



The Promise of Urban Agriculture

National Study of Commercial Farming in Urban Areas

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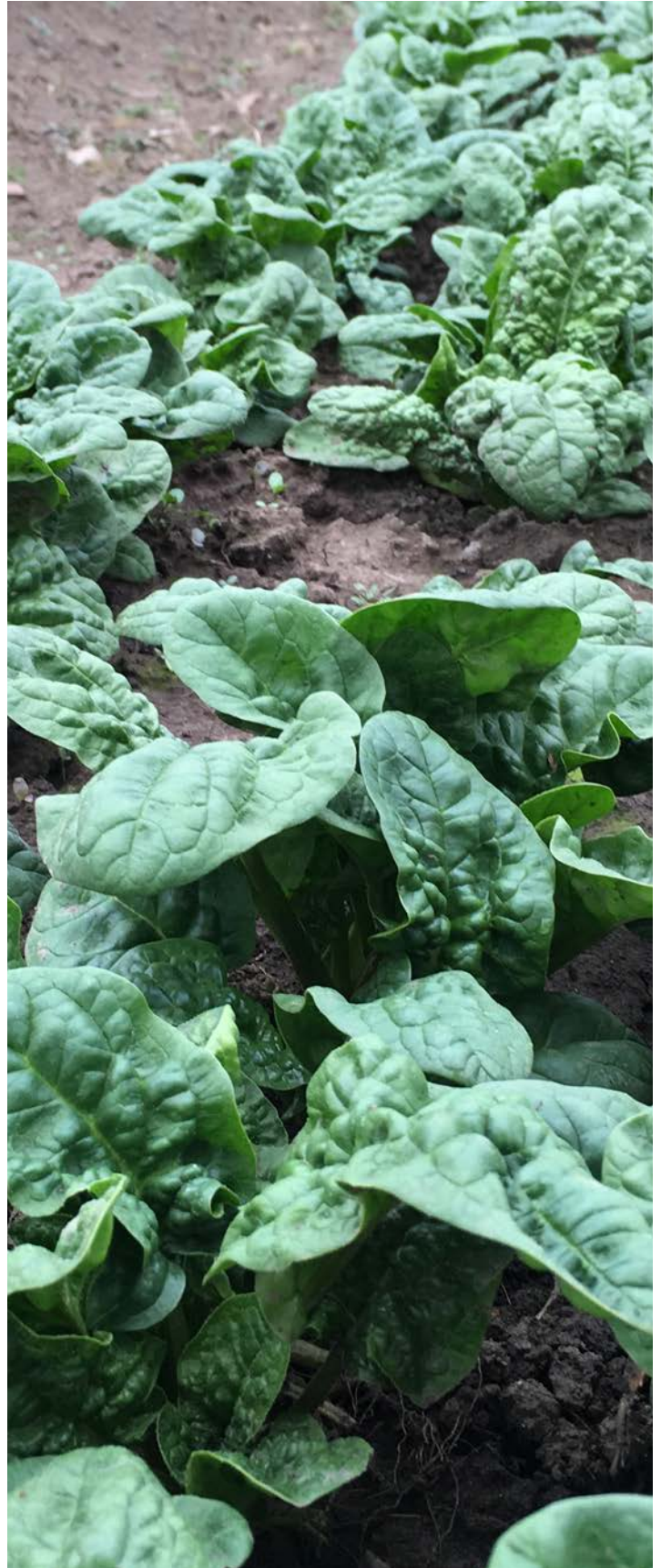
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Executive Summary

Urban and peri-urban farms have proliferated around the United States in the past decades. Although considerable attention has been paid to the impact of this emerging farm sector on social indicators, such as fresh food access, youth engagement, community development, and educational attainment, far less attention has been paid in the research literature to the economic and commercial promise of urban-based agriculture. Nevertheless, despite the high risks and narrow profit margins often associated with growing and selling farm products, some urban farms have managed to develop successful business strategies that merge economic objectives and social mission in a profitable manner.

Our purpose in conducting this study was to investigate the commercial promise of urban-based agriculture and uncover those specific urban farm characteristics that seem to be linked most closely to long-term survivability and growth. The study posits that urban farms have the potential to be commercially viable and economically self-sufficient, while offering a multitude of quality of life benefits for community residents, which may include:

- economic security and sustainability;
- empowerment of small business owners and entrepreneurs;
- access to employment opportunities, job training, and skill development;
- expanded access to nutritious food;
- community beautification and safety; and
- greater opportunities for interpersonal connection.

Observations are drawn primarily from the experience of 14 commercial-scale urban farms located in 13 cities across the United States. The testimony provided by farmers associated with these urban farms is further enriched by interviews with more than 160 subject matter expert¹ in the field of urban agriculture including: policymakers, urban planners, funders, additional non-case study farmers, and representatives of nonprofit and community-based organizations engaged in urban agriculture and local food systems.

Based on the results of our interview findings, we have framed the report around those specific trends in the emerging world of urban agriculture and urban policy that seem to facilitate or disrupt individual farms' paths toward achieving financial viability. Given the diversity of operations included in our interview cohort (related to size, business structure, growing practices, product mix, sales channels, et. al.), it is no surprise that the individual farm operators we interviewed often took very different paths on their road toward commercial viability. Yet, we also observed a number of key shared experiences among the group of urban farm managers and stakeholders we interviewed, which can be summarized as follows:

1. Obtaining access to affordable, usable land for agricultural purposes is a cost-prohibitive barrier to entry for many prospective urban farmers, especially those seeking financial self-sufficiency. The ability of urban farms to maintain access to land over time is often threatened by rising land values and real estate development pressures. Those urban farms that have been successful in acquiring long-term access to land that supports commercial production frequently obtained their access to land through exceptional circumstances (land donated from the city, neighbors offering the free or discounted use of their land, long term leases that were established before a sudden increase in the demand for and price of land occurred).
2. Commercial urban farms often depend on revenue-generating activities beyond agricultural sales to sustain themselves financially. Such activities may include agritourism (pick-your-own, tastings, farm tours), farmer trainings, consumer workshops (cooking demonstrations, health and nutrition education), and events (weddings, birthdays, company events).
3. Commercial viability for urban farms depends upon continued demand for local food through farmers' markets, CSAs, and locally-focused restaurants and retailers. Typically, commercial urban farms cannot compete on price point alone. These marketing channels need to continue to associate an additional value with local food in order for commercial urban farms to stay competitive.

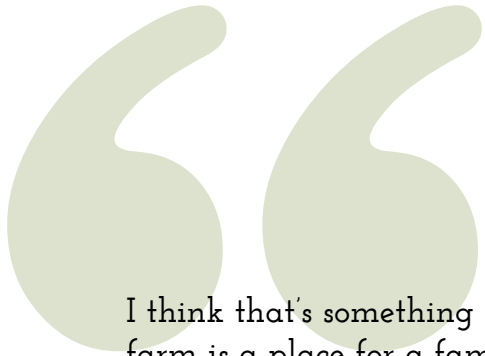
¹ Information provided in this report (including job titles and business descriptions) reflects material provided in interviews conducted throughout the development of this publication. This information may have changed between that time and the time of publication.

4. As socially motivated business enterprises, commercial urban farms are usually driven by the opportunity to generate economic revenue and the desire to advance social mission objectives relevant to the needs of community residents. They tend to be very attuned and sensitive to community concerns and feedback, and often feel pulled in different—and incompatible—directions. Many commercial urban farms take innovative approaches in order to reconcile the tension between these missions. This includes: developing community partnerships, establishing hybrid organizational structures (for-profit and nonprofit), and conducting community outreach and engagement activities.
5. Commercial urban farms cannot achieve financial sustainability when saddled with all of the expectations implied by the promise of urban agriculture. They cannot be all things to all people. Farmer profitability is essential for these types of operations to be sustainable and at times this means prioritizing financial objectives over social objectives.

Commercial urban farms contribute to the larger promise of urban agriculture, and their needs are similar to small, diversified rural farms. Technical assistance and other support is needed to help urban farms and farmers achieve sustainable success. The ways in which urban farms can be supported include:

- greater transparency and knowledge surrounding municipal zoning, land use laws, and policies;
- improved coordination in matching available public and nonprofit owned land (e.g. churches) and other financial and technical assistance resources with farmers;
- expanded organizational capacity through local partnerships with nonprofits, other urban farmers, existing market outlets (farmers markets, restaurants, consumers) and local, State and federal government;
- enhanced awareness of extension services and training opportunities available to urban residents; and,
- stronger connections with rural agriculture to foster more resilient and responsive regional food systems.





I think that's something unique about urban farming. Whereas a rural farm is a place for a family or a collection of families or the immediate community, I feel like placing that kind of activity in a city allows for the appreciation and enjoyment by such an extended community.

– Caitlyn Galloway, Founder and Farmer
Little City Gardens, San Francisco, CA

Chapter 1: The Promise of Urban Agriculture

Urban agriculture (UA)—growing food in urban and peri-urban areas where agriculture is not a primary land use—takes many forms for many purposes. From a raised bed in a community garden to a 70,000 square foot multi-story vertical farm, UA offers many promises: fresh food access, neighborhood food security, workforce development, farmer training, elimination of food deserts, youth education, reduced recidivism, neighborhood safety, open space, improved urban ecology and environment, better health outcomes for city-dwellers, local economic development, reducing “food miles” traveled... the list goes on.

Though the contemporary UA movement has received attention from growers, planners, policy-makers, and funders over the past 2 decades, growing food in American cities is not new. In the economically turbulent 1890s, Detroit Mayor Hazen S. Pingree devised his “potato patch plan” to help unemployed Detroiters grow food for themselves and their neighbors on the city’s vacant land. Over 1,500 Detroit families farmed Pingree’s Potato Patches in 1897, but the program dissolved as the city and national economy rebounded, a boom-bust cycle familiar in Detroit’s current context.²

Since the turn of the 20th century, UA has surfaced many times: to prevent hunger during the Great Depression, to supplement war rations in the form of World War II Victory Gardens when 41 percent of all vegetables consumed by the nation came from urban and suburban gardens,³ and in the late-1960s and 1970s as a response to inflation⁴ and the devastation to minority neighborhoods left by race riots.⁵

The first federal legislative support for urban food production came in 1977, when Congress allocated \$1.5 million to the Urban Gardening Program. This program, which was eventually expanded from 6 to 23 cities, funded cooperative extension agents in urban areas to work with community gardeners. Though a highly successful program, it was discontinued in 1994 due to lack of congressional and extension support.⁶

Today, UA is firmly rooted in many municipalities. For several that have experienced economic downturns (e.g. Detroit, Buffalo, Chicago), UA serves a focal point to discuss larger, more institutional challenges that contribute to disempowerment and poor economic and health outcomes for these communities.⁷ While a full and accurate count of urban farms does not currently exist, an analysis of 2017 U.S. Census of Agriculture data shows that urban and peri-urban farms in the 50 most populous metropolitan statistical areas (MSAs) make up almost 15 percent of the country’s farms.⁸ Urban farmers and advocates interviewed for this report say urban farmers are far less likely to register for the Census or be counted. This, coupled with the resurgence of interest in urban farming, makes it likely that there are more farmers in urban counties than the 2017 Census of Agriculture reports.

UA has found proponents in cities across the country. City planners are amending zoning codes and writing urban agriculture ordinances (UAOs) to define, regulate, and facilitate both community gardening and urban farming.⁹ Cities are passing legislation to make it easier for urban gardeners and farmers to access water.¹⁰ Food policy councils from Los Angeles, CA to Pittsburgh, PA are studying the impacts of UA on their cities and helping city governments formalize agriculture as an urban land use.

2 Community of Gardens. n.d. Pingree’s Potato Patches. Accessed August 1, 2016 from <https://communityofgardens.si.edu/items/show/29>.

3 Lawson, L.J. (2005). *City Bountiful: A century of community gardening in America*. Berkeley: University of California Press.

4 Brown, K.H. and Jameton, A.L. (2000). Health Implications of Urban Agriculture. *Journal of Public Health Policy*, 21(1), 20-39.

5 Jones, I. (2011, February 16). A Food Crisis is Coming, but Urban America Already has it Solved. *Colorlines*. Accessed August 1, 2016 at <http://www.colorlines.com/articles/food-crisis-coming-urban-america-already-has-it-solved>

6 Malakoff, D. (1994). Final Harvest. *Community Greening Review*, 4-12.

7 Meenar, M. & Hoover, B. (2012). Community food security via urban agriculture: Understanding people, place, economy, and accessibility from a food justice perspective. *Agriculture, Food Systems, and Community Development*, 3(1), 143-160.

8 Authors’ compilation of data from Census of Agriculture, 2017. Repeating work previously completed by Rogus, S. and Dimitri, C. (2014). Agriculture in urban and peri-urban areas in the United States: Highlights from the Census of Agriculture. *Renewable Agriculture and Food Systems*, 30(1), 64-78.

9 Barth, B. (2014). Agriculture as an Emergent Land Use: Case Studies of Municipal Responsiveness. *Zoning Practice*, American Planning Association, 8.

10 Postel, S. (2015, January 8). Securing Water for Urban Farms. *National Geographic*. Accessed May 24, 2016 at <http://voices.nationalgeographic.com/2015/01/08/securing-water-for-urban-farms/>.

While the diverse literature on UA has primarily focused on community gardening and the social and environmental impacts thereof,¹¹ some findings indicate positive economic impacts of urban farms. For example, a study of community gardens in New York found these gardens have a positive effect on surrounding property values, particularly in the lowest-income neighborhoods where the presence of a garden within 1,000 feet can increase property values up to 9.4 percent.¹²

Yet, some city officials would rather retain vacant parcels than turn them into farms, as urban farms have a lower measurable economic return than other types of development.¹³ The tendency for planners, businesspeople, and other local decision makers to focus on economic “return on investment” is pervasive in UA policy discussions. Even urban planners aware of UA’s social and community benefits often struggle with setting aside land for UA because it does not represent the land’s “highest and best use” from an economic point of view. For example, many cities are facing a housing crisis and view UA as an ineffective use of land that could be put to better use as apartments or condos to house the expanding urban population. Results from a Berlin-based study further support this idea, finding that city residents prefer that urban farms either be open to the public, as with community-based gardens or park-like atmospheres, or on rooftops so as not to compete for land.¹⁴

Types of Urban Farms

The many forms of UA can be categorized as either commercial or community-based¹⁵. Commercial urban farms typically frame their business model on creating

economically viable businesses that provide employment, food, and education opportunities to serve local needs. In the case of community-based urban gardens, their primary objective is to create spaces for local residents to engage in individual and neighborhood development and empowerment while growing and sharing (or selling) fresh vegetables and fruits with each other. Profitability is not necessarily the goal of community-based UA.¹⁶ Instead these efforts seek dedicated outside funding to realize UA’s promises of increased healthy food access, food justice, education, job training, ecological literacy, and community empowerment and development.¹⁷ Urban farming and gardening, particularly learning to grow one’s own food, is often presented as a potential solution for improving health outcomes, increasing self-reliance, strengthening community, and achieving social goals.

Commercial urban farms, on the other hand, grow food for the primary purpose of selling that food to support the farm business, not as a tool for individual or community improvement per se. They produce at a scale large enough to earn a significant portion of their annual budget from farm product sales. Education, training, or community improvement may be important activities or side-effects of the farm, but not always its primary purpose.

Whether community or commercial focused, regardless of business incorporation, many of these farms exhibit the behavior of ‘social enterprises’.¹⁸ Social enterprises are broadly defined as businesses that take an entrepreneurial approach to solving widely experienced social or ecological problems.^{19,20} Social enterprise missions include using urban farming as a vehicle for workplace-readiness training, youth education, and lifting the chronically unemployed out of poverty through additional social and financial services.

These laudable causes come at steep costs to urban farms,

11 Guitart, D., Pickering, C., and Byrne, J. (2012). Past results and future directions in urban community gardens research. *Urban Forestry & Urban Greening*, 11(4), 364-373. doi:10.1016/j.ufug.2012.06.007.

12 Voicu, I. and Been, V. (2008). The Effect of Community Gardens on Neighboring Property Values. *Real Estate Economics*, 26(2), 277.

13 Schmelzkopf, K. (2013). Incommensurability, Land Use, and the Right to Space: Community Gardens in New York City. *Urban Geography*, 23(4), 323-343.

14 Specht, K. (2016). Socially acceptable urban agriculture businesses. *Agronomy for Sustainable Development*, 36(17), n.p. doi: 10.1007/s13593-016-0355-0.

15 Hodgson, K., Caton Campbell, M., & Bailkey, M. (2011). *Urban agriculture: Growing healthy, sustainable places*. Chicago, IL: American Planning Association Planning Advisory Service.

16 *Ibid.*

17 Vitiello, D. and Wolf-Powers, L. (2014). Growing food to grow cities: The potential of agriculture for economic and community development in the urban United States. *Community Development Journal*, 49(4), 508-523. doi:10.1093/cdj/bst087.

18 Elkington, J. (2004), “Enter the triple bottom line”, in Henriques, A. and Richardson, J. (Eds), *The Triple Bottom Line: Does It All Add up?*, Earthscan, London, pp. 1-16.

19 The definition of social entrepreneurship varies; for general information see BC Center for Social Enterprise (<http://www.centreforsocialenterprise.com/>), and the Social Enterprise Alliance (<https://socialenterprise.us/>).

20 Cohen, N. and Reynolds, K. (2015). Resource needs for a socially just and sustainable urban agriculture system: Lessons from New York City. *Renewable Agriculture and Food Systems*, 30(1), 103-114.

which already run on the slim margins that small rural farms know so well. While nonprofit urban farms can seek grants to support programming and general operations, for-profit farms do not have this option. Indeed, for-profit urban farms feel pressure to serve social functions, despite very little bandwidth to do so.²¹ Often urban farms feeling squeezed to farm productively and act communally look to other types of subsidies—including free or below-cost labor or land, or long-term investments—and policy changes to help them balance the goals of commercial viability and community impact.^{22, 23}

Thus the line between community-based and commercial UA (CUA) is blurry. Highly productive nonprofit farms can straddle the divide between community and commercial, as can for-profit farms that dedicate a significant portion of their time to community activities. Success for all UA approaches is deeply dependent on visibility, committed partnerships, strong leadership, and support from consumers, local municipalities, and funders.

The complementarity of community based and CUA missions provides multiple opportunities for creative collaboration that could deepen the impact of UA on local food systems and citizen quality of life. Purposeful policies that do not prioritize one form of UA over another are needed to ensure that the full promise of UA may be met.

Exploring Commercial Urban Agriculture

This report focuses on commercial viability, or what it takes to sustain an urban farm from its own production and sales, and asks the question largely unanswered in the literature: “How can a commercial urban farm realize the promises of UA and be profitable?”

The risks and costs for commercial urban farmers are

steep. The high cost of urban land and utilities; limited space to expand the business and increase production; and overall higher costs of living in cities; paired with the typically low-pay of agricultural work; and lack of agricultural resources, suppliers, and mentors make it difficult for UA to be commercially profitable.²⁴ Is it really possible to farm on a small urban parcel, make money doing it, and provide the social, ecological, educational, and community benefits that UA advocates describe?

Yes, CUA is possible—with caveats.^{25,26} This report describes the efforts of 14 urban farms to produce food commercially in the urban setting while undertaking many other missions, activities, and strategies (see full case studies in Appendix A). It highlights practices and strategies that may be valuable to other urban farmers, and considerations important for policy-makers and city planners who are unsure what role UA should play in their cities. Their stories are complemented by insights gathered through interviews of over 160 UA experts (see Appendix B).

This focus on commercial viability of urban farms is not intended to obscure the many other important social outcomes of UA. Instead, it seeks to provide a more in-depth look at the conditions and innovations which have allowed agricultural entrepreneurship to thrive in urban areas.

When asked about challenges impacting UA, the experts interviewed commonly mentioned issues of race, diversity, and equitable access to land and other resources. However, it is not within the scope of this report to critically review factors affecting the diversity of who is farming commercially in cities or the equitable access to resources that are the precursors to building a successful CUA business. Some strategies to specifically address these challenges within CUA are offered in this report,

21 The literature on qualitative positive impacts of urban farms and gardens is vast. For two excellent repositories of primary research, see Golden, S. (2013). *Urban Agriculture Impacts: Social, Health, and Economic: An Annotated Bibliography*. Agricultural Sustainability Institute at UC Davis. and Santo, R., Palmer, A., and Kim, B. (2016). *Vacant Lots to Vibrant Plots: A review of the benefits and limitations of urban agriculture*. Baltimore, MD: Johns Hopkins Center for a Livable Future.

22 Santo, Palmer, & Kim, Ibid.

23 Christian, S. (2010). A Growing Concern. *Earth Island Journal*. Accessed August 7, 2016 at http://www.earthisland.org/journal/index.php/eij/article/a_growing_concern/

24 FAO. (2007). Profitability and sustainability of urban and peri-urban agriculture. *Agricultural Management, Marketing and Finance Occasional Paper*. Retrieved from <http://www.fao.org/3/a-a1471e.pdf>

25 Lepeska, D. (2013). Betting the Farm: Is there an urban agriculture bubble? *Forefront*, 2(40). Philadelphia: Next City.

26 Heumann, L. (2013). “Urban agriculture for food security: Good but not enough”. *The Urban Fringe*, Berkeley Planning Journal. Retrieved from <http://ced.berkeley.edu/bpj/2013/03/urban-agriculture-for-food-security-good-but-not-enough/>.

but for more in-depth exploration of these issues, readers are directed to more comprehensive studies recently published.^{27, 28}

Structure of the Report

Urban farms vary widely in their missions, goals, operations, and limits. As a result, each urban farm has different opportunities and abilities to meet the many promises of UA outlined at the start of this report. It is the aim of this report that, through the recognition of these different urban farm types and how they define viability, UA advocates will be better able to frame the promise of UA based on farm type and community.

This report describes diverse models of CUA, using farmers' and other experts' words to illustrate farms' origins, production, market, sales, expenses, and the environments and policies that have helped or hindered their viability. Chapter 2 describes the authors' process for gathering and analyzing this information, while Chapter 3 provides brief descriptions of 14 case study farms (full case studies follow in Appendix C of this report).

Chapter 4 analyzes case study observations and farm data to summarize strategies, trends, and commonalities that affect commercial viability. As discussed previously, not all farm activities are specifically commercial in nature. Many have a social or community driven goal, such as food access, job training, or community beautification. Chapter 5 describes the social and environmental work of urban farms, focusing on urban farms that exhibit social enterprise missions.

Investors and innovators are being drawn into UA by the promise of controlled environment agriculture (CEA). While greenhouse production is a proven strategy in more rural areas, new vertical farms or plant factories suggest pathways to reinvigorate or repurpose urban industrial spaces. As an emerging UA strategy, Chapter 6 discusses its unique promises and challenges in the urban environment.

Holding the plurality of models, needs, and promises in CUA, Chapter 7 analyzes how programs, plans, and policies can support CUA development. "Local food" and UA are very popular today, and advocates must have a strong grasp of urban farms' operations, needs, and limits to develop systems that promote UA models that meet a municipality's needs.

The case studies that are summarized here represent businesses that have some maturity. Many emerging UA trends and technologies are too new and unproven to be studied for their viability. Yet, they are notable because they point the way for new UA businesses, policies, and plans (Chapter 8).

At the end of each chapter are recommendations and considerations for supporting CUA. They are derived from the findings from the case studies and the input from over 160 UA experts. Chapter 9 synthesizes some of the dominant themes that emerged for securing the promise of CUA:

1. Commercial urban farms often access land through extraordinary circumstances, including eliminating or reducing land costs that can be prohibitive to entering farming (urban or rural).
2. Commercial urban farms rarely depend on sales of agricultural products alone.
3. Commercial viability for urban farms depends upon continued demand for local food through farmers' markets, CSAs, and locally-centered restaurants and retailers.
4. Commercial urban farms cannot be all things to all people.
5. Commercial urban farms can provide important social and environmental benefits.

The chapter concludes with a compilation of all of the recommendations and considerations for supporting CUA as put forth throughout the report and is organized by the topic or user it addresses: urban farmers, federal policy, local-level policy and planning, programs, future research, and extension and education programs.

27 Ventura, S. and Bailkey, M. (2017). *Good Food, Strong Communities: Promoting Social Justice through Local and Regional Food Systems*. Iowa City: University of Iowa Press.

28 Reynolds, K. & Cohen, N. (2016). *Beyond the Kale: Urban Agriculture and Social Justice Activism in New York City*. Athens: University of Georgia Press.

Chapter 2: Study Methods

Using a case study approach, this research seeks to evaluate factors that have contributed to or inhibited the establishment and growth of commercial urban farms; distinguish policy, investment, and community actions that could foster development of more CUA; and identify strategic research, training, extension, and education needs to advance commercial urban farming. It concludes with recommendations and considerations for community-based organizations, policy makers, urban planners, and funders who may support UA.

For the purposes of this study, *commercial urban agriculture* (CUA) is defined as:

- **Commercial:** earned annual revenue greater than \$10,000 through multiple direct and wholesale channels, whereby income earned from product sales accounts for a sizeable portion of total earned revenue. We used \$10,000 as a minimum annual revenue to (1) eliminate gardeners or hobbyists, (2) focus on farms that are at least ‘side-businesses,’ where farm revenue may provide supplementary income for the farmer, and (3) enable more consistent collection of other data on farm operations and earnings, as extremely small farms would not likely record this information.
- **Urban:** includes peri-urban areas; using Weeks’ (2010) definition, urban and peri-urban places are “concentrations of people whose lives are organized around nonagricultural activities,” where agriculture is not a primary land use, and there may be competing land uses.²⁹
- **Agriculture:** for the purposes of this study, we focus on operations that primarily grow food for human consumption, though some also grow flowers or engage in other value-adding activities.

Understanding Perspectives on Commercial Urban Agriculture

An extensive literature review coupled with consultations with UA researchers identified opportunities and threats to the economic viability of CUA. This review included urban farms’ own online materials, popular media presentations of UA, past UA studies, peer-reviewed journal articles, and investigation into organizations and policies that promote urban farming.

Snowball sampling—where interviewees are asked to recommend future interviewees from their personal networks—was used to gather information and perspectives on CUA and identify potential case study farms. During interviews with UA leaders, they were asked to identify other UA leaders, key informants, supportive policy and planning officials, potential study advisors, and possible CUA case study farms.^{30,31} We interviewed over 160 individuals, including, farmers (50), advocacy organization representatives and community advocates (24), researchers (19), urban farm educators (18), urban farm service providers (17), foundation representatives (11), municipal and federal government officials (10), and legal professionals with UA experience (7) (see Appendix B).

From these interviews, the authors identified seven advisors with expertise in food systems research and planning, community organizing, city planning, farmer education, advocacy, food business development, and the economic and social impact of urban farms. These advisors reviewed interview protocols, provided feedback on case studies, and reviewed findings.

29 Weeks, J.R. “Defining Urban Areas.” Chapter in *Remote Sensing of Urban and Suburban Areas*, Rashed, T. and Jurgens, C (eds.) Springer Science+Business Media B.V. 2010. pp. 33-45 DOI 10.1007/978-1-4020-2385-7_3.

30 Wasserman S, Pattison P, Steinley D. Social Networks. *Encyclopedia of Statistics in Behavioral Science*. Hoboken, NJ: John Wiley & Sons, 2005.

31 Handcock, M.S. & K.J. Gile. 2011. “Comment: on the concept of snowball sampling.” *Sociological Methodology*, 41:1, pp. 367-371. DOI: 10.1111/j.1467-9531.2011.01243.x

Selection of Commercial Urban Agriculture Case Study Farms

Expert interviews and review of urban farm websites and other social media highlighted many urban farms across the US for consideration as case studies. The authors also visited more than 50 farms in 16 cities to observe their operations, learn about their missions, and evaluate the extent to which they fit the criteria of “commercial urban agriculture.”

Four major criteria were used to refine this list to the 14 selected case study farms: gross revenue, urban location, geographic region, and farm maturity. The selected CUA farms earned a minimum of \$10,000 annually from the sale of agricultural products for the reasons stated in the above definition of ‘commercial.’ Farms could supplement income through grants or other on-farm activities, but 50 percent of gross revenue had to be from sales of food grown in an urban area.

Second, the farm had to primarily produce in an urban area. While some farms have rural holdings, the majority of earnings came from an urban farm location. Farms also

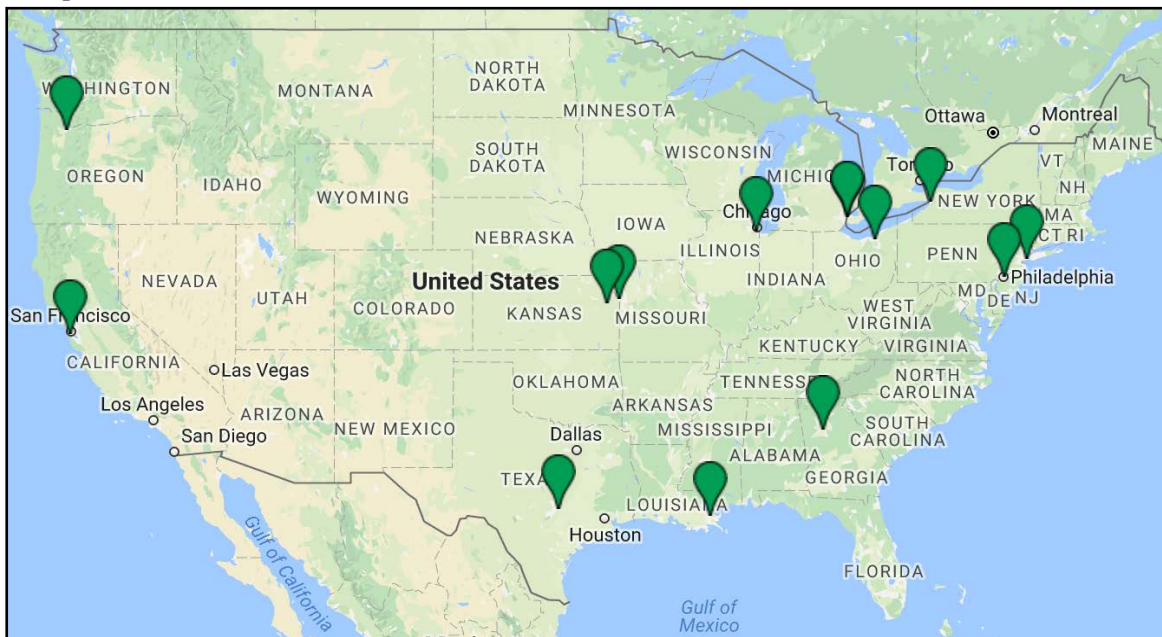
had to principally be selling agricultural products (fresh fruits, vegetables, or flowers), while some value added activities did occur.

Third, the investigators aimed to represent diversity of production regions. The nature of snowball sampling led to concentrated areas of UA activity, including both coasts of the United States and the Midwest and Great Lakes regions. An effort was made to profile farms in cities with different demographic, economic, cultural characteristics, and growing climates.

The final criterion for case study selection was farm maturity, with a minimum of 3 years in business. Though it takes much longer than 3 years for farms to reach business stability, it is expected that most farms are out of their higher-risk start-up phases during which operating capital may come from outside sources. Indeed, USDA Economic Research Service findings show that farmers 45 years old or younger farming less than 10 acres have over a 50 percent exit rate in the first 5 years.^{32,33} The authors chose 3 years as a minimum age given the emergent nature of commercial urban farms.

The final 14 case study farms reflect a diversity of manager demographics (age, race, ethnicity, gender), geographies (cities of different sizes and densities), production environments (outdoor ground-level, rooftop, controlled-

Figure 1. Location of 14 selected commercial urban farms that met the criteria of the research team to be considered as case study farms, and agreed to participate in this study. Two farms are located in Detroit, MI.



