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CENTER FOR GOVERNMENTAL STUDIES Northern Illinois University

## **issue:** *Locally Produced Food: A Way To Grow More Food And The Economy*

*By Patricia Inman*

*Editor's Note:* The landscape in rural Illinois is changing rapidly as family farms give way to industrial agricultural production. This change is having a profound impact on the economic and social life of Illinois' rural communities. Less well known, but just as significant, this landscape change is also adversely affecting both Illinois' economy and food sources. This *Policy Profiles* explores these changes and offers suggestions which can help correct some of the resulting problems.

While Illinois has some of the richest soil in the world, the state's farms now produce only four percent of the food consumed in the state. The Illinois Department of Commerce and Economic Opportunity has estimated that the state has the ability to produce 85 percent of the food its residents and visitors consume. Where is the disconnect?

One answer is that economic considerations have rendered the family farm, once the backbone of Illinois' agricultural economy, obsolete. To make matters even worse, the federal government's agricultural subsidies, originally intended to protect and maintain family farms, now serve as an added incentive to large, agribusiness enterprises—industrial farming—to expand their operations and drive family farms out of existence.

### **What happened to Illinois' family farms?**

Illinois' flat topography encourages farmers to increase profitability by planting a single crop—most commonly corn or soybeans—across vast acreage. This is best accomplished by acquiring huge tracts of land; investing in large, expensive mechanized equipment; and planting a single crop in a field stretching across many dozens of acres. It enables a farmer to plant corn and soybeans in uniform rows; apply huge volumes of chemical fertilizers and pest controls; and expand the use of potentially harmful chemicals to increase agricultural yields in the short term. But such techniques also discourage farm operations from producing food for human consumption.

These techniques require a huge, up-front investment of capital, but they also produce huge yields, enabling the investors to sell the crops with lower profit margins. Access to such capital for investment poses relatively few problems for agri-business enterprises, but it is beyond the means of all but the most successful family farmers.

The traditional family farm, in short, can no longer compete economically with today's agri-business enterprises.

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- *Illinois produces only four percent of the food it consumes.*
- *A new model for small-scale food production creates career opportunities requiring minimal up-front capital.*
- *A wide diversity of people are supporting themselves on farms of approximately four acres in or near urban areas.*
- *Such farms create jobs, enrich local food resources, serve as business incubators, and enhance local economic development.*
- *Creative zoning can promote the development of such farms.*

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## What other changes has agribusiness or industrial farming brought to Illinois?

Besides reducing the production of food for human consumption, agribusiness has other effects on Illinois agriculture as well. Anna Lappe, an advocate of sustainable farming practices, lists some of the actual costs of industrial farming as:

- Soil loss;
- Soil pollution, compaction, and erosion when cover crops are not used;
- Water pollution; and
- Adverse consequences on farmer and farm worker health.

She points out that 90 percent of U.S. cropland is losing its topsoil faster than nature can rebuild it.<sup>1</sup> Industrialized farming uses enormous amounts of fuel, chemical pesticides, and herbicides which filter into water supplies and threaten still more water pollution. The weight of its massive machinery results in compacted soil that is “dead” with little evidence of the organic matter and life forms necessary to support the regeneration of rich soil commonly referred to as “black gold.”

Perhaps most significant is the negative effect of industrialized farming upon rural communities and the rural way of life. The jobs created in industrialized agricultural systems are unskilled, dangerous, and pay wages too low to support families. Mechanization, pesticides, synthetic fertilizers, and the availability of cheap migrant labor have allowed fewer farmers to manage larger farms.<sup>2</sup> According to sociologist Dean MacCannell, “Everyone who has done careful research on farm size, residency of agricultural landowners, and social conditions in the rural community finds the same relationship: *as farm size and absentee ownership increase, social conditions in the local community deteriorate.*”<sup>3</sup>

Finally, industrial farming is often conducted by international corporations whose earnings move out of state and nation. This is a significant economic issue. The Chicago Metropolitan Agency for Planning (CMAP) has reported that, of the \$48 billion Illinois residents spend on food every year, \$46 billion is leaving the state. If Illinois produced just 20 percent more local food in the fertile soils of northeastern Illinois, it would see a \$2.5 billion increase in economic activity.<sup>4</sup> **Exhibit 1** describes the negative economic impact of industrial-style agriculture on just one economic region in Illinois.

