms of public financing may need to be better targeted to the sector’s needs (e.g. relative availability of grants, loan guarantees, and loans, geographic available and need of financing, etc.) (Reader & Bagi, 2010). The Rural Business Service already makes annual reports to Congress on the use of Section 6015; however, these reports have not yet been made public.

Expand Credit Markets for Retail Agriculture. As noted earlier, we suggest an approach to develop policy to support the financing of the local and regional food system supply chain. Such a policy proposal may help facilitate the urban-rural support often needed for successful Farm Bill policy proposals. While public financing would have a cost to the Federal budget – a challenge to its feasibility – expanding the role of private markets to provide credit can come at no additional public cost. For example, the Farm Credit System could be allowed to lend to critical agricultural infrastructure, such as the non-farmer owned slaughterhouses, food distributors, and suppliers (e.g. seed growers) that are necessary for retail agriculture’s market access. A combination of public and private credit options may be needed.

Discussion

Why a market-oriented narrative?

A market-oriented policy narrative does not capture the breadth of activities and outcomes intended from value-added agriculture, value-chains, local and regional food systems, or organic agriculture. However, a market-oriented narrative has been used as a starting point for legislation which supports those goals. Notably, market-oriented narratives are used in several programs authorized or reauthorized by the Food, Energy, and Conservation Act of 2008: the Value-Added Agricultural Product Market Development Grant program, the local and regional food enterprise priority in the Rural Business and Industries Loan Guarantee, and the Healthy Urban Food Enterprise Development Center. These programs all utilized market-based narratives to introduce their program purposes via a *prosperity* frame. In following paragraphs of their legislation the framing often shifted to *equity* and *interdependence* frames to explain program priorities. Other frames, such as that of “health” can be brought in, as with the Healthy Urban Food Enterprise Development Center. A market-based narrative combined with a layering of framing strategies may be an appropriate for now. These strategies may change over time. For example, an *equity* frame may be no longer useful (Simon, 2009). Other narratives and framing strategies may be appropriate for other audiences.

Young, Beginning, and Small-Farm Involvement in Retail Agriculture

Young, beginning, and small farmers are participating in Retail Agriculture. Young farmers are active in direct-to-consumer marketing and organic agriculture. Beginning farmers utilize a layered approach with their business activities to make a go at farming, including direct-to-

consumer marketing and Community Supported Agriculture. And beginning farmers are likely to start small and often stay within in their size class (Ahearn & Newton, 2009). The market for Retail Agriculture is both urban and rural. At least one study shows that demand for local meat products may be higher in rural areas and produce demand may be higher in urban areas (Eson, 2008). Retail forms of agricultural trade, such as direct-to-consumer marketing, are more central to farm operations closer to urban centers (Steve Martinez, et al., 2010). However, activities like Community Supported Agriculture occur throughout nearly every county in the U.S.

The Economic Impacts of Retail Agriculture?

While the economic impacts of these activities cannot be assessed for certain, direct-to-consumer sales, at the very least, is a marketing strategy employed by 136,000 farms which had total productive value of over \$8 billion in 2007 (Table 2). It may well be that the combined \$26.6 billion of estimated organic retail sales in 2009 and estimated of \$5 billion in “local” food sales in 2007 (even with the discrepancy in years and potential overlap) represents 5% of U.S. retail food sales (Organic Trade Association, 2010; Packaged Facts, 2007). Until better information is collected reliably and regularly we will have to do with estimates and examples.

Where the economic impacts of Retail Agriculture are likely to be felt most – whether urban or rural – is not clear. Perhaps this is because these systems have developed regionally, often requiring relatively centralized infrastructure with good transportation links. We have shown, though, that infrastructure located in urban-influenced counties is critical for market access for the organic sector’s handlers and distributors as well as in the local and regional food enterprises.

Five out of twelve off the enterprises we profiled were located in areas ineligible for USDA Rural Development financing (Table 3). This suggests that Congress's approach to non-farmer financing authorities may need to be revisited to support the enterprises that provide the market access for the young, beginning, small and medium-sized farms involved in Retail Agriculture. Private and public investing in the non-farmer owned supply chain, as well as the farmer-owned supply chain, are necessary steps to support this market and the future of farming.

Conclusion

Agricultural markets are shaped by federal policy. This is no exception to Retail Agriculture. Enough data exists to show that there is a significant trend towards retail and consumer-oriented agricultural marketing practices. The sector is important to agriculture's viability as young and beginning farmers are attracted to its entrepreneurial drive and relatively low start-up costs. However, the data collection practices in place are inadequate to track participation in Retail Agriculture, assess its economic impacts and needs, and understand its risks and credit access. Policy proposals for the next Farm Bill should lay the groundwork for better understanding this sector and addressing the information barriers that likely limit its access to credit. A market-oriented narrative may well help facilitate the success of those policy proposals as it has legitimized the needs of Retail Agriculture in the prior Farm Bill. To other audiences, other narratives may well work. In our assessment and policy experience, a narrative like that of Retail Agriculture will do well in building rapport with the broader agricultural policy community that is increasingly aware of the diversity of young, beginning, and small farmers.

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