32 MacDonald, J.M., P. Korb, and R. Hope (2007). “Experience Counts: Farm Business Survival in the U.S.” *Amber Waves*, April 2007. http://www.ers.usda.gov/amber-waves/2007-april/experience-counts-farm-business-survival-in-the-us.aspx#V_1EHZMrKR

33 Though the referenced study uses five year data that corresponds to the Census of Agriculture, the relatively new emergence of commercial urban farms and the lack of urban agriculture census data cannot track these five year exits.

environment), and business structures (for-profit, nonprofit). Given constraints of time and budget, the research team limited case study farms to those within the continental United States (see Figure 1).

The research team, advisors, and expert interviewees were very eager that controlled environment agriculture (CEA) farms be included. This presented two primary problems. First, because CEA is an emergent industry in the United States, many CEA businesses are less than 3 years old. Second, the research team found through expert interviews that the largest and most well-known CEA operations were extremely private about their businesses strategies, specifically their technology which they consider to be proprietary information or trade secrets (See Chapter 7 for more on CEA farms and technology). This was confirmed by the research team’s experience after unsuccessfully attempting to recruit a single large-scale, for-profit CEA operation as a case study despite multiple attempts and encouragement from mutual professional and personal connections.

The authors successfully identified and profiled commercial urban farms started and managed by producers from diverse racial, socio-economic, and ethnic backgrounds who had long-term ties to the surrounding community (e.g., Karen Fresh, Our School at Blair Grocery, Brother Nature, Growing Home). However, the study’s restriction to only commercial focused (as defined above) urban farms that were willing to share business information led to the selection of mostly farms primarily operated by college-educated, Caucasian farmers who live outside or only recently migrated to the community where the farm is located.

Case Study Interview Protocol

A standardized interview survey instrument (Appendix A) was used to collect quantitative and qualitative data about case study farms and their current and future planned activities (see Table 1 for example questions). Key sections

Table 1. Example questions asked of 14 commercial urban agriculture case study farmers from across the United States

Subject Area	Quantitative Information	Qualitative Information
Land, Infrastructure and Natural Resources	What are your total farm acres and the acres under cultivation? What is the length of your growing/sales season? What are the costs of adding infrastructure? Do you have water access and what are the associated costs of water delivery?	What was the land access process like? What are your growing methods? What on-farm infrastructure do you have? What soil management challenges did you have?
Crops	How many different crops are grown on the farm?	What certifications does the farm have and why? What products are most profitable?
Marketing and Sales	What are your earnings from farm products sold by market channel for FY2015?	Which farm sales channels work the best for you and why? Who are your competitors? Have you experienced growth or change in your customer base?
Financial Management	What were your total operating costs for FY2015? Do you have any loans or grants? If yes, for what amount?	When and how do you track metrics or evaluate the business? What are your key measures of success?
Employees	What were your total wages paid out in FY2015? What were your volunteer vs. paid hours? What is the starting salary for employees?	What is the composition of employees (production, administration, sales, etc.)? How have you found employees? How do you manage volunteers? Do you have training programs for employees or students?
Resources & Policies	What access to capital did you have to start? Did grants or gifts helped you start?	Where do you go for farm training and education? What policies have made it easier or harder to farm in the city? What is the farm’s biggest asset in becoming viable? What is the most pressing challenge to farm viability?
Other Farm Services	What percentage of time is spent on other farm service activities? Who does this? What percentage of revenue is generated from these activities, if any?	What kinds of education and training are you providing in your community? Who manages these additional activities?

of the survey included farmstead design, production, crop yields, and income for the one production season (2015). Interviewees received the protocol in advance of the interview to become familiar with the questions. Interviews were conducted at the farm and lasted 2 to 4 hours, enabling the farmers to share their origin stories and aspirations, detail production strategies, provide a tour of their operations, and highlight their UA innovations. During these 2-day site visits, 1- 2 hour interviews with other key informants provided much deeper background on the context for success of the case farm.

Expert interviews and research made clear that urban farms, even those that are commercially-driven, attempt to fulfill other social and ecological goals.³⁴ Interviewers asked the farmers about activities related to youth engagement, job-readiness training, school tours, and community development based on their proximity to urban people curious about farming and food.³⁵

Farmers were asked to describe other services their farms provide to the local community, which may include education, community development, environmental improvements, and other non-revenue-generating activities. When such services were described, farmers were asked what percent of time was spent on these activities, and whether farm sales or other revenue supported these activities. The mix of social and environmental missions alongside profit are evidence of social entrepreneurship, or using a revenue-generating business to achieve social and environmental outcomes that benefit a larger community.³⁶

Case studies also include community descriptions. While city policies are important, the unique characteristics of the immediate communities surrounding farms—their land uses, demographics, and history—impact farms' development and growth potential. Often farms exhibit unique adaptive characteristics to integrate into their communities, which planners, policy-makers, and future urban farmers should consider as they expand UA.

Interviews of Other Urban Agriculture Farmers and Supporters

Interviews with more than 160 UA experts uncovered many innovative policies, business plans, approaches, and technologies that did not fit into the case study framework. While many of these innovations are new, they may have promise in other cities and for other farms. One-hour interviews with policy-makers, farmers, or others who created or manage these innovations were conducted and, when possible, the research team observed these innovations at work. Chapter 7 illustrates these innovations in more detail, largely in interviewees own words.

34 Dimitri, C., L. Oberholtzer, A. Pressman. 2016. "Urban agriculture: connecting producers with consumers." *British Food Journal*, 118:3, 603-617. <http://dx.doi.org/10.1108/BFJ-06-2015-0200>

35 Vitiello & Wolf-Powers, 2014.

36 For a discussion of the difficulty of measuring social enterprise, see, Trelstad, B. 2008. "Simple Measures of Social Enterprise." *Innovations*, 105-118.

Chapter 3: Case Study Briefs

Each of the 14 farms highlighted in this study have unique approaches and circumstances that have been key to their growth and development. The full case studies synthesize findings from site visits as well as interviews with other community members and local policy makers (Appendix C).

The following case study briefs provide a snapshot of each farm's start-up, size, markets, production and business strategies, and manager education. At the top of each brief is a table highlighting key features about each farm (Table 2). A summary of these key features is provided to help readers understand the diversity of farming strategies employed by case study farms (Table 3).

In addition, the case studies provide the opportunity to explore several topical themes relevant to CUA development that support the in-depth analysis in the following chapters (Table 4). Readers may choose to read all or specific case studies, depending on areas of interest.







These themes include:

- Land Access
- Urban Ag Policy
- Full Time Owners
- Community Revitalizing
- SNAP/Double Up Bucks
- Value Added Products
- On-farm events/Agritourism
- Farmer Food Security
- Multi-farm efforts
- Education and Training
- Incubator Farms/Training
- Animals
- Specialty Crops







Commercial Urban Agriculture Full Case Study Sections (Appendix C)

- History
- Community Description
- Farm Description
- Production Practices
- Business Structure
- Marketing and Sales
- Employees
- Other Activities/Services
- Support
- Policies Impacting Success
- Assets and Challenges

Table 2. Description of commercial urban farm highlights or key features

Farm overview	Description	Representative image
Farming strategy	Soil: producing crops in soil either directly in ground or raised beds	
	Controlled environment agriculture (CEA): producing crops in structures to allow control of heat, light, temperature, water, and humidity	
	Roof top: producing crops in restricted volumes of soil on roof tops	
Total farm size	Number of acres	n/a
Area cultivated in 2015	Number of acres	n/a
Revenue strategy	Production: majority of revenue from sales of farm products	
	Training: nonprofit farms focused on education and training, with majority of revenue received as grants, gifts, and educational program revenue	
	Hybrid: primarily production with some training or education and site-based fundraising	
Business structure	For profit: sole proprietor, LLC, or S-corp	FP
	Nonprofit: 501(c)(3)	NP
	Hybrid: split between both for profit and nonprofit entities	FP + NP

Source for images: © Aleksey Vanin - Dreamstime.com

Farm overview	Description	Representative image
Crop choice	Specialized: relying upon a few crops for the majority of farm income	
	Diversified: producing a diversity of crops for farm sales	
Season extension	Using strategies such as growing in unheated high tunnels or applying plastic mulches on planting beds to extend the production season	
Primary market	Direct to consumer: farmers markets or community supported agriculture (CSA)	
	Direct wholesale: traditional wholesale channels (includes sales to restaurants, grocery stores, and other retailers.)	
Manager education	Self taught, training program, rural or urban farm work, in-house training, formal agriculture education	

Source for images: © Aleksey Vanin - Dreamstime.com

16 Table 3. Key features for 14 commercial urban agriculture businesses profiled. Data based on 2015 farm practices.

Farm name and location	Description	Year started	Farming strategy	Total farm acres	Acres farmed	Revenue strategy	Business structure	Cropping strategy	Season extension used	Primary markets	Manager education/training
Mycopolitan Mushroom Co., Philadelphia, PA	Mushroom production in an industrial space	2013	CEA	0.1	0.1	Production	For profit LLC	Specialized	Yes	Direct wholesale	Self-taught
Little City Gardens, San Francisco, CA	Risky business on land not secured	2010	Soil	0.8	0.3	Hybrid	For profit LLC	Specialized	No	Direct wholesale	Self-taught, rural farm work
Karen Fresh Garden, Kansas City, KS	New Americans rooted through farming	2012	Soil	0.5	0.5	Production	For profit sole proprietor	Diverse	No	Direct to consumers: farmers markets	Training program, rural farm work
Our School at Blair Grocery, New Orleans, LA	Rebuilding a community through farming and food access	2008	Soil	1	0.7	Training	Hybrid	Specialized	Yes	Direct wholesale	Training program
Rising Pheasant Farm, Detroit, MI	Focus on efficiency and costs to farm debt free	2009	Soil	0.75	0.75	Production	For profit LLC	Specialized	Yes	Direct wholesale; farmers markets	Self-taught, urban farm work
Growing Home, Chicago, IL	Providing job readiness skills through farming	2002	Soil	1.5	0.9	Training	Nonprofit 501(c)(3)	Diverse	Yes	Direct to consumers: farmers markets	In-house training
Brother Nature Produce, Detroit, MI	Integrating urban and rural production and value-added products	2009	Soil	1 urban and 7 rural	1	Production	For profit LLC	Specialized	Yes	Direct to consumers: farmers markets	Self-taught, formal agriculture education
Side Yard Farm, Portland, OR	Chef's hobby becomes vibrant farm business	2009	Soil	1.8	1.2	Hybrid	For profit LLC	Specialized	No	Direct wholesale	Self-taught, urban farm work

Farm name and location	Description	Year started	Farming strategy	Total farm acres	Acres farmed	Revenue strategy	Business structure	Cropping strategy	Season extension used	Primary markets	Manager education/training
Wilson Street Farm, Buffalo, NY	Family homestead incubates a farm business	2008	Soil	1.8	1.5	Production	For profit sole proprietor	Diverse	No	Direct to consumers: farmers markets	Self-taught, rural farm work
Love is Love Farm at Gaia Gardens, Decatur, GA	Unique partnership with homeowners secures farm's future	2008	Soil	1.5	1.5	Production	For profit LLC	Diverse	Yes	Direct to consumers: CSA	Rural farm work
Springdale Farm, Austin, TX	Multiple business ventures support farm's growth	2008	Soil	5	2	Hybrid	Hybrid (s-corp/501(c)(3))	Diverse	Yes	Direct wholesale	Self-taught
Brooklyn Grange, Brooklyn and Queens, NY	Intensive rooftop farm managed for profit per square foot	2009	Rooftop	2.5	2.4	Hybrid	Hybrid	Specialized	Yes	Direct wholesale	Self-taught
Mellowfields Farm, Lawrence, KS	Incubating a business to eventually scale up on rural land	2007	Soil	3	3	Production	For profit sole proprietor	Diverse	No	Direct to consumers: farmers markets and CSA	Training program, rural farm work
Green City Growers, Cleveland, OH	Year round employment through hydroponic lettuce	2013	CEA	5.2	3.3	Training	Nonprofit 501(c)(3)	Specialized	Yes	Direct wholesale	In-house training

18 Table 4. Topical themes explored in commercial urban agriculture case studies

Farm	Land access	Urban ag policy	Full-time owners	Community revitalizing	SNAP/ double-up programs	Value-added products	On-farm events/ agritourism	Owner food security	Multi-farm efforts	Provides education and training	Incubator farm trainee	Livestock	Signature product
Mycopolitan Mushroom													Mushrooms
Little City Gardens	X	X		X		X	X						Flowers
Karen Fresh Garden			X					X	X		X		Ethnic vegetables
Our School at Blair Grocery	X	X		X			X			X	X	X	
Rising Pheasant Farm	X	X	X	X	X			X					Sprouts
Growing Home		X		X	X		X			X			
Brother Nature Produce	X	X	X	X		X		X					Salad mix
Side Yard Farm			X			X	X			X			Flowers
Wilson Street Farm	X		X		X			X	X				
Love is Love Farm at Gaia Gardens			X		X		X		X	X			
Springdale Farm	X	X			X		X		X	X		X	
Brooklyn Grange	X		X				X			X			
Mellowfields Farm	X	X	X		X				X	X	X		
Green City Growers	X		X	X						X			Lettuce

Mycopolitan Mushroom Company, Philadelphia, PA

Mushroom Production in an Industrial Space

Year started: 2013 • Total farm size: 0.1 acre • Area cultivated in 2015: <0.1 acre

Themes: Signature product – mushrooms



FP



About the Farm

Tyler Case and Brian Versek, mushroom enthusiasts with science backgrounds, were eager to start a specialty mushroom-growing operation to test their skills. In 2012, they found an ideal home for what would become Mycopolitan Mushroom Company in an unlikely place: the dark basement of an old warehouse in an industrial area of Philadelphia. They signed a 3-year lease with landlord, The Common Market, hired fellow enthusiast Dan Howling, and constructed underground high tunnels, realizing their mushroom-farming dream.

Production, Sales and Marketing

Mycopolitan grows a variety of specialty culinary mushrooms including King Trumpet, Nomeko, and Shiitake. Mushroom spawn is suspended in bags of sterilized substrate, the growing medium from which mushrooms fruit. Mycopolitan can take advantage of several waste streams for its substrate, including grain from a local flour mill and sawdust from a local saw mill.

Philadelphia restaurants are fans of the results, and Mycopolitan has found success at farm-to-table restaurants, especially because mushroom season runs counter to other locally grown food. The business wrote a food safety plan and is pursuing Good Agriculture Practices (GAP) certification, which will be particularly helpful in marketing to institutions. Mycopolitan already appears on menus at the University of Philadelphia, its first institutional customer.

Community and Policy Support

Because Mycopolitan is relatively unprecedented in Philadelphia, it does not face many of the same challenges that outdoor, soil-based farms do. The nature of the business—small, underground, utilizing former industrial



A first-flush of shiitake mushrooms bloom shaggy caps from a brick of substrate.

space with few productive alternative uses—does not create land use issues. Case, Versek, and Howling still depend on a strong internet community of mushroom growers for support and guidance as they refine their skills and business.

Assets and Challenges

The business benefited from an early capital boost from an investor and part-owner in the business and The Common Market's eagerness to bring on tenants. It has already expanded its production facilities to increase production and hopes to pay its employees better. The challenge comes in figuring out the key next steps: with few resources and no local specialists, Mycopolitan is charting new ground for urban mushroom farms.

Little City Gardens, San Francisco, CA

Risky Business on Land Not Secured

Year started: 2010 • Total farm size: 0.75 acres • Area cultivated in 2015: 0.33 acres

Themes: Land access, Urban ag policy, Community revitalizing, Value-added products, On-farm events, Signature product – flowers.



About the Farm

Caitlyn Galloway and Brooke Budner found the San Francisco property that would become Little City Gardens in 2009. The irregularly shaped, garbage-strewn lot would soon become an urban farm as owner after owner struggled to develop the land, which had been plagued with issues including a high water table and a neighborhood wary of new development. Neighbors began to visit and enjoy the farm more frequently, as what Galloway describes as the “experiment” grew its customer base.

Production, Sales and Marketing

The farm benefited from San Francisco’s temperate climate to grow food and flowers 10 months each year. The farm became known for its salad greens, which often included sprouts and edible flowers popular among the city’s chefs. It also grew more traditional crops like radishes and turnips alongside less common vegetables like cardoons and artichokes.

It offered a small CSA and advertised any surpluses in greens or vegetables through social media, on which it had a strong following. Little City Gardens also grew cut flowers and sold them in bouquets through a few local retailers.

Community and Policy Support

Little City Gardens was nearly closed when the City of San Francisco determined it was illegal to sell anything produced on the farm. Galloway and Budner became activists, petitioning the city to change the law along with other local UA advocates. They succeeded, winning the right to farm commercially in any city zone under 1 acre.



The seed-starting room and potting shed at Little City Gardens is constructed of found materials.

The farm continued to face development pressure, however, and the neighborhood became one of the strongest support networks for Little City Gardens. The local neighborhood association’s “Save the Farm!” campaign was broadly supported by the community and San Francisco’s local food advocates.

Assets and Challenges

Galloway says the land which was made available for Little City Gardens and the buy-in of the neighbors whose properties surrounded it was one of its biggest assets. It lost its land lease at the end of 2016 when the owners were finally cleared to develop the ¾ acre property into a private school. The community was devastated by the loss of Galloway’s “experiment,” one she believes was ultimately successful.

Karen Fresh Gardens, Kansas City, KS

New Americans Rooted through Farming

Year started: 2012 • Total farm size: 0.5 acres • Area cultivated in 2015: 0.5 acres

Themes: Full-time owners, Owner food security, Multi-farm efforts, Incubator farm trainee, Signature product – ethnic vegetables.



FP



About the Farm

Lay Htoo, a Burmese refugee settled in Kansas City, enrolled in a farmer training program called New Roots for Refugees. Graduating ahead of schedule in its inaugural 2011 class, she honed her business and production skills as she learned to grow American vegetables alongside those she grew in Burma. Upon graduation, she and her family purchased a house with a yard and began farming in 2012, naming it for the Karen ethnic group of which they are part. The farm is a source of supplemental income and provides for many of the family's food needs.

Production, Sales and Marketing

A high-tunnel, built with the help of the NRCS EQIP program, produces spinach all winter while spring, summer, and fall proffer a wide variety of crops—from kale and zucchini to Thai chili peppers and lemongrass.

Lay Htoo sells produce at two farmers markets in Kansas City, where she had also sold when enrolled with New Roots for Refugees. Word of mouth and good customer service keep customers coming back, says Lay Htoo through an interpreter. She is shy about speaking English and does not use social media, instead focusing her marketing and brand on her farmers market displays: “The merchandising is great, and the produce is really pretty,” she says proudly.

Community and Policy Support

Kansas City, KS, has a large refugee population, including many Burmese who patronize Lay Htoo's stands and who also farm. Lay Htoo and the three other women with whom she graduated from the New Roots for Refugees training program have become a close-knit community of urban farmers.



Rows of spinach ready for harvest in Karen Fresh Garden's high tunnel.

New Roots, which is a collaboration between Catholic Charities of Kansas City and Cultivate Kansas City, an urban farming advocacy organization, provides continued support to graduates. It assists with limited direct wholesale sales, connects farmers to social services, provides assistance with taxes and other business paperwork and requirements, and even offers purchase of compost and marketing supplies at cost from its bulk orders. In 2010 and 2016, New Roots received funding through National Institute of Food and Agriculture's (NIFA) Beginning Farmer and Rancher Development Program (BFRDP).

Assets and Challenges

Lay Htoo is grateful for the support she has received from New Roots, especially from its trainers with whom she has developed lasting friendships. They also help her with paperwork, with which she still has difficulty because of her English proficiency. But, Lay Htoo plans to farm “forever” in Kansas City—the farm is the greatest assurance that she will always be able to feed her family.

Our School at Blair Grocery, New Orleans, LA

Rebuilding a Community through Farming and Food Access

Year started: 2008 • Total farm size: 1 acre • Area cultivated in 2015: 0.66 acres

Themes: Land access, Urban ag policy, Community revitalizing, On-farm events, Provides education and training, Incubator farm trainee, Livestock.



About the Farm

Nat Turner had taken several trips to New Orleans' decimated Lower Ninth Ward after Hurricane Katrina when he finally decided to move there from New York City in 2008. The former high school teacher began gardening on the empty lots of the Lower Ninth Ward and hatched a plan for troubled neighborhood youth: build an alternative school that pairs education with part-time work on a production farm to empower youth to make better life choices.

Our School at Blair Grocery (OSBG) comprises several lots purchased and leased from the New Orleans Redevelopment Authority (NORA) where Turner, his staff, and students grow vegetables and manage goats and chickens year-round. The school building, a former grocery store, gives the farm and school its name.

Production, Sales and Marketing

OSBG specializes in arugula and other high-value greens, including microgreens in its greenhouse. It supplements the nutrient-poor soil of the Lower Ninth with compost comprised of discarded produce from a local grocery store.

Restaurants are OSBG's biggest customer, especially as farm-to-table fever has taken over New Orleans. Community members also buy food, but at a price much lower (or free) to increase access in the neighborhood.

But the center of OSBG effort is education, and over 28 percent of their revenue is from educational events, trainings and speaking events. An additional 17 percent of funding is from grants.

Community and Policy Support

OSBG received a lot of early attention and support for its efforts as the Lower Ninth Ward struggled to rebuild from the storm. USDA and several local and national foundations granted money to the organization.



The former Blair Grocery, which served as a school as the property and surrounding parcels began to operate as a farm.

Turner was able to purchase land from the NORA after an intern compiled several UA policies from cities around the country to suggest a variance for the farming use. It was an early step for New Orleans, which did not have an UA policy. New policies have been put in place and are being amended to be more amenable to farmers' needs.

Assets and Challenges

OSBG's ambitious goals and wide-ranging praise were an asset at its start, but financial challenges quickly cast a shadow over the organization. It has been rebuilding since, redefining its mission and scope, and preparing for new ventures to increase food security in the neighborhood. A constant stream of volunteers from around the country visit the farm to assist with projects, helping to lighten the load of so many moving pieces.

Rising Pheasant Farm, Detroit, MI

Focus on Efficiency and Costs to Farm Debt Free

Year started: 2009 • Total farm size: 0.75 acres • Area cultivated in 2015: 0.75 acres

Themes: Land access, Urban ag policy, Full-time owners, Community revitalizing, SNAP/Double-up programs, Owner food security, Signature product – sprouts.



About the Farm

Carolyn Leadley, her husband, and their children moved to the Farnsworth neighborhood on the east side of Detroit to give a permanent home to Rising Pheasant Farm. Leadley started farming in a rented attic in 2011, and has expanded to 10 lots around her home, comprising the family's sole source of income. Her deep commitment to reuse, recycling, and low-impact solutions has resulted in creative strategies to keep costs low. An iconic example is the farm's Dutch cargo bicycles for delivery and advertising of farm products, which also serve as the family's primary mode of transportation.

Production, Sales and Marketing

Shoots are Rising Pheasant's backbone—sunflower, sweet pea, mixed radish, and buckwheat—produced year-round in the farm's greenhouse. Leadley's other 10-15 field crops are produced from April through October, an extended season with the help of 4 high tunnels. The majority of the shoots are sold directly to a few restaurants in the city. The farm also has a table at Detroit's Eastern Market, where it offers a 'market-based' CSA to give customers flexible choices on crops available each week. The Eastern Market's Electronic Benefits Transfer (EBT) and Double-up Food Bucks programs have increased their SNAP-recipient customers.

The productivity of the farm has improved over time, such that Leadley now hires one part time employee (30 hr/week) during the season, to help with production and bike deliveries.

Community and Policy Support

The 2013 passage of Detroit's urban agriculture ordinance legalized Rising Pheasant's farming activities. They purchased three of their lots from private owners, and the rest from the City of Detroit. A 'sidelot' program helped



Pea and sunflower shoots are grown in the greenhouse for year-round harvest at Rising Pheasant Farm.

expedite purchases of vacant adjacent lots. The Detroit Land Bank Authority is now managing all vacant parcels in the city.

Keep Growing Detroit, a local urban gardening and farming organization, has been a critical supporter in sharing grant opportunities, resources, and training. The National Resources Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP) grants for high tunnels have helped Leadley produce year round and maximize productivity of her very small farm.

Rising Pheasant Farms owes much of its expansion to Leadley's strategic application and creative use of small grant funding available to urban farmers in Detroit to build greenhouses, install heating, and buy small scale equipment.

Assets and Challenges

The availability of land around their home has been a critical asset, allowing Leadley to rapidly and inexpensively expand the farm. However, some of these lots have had trouble with soil contamination, which requires careful testing, plant management, and compost to build raised beds.

Growing Home, Chicago, IL

Providing Job Readiness Skills through Farming

Year started: 2002 • Total farm size: 1.5 acres • Area cultivated in 2015: 0.9 acres

Themes: Urban ag policy, Community revitalizing, SNAP/Double-up programs, On-farm events, Provides education and training.



About the Farm

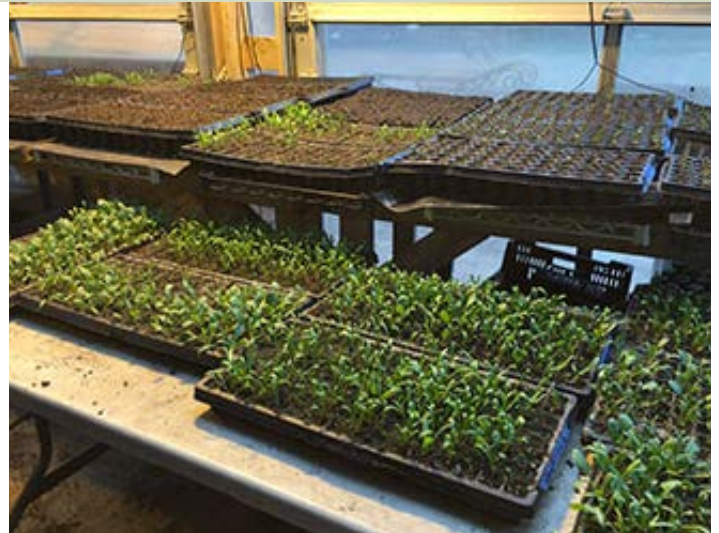
William “Les” Brown, founder of the Chicago Coalition for the Homeless (CCH), hired Harry Rhodes in 2001 to create a program that used farming to help recently incarcerated or otherwise displaced individuals develop job readiness skills to re-enter the work force. Since 2002, Growing Home has graduated over 400 people from its job training program, contributed to rewriting the city’s zoning policy, and has made a significant impact on Chicago’s UA movement. As a social enterprise, Growing Home integrates production and marketing of produce with employment and job training for about 40 individuals. Growing Home’s graduate recidivism rate within 3 years is around 13 percent compared with 50 percent for the State.

Production, Sales, and Marketing

Growing Home operates a certified organic farm (only one in Chicago) on about 0.9 acres in the Englewood community on the Southside (Wilson Street and Honore Street). The farm infrastructure includes five high tunnels, outdoor growing areas, a farm stand, and a two-story building housing administrative offices, classrooms, a wash station, walk-in cooler space, and storage and potting areas. Sales of over 50 different crops and 200 varieties provides about one third of the overall farm budget. While farm markets and farm stands are their primary sales outlets now, they hope to expand their restaurant and other direct wholesale in the future to provide more financial stability.

Community and Policy Support

The majority of funding for the programs hosted by Growing Home comes from support of donors, grants, and foundations committed to the same goals of individual development through meaningful work and self-reliance.



The seed-starting room at Wood Street Urban Farm.

As a result of their own challenges with setting up an urban farm, Growing Home partnered with several other UA organizations to rewrite Chicago zoning policy to support UA. The 2011 UA ordinance further defines zones for UA activity and sales, and exempts urban farms from some landscaping and parking requirements of other businesses.

Assets and Challenges

The combination of fast-paced production and customer interactions at market give Growing Home trainees ample opportunity to hone job skills and interests. Growing Home has succeeded as a social enterprise that aims to promote urban farming, provide job training and affordable food, all while paying a living wage to its trainees. As the minimum and living wages continue to rise in Chicago, however, securing grant funding for their programs will be the most persistent challenge going forward.

Brother Nature Produce, Detroit, MI

Integrating Urban and Rural Production and Value Added Products

Year started: 2009 • Total farm size: 1 urban acre + 7 rural acres • Area cultivated in 2015: 1 acre

Themes: Land access, Urban ag policy, Full-time owners; Community revitalizing, Value added products, Owner food security, Signature product – salad mix.



About the Farm

The North Corktown neighborhood of Detroit is now home to Brother Nature Produce. Greg Willerer quit teaching in 2008 to farm full time at Brother Nature Produce. Olivia Hubert, a seasoned horticulturist, joined him as partner in business and life. They provide the majority of the labor on the farm but have a few committed volunteers who share their vision for a renewed Detroit. The farm includes 2 houses and 10 city lots, just under 1 acre, plus a recently acquired rural 7-acre farm 1 hour north of Detroit.

Production, Sales and Marketing

Brother Nature Produce's production is centered on their salad mix, which has become its signature product. The five to eight species in the mix changes over the season, but Olivia has perfected mild, medium and spicy green combinations. Brother Nature adds value to its mix by selling salads ready to eat at the Eastern Market. To extend the season, they have high tunnels and are also breeding and selecting varieties of greens that will overwinter in their environment. Three farmers markets account for the majority sales, but restaurants and a few committed CSA members add diversity. But, the farm produces more than just income. It ensures the family's food security.

Community and Policy Support

Through grants available to vendors at the Eastern Market, Willerer has been able to purchase labor-saving equipment and a tractor that he also uses to provide custom tillage to neighboring farms. Local nonprofit Keep Growing Detroit was critical in early days to help with marketing and with projects around the farm. The Detroit UA Ordinance has allowed Brother Nature to farm legally.



Interior of a high tunnel at Brother Nature Produce.

Assets and Challenges

The increase in tourism and visitors at the Eastern Market has led to a decrease in sales with fewer long term residents interested in facing the crowds. Other markets, as well as value-added salad mixes and custom work have helped to keep Brother Nature thriving. Hubert is currently creating new vinegars and other products that they hope will leverage their farm's product to higher returns.

Despite their prominence as leaders in Detroit's urban farming movement, Willerer and Hubert have struggled to purchase the land they are currently cultivating from the Detroit Land Bank. While UA is now recognized as a legal use of urban land, they fear that some in the city may prefer land being held for other uses. The support of their neighbors and community, as well as adding a rural farm, helps secure the future of Brother Nature Produce, regardless of other visions for land in Detroit.

Side Yard Farm, Portland, OR

Chef's Hobby Becomes Vibrant Farm Business

Year started: 2009 • Total farm size: 1.75 acres • Area cultivated in 2015: 1.2 acres

Themes: Full-time owners, Value-added products, On-farm events, Provides education and training, Signature product – flowers.



About the Farm

Stacey Givens came to farming through the kitchen. A professional chef, she tended restaurant gardens before deciding to start her own urban farm in Portland's Cully neighborhood.

Givens owns and operates The Side Yard Farm & Kitchen, a farm and catering company. The farm is on two lots in the neighborhood and includes an office-building, cold storage, and wash stations.

Production, Sales, and Marketing

The Side Yard Farm grows a variety of vegetables, specialty culinary herbs and edible flowers, and specializes in high-value, quick-succession crops. Portland's temperate growing season is extended by the high tunnel erected with the help of the NRCS EQIP program, allowing Givens to grow hardy greens to supply her catering business throughout the winter. The Side Yard is also a frequent site for paid farm dinners and events. Givens follows organic practices but does not feel the need to certify organic: "The chefs know I'm organic [in my growing practices]. That's the only way to grow in Portland."

The Side Yard Farm primarily sells direct wholesale to restaurants and to its own catering company. The farm relies on word of mouth to find new restaurant clients, and Givens has strong relationships with area chefs from her years in the kitchen. On-farm dinners catered by the Side Yard's catering company are another valuable income stream. Though the catering side of the business helps keep the farm viable, Givens says she cannot imagine one without the other, as the farm is part of the business philosophy.



Side Yard Farm's sign from the street, with the one-acre plot and primary outbuildings in the background.