## Is there an alternative model of farming?

Fortunately, the answer to that question is “yes” since the large scale farms once thought necessary for “feeding the world” are not always adequately performing that function in local areas. Small farms, located close to a consumer market, are proving themselves capable of producing more food than was previously thought possible, thereby providing both a wholly new business model for agricultural food production and enriching local food options.

### **Exhibit 1** Food Production Economics: The Sangamon County Region: A Case Study

#### According to Economist Ken Meter’s 2010 study of the Sangamon region of central Illinois:

- Farmers in the Sangamon County region earn \$3 million each year producing food commodities, but
- They spend \$636 million buying inputs (agricultural supplies) from firms outside of the region. This results in a
- Total outflow of \$633 million from the regional farm economy.
- Meanwhile, consumers in the region spend more than \$1 billion buying food from outside the region. This results in a
- Total loss to the region of \$1.6 billion of potential wealth each year.
- This loss amounts to more than the value of all commodities currently raised in the region.

Source: Meter, K. 2010, *Sangamon Region Local Food and Farm Economy*, Minneapolis: Crossroads Resource Center. <http://www.crcworks.org/crcdocs/ilsangsum10.pdf>

Post industrial cities, such as Cleveland, Ohio, can locally grow up to 100 percent of their current needs for fresh produce and other food items. Ohio State University's research shows that not only would this model for local production give individual cities greater food security (i.e., provide a reasonable guarantee of accessible food that is sufficient, safe, and nutritious), but that it would also retain locally a larger share of the millions of dollars now spent outside the area to purchase food for local consumption. Such local economic savings, in turn, can help create new jobs and spur additional health, social, and environmental benefits.<sup>5</sup>

The potential production capabilities of this new model of agricultural production have been demonstrated by a scenario developed at Iowa State University and presented in **Exhibit 2**. The balance of this *Policy Profiles* focuses on the development of a new model for farming that is now available to produce food for human consumption.

### What is this new model for farming?

A new model for farming has evolved explicitly for the purpose of developing local and *sustainable agriculture* utilizing smaller parcels of land in urban and peri-urban settings,\* but it can be applied in rural settings as well. It is a sustainable model of farming that supports local economic development while also increasing the supply of locally grown food. It is also a model that requires relatively little up-front investment of capital. **Exhibit 3** defines the term "sustainable agriculture"

This new model of farming, referenced in the preceding section, is defined by the following characteristics:

### Exhibit 2 Local Food Land Use Requirements: The Iowa Scenario

**The Leopold Center at Iowa State University determined that the amount of land needed:**

- To grow enough of 28 kinds of fruits and vegetables,
- Within a single, typical Iowa growing season (about four months of the year, but longer for crops that could be stored, such as onions or garlic),
- To meet the local annual demand, based on population, in the State of Iowa,
- Would require the amount of cropland in a single Iowa county.

*Source: Swenson, D. "Expanding the Fruit and Vegetable Industry in the Upper Midwest Could Have a Huge Economic Impact in the Region." Beginning Farmer, 2010. Retrieved from <http://www.beginningfarmers.org/leopold-center-studies-potential-for-increased-fruitvegetable-production-in-the-midwest/>.*

### Exhibit 3 What is Sustainable Agriculture?

**The United States Department of Agriculture, in the 1990 Farm Bill, defined sustainable agriculture as a way of farming that:**

- Satisfies human food and fiber needs;
- Enhances environmental quality and natural resources;
- Makes the most efficient use of nonrenewable resources;
- Sustains the economic viability of farm operations; and
- Enhances the quality of life for farmers and society as a whole.

*Source: Food, Agriculture, Conservation, and Trade Act of 1990 (FACTA), Public Law 101-624, Title XVI, subtitle A, Section 1603 (government Printing Office, Washington, DC, 1990) NAL Call # KF1692.A31 1990. <http://www.nal.usda.gov/afsic/pubs/terms/srb9902.shtml#toc2>.*

**Location near urban areas.** Designed to produce food for local area consumption, the farms are located in, or near, an urbanized area where the farms' products can be easily and readily marketed.