Community and Policy Support

Portland's Urban Growth Boundary makes finding affordable farm land difficult within city limits. Though the city does not plan to promote UA, Steve Cohen, Manager of Food Policy and Programs at the City of Portland Bureau of Planning and Sustainability, has provided critical assistance to the Side Yard Farm and other farmers by helping to educate and coordinate city bureaus to make the regulatory burdens on farms reasonable and fair.

Assets and Challenges

Though the majority of the farm's expenses are its two part-time farm managers' pay, the most pressing for Givens are the costs laid by city policies. High water costs, permitting fees, and poor coordination at the City level cost the farm upwards of \$15,000 during the 2015 construction of its newest site. Luckily Givens' landlords have been sympathetic to her plight and generously assisted her in paying for fees or waving rent as she battled to install the farm.

Wilson Street Urban Farm, Buffalo, NY

Family Homestead Incubates a Farm Business

Year started: 2008 • Total farm size: 1.75 acres • Area cultivated in 2015: 1.5 acres

Themes: Land access, Full-time owners, SNAP/Double-up programs, Owner food security, Multi-farm efforts.



FP



About the Farm

When Mark and Janice Stevens and their seven children moved from rural New York State to the East Side of Buffalo, they did not expect to become some of the city's highest-regarded urban farmers—they merely wanted to continue to homestead and practice self-reliance. But, the family's farm, comprised of 25 vacant lots in the economically-depressed East Side, soon became a side-business and a stop for tours on subjects from local food to city planning.

Production, Sales, and Marketing

The Stevenses grow a wide variety of vegetables for as long as Buffalo's climate will allow, aided by a small high tunnel. They work hard to improve their rocky, nutrient-depleted soil with compost from a local cooperative they helped to start as well as cover crops, and irrigate their crops from the four 350-gallon rain catchment barrels that collect from the roof of their high tunnel and their house, situated across from the farm.

Nearly half of Wilson Street Urban Farm's produce goes toward feeding the Stevens family. The remainder goes toward their farmers market stand, 14-member CSA, and a farm stand they operate on their farm every Saturday. Because the Stevens' goal was not to start a business but to provide for themselves, they are interested in the right combination of sales channels that allow them to earn what they need while still having time to farm and enjoy life.

Community and Policy Support

Through 2015, the Stevenses benefitted from a prolonged planning process in the City of Buffalo as it prepared to adopt its "Green Code"³⁷. With no restrictions and a friendly relationship with the city officials who offered



Wilson Street Urban Farm sign celebrates growing food in the city.

the family a 5-year lease for the 25 lots for a cost \$1 per year, Wilson Street has been able to grow as it pleases. The family remains involved in the continuing policy development, however, and are strong advocates for the power of UA to contribute to the revitalization of Buffalo.

Assets and Challenges

Beyond seeds, materials, fuel for their tractor, and maintenance, the Stevenses are able to provide for most of their other farm needs. Mark, a carpenter, can build or maintain any of the farm structures. Several of the Stevens children do farm chores as part of their daily routine, watering, weeding, and harvesting with Janice, who is the primary laborer.

But as her children grow, Janice wonders how the farm will evolve. "I'm losing my labor force," she jokes, talking about her children growing up, getting jobs, and moving away. She has been finding ways to work smarter instead of harder by making better use of space, making crop choices that best fit the market demand and their production capabilities, and keeping better records to track their income and expenses.

37 This was signed into law in January 2017.

Love Is Love Farm at Gaia Gardens, Decatur, GA

Unique Partnership with Homeowners Secures Farm's Future

Year started: 2008 • Total farm size: 1.5 acres • Area cultivated in 2015: 1.5 acres

Themes: Full-time owners, SNAP/Double-up programs, On-farm events, Multi-farm efforts, Provides education and training.



About the Farm

Love Is Love is not a place, says farmer Joe Reynolds: it is a farming philosophy. After renting land in rural Georgia, Reynolds accepted the opportunity to move Love Is Love to the 1.5-acre farm area Gaia Gardens, 5 acres of open space that is part of the planned community East Lake Commons. Reynolds works with the community not just to farm responsibly and provide CSA shares, but to co-manage the land and maintain balance between natural areas, open space, the farm, and the built environment.

Production, Sales and Marketing

Reynolds learned organic practices as a new farmer, and Gaia Gardens maintains organic certification. The farm benefits from Atlanta's long growing season, and Reynolds, who received NRCS EQIP assistance in 2015, put up a high tunnel to extend the season. The housing community owns and maintains the farm infrastructure, including its tractor and cold storage, at no cost to Reynolds.

Love Is Love's lease requires it to have a CSA to offer to community members. Extra CSA shares can be offered to the general public, and over half of Love Is Love's CSA members live outside East Lake Commons. Shares are offered in two sessions over the long growing season. To grow membership and diversity of offerings in the CSA, Reynolds has now partnered with another farmer in the area. This will help shift reliance away from farmers' markets which are a large time investment and are showing decreasing returns.

Community and Policy Support

Gaia Gardens' farm land and materials are fully supported by East Lake Commons residents, who also participate in Love Is Love's CSA. Prior to a DeKalb County ordinance amendment in 2015, Love Is Love and other farms like it



Beginning of the season at Love is Love Farm, where some cover crops have been plowed under while others stay in place until Joe Reynolds and his team are ready to plant.

operated in a grey area, as farming was not technically legal even though it was widely accepted. Political support behind urban farming is growing in the Atlanta metro area, and zoning changes like DeKalb's will make it easier for more farms to become legitimate businesses in the future, says Reynolds.

Assets and Challenges

Reynolds' lease with East Lake Commons offers him free access to the land, infrastructure, equipment, and a set budget for maintenance, repairs, and replacement, as well as free utilities. A water catchment pond provides for most irrigation needs. Though the farm cannot expand beyond its 1.5 acres, due to restrictions put in place by the community, the generosity of the arrangement and thoughtfulness of residents make this agreement ideal for Love Is Love.

Springdale Farm, Austin, TX

Multiple Business Ventures Support Farm's Growth

Year started: 2008 • Total farm size: 5 acres • Area cultivated in 2015: 2 acres

Themes: Land access, Urban ag policy, SNAP/Double-up programs, On-farm events, Multi-farm efforts, Provides education and training, Livestock.



About the Farm

Glenn and Paula Foore started farming in 2008 when their landscape business, for which they had purchased their East Austin property, suffered the effects of the Great Recession. Eager to keep their employees working, they began growing and selling food, eventually establishing an indoor farm market and helping to make East Austin an urban farming destination.

Production, Sales, and Marketing

Austin's year-round growing climate allows the Foorees to grow more than 75 varieties of vegetables, fruit, and herbs. High tunnels and outbuildings used for the landscaping business were repurposed for food crop production, and Glenn hard-plumbed irrigation lines into the fields, fed by the property's well. They also collaborate with three other urban farms near them, buying and selling from each other and rallying to support each other when challenges arise.

While the Foorees still own and operate their landscaping company, farm sales have grown to be a competitive second business. Local chefs come to the Springdale farm stand twice weekly to purchase for their restaurants. The farm stand is open to the public as well, and accepts SNAP benefits, which approximately 28 percent of residents less than a mile from the farm receive. In addition, they host numerous school group tours and events, generating additional farm revenue.

Community and Policy Support

Springdale Farm and other farms in the neighborhood struggled for several years with a community group that opposed the urban farms. The battle ended up in zoning hearings, despite that agriculture was already legal in all zones in Austin. The multi-year ordeal cost the Foorees not only financially due to legal fees and changes demanded of the farm, but in morale, as well. Something they had created to be inclusive and positive was dividing the



Beyond the rows of young vegetables, an Airstream trailer serves as a bridal party respite. The Foore's home, right, is also on the property. It is the only part not protected with an agricultural variance and has been featured in several architectural magazines. It also makes for an easy commute.

community. Yet, overall the zoning changes were a victory for Austin's urban farmers, who reestablished their right to exist in the city and continue to grow food.

Assets and Challenges

Springdale Farm does a lot more than grow food: it hosts a pop-up restaurant, acts as a wedding and fundraiser venue, and is home to the Foore's landscaping business. It also enjoys popularity among chefs and schoolteachers, who are eager to bring students to the farm. In late 2015, Springdale Farm started a nonprofit arm to facilitate more educational opportunities for youth, something the Foorees value in their role as urban farmers. The nonprofit will be able to accept grants and donations to support education work, which eats into the farm's current productivity.

Note: As of August 2018, Springdale Farm has closed for personal reasons.

Brooklyn Grange, Brooklyn and Queens, NY

Intensive Roof Top Farm Managed for Profit per Square Foot

Year started: 2009 • Total farm size: 2.5 acres • Area cultivated in 2015: 2.4 acres

Themes: Land access, Full time owners, On-farm events, Provides education and training.



About the Farm

Brooklyn Grange grows produce high above the industrial neighborhoods surrounding it, farming two rooftops with Manhattan skyline views. Despite its location, the farm has become a destination for New Yorkers seeking a bit of farm life: from a weekly farm stand and tours, to event rentals and photoshoots, Brooklyn Grange does much more than grow vegetables.

Production, Sales and Marketing:

Brooklyn Grange grows a wide variety of lettuces and salad greens, peppers, tomatoes, herbs, and edible flowers, as well as limited quantities of many other vegetables that grow well in its specially designed soil mix. It employs detailed crop planning and tracks earnings on a square-foot basis to choose the most productive and profitable crops that make the best use of its limited space. It also grows sprouts and microgreens in its high tunnels in winter months.

The majority of sales are to restaurants in Brooklyn and Manhattan, who hear about Brooklyn Grange by word of mouth or through social media and are excited to receive its hyperlocal produce. The farm also sells at a local farmers market and hosts a farm stand, one of several opportunities for the public to see its rooftops.

Community and Policy Support

Increased interest in green roofs and rooftop farming has helped Brooklyn Grange take advantage of several policies, programs, and grants that helped it secure its locations. Interest in supporting green infrastructure is responsible for its Brooklyn location, without which the Grange could not have completed the rooftop installation project. The



Brooklyn Grange farm sign.

farm has also received accolades from the urban farming community for its innovative education programs, and from average people who rent space on the farm for dinners, weddings, and photo shoots.

Assets and Challenges

Forward-thinking landlords of suitably sturdy buildings have given Brooklyn Grange the long-term leases it needs to justify the expense of installing a rooftop farm. As the farm looks to expand, it will look for similar long-term leases. It will also attempt to continually improve its bottom line in order to retain top talent in one of the most expensive cities in America.

Mellowfields Urban Farm, Lawrence, KS

Incubating a Business to Eventually Scale up on Rural Land

Year started: 2007 • Total farm size: 3 acres • Area cultivated in 2015: 3 acres

Themes: Land access, Urban ag policy, Full-time owners, SNAP/Double-up programs, Multi-farm efforts, Provides education and training, Incubator farm trainee.



FP



About the Farm

Jessi Asmussen and Kevin Prather trained and apprenticed over the course of several years, slowly moving away from their day jobs toward owning and operating Mellowfields Urban Farm. They farmed in their own backyard and on rented plots until 2013, when they were accepted into a program operated by the City of Lawrence providing land to urban farmers and gardeners. They earned organic certification in 2015 and have begun a greenhouse operation with another nearby farmer, allowing them to move beyond seasonal production to year-round sales.



Production, Sales and Marketing

Mellowfields grows 30-40 different crops throughout the season to supply their CSA and farmers' market stand. They moved to a permanent raised bed system to improve production of crops like carrots and beets, and have purchased and improvised machinery to operate their 3 acres.

The farm's CSA is consistently sold out, and its farmers market stand is very popular due to its high-quality produce and excellent marketing. At the farmers market farmers work together on pricing because though the market is competitive, it is still a community and vendors do not want to undercut each other. Mellowfields accepts SNAP and Double Up Food Bucks at the farmers market which provides additional income and helps them reach a wider variety of customers.

Community and Policy Support

The City of Lawrence's Common Ground program is responsible for granting Asmussen and Prather their land, which as of the 2016 season has a 3-year rolling lease for \$1 per acre per year. Agriculture has always been legal in Lawrence, and the program, along with enabling land use regulations, has made it easier to farm in Lawrence.

Thousands of cells of onion starts under glass at Mellowfields' new co-owned greenhouse.

The couple also benefits from strong relationships with rural farmers outside of Lawrence, upon whose expertise they call. They are some of the same farmers that trained them as employees and apprentices, and invited the farm to partner in a cooperative organic CSA—a powerful additional marketing channel.

Assets and Challenges

Mellowfields' nearly free access to land with the highest quality soil has been its greatest asset, says Asmussen. In 2017, the farm's dream was realized, and they moved to the outskirts of Kansas and four acres of river bottom land. While their improvements to soil quality at this site will accrue to another farmer, the couple had prepared for the move by designing moveable infrastructure, including wash stations and a walk-in cooler.

Green City Growers, Cleveland, OH

Year Round Employment Through Hydroponic Lettuce

Year started: 2013 • Total farm size: 5.35 acres • Area cultivated in 2015: 3.25 acres

Themes: Land access, Full-time owners, Community revitalizing, Provides education and training, Signature product – lettuce.



NP



About the Farm

Green City Growers (GCG) is a social enterprise that leverages greenhouse lettuce production to provide employment and rebuild the Central neighborhood of Cleveland. It is the third worker-owned cooperative incubated by Evergreen Cooperative Corporation (ECC), a 501(c)3. After 1 year working at Green City, employees can be voted in as member-owners, participate in decision making, and receive a share that will hopefully grow into a \$65,000 equity account after 10 years. It is its commitment to its member-employees—and their commitment in return—that sets GCG apart from other greenhouse operations. The diverse staff manage all parts of the operation, with mentoring and coaching from the Corporation.



Green City Growers has over 3 acres of hydroponic growing space.

Production, Sales and Marketing

Lettuce and herbs are produced in tight succession using a floating raft/pond system in a controlled environment greenhouse. Supplemental light, nutrients, heat and carbon dioxide have dropped production cycles to 40 days or less. Recycling of water from production ponds plus recapture from snow melt and rain has minimized water use. Heads are packed in boxes or clam shells destined for local institutions or retail chains. Now, regional distributors and direct retailers handle most of their product.

Community and Policy Support

ECC has received tremendous accolades for their employee empowerment models. Local, city, and federal support through loans, grants, and tax abatements generated the \$17 million needed to purchase the 10 acres of land and construct the greenhouse facility. The project was heralded by many as a boon for development in this

lagging neighborhood. ECC is loosely modeled on the Spanish Mondragon cooperative model for growing cooperatively managed businesses, a concept that has resonated with anchor institutions and investors.

Assets and Challenges

While the greenhouse currently produces at about 86 percent capacity, 90 percent is the breakpoint for profitability. Initially, GCG anticipated most of the product being purchased by other institutions in the University Circle area, but the product price point reduced their attractiveness. Managers foresee two strategies to get there: increase production and reduce energy consumption by retrofitting to LED supplemental lights. Building this social enterprise depends very much on making the bottom line work.

Chapter 4: Exploring Commercial Urban Farm Viability

What are the hallmarks of a viable commercial urban farm business? The answer to this question is difficult to generalize among 14 case study farms. Particularities such as crop choices, season extension and seasonality, market channels, income streams, land agreements, and labor and other expenses make each farm's trajectory unique and not easy to predict. Ideally, production and income data could have been synthesized for multiple years and across many more farms, but this was beyond the scope of this study. While 85 candidate urban farms were identified, the 14 selected met criteria for farm maturity and earnings as well as represented gender and racial diversity among the primary managers.

While these 14 commercial urban farms represent a tiny fraction of urban farms in the United States, they show striking parallels in their strategies, evolution, challenges, ideas, and plans. Many of these farms are more mature businesses than is common among commercial urban farms. Thus, they represent the potential for CUA. These farms have developed on the front edge of the UA industry, and in many cases prior to coordinated municipal, state and federal investments in UA.

In the following section, we analyze strategies presented by these case study farms for achieving commercial viability through both their verbal accounts and their sales and expense records for the 2015 season. We consider how specific choices in farm structure, operation, or location impact farms' commercial performance (See Table 3: Case Study Themes). This chapter concludes with recommendations and considerations for urban farmers, educators, city planners, advocates, and government officials on strategies to increase viability and mitigate risks of commercial urban farming.

Farmer Training and Information Networks

Case study farmers' choices and strategies are strongly informed by the educational resources they have access to, the training they have received, and the farmer networks in which they participate. They are also informed by their previous work experience, whether on an urban farm, a rural farm, or some other non-agricultural business.

Three case study farm owner/managers have degrees related to agriculture, including horticulture and plant ecology, though none did so with the plan of starting an urban farm. Four of the case study farms are owned/managed or co-owned/managed by a farmer who is primarily self-taught, having never worked on an urban or rural farm prior to starting their own. Five farmers apprenticed or interned on rural farms, while three previously worked on urban farms.

Several farm owners and managers participated in training programs to improve their production or business skills. Lay Htoo launched Karen Fresh Garden after participating in the New Roots for Refugees program for 3 years. Nat Turner (Our School at Blair Grocery) participated in the urban farmer training hosted by Growing Power in Milwaukee. Others participated in business training courses that covered business planning, financial management, and recordkeeping.

The CUA farmers who previously worked on other farms benefit from a robust network of mentors. Former bosses and other farms they interacted with have supported their continued education. Kevin Prather and Jessi Asmussen get advice from the mentor farmers with whom they apprenticed. One mentor farmer was so good, Prather says, that other former apprentices become his own best competitors. Joe Reynolds gets advice from the farmer with whom he formerly apprenticed, as well as the previous farmers of Gaia Gardens, which he says is a built-in network. Even for mostly self-taught farmers like Paula and Glenn Foore, talking through crop or pest problems with other Austin farmers has provided key insights. Side Yard Farm, Rising Pheasant Farm, Brother Nature Produce, and several others indicate that mentor farmers are some of their most valuable sources of information.

Networks of other farmers, both urban and rural, are important, say case study farmers, and some use the internet to broaden that network. All three growers at Mycopolitan Mushroom Company learned to grow mushrooms from hobbyist online forums, and, only after a lot of experimentation, sought more extensive training through workshops and training programs. Meanwhile, Reynolds says the internet has become a powerful networking and information tool—from advertising CSA shares to identifying insects.

Case study farmers were less likely to be involved with local cooperative extension or other traditional agricultural education. Several said they did not know extension educators who could provide assistance for some of their most difficult problems. Others, like Caitlyn Galloway who knows her cooperative extension educator, were unsure how they could or should interact with educators who specialize in UA: “Maybe it’s just me or that I am insulated, but it feels hard to know what’s available. I appreciate Rob’s (Bennaton, University of California Cooperative Extension Specialist in Urban Agriculture) presence and I appreciate what he does, but I have a hard time remembering he’s there and think of ways to utilize his position and knowledge.”

Some farmers also rely strongly on the published resources and books. Brooklyn Grange’s Ben Flanner and Mellowfields Urban Farm’s Kevin Prather detailed nearly-identical reading lists for books that influenced their choices and strategies, including Eliot Coleman’s “New Organic Grower,” John Jeavons’ “How to Grow More Vegetables,” Richard Wiswall’s “The Organic Farmer’s Business Handbook,” Jean Martin Fortier’s “The Market Gardener,” and Ben Hartman’s “The Lean Farm.” Several farmers say they read books by these and other rural farmers and attend workshops and conferences to learn new skills and strategies from speakers who have succeeded in small-scale farming.

Thus, informal networks, small-farm resources targeting rural farms, and skill-specific UA training programs have been more accessible to case study farmers than long-trusted, commonly rural farmer education, including accredited programs and cooperative extension. It is difficult to know to what extent training and education play a role in case study farm viability because each farm is so unique in their growth trajectory. But, the words of these farmers may indicate that in the future, formal farmer educators (e.g. cooperative extension) may have expanded urban farmer audiences.

Business Structure

Business incorporation strongly determines at least some of the farm business strategies and revenue streams, explored throughout this chapter. While case study farms are primarily for-profit (9 farms), nonprofit (2 farms) and for-profit/nonprofit hybrids (3 farms) were included as well (see Table 3).

Nonprofit and hybrid business structures allow CUA farms to receive grants and gifts to support education and training programs. These farms chose to incorporate part or all of the farm business as a nonprofit for the specific purpose of enabling the farm to provide programming, education, and training. Grants offset the costs of hosting such programs: increased labor, reduced productivity, and loss of potential earnings.

For-profit farms chose structures including sole-proprietorships, partnerships, LLCs, and S-corps. The choice to be a for-profit farm was nearly a default for many case study farmers, particularly for those who had previously worked on rural farms. Some said they “wanted to prove” that urban farming could be done on a commercial scale, while others were reluctant to submit to the responsibilities of nonprofit farming: applying for grants, maintaining a board, and other activities that would take them away from farming. Farmers with previous rural or urban farming experience, or a network of other commercial farmers, were more likely to set up for-profit businesses than those without previous farming experience, or where inclinations toward social entrepreneurship are very strong (see Chapter 5: Urban Farms as Social Enterprises).

Gross and Net Revenue

Case study farmers were asked to detail their earned farm revenue, expenses, and labor (see Appendix C). Not all farms kept detailed records, and thus, some potential inconsistencies exist. Record keeping challenges many small farms, whether urban or rural. In particular, farm profitability was difficult to assess given the differences in business accounting, marketing, labor expenses, and investments for future growth.

Three sources of revenue on case study farms included:

- Agricultural Product Sales: sales of products grown on the farm through all direct and indirect market channels.
- Related Farm Activities: earned revenue through means other than the sale of farm-grown agricultural products. This includes facilities rentals, workshops, speaking engagements, agricultural services performed off farm, and any other farm activity that earned revenue.
- Grants and Gifts: fundraising in the form of grants or gifts from government, foundation, individual, or other donors.

Urban Agriculture Training Programs

As UA gains popularity, UA training programs are popping up all over the country for different target audiences. New Roots for Refugees (Kansas City) and the Green Entrepreneurial Center (Buffalo) target refugees. Grow Dat Youth Farm (New Orleans), Massachusetts Avenue Project (Buffalo), Added Value (New York City), and many others train youth in farming skills. The Urban Farming Institute (Boston), Growing Home (Chicago), and Archi's Acres (Escondido, CA) target part of their training to adults who have difficulty entering the regular workforce due to low education attainment or opportunities, recent incarceration, or post-traumatic stress after military service (respectively). These programs and others use urban farming to teach many skills: ecology, biology, plant science, math, workforce readiness, patience, responsibility, accounting, and customer service. For many training programs, "soft skills" like taking direction and accountability are the end-goal—farming is the means.

Other UA training programs primarily educate the next generation of farmers. Purdue Extension recently started an UA certificate program that offers online classes plus farm tours to help UA entrepreneurs design for economic sustainability. Growing Power (closed in 2017) trained thousands of adults and youth, opened farms in Chicago, IL, and Madison, WI, and established more than a dozen regional outreach training centers around the country to grow the UA movement. Its CUA Training Program focused on business and marketing skills for urban farms regardless of their business structure.

Not all UA training programs are created equal, says Michael Ableman, who founded the Center for Urban Agriculture in Goleta, CA, in the 1980s. The Center now operates Sole Food Street Farm in Vancouver, British Columbia, which hires and trains people who have struggled with addiction and homelessness. Sole Food has 25 employees, grosses over \$400,000, and cultivates a few acres of produce and fruit trees in custom soil boxes that can be moved by pallet jack or forklift from site to site.

Ableman, who farmed in rural areas before moving toward cities, says, "I am fascinated by the new public excitement around UA, but concerned that it's not based in any agricultural reality." Urban farm trainers may have a couple years of experience on rural farms, but as Ableman says "the smaller the scale, the higher level of skill required to make it commercially viable." Without deep production experience, says Ableman, urban farm trainers may not pass on the "scale and experience" that is needed for urban farms to reach viability.

That does not mean urban farm trainees do not get a dose of farming reality, says Jennifer Aron, instructor for Portland's Beginning Urban Farmer Apprenticeship program. "One of the biggest shocks for students is how much work it all is: what it took to get these Brussels sprouts up or carrots cleaned."

She says the hard work, plus the constant reminder to evaluate their work against a commercial bottom line and manage costs, weeds out a lot of people who would not make it as farmers. "We have about a 50 percent success rate of people graduating and taking the next steps [toward starting a farm]," says Aron. However, the program still considers this a success: "We have a lot of people who go back to their past vocation. But, that is as important as the people who are taking the next steps toward farming. We are saving people from making an investment that they are going to regret."

Chris Wayne, Director of GrowNYC's FARMroots program, has high hopes for young people who apprentice with urban farms. A commercially viable urban farm, says Wayne, can demonstrate the "type of management and efficiency [that can] educate interested agriculture entrepreneurs. Apprentices who come out of [those farms] and want to start rural [or urban] farms will have the skills to make them viable."

Based upon the amount of revenue from these three sources, case study farms segregated into three revenue strategies (Figure 2). First are production farms, or those that earn nearly their entire budget from sale of agricultural products, and eschew offering additional on-farm activities or engaging in fundraising in favor of focusing on growing food. Second are hybrid farms, or those that meet their total budgets through agricultural product sales plus a variety of related farm activities. Third are training farms, or those that prioritize an education or training mission and usually are partly or completely structured as not-for-profit yet still produce on a commercial scale.

Production Farms (n=7) earn over 90 percent of their revenue from the sale of agricultural products. Unlike hybrid farms, they do not rely heavily on income from additional farm activities in their business model. They may receive very small grants or gifts, usually through community foundations or crowdsourcing, but do not rely on these gifts for farm operations.

Hybrid farms (n=4) earn revenue from a variety of sources. On average just over 60 percent of their total earned revenue is from the sale of agricultural products, while 35 percent or more of earnings come from related farm activities including event hosting, site-rentals, educational workshops, speaking engagements, or off-farm agricultural

services like plowing. They receive a small amount of grant funding, most frequently to support workshops or community-outreach pursuits.

Training farms (n=3) are partially or completely nonprofit, and are therefore able to receive grants and gifts with few restrictions. Grants and gifts make up the majority of their revenue, on average, while sale of agricultural products makes up just over 40 percent. Grants and gifts support their programs, including job training and farm education, as well as farm operations where sales fall short.

These decisions on CUA farm structure and revenue strategy impact the range of actual earnings in dollars. For each farm type, Figure 3 shows the range and average value of agricultural product sales, total revenue (the sum of agricultural product sales, revenue from additional activities, and grants and gifts) and profit, or total revenue less total expenses. These values have been standardized to the tenth-acre and divided by the number of months each farm is able to sell. This is done in an effort to account for the vast difference in size and seasonal output among case study farms. Because the practices and therefore earnings and expenses of a tenth acre farm cannot be accurately scaled-up, values from all farms have been scaled to the lowest common denominator to allow comparison among farms.

Figure 2. The average percentages of revenue generated from three revenue categories—sales of agricultural products, related farm activities, and grants or gifts—among CUA case study production farms (n=7), hybrid farms (n=4), and training farms (n=3) in 2015.

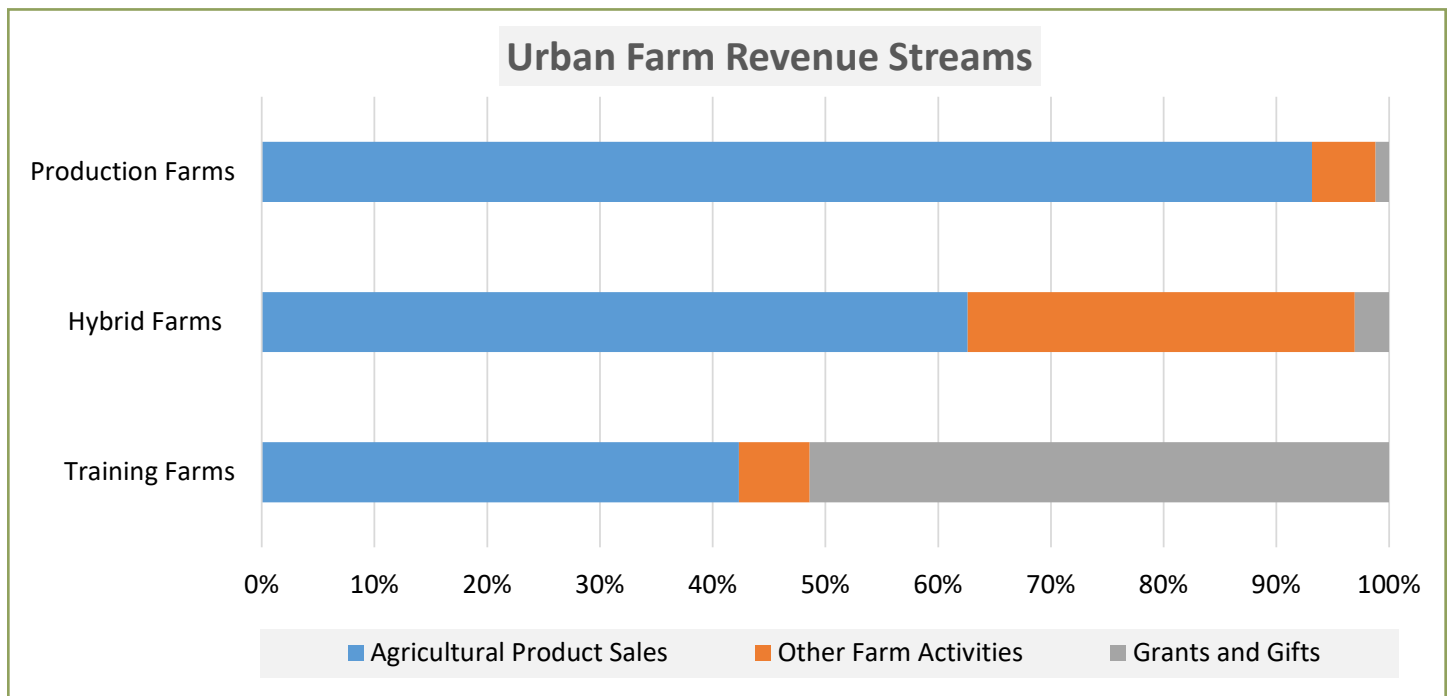
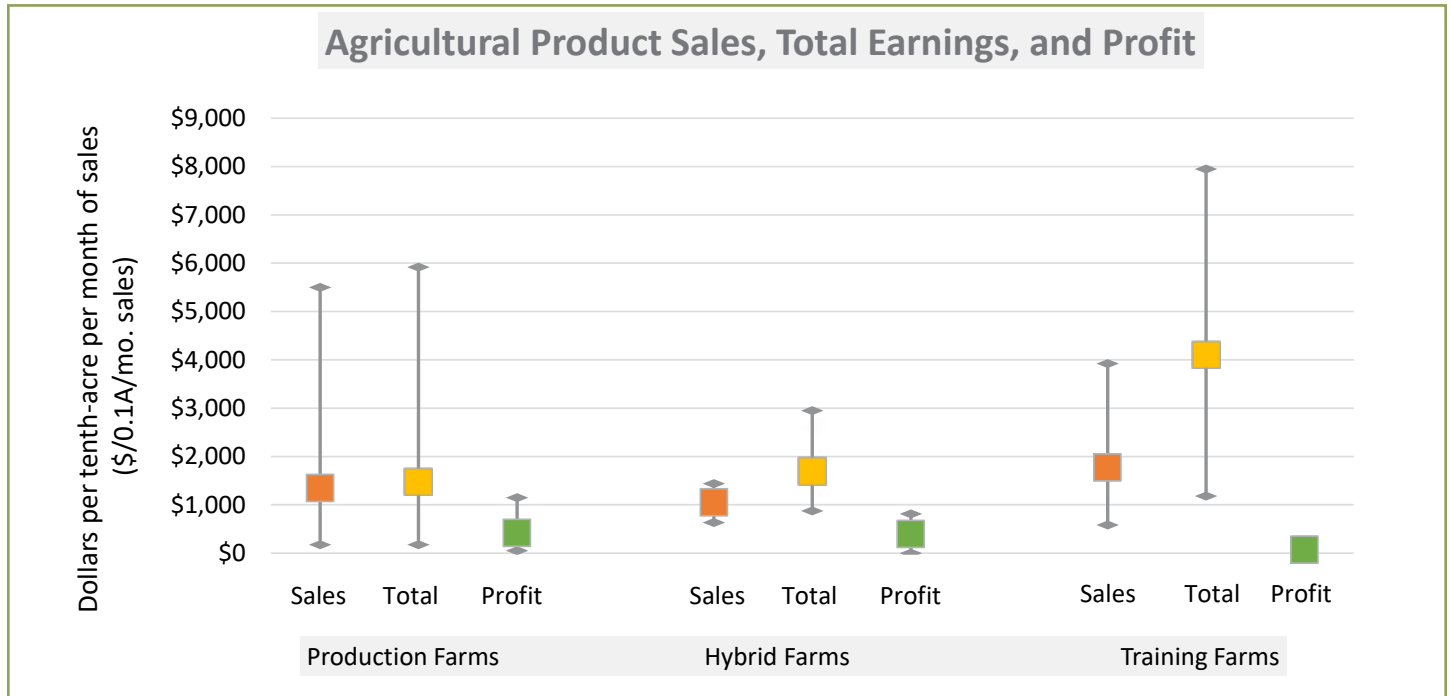


Figure 3. The maximum, minimum and average value in dollars associated with earnings from a tenth acre of production per month of sales on 14 commercial urban farms. Sales represents earnings from sales of agricultural products (fruits, vegetables, flowers). Total revenue includes additional income from grants, gifts or other related farm activities. Profit was calculated based upon total revenue less farm expenses as reported by each farmer for 2015. Farms are represented based upon primary revenue strategy as Production (n=7), Hybrid (n=4) or Training (n=3).



Because of the differences in farming approach, the production farms have a greater range in earnings from agriculture product sales than either the hybrid or training-focused farms. Production farms' total revenue are not much larger than their sales, as they receive very little from other farm related activities (see Figure 2). Their profits also have a larger range than hybrid or training-focused farms.

Hybrid farms have narrower ranges in sales and revenue, but profits were similar to production farms. Other farm activities have a significant impact on overall farm profitability. These additional earnings serve to reduce risks related to variable produce sales by supplementing farm revenue.

Training farms have the highest average product sales. Their total revenues are much higher per tenth-acre than other farm types due to grants and gifts. Yet, despite much higher total revenues, profits are near-zero, as earnings are invested in training and education instead of being reported as profit.

While ranges in profit is indicated for the production and hybrid farm types, differences in business, marketing, labor accounting, and recordkeeping strategies on these farms (further described below) suggest that it is difficult to calculate and compare profits among these farms.

Business Strategy and Risk Management

To build profitable CUA businesses, all farms had specific strategies to intensify production and outputs from a small area. Crop choice, crop mix, and season extension were carefully deployed to optimize returns. What they grew, how, and for how long determined how much they could grow in their limited space, to whom they could sell (next section), and for how long, which influenced how they approach commercial viability. Crop choice and season extension were also methods of risk management, buffering farms against crop or market slumps.

Crop Choice

The urban farmer's strategy to achieve commercial viability depends upon optimizing crop and financial output from a limited growing area. Crop choice is central to this planning. Case study farms' choice of crops followed two distinct strategies: specialization or diversification. Each approach has benefits for both sales outlets and risk management. Crop specialization in this study describes earning more than 50 percent of total income from one or two crops. Surprisingly, both production and training farms opted for both strategies. Farm mission did not direct crop choice as much as farm facilities (e.g. CEA).

To build an economically viable urban farm, 8 of the case study farmers chose to specialize in the production of crops that are lucrative and well-suited for sale to restaurants and high-end retailers who are responding to the vibrant local food culture. Both controlled-environment operations (Mycopolitan and Green City Growers) specialize in quick-succession, high-value produce (mushrooms, head lettuces). Non-CEA farms also specialized in quick-succession, high-return crops like lettuces and baby salad greens and edible flowers, earning \$7 to \$24 per pound.

Farmers say specialization is critical when space is limited, and the focus on high-value, quick-succession crops makes up for small acreage. Givens of Side Yard Farm says she now grows more specialty herbs and edible flowers and fewer crops that take more space and time:

“We took away Hakurei turnips because people don’t know what they are. And peppers—there was no point for us to do peppers. We just get them from local farms. There’s no point when someone else has more land and can do it better than me. So why not put [the land] into something like arugula that pays 9 dollars per pound and get two or three harvests out of one bed?”

Thus commercial viability using specialization by default depends on production and sales of crops that do not impact local community food access, nutrition, or anti-hunger goals. This is particularly acute for CEA urban farms that specialize in rapid-turnover niche crops like salad greens, tender herbs, and microgreens, which typically cost more than field-grown greens and are sold primarily at retail stores that cater to higher-income customers.^{38, 39}

But, soil-based farms face the same quandary; greenhouse-grown sunflower shoots are a key crop for Rising Pheasant Farm, while Our School at Blair Grocery’s Nat Turner says his farm can earn \$7 per pound or more for field-grown arugula, exclaiming, “You can’t beat \$7 per pound with a stick!”

“You may get pushed toward [growing] more expensive, high-end [products],” says Brooklyn Grange’s Ben Flanner, who, like many of the case study farmers, struggles to keep his produce affordable and attractive to lower-income customers while earning enough revenue to sustain the farm, his employees, and himself.

For farms that do more direct sales to individuals, including farmers’ markets and CSAs, a wide variety of products has the potential to capture more of each customer’s food-spending by providing broader selection. Particularly for CSA farms like Love is Love Farm at Gaia Gardens and Mellowfields Urban Farm, a broad variety of produce will engage members throughout the season, keeping them satisfied and potentially improving retention for subsequent membership.

Even outdoor farms that specialize say they aim to keep a good variety of crops in rotation as a risk management strategy. “We want diversity on the farm,” says Flanner from Brooklyn Grange. “You get too carried away, you become a monoculture, set yourself up for a lot of risk, and the next thing you know you’re using pesticides. When there’s more variety, you’re not setting yourself up for as much risk.”

Season Extension

Season extension includes any practices that modify temperature, moisture, and the light environment for a crop to allow it to be grown and harvested beyond the typical outdoor growing season. It is a form of risk management in that it attempts to control the growing environment and minimize weather-related challenges while increasing the total months of sales and overall earning potential. Seven of the 12 outdoor farms use heated greenhouses or unheated high tunnels to grow crops for sale. Others only use protected structures for growing transplants, but not for producing crops. Convinced by its efficacy and profit potential, two more farms added season extension in 2016 (2015 figures do not reflect new season extension).

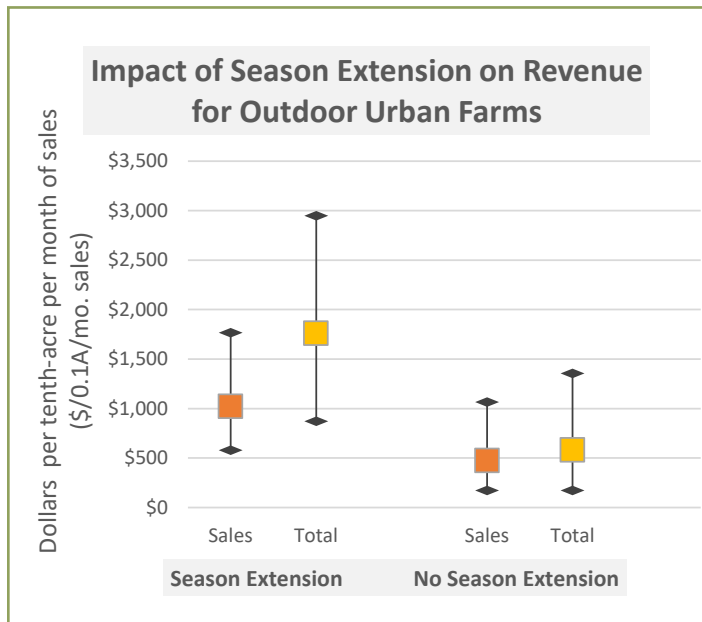
Sprouts and microgreens grown in greenhouses or high tunnels are some of the most successful crops for extending the season for case study farmers. Rising Pheasant Farm, Brooklyn Grange, and Our School at Blair Grocery specialize in or have ongoing production of sprouts and microgreens. “The sprouts have been our bread and butter,” says Rising Pheasant’s Carolyn Leadley, who sells sprouts to restaurants and at farmers markets year-round.

Even farmers that do not specialize in sprouts or microgreens find that growing unique crops and taking advantage of season extension increases sales. Joe Reynolds uses his high tunnel for beets and fava beans in the winter months with great success, and grows ginger and turmeric in a heated glass greenhouse that was

38 Brin, H., Murayama, D., Landau, J., & Kalva, P. (2016). The State of Vertical Farming [white paper]. The Association for Vertical Farming.

39 Sission, P. (2016, October 31). As vertical farming grows, a new real estate opportunity takes root. Retrieved from <http://www.curbed.com/2016/10/31/13476888/real-estate-warehouse-vertical-farming-aerofarms>.

Figure 4. Range and average of sales and total revenue per tenth-acre per month for soil-based farms that use season extension (n=7) and farms that do not (n=5). CEA farms are not included.



at Gaia Gardens before he arrived. Springdale Farm in Austin, TX, produces year-round, using high tunnels for a wider variety of crops in cooler months. While both farms produce a diversity of crops, they prioritize valuable types, like strawberries and heirloom tomatoes, which grow and sell well.

Many of the case study farms have applied for a USDA NRCS EQIP grant to help with the costs of a high tunnel. These structures and the practice of growing in a high tunnel are seen as a conservation strategy, since they help extend the growing season, can reduce water and nutrient losses, increase plant diversity, improve soil quality by keeping living roots growing in soil for more of the year, reduce erosion by maintaining more soil cover, and increase locally-grown food availability. The NRCS EQIP provides both financial and technical assistance with adding a high tunnel to a farm site. Grants amounts generally cover the physical structure of the high tunnel, based upon cost and square footage.

On average, soil-based farms with season extension earn twice as much in agricultural product sales per tenth acre per month than those without season extension (Figure 4). They also have larger ranges of total revenue, with the highest sales close to \$3,000 per tenth-acre per month. This figure does not include a comparison of profits because not all farms calculate their own labor in the same way. Farms that do not use season extension happen to also not always include farmer’s labor as part of expenses, making profits appear higher than those farms that do include farmer wages.

Season extension also supports sales for a greater portion of the year than outdoor production without season extension (Figure 5). By increasing the months with sales, cash flow is improved and financial risks lowered. Outdoor

Figure 5. The sales of agricultural product per month in dollars per a tenth-acre of production for five farms without season extension (blue) and seven farms with season extension (orange). Sales are plotted against the number of months each farm conducts.

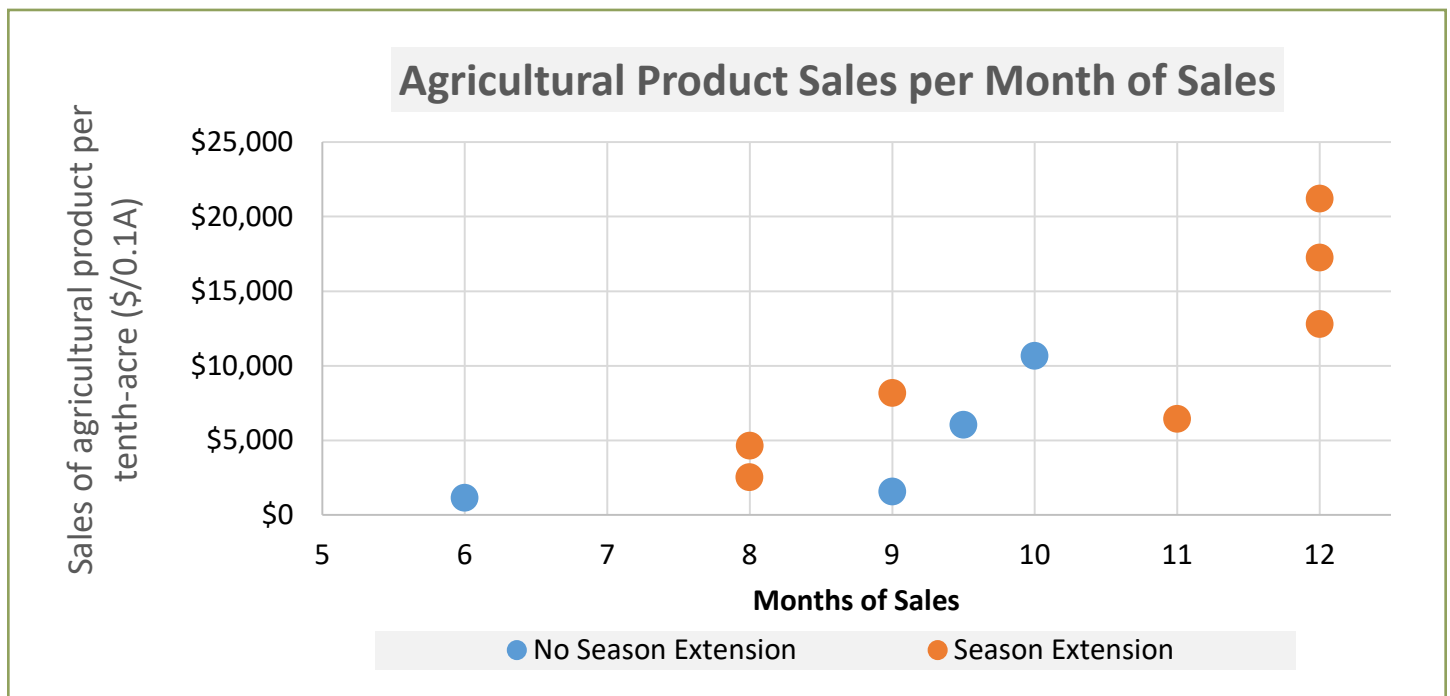
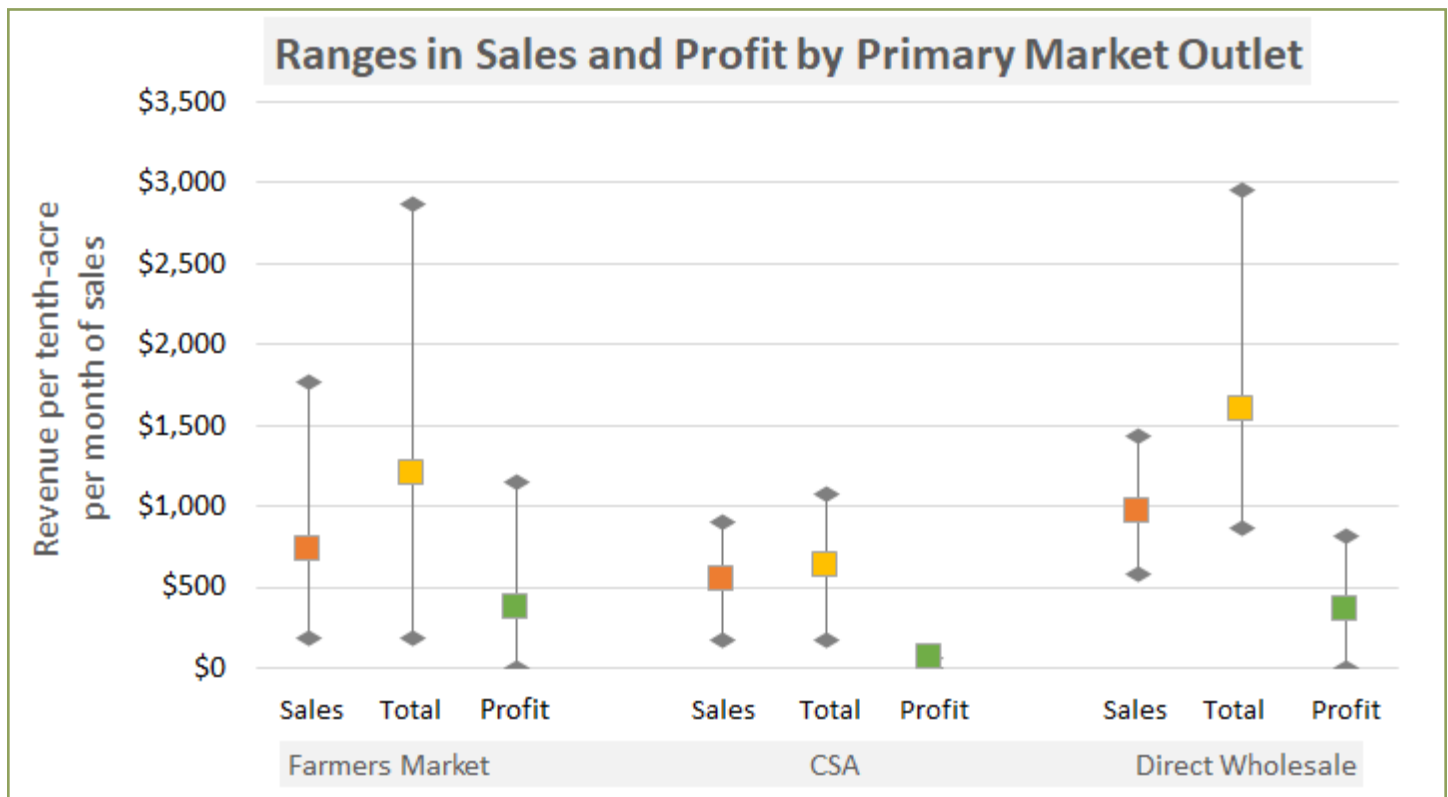


Figure 6. Range in sales and profit associated with a tenth-acre of production per month of sales for twelve outdoor farms where more than 50 percent of sales falls in one of the three categories: farmers markets, CSAs, and direct wholesale. Direct wholesale includes sales to restaurants, grocery stores, and other retailers.



farms without season extension typically produced for fewer months than those with season extension, however in some cases, regional location can support a fairly long growing season without season extension. Farms without season extension also sold less agricultural product per month than those with season extension.

In a fully controlled environment, as in CEA, production risks can be tightly managed. For example, Green City Growers follows strict food safety, biosecurity, and sanitation protocols with foot baths and hairnets required of all workers and visitors to protect the ecology of the floating raft system of lettuce production and minimize microbial food safety risks. Mycopolitan Mushroom Company has strict cleanliness and food safety rules in the delicately-balanced ecosystem of growing chambers to protect their mushrooms from a crop-devastating airborne pathogen.

The plus side, says Mycopolitan’s Brian Versek, is that mushrooms grow when most outdoor crops do not. Mycopolitan’s mushrooms can capture a larger market share from locally-oriented restaurant sales in the autumn, winter, and early spring when supply and variety of local produce is limited, further mitigating financial risks.

Markets and Income Streams

Farm Product Sales Channels

These CUA farms use diverse direct to consumer and direct to retail marketing channels to manage risks. Direct marketing may be through a combination of CSA, farm stands, or farmers market. Several use fairly informal sales at the farm (simple stand with cash “honor box”) to keep the farm and its products visible and accessible to neighbors. Two farms are CSA-focused (Love Is Love and Mellowfields, both certified organic) and five conduct the majority of their sales at farmers’ markets.

Restaurant sales (direct wholesale) comprise 50-100 percent of revenue for six farms. Restauranteurs and chefs with strong farm-to-table ethics have become regular customers of these farms. For CUA farmers, restaurant sales are a way to move significant quantities of product quickly without the long hours, logistics, and unpredictability of farmer’s market sales. Because these farm-to-table restaurants charge high prices for their food, they can afford to pay higher prices for city-grown produce. The strength of the farm-to-table movement suggests there is stable demand for what these urban farms grow.

Figure 6 shows the ranges of sales and profit per tenth-acre per month of sales for 12 outdoor farms whose primary sales channel is either a farmers market (n=5), community supported agriculture (CSA) programs (n=2), or direct wholesale, including sales to restaurants and retailers (n=5). Farmers markets have the widest range of sales and reported profit of all three market channels, and appear to be the most profitable based on case study farms. CSAs have the lowest range of sales and profitability per tenth acre per month of sales. Direct wholesale has a broad range of sales competitive to farmers markets, but a smaller reported profit range.

Income from Related Farm Activities

Non-production income streams help many farms stabilize their cash flows and budgets. Six farms report earning income from on-site events, tours, or rent collected for use of the land by others. For two farms this represents 25 percent or more of their total earned revenue.

All 14 farms participate in community or education events to some extent, but only 4 earned revenues for these activities. Those who were able to monetize educational activities typically did so through holding on-farm workshops, which constituted 3-14 percent of total earned revenue.

Five farms earned additional income through off-site speaking events, payment for which constituted 1-4 percent of the farm's total earned revenue. Speaking events are aimed at a wide variety of audiences including farmers, students, consumers, and funders.

The remainder of earned revenue came from off-site services like landscaping or installation of home-gardens, or custom hire jobs like field preparation or snow-plowing. Seven of the 14 farms earned additional revenue this way. Five consider it a critical part of their business model and earn 8-28 percent of their total annual revenue this way. For the other 2 farms, it constitutes 2 percent or less of total revenue.

Grants and Gifts

Eight of 14 farms, including 3 nonprofit or hybrid-model farms, received some sort of grant in 2015. For training farms, grants and gifts comprise 33-67 percent of the total farm revenue. These farms seek larger, multi-year or renewable grants available by application through government or foundation sources, or if they are very large, they run through capital campaigns for individual donors. Grants and gifts are directly related to program provision, though farm operations as a function of training is also funded.

To Organic Certify or Not?

Only 2 of the 14 farms are certified organic as defined by the USDA National Organic Program. Several interviewees assumed organic certification would be “prohibitively expensive.” But, for the owners of Mellowfields, organic certification has “opened the door up” with the local co-op grocery. “It increased the quantity of what they were interested in,” says Mellowfields’ Kevin Prather. “We sold them chard last year, but they want twice as much chard this year, and at a better price.”

“We’re just getting more [revenue] out of a 100-foot bed,” he says. Mellowfields head farmer and his wife Jessi Asmussen agrees, and says, “I don’t think organic certification has as many barriers as people think it does. Once we actually went through the process it was easier than we thought.”

Other urban farmers eschew organic certification, preferring to be transparent about how they grow. “Our deal is, come and see it: we’re open Wednesdays and Saturdays,” says Glenn Foore of Springdale Farm. “The chefs wonder why we would need to [be certified organic]. Well, we want to be the best. They say, ‘well it looks like you’re already there now.’”

Proximity increases transparency because customers can visit the farm. However, as organic farmer Joe Reynolds of Gaia Gardens says, many organizations “beat the drum for consumption of local organic food.” This study does not investigate whether these hyper-local urban farms benefit from consumers’ conflation of ‘local’ and ‘organic,’ though that conflation still occurs among consumers broadly, both nationally and internationally.^{40 41}

40 Campbell, B. et al. (2014). “U.S. and Canadian Consumer Perception of Local and Organic Terminology.” *International Food and Agriculture Management Review*. May 2014, 17:2. Accessed August 22, 2016, at <http://ageconsearch.umn.edu/handle/167903>
41 Lombardi, P. et al. “Marketing high quality Thai organic products in Europe? An exploratory approach.” In *Looking east, looking west: Organic and quality food marketing in Asia and Europe*. (2010). R. Haas et al., eds. p. 135.

Nonprofit and hybrid farms like Growing Home, Our School at Blair Grocery, and Green City Growers (through Evergreen Cooperatives) can draw on a much larger pool of grant funding. National funders like the W.K. Kellogg Foundation and the Kraft Family Foundation provide important support to food businesses throughout the country, while foundations with a more regional focus can provide more continuous support for programming and operations through years of trusted partnership.

Urban farms can also apply for USDA grants, including the Farmers Market Promotion Program (FMPP), the Local Foods Promotion Program (LFPP)⁴², and the Community Food Project (CFP) grants. FMPP helped Growing Home build out and strengthen its farm stand marketing, while Our School at Blair Grocery's CFP grant supported its employment of New Orleans youth and youth programming in connection to farming.

Production-focused and hybrid farms may also receive grants, though they have tended to be much smaller and comprise less than 7 percent of the total farm budget. These small grants either target business improvements to help farms become more sustainable or profitable, or support one time education programs. These grants are typically awarded by local foundations, nonprofit organizations, or schools supporting local farms. These farms also use crowdfunding platforms to raise money for capital improvements or other goals. It is important to note that these farms would qualify for several federal grants such as Value-Added Producer or Small Business Innovation Research grants.

Small local grants offered by Detroit's Eastern Market subsidized the cost of high tunnels at Brother Nature Produce and the greenhouse at Rising Pheasant Farm. Rising Pheasant's Carolyn Leadley says these grants, while small, have been key to ratcheting up production of microgreens and making her business year-round.

Little City Gardens forced the creation of a grant program to offset the cost of installing an irrigation meter in San Francisco. The public utility commission was convinced by the farmers' argument for better access to water for urban farms, and the grant, which is not well publicized, covered the entire \$7,000 cost of installing the irrigation meter and hooking into the water main.

Grants and gifts offer security to farms that spend their earned revenue on programming (trainings, after school activities, tours, etc.), and are often the reason farms can



Site manager Fred Daniels directs fellow farm employees at Growing Home..

continue to thrive as places of production and learning. Farms that focus on these programs have a variety of grant and gift sources to minimize the risk of losing a single funding source which could otherwise devastate programming. Grants and gifts also help farms make small improvements that position them to scale up.

Expenses

Land and Infrastructure

Eight farms own part or all of the land they farm. All but one purchased land through a city or quasi-public program to sell vacant parcels. Land costs vary widely, and depended on the zoning and previous use of the parcels. Karen Fresh Garden is the only farm that is completely located on the same lot as the farm owner's personal residence.

Land owners are responsible for property taxes, the rate structure of which depends upon the city. For example, Detroit charges Rising Pheasant Farm and Brother Nature Produce a vacant land tax rate much lower than the residential tax rate, while Karen Fresh Garden pays Kansas City, KS, residential property tax rates. Just one farm, Springdale Farm in Austin, TX, has an agricultural property tax exemption for 4.5 of the 5 acres they own.

Seven of the 14 farms lease part or all of their land for production. Like ownership, leases have a variety of structures and costs. Some farms have free or nearly-free leases from their respective cities, city-based programs,

⁴² Projects must benefit two or more producers to qualify for FMPP and LFPP.

or individual landlords. For example, Mellowfields Urban Farm in Lawrence, KS, has one of the most generous leases, paying 1 dollar per acre per year to farm on city-owned land through a farm and garden promotion program run by the city and county governments. Their lease states, that if the city decides to terminate the lease, the farmers have 3 years from that termination date to move off the land.

Other case study farmers who have taken advantage of free to low cost leases do not necessarily choose farm sites based on surrounding demographics and typically are not socially connected with the existing community. Rather, the right mix of circumstances for soil-based urban farming —vacant properties, inexpensive land access, low regulatory oversight—drives choices. These types of properties have been primarily located in historically disinvested neighborhoods.⁴³ When the Wilson Street Urban Farm relocated from rural western New York state to Buffalo's East, they chose their home because a friend living nearby suggested the 25 empty lots on the next block may be the right size for the Stevens' urban farm. The city planning agency, eager to make improvements and decrease the burden of maintaining vacant land, leased the land to the Stevens family for just a few dollars a year. While their 5-year lease with the City of Buffalo lapsed in 2014, they have not been asked to vacate the land. The City has also not renewed the lease, leaving the farm in a state of land-security limbo.

Like the Stevens family, Glenn and Paula Foore were similarly drawn to East Austin by an offer of below market value land (Springdale Farm Case Study pg. 29): a federal-local partnership for economic development helped the Foorees purchase the five-acre parcel that housed their landscaping business for 20 years. At the time East Austin was suffering from decades of disinvestment, and its residents experienced a poverty rate of 52 percent.⁴⁴ It was only during the 2008 recession that the Foorees, eager to keep their employees working, started to farm their land. Springdale Farm became one of several urban farms in the area, all owned by individuals who moved from outside of the community.

This influx of urban farms was not without challenges. Neighborhood leaders rallied against the farms after one farm's composting system created unacceptable odors. This led to a multi-year zoning dispute with farmers on one side and community-activists on the other. Andrew Smiley,

deputy director of Austin's Sustainable Food Center, says the imbroglio was about more than farming: "What confounded [these disagreements] was the economic divide: urban farms were taking advantage of vacancies and low property prices in lower-income neighborhoods."

Other farms pay rent at or near market value to landlords. Brooklyn Grange, Mycopolitan Mushroom Company, and others have standard rental agreements with rate-increase schedules and other stipulations. Land is a much higher cost for these farms, and farms paying these higher lease rates are more likely to support their business through a mix of activities beyond sales of agricultural product.

A farmer's relationship with their landlord is a key determining factor in how secure the farmer feels about their land tenure. Stacey Givens of Side Yard Farm calls her landlords her greatest asset, and their willingness to contribute to some of the costs of her operation is unique. On the other hand, Little City Gardens' rent-free lease was a looming threat as the farm could be and in 2016 was evicted when landlords' planned development was approved.

Even when land tenure is secure, as with Mellowfields Urban Farm, urban farmers find it necessary to remain mobile. Mellowfields has invested in mobile infrastructure, including their two-zone walk-in cooler (built on a pallet-base and moveable with a forklift) and high tunnel. Farms like Side Yard Farm, Love Is Love Farm at Gaia Gardens, and Wilson Street Urban Farm which farm on leased land have high tunnels that can easily be disassembled and



Glenn, left, and Paula, center, look over their fields, which produce food nearly year-round at Springdale Farm.

43 Guthman, 2008. Bringing good food to others: Investigating the subjects of alternative food practice. *Cultural Geographies*, 15, 431–447.

44 Geolytics (2000). Neighborhood Change Database (NCDB) Tract Data from 1970-2000.

moved should they move on (though Joe Reynolds, owner of Love Is Love Farm, agreed to give the high tunnel to Gaia Gardens for its next farmer). With some effort, even Mycopolitan Mushroom Company’s multiple labs and grow-rooms could be disassembled and moved. Creating a movable infrastructure makes leasing land or facilities less daunting.

Farms that own or have long-term land tenure agreements are more likely to install permanent infrastructure, like Springdale Farms’ hard-piped irrigation system or Growing Home’s office and seeding room. Givens of Side Yard Farm, says her relationship with her landlords was strong enough that she paid to put in a permanent office and storage space and install her walk-in cooler. Her landlords even provided financial assistance when building costs rose because of confusion about the farm’s zoning.