**Small size in acreage.** Such farms can be as small as three or four acres in size and can consist of several parcels of nearby land

that need not be contiguous. Such farms have been developed in old residential neighborhoods where dilapidated houses have been removed and a number of the resulting vacant lots in close proximity to each other have been converted by a single farmer to garden plots on which food for local consumption is grown and marketed.

\*Peri-urban land refers to land that buffers urban areas from rural areas and vice-versa. These green belts can be used to provide fruit and vegetables for both urban and rural residents.

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**Local marketing.** The food produced can be marketed to individual consumers through farmers' markets, to local restaurants, and to local retail stores.

**Cash crops.** A wide variety of food products have been produced and marketed through such outlets, including primarily fruits and vegetables, but some such farms also produce eggs, goat milk, sprouts, chickens, and fish (albeit, perhaps, in more limited quantities). Growing seasons, even in northern climates, can be made year-around through the use of hydroponic growing of vegetables, such as tomatoes which can produce seven crops each year.

**Limited capital investment.** Such farming operations can be launched on a small scale and expanded on a pay-as-you-go basis. Minimal equipment is needed. Equipment for hydroponic gardening can be built from materials sold at any neighborhood hardware store.

This new model of farming also differs from the larger, global model of industrial agriculture in that it links together all of the elements of the food system in a defined geographic region:

**Production** – growing food, and especially food best marketed fresh from the farm such as vegetables and fruits;

**Processing** – doing whatever is needed to transform harvested food from farms into whatever form it must take to be marketed to consumers;

**Distribution** – moving the processed food directly to customers or to grocery stores and from there to consumers; and

**Waste disposal** – removing waste, in an environmentally sound fashion, of material left over from production on the farm and consumption in homes and restaurants.

“Each element of the local food system makes an important contribution to its community, including business development and expansion, the development of new business relationships, and providing fresh wholesome food to consumers.”<sup>6</sup>

### Where can this new model be used?

While the farm described in Exhibit 4 is located in a rural area, it is immediately adjacent to a large urban area. Although it is geographically in an area with very favorable weather conditions, the farm's soil is sand which requires heavy fertilization to produce marketable crops.

The model is *particularly suited* for use within or near urban areas where its small size minimally impacts residential living while providing highly desired open or

### Exhibit 4 A Model Small Farm

**Sandy Land Farm** (not its real name) provides an example of a year-round farming operation that operates on four acres of land in Southwest Florida adjacent to the Florida cities of Ft. Myer and Cape Coral. Although its Florida location affords year-round growing conditions, such a small scale enterprise could be replicated, with some modifications, in any climate.

The four-acre farm contains fruit and nut trees, several shade houses for year-round hydroponic vegetable production, outdoor gardens where vegetables are grown in very sandy soil enriched on site primarily with natural fertilizers, an irrigation pond filled with fish, and free range chickens that have access to fresh produce and, in turn, fertilize and “till” the soil.

Promoting sustainable farming practices, the farm requires minimal equipment: a small tractor, a sprayer, and standard hoses. The hydroponic facilities, from which seven crops a year are harvested, were built with materials available at most hardware stores. The production relies on recycled water. Waste organic materials from local landscaping firms are composted to provide 80 percent of the farm's fertilizer needs.

The farm is worked full-time by the owner who handles all planning, developing, farming, and marketing with the help of one 30 hour per week employee. All capital improvements and operating costs during the farm's 12 year history have been paid from current revenues. The farm's entire produce is sold through farmers' markets and direct sale to restaurants. The farmer divides his time on an approximately 60/40 basis between farming and marketing.