Labor

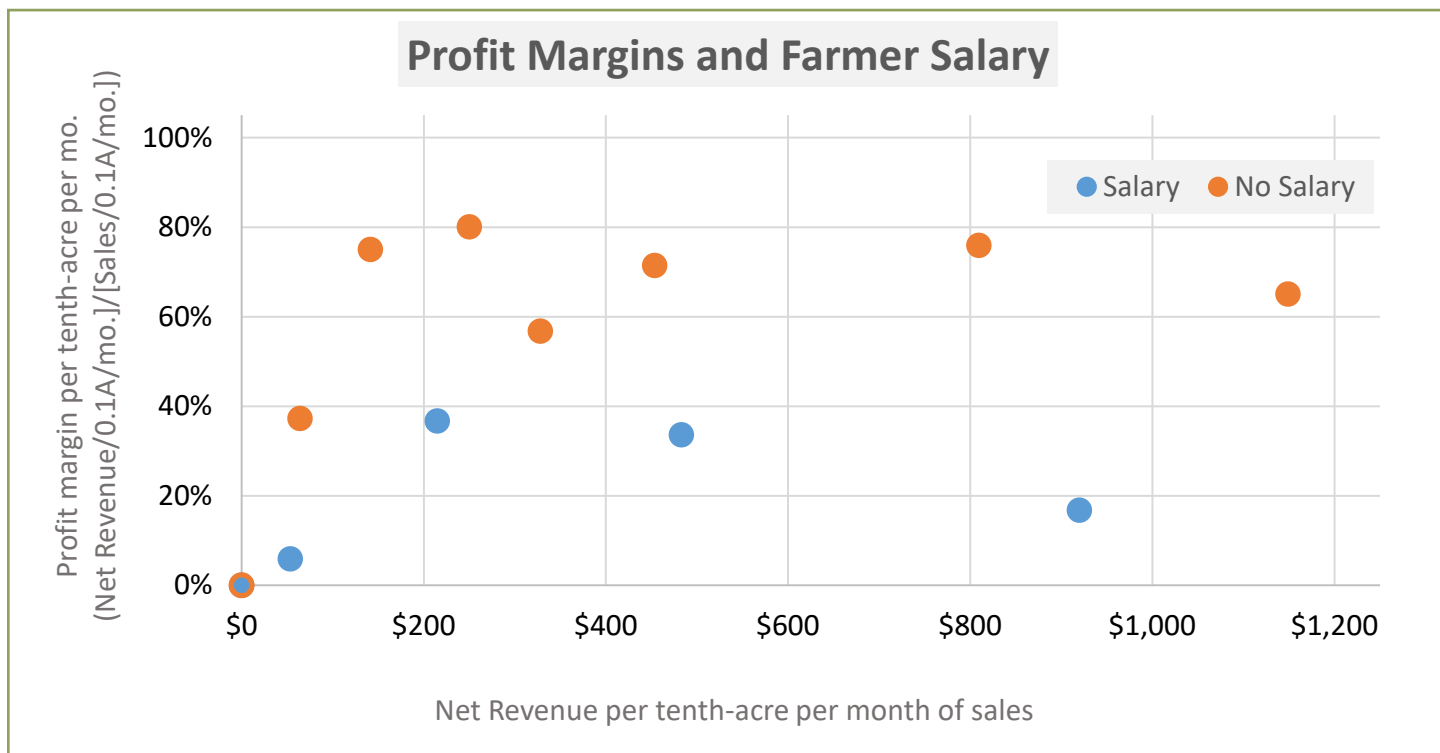
Labor is a significant but necessary expense for farms that have scaled beyond the hours of a single farmer, couple, or family. Six of the 14 case study farms have full-time year-round employees in addition to some seasonal and/or part-time employees, while 4 have just part-time or

seasonal employees.

Farmers said the decision to have employees was difficult. Employees are expensive, and farmers recognized this significant expense despite saying they wished they could afford to pay their employees more. They reported farm employee wages of \$8-12 per hour. But, they also say that having good employees has helped their farms’ scale up or reduced their stress-level, both of which are worth the cost.

Just 6 of the 14 case study farms pay the farm owner a salary. Those that do not expense their salary report taking owner-draws from net farm revenue. The impact of owner salary is illustrated when comparing sales per tenth acre per month with profit margins (Figure 7). Farms that report net revenues of 40 percent do not include owner salary as part of expenses. Rather an unknown, and likely unequal, amount is drawn by the owner from farm net revenue for personal expenses. Farms that do pay the farm owner a salary report much lower profits margins but more accurately account for salary and management expenses. Farms that report zero profits (Figure 7) operate as nonprofit training farms, at which all employees are paid salaries.

Figure 7. Profit margins calculated based upon farmer provided net revenue as a percentage of total agricultural product sales per tenth acre per month of sales. Profit margin for each farm is graphed against net revenue in dollars per tenth-acre per month of sales. Each dot represents one farm that either pays the farm owner a salary (blue, six farms) or does not pay a salary but the farmer takes owner-draws from profit (orange, eight farms).



Volunteers

Despite labor laws prohibiting for-profit businesses from engaging volunteers⁴⁵ as a primary workforce, volunteerism on small diversified vegetable farms is not uncommon in urban or rural areas.^{46, 47} Seven of the farms interviewed—five for-profit, two nonprofit or hybrid—have volunteers. None of the farmers interviewed were hesitant about sharing information about how many hours volunteers worked on the farm, further proof that volunteers are an important component of work planning on these farms.

Several farms accounted for 20-25 volunteer work hours per week during the growing season. Many have regularly advertised volunteer hours. Other farms have backed away from regular volunteer hours, instead inviting groups to volunteer for special-projects like building a high tunnel.

Some urban farms rely on volunteers to accomplish all they need to do: “we rely on that volunteer labor to get our harvest done.” Volunteers reduce owner labor-hours per day and decrease the need for mechanization. Farmers also report that volunteer opportunities allow customers and community members to have local “buy in” and provide a venue for farmers to share what they do with the community. According to one farmer:

“I know some farms in the area have gotten investigated for unpaid internships that are illegal, but it is so integral to this operation that it’s hard not to talk about it. It feels contentious or sketchy. I wish it wasn’t like that, because I feel like some of the most valuable educational experiences we can offer are through our weekly workdays and internships and less formal volunteer workdays. A large part of [urban farming] is the education that comes out of it.”

Farmers acknowledge that while volunteer labor is free, it is not the most effective. “It’s actually totally inefficient, but it’s helpful,” says one farmer. Brooklyn Grange stopped offering volunteer days because the cost of managing volunteers was high. For the Grange and other farms that do not offer volunteer opportunities, tours and farm stands allow the public to interact with the farm and farmers, meeting similar community-engagement goals.

Taxes, Utilities, and Other Costs

Utilities, rent, and property taxes are the three areas of expense that are particularly high for urban farmers. Rent and property taxes are directly influenced by market-rate property costs, and utilities, particularly water, can be high for farmers in areas without irrigation water rates.

Six farms paid property taxes in 2015. Springdale Farm of Austin, TX, is the only case study farm to have received an agricultural property tax exemption: all but 1/2 acre of its 5 acres are taxed at a lower agricultural rate, while the remaining half-acre that holds the Foore’s house is taxed at a standard residential rate. Three farms purchased vacant lots from the city, and paid property tax based on their vacancy status, which is lower than their zoned rate (e.g. residential). Land purchased this way was taxed no more than 15 cents per square foot. Each city’s property tax rates are different, and each property is subject to different rates based on its location, zoning, the buildings on it, and a variety of other factors.

Utility costs are also variable based on zoning and production practices. Water is the costliest utility for soil-based growers using municipal water: 2-13 percent of total sales can go toward paying water costs alone. Farms like Wilson Street Urban Farm and Green City Growers use water catchment to decrease water costs, while Springdale Farm was able to install a well on its property, a cost saving investment they felt comfortable making based on their secured land tenure. Electricity is the costliest utility for CEA farms and those that heat greenhouses throughout the winter at a cost of up to 20 percent of total sales.

Other costs are variable and depend upon farms’ business, sales, and marketing strategies. Liability insurance can cost thousands of dollars for farms that invite youth or the general public onto the farm for education or events. Farms that do not have the public on their farm have lower liability insurance costs. Packaging can be costly for farms that conduct direct wholesale to retailers; packaging costs are very low for direct-to-consumer sales. Fertilizer and seed costs also depend upon the land condition, the growing season, and the business strategy. A conservative estimate based on case study farm costs is \$190 per tenth acre for fertilizer and \$340 per tenth acre for seeds.

45 Fair Labor Standards Act. 29 U.S.C. § 203(f)

46 Ekers, M. et al. “Will work for food: agricultural interns, apprentices, volunteers, and the agrarian question.” *Agriculture and Human Values*, (2016) 33:705–720. DOI 10.1007/s10460-015-9660-5

47 Mincyte, D. and K. Dobernig. “Urban farming in the North American metropolis: Rethinking work and distance in alternative food networks.” *Environment and Planning A*, 2016, 48:9, 1767-1786. DOI: 10.1177/0308518X16651444

Keeping Up Appearances

Farmers working at street-level mentioned attempting to fit into the neighborhood by introducing themselves to their neighbors and hosting neighborhood events, and also by keeping the farm tidy and attractive. A farm's appearance is critical to neighborhood acceptance, which may be skeptical of the sights, sounds, and smells of farming.

Janice Stevens says she and her family try as hard as they can to make Wilson Street Urban Farm "look like a park." "We have to be very careful about how we proceed," she says. "We can't have shoddy compost piles that have rats everywhere, we can't be stinking up the place, we can't be leaving weeds growing all over."

When Caitlyn Galloway started Little City Gardens in an undeveloped lot in the middle of a neighborhood block, neighbors' skepticism was tempered by Galloway and her farm-partner's eagerness to connect with neighbors and keep them informed about the farm's progress. It did not take long for neighbors to come visit the farm themselves.

"A lot of the neighbors have grown to cherish this use of this space," says Galloway. "They've seen this space go through a lot of iterations of neglect or what they might call unsafe. A lot of neighbors have said that we've made the neighborhood feel more safe by activating the space. And there are neighbors who are engaged with the farm: CSA customers or people who like to come walk, enjoy the space, bring the kids while we're working. So there's an appreciation for us using the space this way."

Michael Hooper, neighborhood resident and president of the New Mission Terrace Improvement Association, says that while not all neighbors get along with one another, "Everyone gets along with Caitlyn." It has also become a place for neighbors to meet each other and meet new people. "They have poetry readings here [at the farm], and we come by and know other people who are showing up." He says, "Instead of it being a barrier, the farm became a point of unity—people wanted this to happen."

Paula and Glenn Foore of Springdale Farm in Austin, TX, would like to see their farm become a point of unity for their neighbors. The Foores, who are also landscapers, have put a lot of effort into making their 5 acres beautiful since they purchased it in 1992. And after a multi-year struggle with a neighborhood group over urban farming, the Foores continue to make the farm look park-like to welcome neighbors and renew relationships.

Beautification can be time-consuming and expensive, and is less likely a burden on small rural farms. Our School at Blair Grocery's Nat Turner looked out over his farm, which still had broken fencing and remnants of previous buildings, and said he wished there were a grant to help urban farms look more like the agritourism destinations they feel pressured to be: "I want to make it look nice: put up a nice fence, get some tools, rewrap our hoop houses so they don't look so raggedy, buying some real shelving," says Turner. But, production and teaching do not leave much time for beautification.



Little City Gardens shared part of its 3/4 acre lot with a school group, which used the area for outdoor learning and play.

Net Revenues or Profit

Lack of consistent salary payments to farm owners confounds profitability analysis in this study, and net revenue should be considered in light of this difference among farms. However, it is evidence that many urban farms act much like small rural farms, where owner income is considered a result of farm performance rather than a critical part of the business plan.⁴⁸

While keeping farm income earnings confidential, it is accurate to say that case study farms with the highest sales per tenth acre have sophisticated business or recordkeeping skills, and have lean, highly-skilled workforces. Many have also invested in technologies such as high tunnels and heated greenhouses that extended the growing and harvest season and farm cash flow. Most of the urban farms profiled here that pay the farm owner or manager a salary use season extension and all but one farm specializes in a high-value, quick-succession crop. These practices support maximizing the output from a small area.

Use of these practices does not guarantee that the farms are profitable enough to pay farmer salary, nor that farms that pay their farmers a salary are more sophisticated in their financial management. As with any business, it is the combination of labor, financial, and planning skills that set successful farms apart.

Comparisons With Rural Farms of Small Size

There are many measures of rural small farm yields and earnings per acre.⁴⁹ In the studies cited here, median or expected net income per acre for small rural or peri-urban farms of 5 acres or less is between approximately \$5,600 and \$6,600.⁵⁰ Only 29 percent of U.S. farms of 1 to 9 acres report net gains, averaging \$34,000 per farm (or \$8,500 per acre); the remaining 71 percent of small-acreage farms reported an average loss of \$11,000.⁵¹ By comparison, the commercial urban farms studied herein are on par with or

exceed median earnings per acre and median farm income for intermediate farms or similarly-sized farms in rural areas. While net income may seem high when compared to rural farms, cities' higher costs of living may negate that advantage.

Case study farms were not specifically asked to account for or budget their labor costs; the farm net income would decrease if they were asked to do so. Many rural farms in the United States do not account for labor performed by the family.^{52, 53} Furthermore, 42 percent of farms selling \$10,000-\$250,000 in agricultural products report using unpaid labor, on average 2 unpaid laborers per farm.⁵⁴

There are several variables that keep us from drawing conclusions around these comparisons among urban and rural farms. One such variable is access to land; five outdoor soil-based case study urban farms benefit from low-cost or free land. Six outdoor case study farms bought some or all of their farmland cheaply through municipal programs that sell off vacant parcels in attempts to reactivate neighborhoods.

Jessi Asmussen, who farms on 3 acres for just 1 dollar per acre per year with a 3-year rolling lease, says she does not feel like she has an unfair advantage over rural farmers who have inherited their land. She does, however, expect that purchasing land will be difficult when she eventually leaves the Lawrence, KS, Common Ground program, because of its high cost. The Common Ground program is helping her farm build its market and earn revenue to save for her family's own farm, acknowledging the chicken-and-egg problem of land ownership and product-demand-outlets in farming: each is needed to have the other.

For CEA farms like Green City Growers (GCG), purchasing land in an urban area may be a much higher cost than a rural location. GCG purchased its 10 acres for \$350,000 from the City of Cleveland, but the company also paid relocation costs for three families and remediation costs for the land. However, costs of production and yield depend much more on the combination of equipment (fixed costs) and labor (variable costs) the operation chooses. So while land costs were high for GCG, facilities build-out and operation has a greater impact on viability over the long term.

48 Frenay, E. "Farm profit: making a life and a living from your farm." Small Farm Quarterly, Summer 2011. Accessed August 22, 2016 at <http://smallfarms.cornell.edu/2011/07/04/farm-profit-making-a-life-and-a-living-from-your-farm/>

49 See for example, Rabin, J., Zinati, G. and Nitzche, P. (2012) "Yield expectations for Mixed Stand, Small-Scale Agriculture. Sustaining Farming on the Urban Fringe, 7(1). <https://njaes.rutgers.edu/pubs/urbanfringe/pdfs/urbanfringe-v07n01.pdf>

<https://www.mda.state.mn.us/~media/Files/food/organicgrowing/specialtycrop2009-12.ashx>

50 <https://www.extension.iastate.edu/agdm/wholefarm/html/c3-65.html>

<http://www.cias.wisc.edu/wp-content/uploads/2008/07/grwr2grwr.pdf>

51 USDA.2012. Table 64 "Summary by Size of Farm: 2012," 2012 Census of Agriculture, v.1c.1.

52 Adam, K. (2006) "Community Supported Agriculture." ATTRA. www.attra.ncat.org.

53 Gray, M. (2013) Labor and the Locavore: The Making of a Comprehensive Food Ethic. University of California Press.

54 USDA. 2012. Table 65 "Summary by Market Value of Agricultural Products Sold: 2012." Census of Agriculture, v.1 c.1.

Recommendations and Considerations for Commercial Urban Farm Viability

The following are recommendations and considerations for urban farmers, city planners, UA advocates (e.g. researchers, educators, nonprofit organizers, community-gardeners), and policy-makers in relation to the above findings on CUA. Chapters 5 through 8 will also offer recommendations and considerations, which are summarized in Chapter 9.

Recommendation: Invest in longitudinal research studies of commercial urban farms.

Farm business development, investment strategies, and profitability require analysis over time. Additional research that collects multiple years of farm income, labor use, and other management data is needed to more completely identify and clarify strategies that best support viable UA development under different land access, education, policy, and community contexts.

Recommendation: Create a Small Farm Business Summary to support more extensive analysis of urban and rural farm sustainability and profitability.

University-based collection and analysis of farm income and expense data has supported growth and farmer decision-making in other agricultural sectors. Adapting these types of data instruments to diversified, small-scale farming could identify policy and community conditions that support farm sustainability.

Recommendation: Prior to starting a farm, understand and engage the communities where the farm could be located.

Michael Conard, Columbia University professor and adjunct researcher for its Urban Design Lab, maps urban farms and the deployment of funds to support urban farming projects. His research and visualizations show that the location of most vacant urban land available for farming maps directly to the presence of minority communities, higher obesity levels, and negative health outcomes. Conard suggests that such maps, which clearly illustrate where neighborhood disinvestment has taken place, could be used to prioritize UA investments for the benefit of local community residents.

Proximity to customers is another benefit of being urban, many interviewees said. Transportation time and costs can be a large expense, and it is easier for urban growers to justify moving a small amount of product 3 miles than a rural grower traveling 30 miles to make the same delivery. Yet, transportation efficiency must be weighed against other costs. Brooklyn Grange used a third-party service to do its deliveries because the cost of owning or renting a refrigerated van, fuel, and labor hours in New York City traffic were too high. But, when its delivery-service went out of business, it went back to making its own deliveries.

Eli Zigas, Food and Agriculture Policy Director for San Francisco planning and policy organization SPUR, has been a proponent of urban policies that make more land and resources available to urban farmers. Yet, he says, that does not mean it is any easier to “make it” as an urban farmer:

It is hard enough to be a rural farmer and make money selling what you grow. [There is a] theory of a premium for urban-grown produce to off-set the high cost of living [in] cities. [But] the cost of labor and housing are higher, and [urban farms] are competing with rural farms at market. The willingness to pay is limited when the other [rural farm] is local and organic as well. Maybe you have savings on transportation, but the premium plus transportation don't outweigh the cost. It doesn't pencil out well.

This, finally, points to marketing. Whether they are on the ground, in buildings, or on top of buildings, the highest-earning and highest-profit case study farms have found a market niche. They sell to mid- to high-end restaurants, farm-to-table caterers, and upper-middle class farmers' market shoppers. They use social media to create a buzz around their produce and the (curated) lifestyle of the urban farmer. They develop cachet in the urban marketplace, and build a following over time.

Such analyses tend to attract the attention of those people dedicated to increasing healthy food access in communities that are not their own.⁵⁵ Non-local urban farmers who act with the best of intentions to increase food justice may inadvertently negatively impact local residents—the people many urban farmers are trying to help.⁵⁶ An urban farm without deep community connections could unintentionally mask the community's struggles and make it more difficult for them to receive the investments and opportunities that local residents would prioritize.

Ten of the 14 case study farms migrated into the communities where their farms are located. While they may have been less familiar with community leaders or history, and not immediately trusted, all shared examples of how they have worked to strengthen ties to their neighborhood. By nature of locating in cities and resulting visibility to local citizens, these urban farmers face the ongoing challenge of trying to meet community and commercial needs.

Engaging communities in advance of starting a CUA business can alleviate many of the concerns expressed about who is farming where. Rather than make assumptions as to local interests, needs or priorities, a thoughtful, open dialogue with neighbors can forge partnerships that may support the farm in many ways. Such discussions, with participation from local leaders, can illuminate the area's history, best locations for retail marketing, and even nascent agricultural skills or interest among community members. Such discussions will alert aspiring farmers to strategies that may enhance or challenge local support, fostering a more socially sustainable and community-connected business model.

Recommendation: Reinvest in urban farm educators and service providers to strengthen education and business networks for CUA farmers.

Urban farmers are well-networked amongst themselves and with training programs specifically designed to train urban farmers. But, they are not strongly connected to traditional agriculture service providers, including Cooperative Extension educators with UA specialties, USDA divisions and the Farm Service Agency, bankers, accountants and insurers who have deep agricultural knowledge.

State agricultural cooperative extension systems have successfully served educational and training needs of rural farms and represent a logical first place for public reinvestment to help urban farmers connect to other resources that may benefit their commercial viability. Dedicated UA Extension staff can begin to translate university research for CUA, including advanced skills and techniques to improve farm outcomes. They can also connect urban farmers to other service providers that are not traditionally located in urban areas as well as rural farmers interested in new collaborations.

Recommendation: Expand farm trainings on critical issues to support UA farm success, such as maximizing yields through rapid-cycling crops, using season extension and high tunnels, diversifying income streams and managing labor.

Successful CUA farms maximized farm profits through careful planning to optimize production per square foot, extending the season, and complementing produce sales with other activities that take advantage of the farm's location (e.g. tours for fee). Urban farms looking to scale toward commercial viability, however, also need more in-depth training aimed at planning for growth. These include skills for business development issues, labor management, risk management and liability issues.

Business development includes not just production practices, but recordkeeping and financial management. Including these components in new farmer training has worked well for all audiences, including refugee and new American farmer training programs, to move farmers from gardens to commercial production. Included should be training on opportunities to leverage an urban farms location to generate 'agritourism' income streams.

Scaling up a business almost always requires hired labor. Urban farmers, like their rural counterparts, do not always understand their state Departments of Labor regulations related to employer responsibilities (e.g. worker's compensation, overtime, payroll, hosting volunteers) or additional insurance protections needed for business risk management. Though their insurance needs are similar to small diversified rural farms, which also need adequate general liability and product liability insurance, there are less likely to be insurance agents in urban areas who understand their agricultural business insurance needs.

⁵⁵ Passidomo, 2014. Whose right to (farm) the city? Race and food justice activism in post-Katrina New Orleans. *Agriculture and Human Values*, 31(3), 385-396.

⁵⁶ Ramirez, 2015. The elusive inclusive: Black food geographies and racialized food spaces. *Antipode*, 47(3), 763.

Finally, all farmers need better clarity on workers' compensation laws. While it is true that some States do not require workers' compensation, farmers must be well educated on their risks and opportunities for workers' compensation. While many complain that the cost of workers' compensation is high, similar group plans or other subsidies could help small diversified farms protect themselves and their farmworkers.

Some cities may already have educators or service providers that have this expertise. Connecting with UA advocacy organizations or Cooperative Extension may help urban farmers identify existing resources. If they do not exist, farmers are encouraged to advocate for these programs and services. Additionally, there are funding sources for organizations wishing to develop and provide such training and technical assistance. For example, the USDA Beginning Farmer and Rancher Development Program (BFRDP) has funded at least six projects focused on urban farmers in the last three years. BFRDP trainings that focus on these topics can support commercial viability for urban and rural farms.

Recommendation: Urban farms should register with the USDA Farm Service Agency (FSA) and participate in the Census of Agriculture to increase visibility of this emerging sector.

Urban farms must be encouraged to register with the Farm Services Agency (FSA) to receive a farm number. FSA farm numbers are assigned by local FSA offices.⁵⁷ FSA numbers enable farmers to participate in FSA loan and cost-share programs, including the NRCS EQIP high tunnel and erosion control program that have been valuable to many urban farmers.

The NRCS EQIP program has proven enormously popular and successful with urban farmers, including four case study farms. Without an FSA number, farmers deny themselves the opportunity to participate in federal programs that may help their businesses. Continued expansion and promotion of NRCS EQIP and other programs that have been well-utilized in urban areas can promote a stronger relationship between USDA and urban growers, and improve urban farming practices.

Urban farms should also be encouraged to participate in the Census of Agriculture administered by the National Agriculture Statistics Service of USDA. A farm is any place

from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year.⁵⁸ Participation in the Census of Agriculture is not tied to the Internal Revenue Service—a fear of many farmers still working to understand the tax system. Farm data is confidential and used in aggregate. Integrating urban farms into the Census of Agriculture is fundamental for USDA to assess how many urban farms exist, what their needs are, and how USDA programs relate to UA in its real-world, multivariate contexts.

Additionally, FSA registration and Census data will provide evidence of UA's reach and scope which can support the inclusion of funding and programming for UA-related activities in future legislation, including the Federal Farm Bill.

Recommendation: Encourage urban farms to invest in season extension technologies.

Use of high tunnels or greenhouses can extend the production and harvest season, improving profitability for many of the farms profiled here, by increasing productivity per square foot and the number of months of sales for the farm. Assistance provided through USDA NRCS EQIP grants to offset costs of high-tunnels was critical for many of these farms to extend their seasons and improve profitability. Coupling these types of support with education on maximizing use of high tunnels could improve overall capacity of CUA to meet emerging local food system needs.

Recommendation: Raise the profile of FSA Microloan and other USDA programs among urban farmers.

Though urban farmers are reluctant to apply for loan programs because of insecure land tenure and other uniquely-urban variables, there is a strong potential to work with urban farmers to take advantage of underutilized programs. For example, the Farm Services Agency's Microloan Program could be used to purchase the land and infrastructure so many farms need. In addition, the Farm Storage Facility Loan Program has potential to fund mobile facilities and equipment to allow a farm to move quickly if they lose their lease or land access. A promotion campaign aimed at urban farmers that clarifies program terms could raise the profile of the program and improve outcomes for urban farmers.

57 USDA Service Center Locator, <https://offices.sc.egov.usda.gov/locator/app>

58 USDA Census of Agriculture. (Last modified 2015, November 16). 2012 Census Highlights. Retrieved from. https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Farm_Economics

Consideration: Expand the visibility of ‘rural development’ programs that could assist urban farms

USDA Rural Development (RD) has made great strides in improving rural agricultural communities’ economies and infrastructure. Urban and peri-urban areas experience many of the same resource needs as rural economies, and programs similar to RD offerings could achieve similar economic gains if piloted in cities with significant UA. Many USDA Rural Development programs, such as Value-Added Producer Grants, Renewable Energy for America Program, and the Business and Industry Loan Guarantees, currently have statute authority to extend outside the traditional rural area definitions and could be particularly valuable to UA businesses. Other program that are not currently under this statute authority could also be helpful to UA operations if they were changed to be able to serve urban communities.

Consideration: Adapt the Whole-Farm Revenue Protection Program to meet the risk management needs of small, diversified farms in urban areas.

Though Federal support for commodity crop production has existed since the 1930s, similar supports for “specialty crops” have existed only since 2004.⁵⁹ Specialty crops include fruits and vegetables, tree nuts, dried fruits, and horticulture and nursery crops (including floriculture).⁶⁰ Support for specialty crops is largely indirect⁶¹ and insurance programs parallel commodity crop insurance programs in their recordkeeping and reporting requirements.

In 2016, USDA heeded the call for a crop insurance program designed to accommodate small, diversified produce farms. Historically small and very small, highly diversified vegetable and fruit farms have not been eligible for crop insurance programs, the recordkeeping and reporting requirements for which are set up for large commodity farms operating at a scale orders of magnitudes larger. Indeed, none of the farms profiled herein hold crop insurance.

The new Whole-Farm Revenue Protection Program (WFRP), piloted in 2016, is designed to protect diversified farms due to natural weather, environmental, or market causes.⁶² While a promising step forward, WFRP requires stringent recordkeeping, something that may be difficult for very small producers with a broad diversity of crops. Small, diversified vegetable farms enrolled in the pilot reported that this was a major hurdle in their operations, and it is expected that even smaller urban farms may experience the same issue.⁶³ As WFRP continues its pilot, it is encouraged to consider recordkeeping requirements that result in an actuarially-sound crop insurance program that meets the needs and capacities of very small diversified producers in urban and rural areas.

59 Johnson, Renée. (July 10, 2014). “Specialty Crop Provisions in the 2014 Farm Bill (P.L. 113-79).” Congressional Research Services. Accessed October 23, 2016 at <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43632.pdf>

60 Defined in the Specialty Crops Competitiveness Act of 2004 (P.L. 108-465, 7 U.S.C. §1621 note) and amended under section 10010 of the Agricultural Act of 2014, Public Law 113-79 (the Farm Bill). See USDA, “USDA Definition of Specialty Crop,” <https://www.ams.usda.gov/sites/default/files/media/USDASpecialtyCropDefinition.pdf>. Excludes peanuts and other crops

61 Id. Johnson, 5.

62 For more information on WFRP, see <http://www.rma.usda.gov/pubs/rme/wfrpfactsheet.pdf>

63 Conversation with Alex Sorino, USDA RMA Officer, November 11, 2016.

Consideration: Expand visibility of CUA priorities in future US Farm Bills, to support research and education on best practices.

Investment in research, extension, and education for agriculture is primarily mediated through the US Farm Bill. Priorities for agricultural development have largely been focused on rural farming, though many programs are available for use relating to urban farming with some USDA programs broadening scope to include urban farms (e.g. USDA AMS Farmers Market and Local Food Promotion Programs, Specialty Crop Block Grants, Federal-State Marketing Improvement Program, Beginning Farmer and Rancher Development Program). Including UA in funding program priorities, coupled with specific outreach to researcher and CUA communities, will support critical analyses and innovations needed to fully achieve the promise of urban agriculture. The 2018 Farm Bill did have an increased focus on urban agriculture and outlined specific actions to be taken, however until they are fully implemented it cannot be determined if these actions will truly satisfy the need of urban farmers.



Chapter 5: Urban Farms as Social Enterprises

The previous chapter highlighted the commonalities and difference among how the case study farms' approached creating profitable businesses on a small footprint of urban land. In this chapter, we focus on their common motivation for farming in the city and how they connect to surrounding communities to affect positive social change. While very few actually described themselves as social entrepreneurs, the hallmarks are found all over their work. Here, some of the ways in which these urban farms succeed and struggle to sustain their triple bottom line missions of social impact, environmental improvement and profitability are explored with support of observations from key informant interviews.

Defining Social Enterprise

The term "social entrepreneurship" was coined in the early 1980s when business and social scholars began to differentiate enterprises with social impact and environmental sustainability goals while also earning profit.^{64, 65} It is often equated with the "triple bottom line," which some reduce to the "three P's" of "people, profit, and planet": a sustainable business supports all three.⁶⁶

Social entrepreneurship is a wide net that describes many businesses, whether or not they identify as social enterprises.⁶⁷ The promise of UA addresses many such goals: increasing food security for the urban poor, decreasing stormwater run-off, improving health outcomes, youth education, job training, and more.^{68, 69}

New business incorporations, like benefit corporations (B-corps), have arisen as entrepreneurs set out to solve social and environmental problems with business-based solutions.⁷⁰ While nonprofit businesses have addressed

social and environmental issues for decades, one could define social enterprises as businesses that demonstrate "profit" as strongly as the other two P's.⁷¹

Qualitative measures of success have frustrated attempts to measure the impact of social enterprises.^{72, 73} The value of ecological services (e.g. rainwater infiltration, carbon sequestration) and social benefits (e.g. increased knowledge of where food comes from and its nutritional value, changes in fruit and vegetable consumption) are notoriously hard to measure, and even harder to put in economic terms. These measures are particularly important to donors and investors, who want to understand and report the impact of their investments.⁷⁴

Acknowledging a lack of consistent measure for social enterprise success, this discussion unpacks the qualitative examples of social entrepreneurial activity unique to urban farms. It will also become evident that commercial urban farming is not a natural social enterprise for one significant reason: beyond the difficulty of measuring impact on "people" or "planet," urban farms struggle to (and are often expected to) serve both even when they chip away at an already-slim "profit."

Social Entrepreneurship and Business Incorporation in Commercial Urban Farming

Growing Home, the only fully nonprofit farm profiled among these case studies, is also the only one that defines itself primarily as a social enterprise. Growing Home's mission as a nonprofit is to "inspire healthy living, economic opportunity, and community empowerment in Englewood" through job training and support services.⁷⁵

64 See for example, <http://www.iese.edu/research/pdfs/di-0546-e.pdf>

65 This report does not attempt to define or redefine the term "sustainability." As this report is the product of a USDA request, the U.S. Code definition originally proposed in the Food, Agriculture, Conservation, and Trade Act of 1990, 7 U.S.C. §3103 (19), suffices as the broadest definition of environmental, economic, and social sustainability. This definition is included in the recommendation on pg. 59.

66 <http://www.johnelkington.com/archive/TBL-elkington-chapter.pdf>

67 Semaan, W.E. Jr. (2014) "Cultivating Capital: A Look at the Issues Affecting Urban Farms as a Business and How New Innovative Policy Changes at the Federal and State Level Will Impact the Financial Sustainability of Urban Farms." University of Detroit Mercy Law Review. 91:317

68 Dimitri, Oberholtzer, and Pressman, *supra*. (2016)

69 Vitiello & Wolf-Powers, *supra*.

70 *Ibid*.

71 Osberg, S.R and R. Martin. (2015) "Two Keys to Sustainable Social Enterprise." Harvard Business Review, May 2015.

72 Bagnoli, L. and C. Megali. (2011) "Measuring Performance in Social Enterprises." Nonprofit and Voluntary Sector Quarterly, 40:1, pp. 149-165. DOI: 10.1177/0899764009351111.

73 Luke, B., J. Barraket, and R. Eversole. (2013). "Measurement as legitimacy versus legitimacy of measures: performance evaluation of social enterprise." Qualitative Research in Accounting & Management, 10:3/4, pp. 234-258. DOI: 10.1108/QRAM-08-2012-0034

74 <http://www.forbes.com/sites/rahimkanani/2014/03/15/how-to-measure-social-impact-new-research-and-insights/#4dfa0c4274be>

75 Growing Home website. "About Us." <http://growinghomeinc.org/about-us/>



Seedlings emerging in the high tunnel at Wood Street Urban Farm.