Sandy Land Farm operates at a profit. The business is debt free. Profits remaining after the payment of salaries to the owner and employee are currently being reinvested in new equipment and building improvements.

green space to residential environments. It was initially used in Detroit where the city's substantial loss of population and high unemployment rates left neighborhoods with many abandoned home sites which could quickly be converted to farm or garden plots for willing and enterprising workers seeking a means of support. From there it has spread to other cities and other parts of the country. *It has been used successfully in northern as well as southern climates in the United States.\**

**What are the benefits of small scale production?**

There are numerous benefits to this new model of small scale agriculture. These include:

- Strengthened sustainable agriculture in food production;
- Increased availability of fresh foods and produce for residents in near-by neighborhoods;
- Increased environmental health with the ability to grow diverse specialty crops without large machinery;
- Enhanced food security for all through the use of community and peri-urban gardens;
- Retention of more of the dollars spent on food in the local community;
- Increased opportunities in farming open to women and minorities due to more affordable land requirements;
- Community resiliency through innovative “green” business development; and
- More job opportunities and local income generated by the farms.

Recent studies indicate that sustainable agriculture is not only better for the planet and its communities, but it also provides increased economic opportunities to farmers or people who would like to become farmers. For example, local food marketing options include roadside stands and community supported agriculture initiatives where consumers share risks associated with food production. The one market most commonly associated with local food systems is the farmers’ market. There is a growing body of evidence that this small, local agricultural model can be successful. Typical examples include the following.

Central Illinois Study. In 2004, the University of Illinois at Urbana-Champaign studied local food systems in central Illinois to assess their potential as a strategy for community and economic development. Thirty-six percent of the local small farms also grew commodity crops marketed to traditional food producers. The study found that:

- Two-thirds of those surveyed used more than half of their total acreage for their commodity products; yet
- Fifty percent of their total gross farm sales were from the crops marketed locally; and
- The farms showed a higher profit per acre from the land on which farm products were sold in local markets.<sup>7</sup>

Caledonia Study. Angelic Organics of Caledonia, Illinois, has only 100 acres in production, a figure considerably below the Illinois average in acreage. Yet, its annual income of \$250,000 allows it to employ as many as 18 seasonal workers

which is meaningful for this small, rural community.<sup>8</sup>

The SEED Study. A recent study of the economic impact of nine diverse farmers’ markets—three each from Baltimore, Cleveland, and Los Angeles—emphasized the capacity of farmers’ markets to incubate small businesses, encourage entrepreneurship, and help move businesses from the informal to the formal economic sector. It also indicated that the annual economic impact of the markets ranged from:

- \$52,000 to \$40,594,000 per market for vendors;
- \$19,900 to \$15,765,700 per market for nearby businesses; and
- \$72,000 to \$56,360,000 per market for the host communities.

Using a methodology called “SEED: the Sticky Economy Evaluation Device,” the study had what its Executive Director Richard McCarthy described as “an often surprising economic impact of the original business incubator, the farmers’ market.”<sup>9</sup> Coupled with the evidence of markets’ ability to incubate entrepreneurs and small businesses and to transition economic activity from the informal to the formal sector, the data make a strong case for farmers’ markets as engines of economic growth and wealth creation.

**How common are small farms?**

Data from the U.S. Department of Agriculture indicate the trend toward small farms is increasing. In 2007 about 85 percent of farms were less than 500 acres; 54 percent were less than 100 acres, and the vast majority (86.5 percent) were

*\*It should be noted, however, that Detroit’s use of the new model has substantially declined as farmers have been the victims of theft by looters who steal food out of fields that are ready for harvest. Clearly the use of the model is questionable in high crime urban areas lacking an effective law enforcement presence.*

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owned by a family or sole proprietorship. Between 1997 and 2007, the average size of farms decreased (from 431 to 418 acres) and the percentage of farmers who were sole owners, as opposed to corporations or partnerships, increased (from 62.5 percent to 69 percent).

The Chicago metropolitan region reflects several of these national trends in local food production. While farmland is decreasing, the number of small farms increased by 23 percent from 2002 to 2007. Production of specialty crops produced to feed local populations is up, while production of commodity crops, such as corn and soybeans, has gone down in the region.<sup>10</sup>

## Does small farming offer career opportunities?

Yes. The “small farm” farmer described in Exhibit 4 is fully self supporting by farming on just four acres of sandy soil. He is debt free and each year is still able to make additional investments to upgrade his four acres and increase his cash flow and income. As his reputation and production have grown, so, too, has his ability to market his produce to local restaurants.

While the average size of an Illinois farm is 368 acres, there are many farms in the state today which are comprised of thousands of acres. Thus the average of only 368 acres suggests that there are many farms operating on a very few acres. The farm described in Exhibit 4 is only four (not necessarily contiguous) acres in size. In many urban farms, farmers work on parcels of land that previously were small lot home sites.

## Who can aspire to be a small farm farmer?

Large farms have traditionally been owned by older white men, but the ownership of “small farms” is more diverse. Men and women, young and old, rich and poor, European-Americans, African-Americans, Native-Americans, Asian-Americans, and Latino-Americans have small farms and all bring different approaches, skills, and crops to American agriculture.”<sup>11</sup>

This is partially the result of the fact that smaller parcels of land make farming more affordable for lower-income populations. Additionally, agriculture is part of the indigenous culture of many of these population groups. Establishing a farming lifestyle comes easily to them; being an independent farmer celebrates their skills and facilitates their inclusion in their community.

## What role can women play in small farming?

The research regarding women “ecopreneurs” (one who earns income from environmentally focused enterprise) is particularly rich. *While nationally the total number of farms has been declining, the number owned and operated by women is on the increase—up nearly 30 percent* according to the 2007 Census of Agriculture released by the United States Department of Agriculture (USDA). Additionally, the Center of Women’s Business Research reports that businesses owned by women continue to grow at two times the rate of all companies.<sup>12</sup> As the number of women-owned businesses and farms increases, opportunities abound for women of all backgrounds, ages, and interests to craft a livelihood in small

farm agriculture.\* Women also qualify as “socially disadvantaged” (SDA) within some Farm Bill and USDA programs.<sup>13</sup>

## How can local governments support local food system development?

The Chicago Metropolitan Agency for Planning has identified ways local governments can support the development of local food systems. These include:

- Provide access to land, facilities, and infrastructure to give local food systems, especially including small farms of the kind described in Exhibit 4, a chance to become established. This can include zoning changes or granting variances to small farms; entering into farming leases for food production on public land; supporting the development of facilities for storage, processing, and packing through financing or donated resources; and supporting business incubation centers or clusters on mutually beneficial activities.
- Adopt or modify policies and standards to encourage local food uses and operations and to reduce the cost and uncertainty of projects. This can include expedited permitting, supportive zoning, land use, public health regulations, and financing tools such as guarantees, revolving loans, and tax rebates.
- Encourage farmers’ markets, innovation, businesses, and entrepreneurs by adopting local food procurement targets; supporting workforce development efforts; linking hunger assistance programs to local food producers; and including local food systems in economic or development plans.

\*This positive growth of women farmers comes after decades of discrimination and lack of representation within the agriculture community. The USDA is currently settling claims from women farmers for past-denied farm loans due to gender discrimination. The process offers a voluntary alternative to litigation for each Hispanic or female farmer and rancher who can prove that USDA denied his or her application for loan or loan servicing assistance for discriminatory reasons for certain time periods between 1981 and 2000.

- Support a forum (such as a food policy council) to discuss and address local food system issues. Such a forum or council can serve to coordinate policy initiatives, research, and educational programs and events; encourage government and business support; and connect stakeholders, buyers, and sellers.<sup>14</sup>

While these recommendations have been made for local government support, these suggestions could just as easily be addressed and supported by other public/private enterprises, such as community colleges, technical schools, and universities—and especially the land grant colleges. This is particularly true for research undertaken to support regional plans and the development of forums for collaborative action. Support in developing business plans for small farms is another area ripe for higher education involvement.

### What are the challenges confronting sustainable farming practices?

Any agricultural operation is a complex enterprise incorporating food production, food processing, and food distribution. The new model of local food production comes with the same challenges and adds some more of its own. These include:

- Identification of appropriate parcels for production,
- Educating new farmers in both alternative agricultural methods and the means of financing small farm operations, and
- Adopting or modifying municipal ordinances to support local food production.