Growing Home dedicates about half of its staff-time, as well as support services, to helping its trainees with life-management and job-readiness skills. Educators, case-workers, and administrative staff manage this portion of the program, which is expensive to run, but critical to Growing Home’s social mission of providing living wage jobs and job-training for those trying to get back into the workforce.

About 89 percent of Growing Home’s budget is funded by foundation and corporate grants, government grants and programs, and individual donors.⁷⁶ Besides relative funding stability, it has an excellent job-placement track record for trainees and low recidivism rates. As a result of its funding and program success, it has also sold a significant quantity of fresh, culturally relevant produce in Englewood where its farm is located, fulfilling another part of its social mission.

Caitlyn Galloway, meanwhile, decided with her business partner before they started Little City Gardens in San Francisco that it would have to be for-profit. Neither wanted to spend time writing grants, and both were convinced that their “experiment” in urban farming could only prove successful if it were self-sustaining. They chose to form a legal partnership, and work toward earning a profit from which to pay themselves.

Though commercial farming was Little City Gardens’ *raison d’être*, it grew into an enterprise that was not only profitable, but had clear benefits to the community and environment noted by Galloway, visitors, and neighbors. Examples included the psychological benefit of more green

space; the community benefit of neighbors talking to one another because they were all drawn to spend time in the farm; the ecological benefit of increasing stormwater infiltration in the flood-prone neighborhood; and the personal benefit to Galloway and others who were able to draw a supplementary income from the farm.

Growing Home and Little City Gardens both have missions that fit within the definition of social entrepreneurship, with two different business models, scales, metrics of success, and supports toward achieving their goals. Most case study farms can be similarly analyzed and found to have social entrepreneurial goals, though not all could be said to be making a true profit because they account for farmer labor in different ways. The business structure and revenue strategy (see Table 3 on page 16) do not necessarily predict social entrepreneurship, and both demonstrate how these farms can act as social enterprises with many structures and strategies for impact.

Becky Lundberg Witt, staff attorney with the Community Law Center in Baltimore, MD, says the choice about business structure is one of the most difficult for urban farmers. She says urban farmers come to her saying, “We want to be able to take advantage of grants, but we don’t want to set up a nonprofit structure because we want to be in charge of it all.”

“They are in a nebulous space that doesn’t actually exist legally speaking,” says Witt “I’m trying to communicate: you have to choose. Are you going to be a for-profit with a social mission, or a nonprofit with a board?” Either can be a social enterprise, she says, but the business model a farmer wants to pursue—including fundraising and diverse revenue streams—will determine how the enterprise is funded.



Caitlyn Galloway of Little City Gardens.

⁷⁶ See for example, <http://growinghomeinc.org/docs/GrowingHome12-13AnnualReport.pdf>

Benefits to People: Education

Education is the social goal of several case study farms, though they fund it in different ways. Farmers say education is part of their everyday work, and record the number of students or tour participants their farms have hosted. Brooklyn Grange hosted over 20,000 students on its rooftop farms in the five seasons since it helped found the nonprofit farming education organization, City Growers. City Growers operates as a separate business, renting bed-space from the Grange for educational programming.

Our School at Blair Grocery has provided after-school activities, internships, and paid-work opportunities for dozens of youth in the Lower Ninth Ward. This part of its mission attracted large funders. But its leaders acknowledge that education is time-consuming, costly, and does not always provide quantifiable impacts like GED-attainment or better career prospects. Its director, Nat Turner, says youth who come back to visit say “decision-making and using good judgement” are the primary skills they learned there.

When asked how much time they spend on the newly formed nonprofit arm of Springdale Farm, Paula Foore says, “Too much, and not enough.” Indeed, hybrid models often represent a careful balancing effort.

“We do spend a tremendous amount of work hours [on education tours] that take us away from the farming time, but it takes a lot of inertia and energy to get it going,” says her husband, Glenn. Still the Foores are compelled to provide educational opportunities for Austin youth as part of what they describe as a “civic duty.” They launched a nonprofit in order to separate production from education to keep the farm viable while seeking funding to expand educational activities.

Many urban farms offer informal education for no compensation, particularly through farm tours and volunteering in the community. For Mellowfields Urban Farm in Lawrence, KS, community engagement and education come with being part of the farm community. However, it still takes a toll, says Asmussen: “[Tours] aren’t associated with the farm at all, but more about the community. But, a lot of time ends up [being spent] on [volunteer work]. We have a lot of volunteer work we do. A goal of mine is to let some of that go.”

While farms like Brooklyn Grange and Springdale Farm have begun charging for farm tours, most farms do not. Unlike rural agritourism, urban farmers say they get the impression that urban agritourism is an obligation: farms located in cities invite questions, and urban farmers feel duty-bound to answer them.

Benefits to Planet: Ecological Stewardship

Case study farmers prove an intuitive sense of their farms’ environmental benefits to the community: decreasing stormwater runoff, sequestering carbon, improving natural habitat, and much more. Yet, most do not or cannot quantify their environmental benefit.

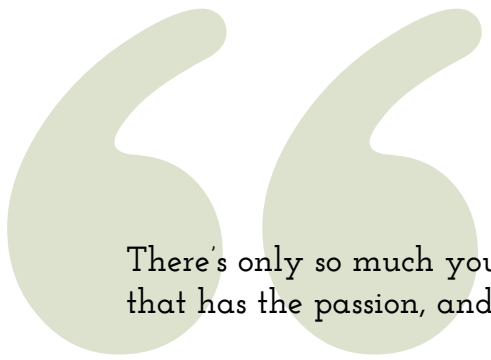
Joe Reynolds of Love Is Love Farm at Gaia Gardens is one of the most successful case study farmers in measuring his environmental impact. On the 1.5 certified organic acres he leases, he tries “to focus on the ecological benefit of a farm and how we try to minimize the impact that farming has. Farming is manmade and a pretty destructive thing to the environment. Even in the way we farm, we walk that line all the time.”

Reynolds’ for-profit CSA farm monitors birds and turtles, and as per the stipulations of his lease has not expanded beyond its 1.5 acres to maintain the balance between farm and surrounding woodlands. He measures the organic matter in his soil as a metric of the farm’s success as well as its earnings and expenses. He is able to pay his employees and himself a modest wage several dollars higher than the local minimum wage. In combination, Reynolds could be said to be a social entrepreneur.



The pond at Gaia Gardens is actually a stormwater catchment for East Lake Commons. Love Is Love Farm is able to irrigate its crops from the water catchment much of the year.

Whether certified organic or not, case study farms rely primarily on multi-year cropping rotations to decrease disease, weed, and pest pressure; application of compost and organic amendments like fish emulsion; and constant vigilance in monitoring their crops. City regulations and personal philosophies do not permit the use of common



There's only so much you can focus on. Better to find another organization that has the passion, and bring them in as partners.

– Ben Flanner
Brooklyn Grange, Brooklyn and Queens, NY

synthetic fertilizers, pesticides, herbicides, fungicides et al. As good neighbors reliant on community buy-in, case study farms are often open to the public and offer informal education on the ecosystem services of urban farms. Yet, most of these attributes are hard to quantify, let alone prove as a measurable benefit to cities.

Cost of Social Enterprise

Nat Turner from Our School at Blair Grocery speaks for many urban farmers when he says, “There’s a difference between teaching-farming and production-farming, and often the teaching-farming messes up the production-farming.” Farming requires precision and vigilance. But, when a farmer’s fields are subject to constant traffic from visitors eager to learn and connect with their food, it could lead to damaged crops, compacted soil, and food contamination.

“We do a lot of nonproductive work around here,” says Glenn Foore of Springdale Farms with a half-smile, half-grimace. “People want to see the farm, so we feel sort of obligated to walk them around, talk to them about what we’re doing.” While he and his wife, Paula, love to share their passion for farming with others, doing so negatively impacts their productivity and bottom line.

Rishi Kumar, founder of the Los Angeles nonprofit urban farm The Growing Home (no relation to the nonprofit Growing Home in Chicago), earns close to \$50,000 per year on his half-acre backyard lot in the Los Angeles hills growing 12 months of the year. But, with him, his mother, and another full-time employee, he says he could not make this intensive growing operation work without the five to eight part-time trainees who learn through working at the farm.

“Unless it was two highly-skilled people working every day 12 hours a day, it wouldn’t work,” says Rishi. “We are looking for grants for irrigation, refrigeration, shade structure, greenhouse; I don’t think it’s any different than any other farm.”

For nonprofits that aim to pay living wages, the costs of social entrepreneurship are higher. Chicago’s Growing Home aims to pay livable wages. But, executive director Harry Rhodes doubts the farm could ever earn enough to cover its costs. “Everybody talks about, ‘you have to be [financially] sustainable! You have to make it on your own!’ But, it’s not really possible for our programs,” he says.

Yet, it is exactly these types of urban farms that advocates of UA promote. Portland, OR, Manager of Food Policy and Planning Steve Cohen says, “The [urban farms] that I love are educational farms, because our stance is: we’re not going to feed ourselves [through UA], but all of the things I work on from planning to food waste is for valuing food. As we move from rural to urban society, we don’t value food the same way. I want kids to know where food comes from, learn about seasonality, and overall to realize that it’s hard for farmers to do what they do.”

Heather Wooten, Vice President of Programs for ChangeLab Solutions, a nonprofit that has written and consulted on UA zoning ordinances in California and beyond, agrees: “It’s not about the produce, it’s about the people” who stand to benefit from UA.

Social entrepreneurs and their supporters believe many people stand to benefit from UA. Sabine O’Hara, Dean and Director of Land Grant Programs at the University of the District of Columbia, says her program supports UA because “what drives thriving communities is quality of life. You shortchange yourself if you only look at the economic indicators. There are significant social and

environmental benefits as well.” While most farms acknowledge they cannot significantly impact food security in their communities, they improve quality of life by providing greenspace, reducing blight, and offering educational and community engagement opportunities.

There are ecological benefits, too. The “ecosystem services” UA provides—including environmental quality, reduced food miles, carbon sequestration, soil health—should be more highly prized, says University of Massachusetts Amherst instructor and landscape architect Helena Farrell. Portland, OR, urban farmer Marc Boucher-Colbert agrees: “Now I see that ecological and habitat preservation can actually be because of UA instead of a byproduct of other issues.”

However, it is also important to acknowledge that social and ecological benefits cost money. Caroline Dmitri, NYU professor and researcher of UA, says she went into the research looking for commercial urban farmers, but found something different. “A lot of urban farms don’t really exist to grow food, per-se. If you want to look at their benefits, then it has more to do with the feel-good social missions than to be [financially] viable.”⁷⁷

Those commercial farms that do exist to grow food—and sustain themselves on crop sales—are not necessarily aiming to fulfill a food access or food justice mission. While they do increase household food security (see Chapter 4), many make the majority of sales by selling niche produce rather than crops that have high calorie or nutritional value.

Some urban farmers focused on making viable businesses feel pressured into social entrepreneurship. “It’s great that urban farms want to be community oriented, but I also feel like there’s an obligation if you’re in the city to give stuff away,” says one urban farmer who asked to remain anonymous because of what they call the “taboo of wanting to have a business.” “There is pressure to give away your vegetables to a food bank or farmers market for low income people—which is great. But, why is it more frowned upon in [urban] agriculture to have a small business?” This is a common tension mentioned by case study farmers: whose responsibility is it that people can afford and access fresh produce?

Commercial urban farmers feel the heavy burden of social entrepreneurship, even as they try to realize themselves as social entrepreneurs. Glenn Foore is concerned that the hype around urban farming makes false promises to would-be urban farmers and their dreams of community and environmental change.

“I’m concerned that people are learning more about it, and think it sounds cool, it’s a pretty hip thing to talk about, but the economics are bad,” says Glenn. “A lot of people are learning the hard way. Like, ‘Oh, nobody told me that the economics aren’t working out here. I’m pulling \$5,000 a month out of my savings to say I’m farming, to lose another \$5,000.’”

Seeking Support for Social Enterprise

Just three for-profit and two hybrid-model case study farms received funding for their education and community engagement work. Farms’ ability to subsidize what Glenn Foore calls “non-productive time,” doing non-farm work for the social good, is based upon how the businesses were set-up.

For example, Brooklyn Grange helped to launch City Growers, a completely separate nonprofit, because the farm determined it was not financially feasible to run its own education program. Flanner says, “There’s only so much you can focus on. If [the Grange] set up a nonprofit [wing of the business], who would run it? Where would the passion come from? Better to find another organization that has the passion, and wants to focus on that, and bring them in as partners.” While the Grange provides a space for education to happen, it remains rooted in its for-profit model as a measure of success.



Ben Flanner overseeing and collecting data on crop development at Brooklyn Grange’s rooftop farm.

⁷⁷ See Dimitri, Oberholtzer, and Pressman “Urban agriculture: connecting producers with consumers” 2016.

Our School at Blair Grocery, meanwhile, was conceived as a nonprofit at the outset. Its business structure allowed it to accept hundreds of thousands of dollars of grants and donations to support its social enterprise as a farm and education facility.

On the other end of the spectrum, Springdale Farm added a nonprofit arm 7 years after launching the for-profit farm. The Foorees have struggled to find grants because they do not have a proven track-record as education or community service providers. While Paula Foore says she doesn't feel competition from urban farmers, she does feel it from other farm-based nonprofits and social enterprises: "We are all competing for the same grants."

Some farms engage in community interaction as part of their land agreement. This is true for Love Is Love at Gaia Gardens and Mellowfields, both of which are beholden to the community for the land they farm for nearly no-cost. That is not to say they would not do it otherwise; merely that communities have begun to put the "social" aspect into entrepreneur-launching programs.

For farmers like Greg Willerer and Oliva Hubert, farming is a social act. Hubert says community engagement and education takes up a lot of the family's time. "It's easy to focus on making money when you're not involved in the community," she says. Though she and Willerer would like to find grants, they would be for farm infrastructure rather than programming, which is a different perspective altogether.



A sign at the Merc Coop in Lawrence, KS features Mellowfields Urban Farm's owners, further assisting the farm's advertising to new customers.

Strengthening Urban Agriculture Social Impact by Bridging Approaches

The case study farmers are proud of their work building commercial farms but recognized the value of multiple forms of UA. As has been described, these commercial urban farmers find themselves challenged to meet a multitude of expectations regarding business profitability and social mission. Most CUA farms are highly visible to curious local citizens, which can be an opportunity for education but also a burden for time and business management.

Leaders of community-based urban farms express concern that the positive social impacts of urban farming on food justice, workforce development, and community empowerment could be undermined by a growing focus on commercial UA or *high-tech* controlled environment agriculture (CEA) by investors worldwide (see Ch. 6). A narrow focus on the commercial viability and return on investment of urban farming can obscure the social accomplishments achieved by urban farms, community gardens and noncommercial UA efforts.

Favoring those UA projects that seem to have the highest economic return on investment (ROI) may reinforce existing socio-economic disparities rather than improve community economic development or quality of life, as very few, if any, of the benefits of such UA projects accrue to the surrounding community. According to University of California Cooperative Extension Associate and Urban Agriculture Specialist Rob Bennaton, an excessive emphasis on economic ROI "almost completely ignores equity issues that have arisen in terms of historic disinvestment in low-income communities."

The hybrid CUA farms decision to separate educational efforts from commercial aspirations suggest opportunities for new collaborations among commercial and community UA that bring the best of both approaches to the table. A complementary approach, nested within highly accessible locations, would leverage the goals and assets of both strategies. Community UA recruits, inspires, and cultivates youth and new UA social entrepreneurs; mentoring by affiliated CUA farmers creates pathways for new UA business development; community UA goals of empowerment and social justice complement

environmental and economic innovation of CUA; citizens can explore the value and challenges of more regional food systems; and together, these UA approaches can make a more compelling argument for UA as an engaging land use practice.

Rather than prioritizing CUA over community urban gardens, or vice versa, there is and must be a well-supported place for both in the urban landscape. It is only through the active collaboration of both community-focused and commercial-oriented approaches to UA and the creation of purposeful policies supporting both that the full promise of food production in cities can be met.

Recommendations and Considerations for Supporting Urban Agriculture as Social Enterprises

Recommendation: Fund research to place value on the ecological and social services performed by urban farms.

Though commercially-viable urban farms are limited in their capacity to produce food for urban residents, particularly those with limited food access, they may have alternative impacts that improve the quality of life for urban residents.

Advocates of urban farming often cite the community development, educational, and ecological benefits of urban farms as a reason for further investment. But, it is hard for researchers, city planners, and funders to know what those benefits are “worth,” particularly when weighing urban farming against other land uses that have greater direct economic impacts. These services include:

- Educational: childhood and consumer education, which may grow the consumption of fresh, locally- and regionally-produced foods and produce in general; improved test-scores in math and science from hands-on learning in urban gardens and farms.
- Social: jobs and job-training for low-skilled or hard-to-employ people; increased healthy food access for underserved groups; improved relations among diverse groups.

- Community: shared community space amongst diverse groups; increased neighborhood safety; access to and appreciation of greenspace; decreased blight; increased neighborhood property values; stable neighborhoods with less “churn”; creation of new businesses near farms.
- Ecological: stormwater runoff management; carbon sequestration.

Placing a value on these services can help urban planners and city officials argue for agriculture as a permanent part of the urban landscape, because its benefits can be compared dollar-for-dollar with traditional economic development proposals. The National Science Foundation has also taken this stance, and its Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS) initiative challenges researchers to study and demonstrate those linkages and values.

Recommendation: Clearly target resources and grant funding to lead to the sustainable development of urban agriculture.

“Sustainable agriculture” is legally defined in U.S. Code Title 7, Section 3103 as an integrated system of crop and livestock management that will over the long term:

- Satisfy human food and fiber needs.
- Enhance environmental quality and the agricultural natural resource base.
- Make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls.
- Sustain the economic viability of farm operations.
- Enhance the quality of life for farmers and society as a whole.

Sustainable urban agriculture must also balance these pillars of sustainability: environmental health, economic profitability and positive social impact. Yet, the social impacts of UA can be overshadowed by an overemphasis on metrics such as ‘return on investment’ or ‘highest and best use’.

Both community and commercial UA have tremendous opportunity for social benefits: both approaches can strengthen community cohesion, provide education and workforce development skills, foster entrepreneurship, and create new infrastructure that, when done thoughtfully, will enhance the quality of life of the surrounding communities. These initial social benefits have the potential to have long term positive economic impacts. Through the funding of research to understand the full impact of different investments in UA on all outcomes, not just financial, the promise of UA can be more fully met.

Recommendation: Explore new models for incubating collaborative UA strategies.

Creation of UA centers which share space and resources could strengthen ties rather than tensions among community and commercial approaches to UA and provide venues for research on UA impacts. Such models offer an opportunity to prioritize social outcomes of UA while tying education to pathways for entrepreneurship and innovation. Shared resources could help both teach and train about the technical aspects of UA food production (e.g. planning, crop choice, enterprise budgeting, food safety), while also highlighting entrepreneurship, product development and social innovation. New collaborative farming and marketing models could evolve to represent the culture and history of host neighborhoods, celebrating unique connections among food and community.

Consideration: Recognize that public-facing social enterprises like commercial urban farms can drive neighborhood revitalization and increase the tax base, with positive and negative consequences to local community residents.

Beyond their direct and indirect social and ecological benefits, urban farms may also drive neighborhood revitalization. Community gardens were employed in the second half of the twentieth century for similar reasons: connecting neighbors, increasing the presence of “eyes on the street” to ward off crime, inspiring neighborhood beautification projects, and providing a space for overall social capital cultivation. These effects can make neighborhoods more attractive to other businesses or new residents, particularly those who view an urban farm as a valuable part of the bundle of goods and services one “purchases” when renting or buying a property. Thus urban farms can be a benefit similar to parks, grocery stores, or good schools.

As such, urban farms, including those with social missions, risk contributing to gentrification and pushing out the people who started farming (because of desire or necessity) or for whom the farms were meant to serve. Urban planners, community groups, and future urban farmers may consider working together to site new urban farms to best achieve the desired outcomes of all groups.

Consideration: Remember that not all farms aim to be commercially viable through agricultural product sales alone.

This report investigates the commercial viability of UA and acknowledges that not all urban farms are intended to be profitable enterprises. Many of the farms profiled in this study leverage their location to host educational and recreational events at the farm, benefiting both the farm and the local community. Urban farms have many missions and strategies for achieving their goals: it may be fair to consider the extent to which their strategies for funding their activities—grants, donations, non-agricultural income streams—are sustainable in the long-term. UA incorporation into cities must be financially viable, but there are multiple paths toward financial viability that are not strictly commercial.



Street view of Wilson Street Farms.

Chapter 6: The Promise and Challenges of Controlled Environment Agriculture in Cities

Urban controlled environment agriculture (CEA), which includes greenhouses and vertical farms with 100 percent artificial light, has surged in the past several years. In CEA systems, the growing environment (temperature, carbon dioxide, light quality and intensity, water, soil, nutrients, and relative humidity) can be controlled. These types of farms require significant energy inputs to maintain the light and temperature environment, in contrast to high tunnels (used by several urban farms profiled here) that typically do not use any supplemental heating, cooling, or lights. High tunnels are also movable structures, unlike greenhouses or vertical farms which are permanent installations.

CEA has two general approaches. The first, greenhouse production, is a well-established agricultural method. These systems enclose the plant growing environment with glass or plastic structures that maximize use of sunlight, moderate temperatures, and reduce plant stress. The second, vertical farms or plant factories, produce plants in completely enclosed buildings that use sole-source electric light with no sunlight. Vertically-stacked growing platforms incorporate either hydroponic (a constant stream of nutrient-boosted water) or aeroponic (a sporadic or misting stream of nutrient-boosted water) plant-growing methods. Spurred by increased demand for fresh local produce and facilitated by more efficient LED lighting systems, CEA operations promise consistent year-round production of high-quality produce using one-tenth the water and causing less food waste.

While there are many micro CEA operations, entrepreneurs have capitalized on new technologies and new interest from grantors and investors to launch large-scale urban CEA companies. Greenhouse-based urban CEA company Gotham Greens has expanded several times to include three farms in New York City and another in Chicago. Its 60,000 square foot greenhouse in Queens, NY, was granted one million dollars from the New York State Energy Research and Development Authority and up to an additional \$152,000 in tax credits from the State's economic development fund to create 46 full-time jobs.

Meanwhile, Aerofarms, a vertical farming company, aims to build 25 vertical farms around the world in 5 years. The company has raised over \$90 million in investment capital, including funding for a 70,000 square foot facility in Newark, NJ. Each facility could employ up to 40 people.

Cleveland's Evergreen Cooperatives saw CEA as a promise to help lift the local neighborhood out of poverty. Its original plan—to provide head lettuce and herbs to nearby hospitals and institutions year-round—was designed to provide good jobs and good food through UA. Evergreen's Green City Growers (pg. 191) received significant start-up capital, but found itself lacking in a few key areas where other CEA producers have also found obstacles: a lack of skilled workers, difficult market penetration, and the tough economics of competing with field-grown lettuce.

Examples of Commercial Urban CEA

Gotham Greens, New York and Chicago
Hydroponic rooftop greenhouses

Green City Growers, Cleveland
Hydroponic freestanding greenhouse

Dream Harvest Farming Company, Houston
Hydroponic vertical farm

Aerofarms, Newark
Aeroponic vertical farm with sole source lighting

Help Wanted

The burgeoning CEA industry needs qualified workers. It needs personnel for low-skilled work like seeding, harvesting, and packing produce, along with highly-skilled master-growers and experts at the intersection of plant biology and computer science, says Ed Harwood, Chief Science Officer for Aerofarms. While all agriculture benefits from highly-skilled head growers, the high capital investments, high operating costs, and delicate ecosystem balances of CEA requires extreme competency and few mistakes for the business to thrive.

There is some on-the-job training for low-skilled workers—urban residents who likely have no agriculture experience—and training programs like Growing Home (pg. 135) attempt to anticipate these farms’ needs and place trainees in CEA jobs.

In the long run, increased mechanization imagined for CEA may reduce the number of low-skilled jobs. While some CEA executives are sure low-skilled work will always be needed, others see mechanization as essential to competing with field-grown crops, primarily lettuces and tender greens.

As mentioned previously, Eric Ellestad of Local Roots states that “True cost parity [with field-grown crops] requires a lot of automation and people who are more technologically savvy.” Researchers agree. Louis D. Albright, emeritus professor at Cornell University and former director of its Controlled Environment Agriculture program, says automation of tasks like seeding can improve efficiencies and decrease costs. Neil Mattson, current director of Cornell’s CEA program, adds that some CEA companies can justify the higher one-time cost of labor-automating machines to save on labor costs down the line, ultimately lowering operating costs.

Still, there is a strong emphasis on job training. High schools around the country have begun to incorporate CEA to teach botany, biology, food science, and more. Nick Greens, a CEA consultant and former grower at FarmedHere in Chicago, partnered with Jaime Guerrero, a chef and local food activist, to start the Food Science Lab at Chicago Public Schools’ Carl Schurz High School. The



Lettuce being grow hydroponically by students in the Schurz High School Food Science Lab, Irving Park, Chicago.

Food Science Lab includes hydroponic, aeroponic, and aquaponics demonstrations, experiments that students conduct, and harvesting the bounty of lettuces and microgreens.

CEA is a strong fit for high schools, they say, because it is a hands-on learning tool that produces throughout the school year (unlike many school gardens), excites students about fresh produce and even provides lettuce and microgreens for school lunches. In addition to all its education and nutrition benefits, CEA in high schools can also be part of a pipeline to train skilled CEA workers, seeding interest in CEA with youth and helping them train for future careers.

Trade Secrets

Training of a CEA workforce faces one major hurdle: intellectual property and “trade secrets.”

Real-world CEA curriculum development is hampered by CEA companies’ reluctance to share their standard operating procedures which may include intellectual property that keeps them competitive, says Greens. Howard Brin, a CEA advocate formerly of the Association for Vertical Farming, agrees: “Standard operating procedures are very proprietary and are not shared between companies.”

As a result, there are also few internships available, says Greens. He suggests that “workforce development can promote transparency between CEA companies over time,” as workers move to new jobs among companies and share knowledge and skills amongst themselves. Developing a standardized CEA training program is difficult in part because of a lack of sharing of industry knowledge.

Meanwhile, Albright says very little of what urban CEA entrepreneurs call intellectual property is really intellectual property. Most so-called trade secrets, he says, have been used all over the world for decades by greenhouse and sole-source lighting CEA operations. Still, many companies require researchers to sign non-disclosure agreements to even visit a facility.

This opacity makes it difficult to understand start-up costs and long-term business projections for urban CEA. One reason Green City Growers is an excellent CEA case study is its umbrella organization’s nonprofit status and the strong social commitment of its executive team which made it easier to gain deep insight into its successes and challenges. Mattson says Green City Growers is similar to

other greenhouses he has worked with, who show greater transparency than vertical farm operators. Greenhouse operators are more willing to invite other greenhouse operators to workshops at their farm and talk about their challenges openly, he says.

Environmental Costs

Though CEA touts many environmental benefits, including water use reduction up to 90 percent over field-produced crops, it also has environmental costs. Energy costs for system operation, including temperature control and lighting (particularly in sole-source lighting vertical farms or plant factories), compete with labor costs for the largest expense on a CEA enterprise, says Mattson.

Energy costs have environmental impact, reminds Albright, and those that use “essentially free” sunlight have far less of an environmental impact than sole-source lighting vertical farms. “Modern greenhouses typically transmit outdoor sunlight to indoor crops with 70 percent efficiency,” says Albright. Sunlight transformed to electricity via photovoltaics to power LEDs in vertical farms, meanwhile, converts sunlight to crops with single-digit efficiency.⁷⁸

The result, says Albright, is widely varying carbon footprints, one of the underpinnings of the local food movement’s concern with ‘food miles.’ Albright’s calculations show that lettuce produced in vertical farms, which provide nearly 100 percent of photosynthetic light from electricity and require 20 or more hours of electrical lighting per day, have a carbon footprint four to five times greater than lettuce produced in greenhouses. Add to this the additional cost of cooling vertical farms, which unlike greenhouses rely more heavily on cooling to remove heat from growing lights, and the environmental cost of vertical farming is very high.

To illustrate the point, Albright simulates lettuce production in scenarios around the country. In one scenario, he compares three types of lettuce purchasable in the northeastern United States: local vertically farmed lettuce, local greenhouse-grown lettuce, and California field lettuce shipped to the northeast. Given current technology in both controlled-environment scenarios, lettuce shipped from California still has a lower carbon footprint.⁷⁹



Green City Growers use insulating blankets to conserve heat and control light levels in the greenhouse.

Marketing Controlled Environment Agriculture Products

Despite their carbon footprint disadvantage, urban CEA companies still market their produce as the sustainable, hyper-local option. Many also add elements of food-accessibility in their mission. As observed with some soil-based urban farms growing niche produce, accessibility is questionable when based on the price of produce: around \$14 per pound for lettuces and \$22 per pound for micro-greens.

Yet, willingness to pay for local CEA is limited. A forthcoming paper by Mattson and Miguel Gomez shows that, while consumers are willing to pay a premium of 19 percent for locally grown lettuce (with a flexible definition of “local”) there is no difference in the willingness to pay for CEA lettuce.⁸⁰ However, CEA can especially benefit from the demand for local in winter months, when produce grown outside is hard to find or nonexistent. In a previous study on consumer willingness to pay for local foods, freshness, perceived health benefits, food safety, and flavor were named as the largest determinants of whether a consumer purchases local food—not the locality itself necessarily.⁸¹

78 Albright, Louis D. “Urban Plant Factories: High in the Sky or Pie in the Sky?” Lecture to Urban Ecosystems class, Cornell University, April 7, 2015.

79 Harbick, K. and Albright, L.D. (n.d.) Comparison of energy consumption: greenhouses and plant factories. *Acta Horticulturae*. In Press.

80 Nishi, Irin Ferdous. 2017. Consumer Willingness to Pay for Local Vegetables Grown in a Controlled Environment: The Case of Lettuce. <https://doi.org/10.7298/X4X63K37>. Accessed Nov. 2, 2017.

81 Tang, Y.,M. Gómez, and K. Park. “A Case Study of Price Premiums for Local Foods in Tompkins County, NY.” *Smart Marketing*, November 2014.

Like many other businesses, the launch of urban CEA businesses is often predicated on soft commitments to purchase produce. For example, J.J. Reidy, founder of the shipping container CEA business Urban Pastoral, based the launch of his company on informal purchase agreements with his business school alma mater, Johns Hopkins University. When a dispute over cost arose, he was adamant that he receive his price, which is significantly higher than the “commodity prices” he says the school was used to paying. “They need me,” he says, referring to the school’s commitment to buy locally.

“Success to a CEA operation is 10-15 percent profit,” says Albright, who estimates that 80 percent of people who approach him with a CEA business proposal have no background in horticulture, agriculture, or a related field. “But success in agriculture is single-digit profit.”

Mattson considers today’s urban CEA businesses the early adopters in the industry. Early adoption often comes with a price premium, like most consumer technology. Urban CEA-grown produce is no different and seems to fetch a high price. Add high location costs—higher rents, more expensive fuel, wages adjusted for higher costs of living in urban areas—to the other costs of urban CEA business, and the higher price for its produce makes sense. As the industry develops and more product is available, prices are likely to come down. The long-term profitability of these high-cost, energy-intensive systems remains to be told.

Locating Controlled Environment Agriculture

While most of the CEA operations described here are located in urban areas, some CEA companies, like Bright Farms, choose to locate in peri-urban and rural areas and benefit from lower location costs.

Urban locations do not necessarily mean a lower carbon-footprint for distribution. Most food retailers use large produce distribution facilities to aggregate and coordinate movement of products to stores. The addition of a truck delivery from an urban farm actually adds to the total food miles. Add to that unpredictable city traffic, and Albright says peri-urban greenhouses that deliver to food distribution facilities tend to make more sense in terms of total energy cost.