Future *Policy Profiles* will deal with these challenges in more detail.

### Where does Illinois fit into this picture?

As noted in the introduction, Illinois is one of the world's most richly endowed agricultural regions, yet it is seriously underperforming in the production of food to feed its own residents—and this performance failure is costing the state a huge annual outflow of monetary resources that could be put to better use promoting local and state-wide economic development.

The new model for local food systems presented herein could be employed much more widely in Illinois, and its use would benefit local communities and the state as a whole. But the unique challenges presented in Illinois—the numerous regulatory codes and the large inequalities in food access across the state—require an organized and coordinated response to local food production issues. These challenges and possible solutions will also be addressed in future *Policy Profiles*.

### Endnotes

- <sup>1</sup>Pimental, D. and Kounang, N. (1998) "Ecology of soil erosion in ecosystems." In *Ecosystems*, p. 418.
- <sup>2</sup>Collin Tudge, in his book *Feeding People Is Easy* indicates that the agricultural workforce in any one country should be no greater than 50 percent and no fewer than 20 percent. Pari, Italy: Pari Publishing Sas, 2007.
- <sup>3</sup>Strange, M. (1988). "The Local Food System" in *Family Farming: A New Economic Vision*. Lincoln: University of Nebraska Press, p. 87.
- <sup>4</sup>Chicago Metropolitan Agency for Planning 2012 *Local Food System*. <http://www.cmap.illinois.gov/livability/local-food>.
- <sup>5</sup>"Can cities become self-reliant in food?" *Sustainable Food News*, September 10, 2011 [http://sustainablefoodnews.com/story.php?news\\_id=13790](http://sustainablefoodnews.com/story.php?news_id=13790).
- <sup>6</sup>Hultine, S. and Cooperband, L. University of Illinois Extension (2008). *Beyond the Farmers' Market: Planning for Local Food Systems in Illinois*.
- <sup>7</sup>*Local Food Systems in Central Illinois 2004-2007* was found at <http://asap.sustainability.uiuc.edu/food-sys>.
- <sup>8</sup>*A Matter of Scale: Small Farms in the North Central Region* (2004). Funded by the North Central Region Sustainable Agriculture Research and Education Program and the Illinois Department of Agriculture.
- <sup>9</sup>Examples of the SEED process can be found at [www.marketumbrella.org](http://www.marketumbrella.org).
- <sup>10</sup>U.S. Department of Agriculture (2007), *Census of Agriculture*.
- <sup>11</sup>*A Matter of Scale: Small Farms in the North Central Region* (2004). Funded by the North Central Region Sustainable Agriculture Research and Education Program and Illinois Department of Agriculture.
- <sup>12</sup>*Women-Owned Businesses: Carving a New American Business Landscape* (March 2014) U.S Chamber of commerce (<http://www.uschamberfoundation.org/women-owned-businesses-carving-new-american-business-landscape-0>).
- <sup>13</sup>Accessing information about special loans or finding resources that are specific to women farmers was an issue until the Midwest Organic and Sustainable Education Service (MOSES) launched its Rural Women's Project in 2008. The MOSES Rural Women's Project supports women farmers and food based ecopreneurs with resources, networking, and collaborative opportunities to champion food system change. The Project aims to increase the voice and impact of women in the organic and sustainable farming and food community. See [www.mosesorganic.org](http://www.mosesorganic.org).
- <sup>14</sup>*Ibid.*, endnote 4.

## About the Author

**Patricia Inman** is a Senior Research Associate at the Center for Governmental Studies at Northern Illinois University. Dr. Inman's research interests include asset-based community development, university engagement, and sustainable regional policy, particularly as it relates to the development of local food systems. She most recently co-edited *The Community Engagement and Service Mission of Universities* and *University Engagement and Environmental Sustainability*.

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Director:  
Diana L. Robinson

Editor:  
James M. Banovetz, Ph.D.

For more information contact:  
Center for Governmental Studies  
815-753-1907  
fax 815-753-7278  
[www.cgs.niu.edu](http://www.cgs.niu.edu)

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