Transporting CEA-grown lettuce from a peri-urban or rural area a few hours’ drive outside of cities is not likely to have a significant deleterious effect on produce quality or nutritional value, says Mattson, who adds there is not significant peer-reviewed literature on the subject to point to this. “If you’re talking about 3,000 miles away, then yes,” he says, “but a tenth of that mileage is not likely to have the same impact so long as the cold chain is in place.”

Urban farms have a greater ability to engage with neighbors and play a part in revitalizing communities. Urban CEA facilities make similar aims to “fuel blooming communities where others fear urban decay”⁸² by making “post-industrial buildings alive again.”⁸³ They pilot CEA projects at local schools and eagerly support secondary school training for CEA jobs in urban areas. Meanwhile, community access to a CEA production facility is limited by necessity to preserve the careful control of growing conditions and minimize plant diseases.

Jobs are one area where most urban CEA businesses aim to have social impact. This is certainly the case for Green City Growers, which hires directly from its surrounding neighborhood and provides supports like housing and transportation assistance to help employees thrive. Green City Growers’ wrap-around services go far beyond other CEA operations, though many aim to “bring agriculture jobs back to cities and create green-collar jobs for the future.”⁸⁴

Good jobs for city residents who are chronically unemployed or underemployed is a strong promise, but runs counter to the need for increased production automation for CEA businesses to remain competitive.

Urban CEA businesses also claim their urban location and production capacity make them particularly adept at providing produce that is “accessible to everyone”⁸⁵, particularly Americans living in food deserts.⁸⁶ However, CEA businesses most frequently sell their produce at high-end retailers like Whole Foods Markets and local specialty retail chains as well as restaurants, and are reliant on these high price sales for their bottom line.

Urban CEA offers many promises: prolific food production, water conservation, decreased carbon emissions (due to lower transportation costs), jobs, increased food access, and more. But, the unique technologies of CEA will determine the extent to which they can deliver on each of those promises.

82 Gotham Greens website. <http://gothamgreens.com/our-philosophy>

83 FarmedHere website. <http://farmedhere.com/>

84 Local Roots website. <http://www.localrootsfarms.com/future/>

85 FarmedHere, *ibid.*

86 Local Roots, *ibid.*

Tradeoffs will occur. Fully-enclosed vertical farms in urban areas may have lower transportation fuel needs, but much higher draws on the energy grid due to lighting and cooling. CEA may be able to bring product costs down to increase food access through automation, however this will eliminate lower-skilled jobs. These are complex chain reactions, but more information is needed for entrepreneurs, investors, and cities to make decisions that benefit all parties, including citizen consumers.

Recommendations and Considerations to Advance Controlled Environment Agriculture

Recommendation: Fund and conduct independent academic research on the costs, output, and environmental and social impact of CEA.

CEA momentum is strong, but to sustain it CEA must achieve tangible benefits for more people than entrepreneurs and investors. The majority of current academic research considers the productivity of different CEA technologies, while industry white-papers tout early successes in the United States and abroad. Neither group, however, considers the full environmental, social, or economic impact of new CEA technologies and the extent to which their promises can realistically be fulfilled. The promise of low-water, high-productivity, high-value yields has excited entrepreneurs and investors, but for funders and cities, which provide allowances and tax breaks for CEA businesses, more information is needed to determine under what conditions these businesses can deliver on production, jobs, and return on investment.

Research can clarify the multiple costs of CEA—including start-up and operating costs, energy, labor, environmental and other costs, to better describe and distinguish CEA from soil-based UA systems. Different combinations of technology, strategy, and location will also suggest situational best practices and will offer decision-makers like investors, city planners, and educators, the requisite information to determine whether or not to invest resources in CEA.

From energy loads to societal impacts, more research is needed comparing vertical farms, greenhouses, and field-grown product in both urban and peri-urban areas. As

technologies evolve, greater transparency about the costs and benefits this type of production system will support decision making on future investment.

Recommendation: Conduct case study analyses similar to those in this report on commercial CEA businesses to assess community, policy, and social factors influencing their viability.

Case studies of existing urban CEA businesses increase transparency around business viability and can help entrepreneurs, investors, city officials, and others determine if CEA is a strong fit for their city. Case studies like the ones in this report discuss farm start-up, including necessary capital, resources, and policies; production practices and technologies; sales and marketing strategies; challenges and expenses, including changing needs for labor; and the expected future course of the business.

Large CEA businesses in American cities declined to respond to requests for interviews for logical reasons; the consensus of expert opinion is that CEA businesses are too new and are too attached to their (often proprietary) technology to be transparent and risk releasing ‘trade secrets’ that may make them less competitive in the marketplace. Yet, to grow the industry—from workforce development programs to research to investor relations—CEA businesses would benefit from working together to increase industry visibility, transparency and future investment by numerous funders, including municipalities and local communities.

Recommendation: Support research on resource-efficient CEA technologies and approaches.

The growing popularity of CEA promises year-round production of greens, fish, and more. Yet, enclosed CEA facilities, and in particular those dependent on sole-source lighting, are challenged by high energy use and costs for lighting and cooling. In repurposing older buildings or warehouses for CEA, the heating, venting, and air conditioning systems are often inadequate to manage the heat and humidity generated by the plant growing systems.

Urban CEA may decrease food waste by being closer to markets, and thus require shorter and more efficient supply chains. While this would suggest a decrease in product losses during shipping and handling, there is a lack of peer-reviewed research on the extent to which this is actually a benefit. In addition, most CEA products are highly perishable and require careful handling to retain quality.

Consideration: Invest in workforce development training to benefit CEA and the entire agriculture sector.

CEA businesses and industry groups indicate a shortage of skilled workers may hamper the industry's growth. High-skill jobs require 4-year degrees or higher in botany, biology, and computer science; even low-skill jobs require some basic training in plant science and production techniques.

CEA programs are popping up in 4-year and community colleges, high schools, and even elementary schools, engaging students in activities that teach math, science, nutrition, and more. With industry collaboration to elucidate skills and processes, these programs could become a workforce pipeline for the CEA industry.

The entire agricultural sector can benefit from students' early engagement with growing their own food. More knowledgeable eaters, more invested consumers, and more future farmers will be a boon to the future of agriculture, particularly those farmers that grow fresh food for human consumption.



Chapter 7: Sustaining Commercial Urban Agriculture through Policy

Previous studies have done well to catalogue the ways cities and suburbs use zoning ordinances and municipal comprehensive plans to include UA into the city fabric.^{87, 88, 89} Rather than provide another list of these accomplishments, this chapter discusses the context in which they arise, their strengths and weaknesses, and the conditions for their successful encouragement of more UA.

Commercial urban farms' viability hinges on land access and cost. Access to land is determined by practical zoning policies, affordable land, and agreeable lease terms. But policies permitting urban farms are just the first step. While multiple city agencies may have expressed interest or oversight of various urban farm activities (e.g. soil contamination, water use, renovation of buildings, and new markets), each agency requires separate policy adaptations. Though this can be an onerous process, when these policies operate in tandem they create a strong platform for CUA success.

While there are several planning tools and strategies that encourage stronger local food systems as an integrated component of city plans,⁹⁰ this chapter reviews those specific policies that directly impact commercial urban farms and that proved the most valuable or challenging to case study farms.

Legalizing Urban Agriculture: Urban Agriculture Ordinances

City zoning codes determine the permitted and prohibited uses of all land within municipal limits. As cities became more populous, agriculture was eliminated as a zoned use to encourage urban density and the "highest and best use" of limited space.

Urban agriculture ordinances (UAOs) are a common mechanism to change zoning codes to permit agriculture where it had previously been a prohibited land use. UAOs define different types of UA (e.g. community gardens, market gardens, urban farms), determine where UA can occur (e.g. residential zones, commercial zones), and restrict the size and activities of farms to what is deemed acceptable and reasonable by officials and the community. UAOs may include limits on farm structures, livestock, or sales.

Ten of the 13 municipalities featured in this report have passed UAOs or other zoning regulations in response to urban farms. While some farms like Little City Gardens have used UAOs to justify their existence and build support for urban farming, others like Brother Nature Produce are unsure that the regulations will improve their businesses. Farming has long been a permitted use in Kansas cities, including Lawrence and Kansas City; it was a permitted use in Austin, TX, as well, but a dispute over urban farms led to a revised UAO in 2013.

Some farms thrive in an environment with few regulations regarding urban farming. For example, Kansas City, KS, and Buffalo, NY, have yet to pass strong policies regarding CUA, so farms operate relatively undisturbed. Others that farm in marginal spaces, like Brooklyn Grange's rooftop farm or Mycopolitan Mushroom Company's basement grow rooms, are subject to fewer regulations than ground-level farms and have experimented and thrived without regulation.

With a limited knowledge base and conflicting opinions about UA, establishing UA legislation is typically an iterative process; no UA legislation is perfect on the first try. It took Springdale Farm 3 years of zoning board hearings to re-affirm the legality of the farm, which was permissible under Austin, TX, existing zoning. The new zoning legislation restricted certain activities on residential properties, but did not differentiate them from farms on

87 Goldstein, M. et al. "Urban Agriculture: A Sixteen City Survey of Urban Agriculture Practices Across the Country." Turner Environmental Law Clinic, Emory University. 2011.

88 Hodgson, K., M. Caton Campbell, and M. Bailkey. "Urban Agriculture: Growing healthy, sustainable places." Chicago, IL: American Planning Association, 2011.

89 Mansfield, B. and W. Mendes. "Municipal Food Strategies and Integrated Approaches to Urban Agriculture: Explore Three Cases from the Global North." *International Planning Studies*, 18:1, 37-60; 2013.

90 For an excellent description of these policies, see Schneider, S., N. Civita, and L. Bernadett. (2015). "Local Food Policies: Reconnecting People to Their Food." Chapter in *Urban Agriculture: Policy, Law, Strategy, and Implementation*. Eds. M.H. Chumbler, S.E. Negro, and L.E. Bechler. American Bar Association. pp. 49-63.

commercial properties, like Springdale. This omission led the farm owners to seek a conditional use permit. The process cost tens of thousands of dollars and months of farm productivity, a sacrifice few urban farms have the resources to make.



Cover of Boston Redevelopment Authority's 2014 publication, "Article 89 Made Easy: Urban Agriculture Zoning for the City of Boston".

In New Orleans, UA amendments to the comprehensive zoning ordinance led to overly restrictive conditions, like a beekeeping limit of one beehive per lot, that are detrimental to commercial farming. Marianne Cufone, agricultural lawyer and founder of New Orleans' Recirculating Farms Coalition, says that because the city council did not understand what farms need to operate successfully, the regulations were based on incomplete information. Revised regulations are in the works in New Orleans, which Cufone interprets as a sign that city leaders are willing to work with UA leaders to reassess and amend regulations as needed.

Even when there is legislation and licensing permitting urban farms, it is not always clear to urban farmers how to become licensed and what city ordinances allow or prohibit. A local farming toolkit or guide, as Boston has created⁹¹, can help farmers navigate the process to becoming a legal farm.

Joe Reynolds of Love Is Love Farm at Gaia Gardens says, that even though DeKalb County, GA, where he farms has updated its ordinance to include urban farms, "Nobody's gone and gotten permitted or gotten licenses. I don't think

anybody's quite figured out where to go, and the county hasn't come knocking just yet. When they do, I reckon [licensing] will happen."

Understanding UA policies and permitting can be overwhelming, says Jenny Rushlow of the Conservation Law Foundation. "Even where urban farming is legal, [cities] don't do a great job making the process clear," she says. "People need help interpreting this stuff."

Attorney Becky Lundberg Witt at the Community Law Center in Baltimore says an additional challenge to UAOs and other permissive policies is that those policies and priorities are not communicated or consistent across city government. "You can get two messages: one from one agency saying, 'Go forth and plant!' and then another says, 'No! Don't get attached to your land!'"

David Silverman, a Chicago attorney, has worked on UAOs which he calls "very fashionable" in urban planning right now. But, he says, city governments should have answers to a long list of questions before they pass an UAO: "Have you properly planned for the incorporation of agriculture into [the] community? Is it part of your comprehensive plan? What's the regulatory framework? Can you handle it under existing regulations? What is it going to do to the marketability of surrounding parcels of land, particular with livestock or apiary?" The list goes on, including soil quality issues and determining which city agency has ultimate oversight of UA projects.

One concern Rushlow has heard from city officials is fear that urban farmers are not prepared to take on the responsibility of maintaining land. In Boston, she says, city officials "want to give city-owned parcels away for urban farming, but fear that people interested in taking them over don't have the skills to do so properly." Boston is working with the Urban Farming Institute to prepare farmers for this responsibility.

Regulating Urban Agriculture

When cities pass UAOs or other UA zoning amendments, they often base site requirements and restrictions on pre-existing zoning that is not adapted to UA scenarios. This is the simplest method of incorporating UA from a planning perspective, but can create complications for urban farms, which do not operate like other businesses. Below are some examples where well-meaning UAOs failed to understand the activities of a farm.

⁹¹ Boston Redevelopment Authority. (2014). "Article 89 Made Easy: Urban Agriculture Zoning for The City of Boston."

Site Requirements: Parking, Sidewalks, Signage

Urban farms are increasingly permitted by right on residential land. But, city agencies have had difficulty deciding which regulations do or do not apply to them based on their commercial or nonprofit activities.

When Growing Home founded Wood Street Farm in Chicago in 2001, there was no city definition of ‘urban farm.’ The City designated Growing Home a ‘technical institute,’ which demanded costly landscaping and parking requirements. “We’re still fulfilling the requirements,” says Growing Home’s Harry Rhodes, some 15 years later.

In Portland, OR, an incomplete understanding of the UAO led the city’s Bureau of Transportation to require Side Yard Farm owner Stacey Givens to put in an American’s with Disabilities Act (ADA) parking space, which cost her \$4,000, and sidewalks. She worked with the city’s planning and sustainability offices to appeal the Bureau of Transportation’s sidewalks decision, which they determined to be a requirement for a commercial business even though there were no other sidewalks in the rest of the neighborhood. Because sidewalks were not in keeping with the character of the neighborhood, they reasoned, the farm did better to maintain the neighborhood quality. The successful appeal for a variance was just one step in educating Portland city bureaus about the nature and needs of urban farms.

Navigating the gray areas of UA policy is no less difficult on commercially-zoned land. Austin, TX, did not make separate provisions for commercially-zoned urban farms, and decided instead that Springdale Farm, which has that zoning, must pursue a costly conditional use permit to determine if it had more rights than residentially zoned farms. A timely and costly process, the conditional use permit was granted only if Springdale put in ADA parking spaces and illuminated “Exit” signs at its gates.

“I don’t know how you could get lost in here,” says Springdale Farmer Glenn Foore, looking across the 5-acre lot’s clear sightlines to a 4-foot fence at the back of the property. “But, I guarantee this is the only farm you’ll see that has illuminated exit signs.” From a regulatory perspective, policies need to be practically applicable to specific case situations: in this case, how often are consumers likely to be on the site at night to see illuminated signs?

Rooftop farms most often have to comply with existing green roof policies, many of which included edible plants as permissible vegetation from their inception. Brooklyn Grange’s rooftop model avoided ground-level zoning issues

because its activities fell under “green roof” designations. Furthermore, it took advantage of a green roof tax abatement that incentivized landlords to support or install green roofs and rooftop farms.

Streamlining the process for approving a green roof could make it easier to install more of them, says Lara Hermanson of urban farm landscaping company Farmscape in Oakland, CA. In the Bay Area, she says, it can take up to 6 months of hearings before getting a green roof started, which can hurt the bottom lines of those installing them.

Farm Buildings

Farm buildings are a necessary but poorly understood aspect of farm operations at the zoning level, including offices, cold storage, tool sheds, shade structures, greenhouses, and high tunnels. For example, New Orleans’ 2015 amendments to its comprehensive zoning ordinance finally made it legal for a lot used as an urban farm to also have a structure for office space and storage. Before that, any residentially-zoned lots used for farming could not have buildings, electricity, or lights. The amendments allow a farm to have an office or meeting space with bathrooms and electricity.

“Urban farms are not rural farms,” says New Orleans lawyer and urban farm advocate Marianne Cufone. “You aren’t running back and forth from the farm house. Urban farms need a place for the things [needed] to run a business,” she says. UA property tax incentives that declare that lots “may only be used for agriculture” may not be applicable to lots with structures that could be used for farm purposes.



Farming on rooftops helped Brooklyn Grange get the needed acreage to farm in NYC.

Meanwhile indoor farms venture into relatively uncharted, but far less contested, territory. All of the indoor farms studied here are on industrially zoned lots. While food safety and other building protocols are still required, controlled environment growing does not present a zoning issue, possibly in part because they are less publicly visible.

“[Most people] never even ask if we’re a legitimate business or where we’re growing, unless it’s out of curiosity,” says Tyler Case of Mycopolitan Mushroom Company. Co-founder Brian Versek continues, “They’re more like, ‘We don’t know what you guys do, we assume you’re doing great. Thanks for the mushrooms.’”

Water

Urban water—access to it, the cost of it—is one of the biggest production concerns of farmers interviewed. Farmers gaining access to vacant land cannot be sure that there are available water hook-ups and connecting to a water main can cost several thousand dollars. When farms do have water access on-site, water billing rates follow zoning; residential water rates are often more expensive than commercial or industrial rates, and are far more expensive than agricultural irrigation water rates available in rural areas. Finally, water fees for sewage and stormwater discharge are common, but very few cities make exceptions for urban farms, which do not contribute to sewage or stormwater flows.

Urban farms with access to alternative sources of water, including rain barrels and wells, are eager to use them to avoid the high costs of city water. Urban growers argue that when fields are responsibly irrigated and there is 100



Green City Growers reclaims most of the water needed for its hydroponic operations from rainwater off of the growing space’s roofs. Hair nets, beard nets, and other food safety precautions are standard protocol.

percent water infiltration, the water is either used to grow plants or recharge aquifers, outcomes that benefit the environment and stressed city sewers and water treatment facilities.

Most public utilities, however, are designed for water consumption by humans, and assume that water will pass through a sewer system, run off into a stormwater system, or will combine in a combined sewer system. Because urban farms are often new and few in comparison to a city’s total water use and processing, cities are slow to adopt policies removing water-processing fees.

“If you have green space, you’re helping [to mitigate] stormwater problems,” says Winona Bynum, Executive Director of the Detroit Food Policy Council. “How do urban farms get credit for that? In a city not set up to think about that, how do we get it in place? Water fees cut into profits, but farms are a benefit to the city.”

Some cities and counties have changed their water billing policies for urban farms. Atlanta and DeKalb County, GA, use irrigation meters, which charge farmers a lower rate by eliminating sewage charges. However, they also require backflow preventers, which can be expensive.

In New York City, community gardens can apply for a Department of Environmental Protection permit to use water for free from sidewalk fire hydrants. The City of Philadelphia’s Water Department at one point had a lockbox program whereby community gardens and urban farms could gain access to a fire hydrant and backflow preventer. But, after losing too many backflow preventers (about \$300 each) when gardeners forgot to return them, the city discontinued the program. It did, however, offer an exemption to the city’s farmers and gardeners for stormwater fees, lowering the price of irrigation by about a third.

For farmers in cities like San Francisco that do not charge stormwater fees, finding a way to reduce costs can be difficult. After the founders of Little City Gardens petitioned the city’s Public Utilities Commission, the commission developed a grant program to subsidize the full cost of meter installation (about \$7,000) for vacant lots that did not have a water meter.

Even in cities where stormwater fees do not exist or, as in Portland, OR, are exempted for urban farms, the price of water is still a burden for farms on residentially zoned lots. Residential water rates are often tiered, and higher volumes incur higher fees. Water is the most frequently mentioned resource contributing to the overall cost of production by urban farmers, and is a concern second only to land cost, access, and tenure stability.

UAOs often do not cover water rates, which are part of a different department and sometimes a different regional authority entirely. Such was the case in New Orleans, LA when it passed its UAO in 2015, and also in Lawrence, KS. Lawrence farmer Kevin Prather says the zoning amendment committee, in which he participated, came to the conclusion that water-related programming was out of its purview due to lack of clarity in regulatory oversight.

Soils

Urban soils are particularly worrisome to planning departments and city councils considering whether to incorporate UA programs and policies into their municipalities. Urban soils are more likely to hold contaminants from pollution, run-off, or structures that previously stood on empty lots. Lead, heavy metals, and historical application of pesticides are of particular concern.

Some municipalities have begun to require soil testing for community gardens and urban farms, but requirements are inconsistent.⁹² Farmers markets and distributors also require soil tests to prove there is no risk of contamination of food sold.⁹³

“It would be useful [for cities] to have a roadmap on how to establish soil testing requirements,” says Hannah Shayler of the Cornell Waste Management Institute. “It is a whole other layer once we’re talking about selling produce to the public. That implies a liability that’s different than gardeners sharing with neighbors.”

But, says Shayler, many cities do not have the “[agency or programmatic] structures to go about soil testing and interpretation and follow up in a consistent way,” including review and recommendations when sites are near State or federally recognized contaminant thresholds.

This is the main reason that Detroit, in the looming shadow of the Flint, MI, lead crisis, has not yet made soil testing requirements. Kathryn Underwood, who has helped usher UA zoning through Detroit’s planning department and city council, says even if the city was to mandate soil testing, “We do not have anybody on staff who can interpret the tests. Planners can’t. The Property Maintenance Division can’t.” As Underwood suggests, an unenforceable rule is no better than no rule at all.



One of Lay Htoo’s family members lends a hand loosening soil in preparation for the spring planting.

State cooperative extension systems support testing and interpreting soil tests on rural farms. Few urban counties, however, have extension agents or educators with UA expertise, though the rise of UA in some cities has necessitated the creation of such positions (see Chapter 4, Farmer Training & Information Networks). Extension resources are augmented by Federal Environmental Protection Agency guidance and publications.⁹⁴

Sales

Another regulatory gray-zone is on-site sales, which have been legalized by Detroit⁹⁵ and other cities in recent years. Baltimore, MD, did not allow on-farm sales for several years, treating urban farms like community gardens from which sales are prohibited. The recent Homegrown Baltimore initiative changed these rules to allow farm stands on-site.

Homegrown Baltimore sits in the middle of the spectrum of city regulation of on-farm sales. On one end is New Orleans’ present ban of on-farm sales, leading to covert sales just off the farm property; on the other end is the Austin provision that allows on-site sales of farm product as well as products made off-site if they comprise less than 20 percent of total retail space.⁹⁶

92 See http://www.urbanaglaw.org/soil/#Index_of_Existing_Soil_Safety_Requirements_by_Location but check cities for up-to-date ordinances.

93 Interviews with Ashley Atkinson, Keep Growing Detroit and Haile Johnston, The Common Market Philadelphia.

94 See for example, “Evaluation of Urban Soils: Suitability for Green Infrastructure or Urban Agriculture,” 2011 at nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100GOTW.TXT

95 http://detroitagriculture.net/wp-content/uploads/2013_Sharable_UA-Ordinance.pdf

96 <http://www.austintexas.gov/edims/document.cfm?id=205937>

There are few municipal restrictions placed on produce sold off-site, through a CSA pick-up location, farmers market, restaurants, or other direct wholesale, other than what facilitators of those sales (market managers, distributors) may require. In one instance, Portland, OR, banned CSA pick-ups in residential neighborhoods due to resident complaints of increased traffic on pick-up days.⁹⁷

Other Urban Agriculture-Promoting Policies

City, State, and federal grants and incentives can be used in interesting ways to promote urban farms. New York City's Green Roof Tax Credit incentivized Brooklyn Grange's Queens landlords to lease the roof to the farm, while the city's Department of Environmental Protection Green Infrastructure Grant provided three-quarters of the cost to launch the second farm at the Brooklyn Navy Yard. In the second case particularly, the city grant was crucial to the project's launch.

Austin's 1992 incentive program to place businesses on its then-depressed east side was not intended to start farms like Springdale Farm, but provided ample land at a low interest rate to do so more than 25 years after the Fooses purchased it. These types of incentive programs are not unusual in city planning, and have begun to be adopted for the express purpose of promoting urban farms in cities and states throughout the country. Utah, Missouri, California, Maryland, and some municipalities provide tax incentives in "agricultural zones," with varying restrictions on the types of farming that can occur to receive incentives.⁹⁸

Green City Growers is unique in that it is the only agricultural business eligible for development financing through the New Market Tax Credit (NMTC) program.⁹⁹ Designed to incentivize investment in economic and community development in low-income communities, NMTCs exclude agriculture and farm development from eligibility.¹⁰⁰ It does not, however, prohibit the construction of a controlled environment facility as part of a commercial or mixed-use facility built to meet these standards.

Property tax exemptions for UA are a recent policy movement that has gained traction throughout the country.¹⁰¹ For example, California's Assembly Bill 551, the Urban Agriculture Incentive Zone Act, provides a property tax reduction for any vacant land owner in the amount equivalent to the difference between current property taxes and an agricultural assessment of the same property, so long as the landowner commits to allow UA on the property for 5 years. The law must be adopted by each city or county.¹⁰² Similar provisions have been adopted in Maryland, Missouri, and other States.¹⁰³

Cities like Cleveland, OH, are also carving out agriculture incentive zones, and targeting areas for UA development. These are frequently located in neighborhoods with significant vacant land and little economic opportunity due to historic disinvestment and high poverty rates.

Leaders of Urban Agriculture Policy Change

The evolution of each municipality's UA policies differs, but a few key groups and mechanisms are responsible for driving, shaping, and enforcing these policies.

Farmers

As several case studies herein demonstrate, UA policy often reacts to existing agricultural pursuits in the city, rather than setting the stage for their appearance. "The City seems to catch up after things happen on the ground," says Harry Rhodes of Growing Home in Chicago. Growing Home and Growing Power Chicago were instrumental in redrafting and advocating for Chicago's UAO.

That was also the case for Detroiters Carolyn Leadley and Greg Willerer, founders of Rising Pheasant Farm and Brother Nature Produce, respectively. "When we started, what we were doing was illegal," Leadley says. Willerer says, "before the [UA] ordinance passed, there were a few crazy people like me who didn't care if [farming] was legal or not. And now that it's technically legal, you see a few more people taking a risk to build up a farm."

97 Interview with Steve Cohen, December 15, 2015

98 Chumbler, Martha Harrell. (2016). "The Tax Implications of Urban Agriculture: Liabilities and Incentives." Chapter in *Urban Agriculture: Policy, Law, Strategy, and Implementation*, eds. Martha H. Chumbler, Sorell E. Negro, and Lawrence E. Bechler. American Bar Association, 2015, pp. 177-183

99 See <https://www.cdfifund.gov/programs-training/Programs/new-markets-tax-credit/Pages/default.aspx>

100 26 CFR 1.45D-1(d)(5)(iii)(C);

101 Johns Hopkins Center for a Livable Future. 2016. Food Policy FAQs: Property Tax Credit for Urban Agriculture Uses.

102 August 2016.

103 Johns Hopkins, *Ibid.*



Co-author Molly Riordan learns from Carolyn Leadley of Rising Pheasant Farm.



Greg Willerer in the field at Brother Nature Produce.

Farmers even advocate for and shape local policy. Caitlyn Galloway and Brooke Budner of San Francisco's Little City Gardens, decided that rather than apply for a costly and difficult-to-secure conditional use permit, they would get the law changed. Their activism led to the redefinition of urban farms in San Francisco, which allows "neighborhood gardens" of less than 1 acre to exist in all zoned areas, as well as on-site sales. Similar activism by the Oakland Food Policy Council led to the citywide allowance of limited agriculture in Oakland.

Existing UAOs are providing models for other cities and other farmers, who may be the first to navigate city bureaucracy in order to farm legally in the city. An intern for Our School at Blair Grocery developed a spreadsheet of details from UAOs from other cities and copied the most relevant pieces into a document when the farm applied for a variance. The City of New Orleans approved the variance for the Lower Ninth Ward properties, aided by the model language from other cities.

Advocacy Groups and Urban Agriculture Leadership

Two distinct types of advocacy organizations have emerged to support UA and food policy generally. First are food policy councils, representative bodies of local food system leaders that collaborate to develop policy

recommendations that integrate food and farming into local governance.¹⁰⁴ Scores of food policy councils are active at the city, county, regional, state, and tribal council level in the United States.¹⁰⁵

The second type of organizations are nonprofit think tanks, food system alliances, farmer groups and advocacy organizations that write model policy and UAOs, and work with cities to adopt such policies. Heather Wooten, Vice President of Programs for ChangeLab Solutions, a policy and local planning organization, has worked with the city of Sacramento, CA, and others to write and adapt UAOs to local environments.

"When an ordinance allows for sales, for example, planners have many concerns," including traffic, noise, and neighbor complaints, says Wooten. "But an informal ChangeLab survey of planners in cities where on-farm sales were legal did not report any of these negative effects." Organizations like ChangeLab can translate information and policy-impacts from one municipality to another, helping cities adopt policies more quickly with evidence from other cities.

Cultivating UA leadership that represents the communities where UA is active remains a priority for many organizations. When Allison Boyd joined the Baltimore Farm Alliance as Executive Director, she expected to find even greater diversity among farmers and leaders than

104 Hamilton, Neil. (2002). "Putting a Face on Our Food: How State and Local Food Policies can Promote New Agriculture," *Drake Journal of Agricultural Law* 7(2), 407-454.

105 Food system expert Mark Winne maintains a map of active and former food policy councils on his website, <http://www.markwinne.com/list-of-food-policy-councils-in-the-usa/>

she had experienced in rural North Carolina. She quickly learned that in Baltimore, as elsewhere, the development of UA and small-scale farms were being led primarily by individuals with financial means from outside of the communities. Boyd worked to increase the diversity of the membership in the Baltimore Farm Alliance and cultivated new Alliance leadership that reflected the demographics of the city.

Other farmer-based organizations have taken on missions to advocate for leadership in UA of different races, ethnicities, and genders that more accurately represent the diversity of farmers in this field. One such example is Black Urban Growers which for the past decade has been committed to building networks and community support for growers while also nurturing collective black leadership in both urban and rural settings, particularly in locales where investment priorities may not reflect the goals or needs of the local community. Embedded within its mission is improved access of farmers of color to land, training, funding, agriculture networks, and policymakers, as well as expanded representation on boards of local governments and foundations.

Food Policy and Sustainability Directors

City mayors have begun to create positions in their administrations for officials who interpret the needs and gaps in the local food system. Often called Sustainability or Food Policy Directors, Coordinators, or Managers, they are frequently housed in a city department such as the Mayor's office or the planning department. They work across departments to implement policies that better serve the city's food system and environment, including its urban farms. The Urban Sustainability Directors Network, a national organization providing knowledge and resource sharing for individuals in these city positions, has over 135 members.

Food policy directors and offices work across a wide array of issues, including food access, farm-to-school programs, and development of food hubs or other aggregation and distribution infrastructure. While they are vocal advocates for UA, as city employees they must also diplomatically and objectively weigh the needs of urban farms against other city priorities. Steven Cohen, Manager of Food Policy and Programs in Portland, OR, has worked to raise the profile of urban farms, but because of the city's urban growth boundary that prioritizes density, "it hasn't led to a lot of ground being plowed."

Edwin Marty, a former urban farmer and now the Austin, TX, Food Policy Director, is a strong advocate for urban farms in schools, which can act as educational resources and distributors of vegetables to students and their

families. But, he says, he does not push for too many outdoor soil-based commercial urban farms because "the purse economics of it are never going to make sense." Still, he has successfully worked with embattled commercial urban farms to establish clear zoning regulations.

Atlanta, GA, meanwhile, is the first city in the country to hire a Director of Urban Agriculture. Mario Cambardella, who was hired into the position in 2015, says framing food systems issues through the lens of UA, "can link urban farming to several facets of a stronger food system," including economic development, cultural preservation, education, ecological literacy, and better nutrition for city residents. One of Cambardella's actions in the position was to make irrigation meters available to community gardens, fulfilling the requests of many Atlanta growers eager for access to irrigation water at a lower price than residential rates.

Land Use and Licensing Programs: Land Banks, Trusts, and Inventories

When city-owned land is made available for UA, there are several entities and tools that can facilitate, or in some cases inhibit, access. The first, land banks, are public or quasi-public entities that manage vacant city land. Land banks sell off properties for development. Sales are made based on land bank and (sometimes) city development plans at market rates for the land.

Detroit developed its Land Bank Authority as a semi-autonomous entity to manage its thousands of vacant properties. While Land Bank land is plentiful, it is not easy for urban farmers to access. Greg Willerer and Olivia Hubert of Brother Nature Produce struggled to secure the land they farm from the Detroit Land Bank after years of attempts. The collective hypothesis among urban farmers, they say, is that the Land Bank is holding out for higher-return development. This follows the idea of "highest and best use," or the optimal outcome for land development based on economic (and sometimes social) factors. Without a specific directive to sell land to urban growers, land banks are free to choose who gets land and who does not, and may prioritize functions like housing or industrial uses that appear to have higher economic returns by common real-estate calculations.

Land trusts, a second entity type, are private or nonprofit landholding entities that are distinct from land banks in a few key ways. First, trusts are usually developed to maintain a stock of affordable housing and/or greenspace,

keeping the community in control of its own development. Second, properties are held “in trust” forever: buildings can be built or sold, but have permanent restrictions on deeds of sale. Community land trusts are common in cities like Boston and Chicago that have vacant land, a large low-income population, and increasing land-prices.

Growing Home worked with NeighborSpace, a Chicago community land trust, to start its Wood Street Farm in Englewood, becoming the first urban farm NeighborSpace started. Meanwhile Boston’s Urban Farming Institute worked with a community land trust to launch the first of several planned urban farms in the Roxbury/Mattapan area. Community land trusts can provide more affordable access to land and more security for the community. Such lands will be controlled by the community for future generations.

Land banks and land trusts maintain inventories of their properties, as do city departments like planning, housing, or preservation. Land inventories for UA are a third land-based strategy that could inform UA policy and placement of UA. There have been efforts to map vacant land¹⁰⁶ and urban farms¹⁰⁷, but overall cities do not provide maps of vacant land that would be most suitable for farming.

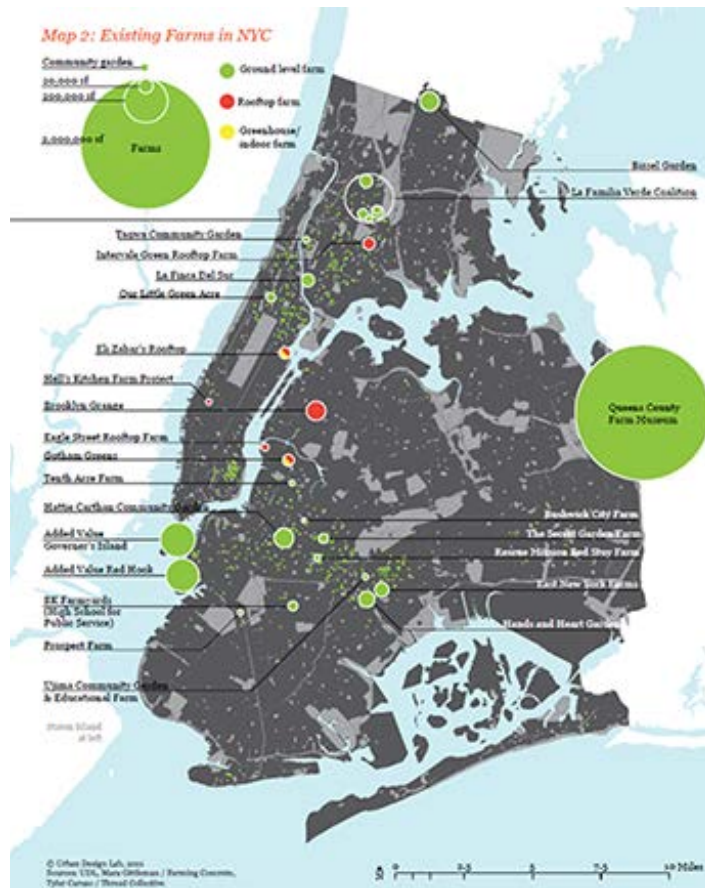
Some planners think UA land inventories would be hard to maintain. “Land changes hands so quickly, it would be hard to keep track” of suitable farming land, says Detroit’s Kathryn Underwood. A full map would have to include the development history of every lot in the 142-square mile city to rule out possible contaminants or other dangers. It would be a monumental task to develop, let alone maintain, says Underwood.

Bruce Durbin, Supervising Regional Planner at the Los Angeles County Department of Regional Planning, says an inventory of “toxic land” would be equally impossible for the unincorporated areas over which his department presides: 2,600 square miles. While the county is interested in which parcels are fit for UA, especially as it implements the Urban Agriculture Incentive Zone act, the impact of UA would not outweigh the expense of such an inventory.

“When we started studying [UA] with the county working group, we found you can’t do soil testing without being comprehensive: different bore drills, different depths, different locations. If you are going for [an UA tax exemption], you want to find out what’s there. But, it is a very expensive procedure” and the County could not take it on, says Durbin.

Furthermore, Los Angeles County, like many municipalities, does not have the knowledge on staff to make strong assessments. “We have zoning enforcement officers, but they’re not scientists,” says Durbin, who works with the Los Angeles Food Policy Council (LAFPC) on implementing the incentive zone act. While LAFPC is trying to build a database of available properties, says Durbin, “they haven’t determined if they’re truly vacant or if they’re fit for urban ag.” This suggests that for Assembly Bill 551 to be successful, the growers would have to bear the cost-burden of soil testing, and the proof-burden of establishing that a site is not contaminated.

Not all experts agree that city-based UA land inventories are impossible to maintain. Dr. Samina Raja, Associate Professor of City and Regional Planning at the State University of New York at Buffalo and Director of Growing Food Connections, notes that cities, “do not have a problem maintaining inventories of land suitable for commercial development.” She suggests that city departments have control over this information, thereby controlling and potentially curtailing UA development.



Map of existing farms in NYC as found in *The Potential for Urban Agriculture in New York City* by Urban Design Lab, The Earth Institute, Columbia University.

106 <http://www.buildingdetroit.org/our-programs/side-lot-sales/>

107 See for example <http://mdfoodsystemmap.org/farm-food-storymap/> http://urbandesignlab.columbia.edu/files/2015/04/4_urban_agriculture_nyc.pdf <http://cuamp.org/#/>

Recommendations and Considerations for Unifying Urban Agriculture Policy

The following are suggestions, based on information garnered through this study, on how and where UA policies work best.

Recommendation: Ensure that UA policies are coordinated with and supported by other municipal support services.

UA policies need to be integrated not just into zoning ordinances, but into the functioning of other city departments as well. Philadelphia's Elisa Esposito says it is crucial for the Department of Parks and Recreation to get buy-in from other city departments in charge of water and streets to help Philadelphians gain access to farm some of the 8,000 vacant city-owned parcels.

"Philly has a vibrant UA movement, and [it] largely happened [with] limited government support: there was more support from nonprofits and academia. But, what's missing is access to land, water, clean soil," and the involvement of the supportive city departments in charge of those elements, she says.

The same coordination is needed in cities like Portland, OR, and Detroit, MI, where case study farmers found that while farming was legal under zoning, it was difficult to coordinate with other municipal services. This might be avoided if policy planning and implementation includes stakeholders from other city departments.

Recommendation: Sponsor more critical analysis of existing UA policies and educate city planners on urban farm functions and best support strategies.

Early adopters of UA said they spent a lot of time educating city leaders about farming, dispelling myths, and showing the value of growing food in cities. This work began with the community gardening movement, and continues today. Each of the case study farmers has had some role in educating their city officials and administrators about the needs and benefits of UA.

Several organizations offer links to UA policies and other regulations around the country, including the Growing Food Connections' searchable database¹⁰⁸, Sustainable Economies Law Center¹⁰⁹, Vermont Law School's Center for Agriculture and Food Systems¹¹⁰, and ChangeLab Solutions.¹¹¹ Yet, there is no coordinated critical analysis of these policies to determine which most strongly support UA and commercial urban farms.

An analysis of city-level UA policies and a dissemination of best practices in UA planning could help city planners across the country identify successful policies and prevent cities from spending time and resources to recreate strong UA policies. Based on stakeholder interviews, primary topics to consider when conducting an analysis of existing UA policies were identified. They include:

- Are these policies working in tandem with municipal support (zoning ordinances, access to land, water, clean soil, etc.)?
- Are these policies in conflict with other urban priorities?
- When these policies were developed were the people being impacted consulted?
- Is there an undue burden (amount of paper work or time required, complicated process, etc.) being put on UA practitioners in order to be compliant with policies? Is there a way to improve the process and requirements?
- Are the policies aligned with the current community demographic and resources available in the community?
- How is it being ensured that the policies impact and benefit all individuals equally and equitably?
- Do the policies require access to resources (e.g. capital, investments, loans, education, and political connections) that undermines lower-resourced people and their ability to achieve economic gains from UA?

108 <http://growingfoodconnections.org/tools-resources/policy-database/>

109 <http://www.urbanaglaw.org/>

110 <http://www.vermontlaw.edu/academics/centers-and-programs/center-for-agriculture-and-food-systems>

111 <http://www.changelabsolutions.org/tools-healthy-planning>

Recommendation: Ensure local plans, funding and policies for UA engage and respond to community input.

Many UA programs and incentive zones target areas with a lot of vacant land and few traditional economic development prospects. Though Rust Belt cities like Detroit, Cleveland, and Buffalo are proving that this can result in viable commercial urban farms, it is important that residents' voices are leading the conversation, says Detroit planner Kathryn Underwood. Participatory planning processes that treat local residents and business-owners as partners and key informants in redevelopment planning can ensure new land use, including UA, is neighborhood-appropriate.

Kim Scott, city planner for the City of Cleveland agrees. After the housing foreclosure crisis left thousands of homes and properties vacant and abandoned in Cleveland, the Federal Department of Housing and Urban Development (HUD) authorized \$9.4 million in Neighborhood Stabilization Program funds to knock down blighted homes and provide incentives for people to purchase vacant land for creative reuse.¹¹²

But, says Scott, "in areas that have been disinvested, people who see opportunities to get funding to support projects are not necessarily reflective of the people living in challenged neighborhoods." As the city considered applications for program funds, it looked at whether applications were submitted by residents living in close proximity or from surrounding suburbs.

"If you're going to propose it, that's one thing," says Scott of suburbanites looking to profit in Cleveland's disinvested neighborhoods, "but how well is your project going to be received by neighbors? Will you have credibility? Have you talked to them?"

Scott and other Cleveland planners started talking with neighborhood residents about redevelopment, including food access. "While some of us on staff thought that people probably were not aligned with "food movement" conversation, we were pleasantly surprised that some were," says Scott. This helped inform their planning direction, and the development of the Urban Agriculture Innovation Zone in the city's Kinsman neighborhood.

Recommendation: Review and revise UA policies to ensure broad benefit by the entire community of current and potential urban farmers.

Most urban farmers interviewed for this study observed that the current structures and priorities of many UA policies and protocols makes it excessively difficult for local community residents to enter the profession. For example, access to available vacant land parcels is too often limited to those prospective farmers and farm managers who are already well-resourced and well-connected politically. To ensure that available vacant sites are promoted to all aspiring farmers and avoid perceptions of bias, municipal governments and planning organizations should consider some of the following practices:

1. Evaluate existing UA land policies and requirements for obtaining vacant land parcels and determine whether or not they provide fair and equal access to all interested parties, including lower-income community residents.
2. Evaluate whether information about UA policies and land access opportunities is distributed in a way that ensures fair and equitable access.
3. Compile an inventory of all available vacant land parcels, using the resources of municipal planning agencies and other departments.
4. Examine available vacant land inventories for their agricultural suitability (e.g., zoning, historical use, utility connectivity, proximity to other buildings, and contiguity with other vacant parcels).
5. Promote and facilitate access to suitable agricultural sites to all community residents.
6. Engage directly with marginalized or underrepresented communities, and/or the nonprofit organizations and foundations that advocate on their behalf, to solicit recommendations on how to design or modify programs that promote UA to ensure access to programs by all residents. One example of this type of approach is the 11th Street Bridge project in DC, which aspires to create community-led processes and support inclusive development.¹¹³

112 <https://development.ohio.gov/files/cs/NSPAwardAnnouncement.pdf>

113 <https://bbardc.org/the-park/>

7. Embed robust community engagement processes into UA planning, to build trust and participation in these urban food systems. For example, programs addressing equity in land access could be collaboratively designed by diverse farmers and communities, urban farmer advocates, and the local, State, or federal agencies that direct and monitor such programs.

Consideration: Align UA policies to complement other urban priorities.

It is easier to advance UA policy when it complements existing priorities. Cities like Portland, OR, that have a strong desire to increase density can also incorporate UA if it is done so with other priorities in mind. “I see nothing wrong with UA so long as it does not detract from urban development,” says Portland land use attorney Carrie Richter. But, when increasing affordable housing is a city priority, she says, “I would hate to see urban farms take the place of needed housing.”

Elisa Esposito, Urban Agriculture Coordinator for the City of Philadelphia Department of Parks and Recreation, says she and other UA advocates are “trying to change the city-mentality of gardens as interim development,” and show how urban gardens and farms are a complementary permanent use to housing and other development.

Permanent use requires considerations of long-term land tenure, comprehensive UA risk management, environmental health, and personal and public safety, suggests attorney and professor of food systems Nicole Civita. “Make sure [UA] ordinances are designed to create harmonious uses,” like a provision that beehives be kept a certain distance from property lines. Without those provisions, there will be conflict over farms, she says.



Chapter 8: Urban Agriculture Innovations: Policies, Plans, Strategies, and Technologies

While this report focuses on fourteen UA businesses that have a demonstrable record of successfully meeting the proposed definition of CUA, emergent policies, plans, strategies, and technologies show early promise in further integrating UA, including CUA, into the fabric of cities across the country. The following examples are just a sample of the many ways city planners, policy-makers, and entrepreneurs are strengthening the support for UA.

Innovative Policies

Baltimore Allies with Farmers

The City of Baltimore has enacted a handful of policies to allow residents to turn some of its 14,000 vacant lots, a result of its declining population since the 1960s, into gardens and farms.

Baltimore's Adopt-a-Lot Program allows residents to adopt a vacant lot, listed on the city's Housing Office website (which operates the program). Adopt-a-Lot leases are one year in duration, and can be terminated with 30 days' notice if the city sells the lot to a developer. Adopted lots can be used for gardens, farms, greenspace, or small informal parks open to the community.

When successful urban farms like Whitelock Community Farm, backed by significant produce sales and community support, petitioned the city for longer leases and more security, the city developed the Homegrown Baltimore Land Leasing Initiative. Part of Mayor Stephanie Rawlings-Blake's comprehensive initiative to encourage the

production, sale, and consumption of locally-grown food, this program offers 5-year leases of city land to urban farms at a cost of \$100 per year.

This urban farming-specific program requires lessees to demonstrate at least 1 year of farming experience, and adhere to sustainable management practices including no pesticides other than those approved for use in certified organic production. The 5-year lease has the potential for a 5-year extension, and includes a 2-year notice to vacate city-owned land should the city decide to sell the property. In 2015, the Baltimore City Council approved a 90 percent property tax break for urban farmers who grow and sell at least \$5,000 of produce per year. Farmers are required to keep the parcel in agriculture for 5 years, and not use the parcel for anything other than farming.

To support new farms popping up as a result of these policies, urban farmer Maya Kosok started the Baltimore Farm Alliance, which provides farming education and helps to market and sell Baltimore farmers' produce. The Alliance is now a registered nonprofit. As the Alliance's membership grows, it is expanding its services to urban farms and reaching out to farmers of color or those from low-resource neighborhoods to make the Alliance more representative of the city itself.

"In so many ways, [the City of] Baltimore has gotten out of the way of people trying to [farm]," says Kosok, who operates Hillen Homestead flower farm on two adopted lots. While access to the opportunity to farm is equal, she says, access to the information on how to do it is not.

The difference between me and one of my neighbors [is] I have the knowledge of who to call to get what. If we want someone in an impoverished neighborhood to be able to start a farm, [these policies] should be better operationalized.

– Maya Kosok
Hillen Homestead Flower Farm, Baltimore, MD

Changing Laws in Los Angeles

The implementation of California Assembly Bill 551, the Urban Agriculture Incentive Zone Act, in Los Angeles County is the latest in a number of policy measures making it easier for Angelinos to farm in the county.

AB551 allows owners of vacant land who agree to host a farm or garden on the property for 5 years to be taxed at the agricultural tax rate. AB551 can apply to properties of any zoning, though the zoning determines what farming activities can take place (e.g. a farm on a residentially zoned parcel in unincorporated Los Angeles County cannot sell its produce without obtaining a conditional use permit). Rather than vacant land being reassessed at a higher tax rate because of 'improvements' via UA, landowners are incentivized to participate in a program that lowers their tax burden while creating more opportunities for farming in the city.

AB551 as implemented in Los Angeles does have some restrictions. Bruce Durbin, Supervising Regional Director of the Los Angeles County Department of Regional Planning, explains that the county differentiates community gardens, which are allowable uses in all zones, from commercial farms, which are not allowed by right in residential zones. A residentially zoned commercial farm requires a conditional use permit, a process that can take up to 2 years and cost more than \$10,000, says Durbin. However, farms on commercial or industrial land do not need a conditional use permit.

AB551 followed the passage of "The Parkway Act," a Los Angeles ordinance legalizing vegetable gardening in the parkways, or grass strips between the sidewalk and street, increasing residents' land access and eliminating fines for such activity. Along with the Cottage Food Act legalizing the production of some value-added foods for direct sale, these new regulations enable food business start-ups.

While Durbin has not been able to quantify significant economic development from these new policies, Los Angeles UA activist Andrew Goodman says, "We'll start seeing the fruits of [these policies] now that we've negated the disincentives" of urban farming.

Tara Kolla, a Los Angeles flower farmer who fought Los Angeles' 1946 Truck Farm law that prohibited growing and selling flowers, successfully led the charge to repeal the law and pass the Food and Flowers Freedom Act in 2010. While this was the first of the acts that have paved the way for more farming in the county, Kolla says there is still work to do.

"I wish that city officials were better informed about the importance of urban farming. Urban farming complaints [from neighbors] are an opportunity for education," says Kolla. She believes that by educating all city departments on how to share urban farming's benefits when responding to neighbor concerns, local communities will become as welcoming of UA as the regulatory environment in Los Angeles has become for UA of all types.

Innovative Plans

Welcome to the Agrihood

Though planned communities like East Lake Commons, in Decatur, GA, (Love Is Love Farm at Gaia Gardens Case Study: Pg. 162) have been in existence for decades, a new generation of real estate developers are incorporating agriculture into new housing developments.¹¹⁴ The first of the so-called agrihoods were in development in the early 2000s, and homes in them came up for sale just before the housing market collapsed. But, they have survived and are now thriving. These agrihoods vary in size and target demographic, but all specifically set aside land for agriculture use, and hire farmers or managers to grow produce and engage the residents. In most cases, farms produce a CSA type share for interested residents, or supply product to on-site restaurants. Demand for local food has increased along with the rise of New Urbanism,



Gaia Gardens is part of East Lake Commons, a cooperative neighborhood focused on sustainable living where cars are left outside and homes are close together to promote community development.

¹¹⁴ See for example <http://www.shareable.net/blog/12-agrihoods-taking-farm-to-table-living-mainstream>

an urban design movement that includes smaller homes, increased suburban density, and ecologically friendly design. Agrihoods integrate these design goals and lifestyle values and ensure local food and open space.¹¹⁵

Unlike the East Lake Commons' agreement which provides land, infrastructure, and some operating costs to its farmers, agrihoods hire their farmers into salaried positions to grow food specifically for the community. Urby, in Staten Island, NY, has a farmer in residence who is paid to manage a 5000-square-foot urban farm on site.¹¹⁶ The farmer also receives a studio apartment, to live on site. The farm's priority is to grow produce for the residents but also provides food to local food banks or restaurants.

Farming and Community Land Trusts

Boston, MA, is home to a complex constellation of community gardens and nonprofit organizations that incorporate gardening and farming into programming. It is also home to many vacant parcels: its Department of Neighborhood Development owns over 500 vacant lots in neighborhoods around the city.

In 2012, a group of residents from the Roxbury and Mattapan neighborhoods on Boston's south side formed the Urban Farming Institute (UFI). This group is interested in farming and increasing food access in these neighborhoods that have high poverty rates and low access to fresh food retail.

Around the same time, the City of Boston, informed by the work of the Mayor's Office of Food Initiatives and its Urban Agriculture Visioning Steering Committee, began to draft its revised UAO. Article 89, passed in 2014, defined and broadened the types of UA permissible in the city. It also made commercial urban farming legal.

One staunch supporter of Article 89 was the Trust for Public Land (TPL). A national organization dedicated to preserving urban and rural greenspace, TPL has completed over 5,300 urban and rural acquisitions preserving open and productive land by acquiring it and transferring ownership to local land trusts which hold land. Article 89 presented a new opportunity to preserve open space in cities while helping to start revenue-generating farms.

After Article 89 passed, the Department of Neighborhood Development announced a bid opportunity for three vacant lots. UFI, which had already been operating a

farmer training program on other lots, wanted access to the land, and partnered with TPL and Dudley Neighborhood Inc. (DNI), a local land trust focused on public housing, to apply for the land.

The group won its bid to farm the land, now known as Garrison-Trotter Farm, due to its unique strengths. TPL lent its credibility and deep pockets toward acquiring and investing in site preparation. DNI would then hold the land once renovations were complete and could lease it to UFI. UFI will use Garrison-Trotter for its training program, and has continued to pursue other sites around the city to place fully-trained farmers who want to begin urban farm businesses.

TPL was attempting to demonstrate a new way to help farmers, says Darci Schofield, Urban Program Director at TPL. "Land is expensive, capital improvement is expensive. [A farmer's] ability to produce is never going to get that return on investment." That's why organizations like TPL can help to prepare the farm sites and offer low-cost turn-key farms for low-resource urban farmers.

That type of investment is expensive. It cost TPL over \$200,000 to acquire and prepare the 0.3-acre Garrison-Trotter site, including bringing in soil and mulch, and building fences and storage sheds.

It is also not as easy as the city's "Article 89 Made Easy" worksheet for would-be farmers makes it seem, says Barbara Knecht, an experienced architect and designer who has acted as UFI's project leader for site development.

"[Boston] passed the zoning resolution but never got [city] agencies together to do something coordinated to help farms. The zoning resolution was passed with the idea that a farmer could take a farm through permitting and approvals process and have a farm at the end. But, that's the reality of land development... [farmers] don't have capital, time, and [the process is] complicated," says Knecht. As the first post-Article 89 farm, UFI and its partners experienced the challenges that still lie ahead for Boston's urban farmers.

Schofield is charging through to make way for more urban farms in part, she says, because she fears UA funding from other organizations may wane if it loses appeal with funders. And while TPL continues to primarily focus its urban efforts on parks, Schofield sees a place for urban farms.

115 <http://urbanland.uli.org/sustainability/food-adds-flavor-value-real-estate-agrihoods-food-halls-food-based-concepts/>

116 Rosen.K. (2017 March 10). A Staten Island Urban Farmer. Retrieved from https://www.nytimes.com/2017/03/10/realestate/a-staten-island-urban-farmer.html?mcubz=0&_r=0.

“From the TPL perspective, UA is not going to feed a city, or affect climate change. But, it does influence the consumer,” says Schofield. “How the public or neighbors interact with a farm, even if only visually, helps them learn and value greenspace.”

Innovative Strategies

Flower Farms

The daunting financial prospects of mixed vegetable farming in the city brought some urban growers to a new crop: flowers. Several growers who have been instrumental in changing policies and increasing support services for urban farmers have themselves turned to cut flowers which, they say, present fewer political challenges and have a greater profit potential.

Tara Kolla and her husband bought their home and half-acre of land in the Silver Lake neighborhood of Los Angeles in 2001. “I saw a field and an opportunity to grow crops,” says Kolla, who aimed only to earn enough from production to cover maintenance costs.

Unbeknownst to her, Kolla had started growing food and flowers as the early buzz around urban farming was just beginning. People wanted to learn from her, as well as buy her produce and flowers. She expanded to an additional property. Then city officials showed up.

Kolla was cited for breaking a 1946 Truck Farming ordinance that prohibited the off-site sale of flowers, and was shut down. “I had three options: close down and give up, pay thousands of dollars to try to get a variance (and even if I spend it, there’s no guarantee), or get the law changed. So I decided to get the law changed.”

Like Caitlyn Galloway in San Francisco, Kolla worked with local activists and politicians to repeal the law to expand opportunities to farm in the city. She also gave up vegetable farming, and her farm, Silver Lake Farms, focused only on “slow flowers,” a phrase used to describe cut flowers grown outside of the traditional cut flower industry.

Maya Kosok of Baltimore similarly advocated on behalf of vegetable farmers before turning to flowers. Kosok worked for Baltimore’s Real Food Farm, an educational nonprofit with a significant production farm, where she got to know

others in the urban farming community. She also applied and got access to a city lot to be used for gardening or greening (via the Adopt-a-Lot program described previously) and farmed it herself.

Kosok realized that Baltimore farmers could benefit if they shared tools and cooperatively marketed their produce. She launched the Farm Alliance of Baltimore to do just that. The Farm Alliance has grown to 20 member farms and works with city officials to continue to improve urban farming infrastructure and policy in Baltimore.

But, running the Farm Alliance and a farm was difficult, especially with two young children. Flowers, however, did not require the same time and intensity of vegetable cultivation. Today Kosok’s farm, Hillen Homestead, occupies two lots totaling a quarter acre of production. She works on her farm about 10 hours a week to provide a needed supplemental income her family would not have otherwise.

“Even if you gross \$11,000 or \$12,000, you still have the potential to take home between \$6,000 and \$8,000,” she says. “I don’t know about you, but for my family that amount of money is not insignificant.” She agrees that full-time agricultural employment is a laudable goal, but sees flowers as an excellent supplemental income.


Kosok and Kolla both said they can easily sell all they grow—demand for locally-grown cut-flowers is high. Caitlyn Galloway of Little City Gardens has moved up to a third of her production time into flower farming, which she says has made her vegetable enterprise more viable. While vegetables brought all three women to farming, flowers are what keep them in it.¹¹⁷

Urban Farms with Rural Partners

Stone’s Throw Urban Farm in Minneapolis and St. Paul, MN, was formed when a group of young urban farmers began asking one another the question: “how can urban farming be a viable business, relying on vegetable sales to support itself?” while also engaging the community and improving the environment?

The group agglomerated its parcels, which in 2016 numbered 11 and totaled 2.5 acres, and began to farm together as one operation. When one of its farmer-partners left the Twin Cities to start Whetstone Farm in rural MN, the two farms connected with the Latino

¹¹⁷ Despite Silver Lake’s Farm success and growing customer base, Kolla closed the farm in 2016 to pursue other agricultural pursuits in France with her husband. <http://www.latimes.com/business/realestate/hot-property/la-fi-hp-silver-lake-farms-20160521-snap-story.html>



One of the best models for urban farming is collaboration with regional rural farms to supplement urban farm production. In return, urban farms increase a regional [rural] farmer's reach and economic sustainability, helping [regional rural farms] stay alive.

– Rob Bennaton, UA Specialist
University of California Cooperative Extension

Economic Development Center, which runs a training program for Latino-run urban farming cooperatives, to see what opportunities might be available for cooperation with Latino-run rural farms.

In 2014, the two farms, along with three Latino-run rural farms—Agua Gorda Coop, Cala Farm, and La Familia Coop—formed the Shared Ground Farmers Cooperative. The Cooperative runs a 120-member CSA and conducts wholesale and restaurant sales for all five farms. Eric Larsen, principal farmer with Stone's Throw, says the connection to rural farms allows Stone's Throw to offer its produce—salad mixes, arugula, heirloom tomatoes—with crops like brassicas and melons from rural farms, creating more diversity and helping all businesses become profitable.

That wide variety of seasonal produce was also Mary Seton Corboy's goal when she expanded the CSA model at Greensgrow Farm in Philadelphia, PA. Corboy founded Greensgrow in 1997 when, she said, "I realized growing tomatoes in rural New Jersey is boring as hell." She and her founding partner Tom Sereduk identified a capped Superfund site, previously a steel galvanizing plant, and worked with the local community development corporation to lease the land and begin to turn it into a farm.

Greensgrow's evolution included the addition of high tunnels and greenhouses, experiments with hydroponic growing, and a nursery to diversify the nonprofit's revenue streams. It also restructured its produce sales, moving from selling what little the farm grew to starting a regional farm box program including vegetables from rural farms.

Philadelphia is surrounded by prime farmland: southern New Jersey, Pennsylvania's Lancaster County, and the DelMarVa Peninsula are home to sizeable produce farms that practice integrated pest and crop management

to maximize yield while minimizing impact on the environment. Greensgrow began purchasing from these farms and featuring them in its CSA. The move simultaneously diversified the produce Greensgrow could offer and helped it achieve its goal as an "idea farm" by raising awareness of regional farmers and food.

"Greensgrow's diversification is what helped it grow and thrive," says Elisa Esposito, UA Coordinator for the City of Philadelphia's Parks and Recreation Department. Philadelphia is a city of many urban gardens and farms; what sets Greensgrow and its 1,000-member CSA apart is its reach beyond the city's limit.

Moveable Feast

Michael Ableman has been an urban farmer since the 1980s when he started the Center for Urban Agriculture near Santa Barbara, CA, "when no one had ever heard of [UA]." Since then, he has moved to Vancouver, BC, and continues to be a UA innovator as the founder of Sole Food Street Farms.

Sole Food has four farm-sites in Eastern Vancouver, using temporary leases to grow food for sale at farmers markets, restaurants, and its own CSA. Sole Food utilizes custom-made grow-boxes with a pallet-like base, so they can be forklifted and moved, meaning Ableman and his team can move the farm mid-season without losing a crop.

Sole Food has 25 employees, many of whom struggle with homelessness, addiction, or previous criminal records. Ableman says the farm grosses nearly \$400,000 CA each year (approximately \$300,000 U.S. dollars), and attributes its success, in part, to learning how to farm in a rural area: rather than learning to farm in a city, Ableman says, "What was unique about Vancouver is that we took a rural production farmers experience and applied it to the city."

Today Sole Food also includes an urban orchard of over 500 fruit trees. They grow in the same soil-box units as the rest of the farm's produce, so that even trees are able to move around the city as land becomes available.

Urban "Farmlettes"

A new wave of urban farm businesses circumvents land access issues by modeling their viability on tiny spaces. They work with homeowners and businesses to use micro-plots of land to grow food for a variety of purposes.

Fleet Farming, a bike-based project of Ideas for Us in Orlando, FL, sets up agreements with Orlando homeowners to dedicate a portion of their yards to food production. Homeowners pay an initial installation fee for their Fleet "Farmlette," which is maintained by staff who bike between the 14 farmlettes.

Homeowners can have up to 10 percent of the salad greens, radishes, and turnips that grow on their lawns, but Fleet Farming Program Manager Michele Bumbier says they often take far less than that. Volunteers harvest the remaining crops on Saturdays, which are transported by bike to Fleet Farming's facility, and then sold to restaurants and at a farmers market. Revenue from harvest sales helps pay for Fleet Farming's staff, which provides maintenance of farmlettes throughout the week.

Fleet Farming is expanding to California, where another business, Farmscape, has been installing micro-farms since 2009. Farmscape, a for-profit company that installs and maintains urban vegetable gardens in and around Los Angeles and San Francisco, has installed over 600 food gardens and maintains 250-350 of them.

Farmscape does not sell any of the food it grows in backyards, corporate offices, or housing developments. "Farmscape has never sold a single carrot," says Lara Hermanson, Principal at Farmscape. "Part of the goal is to make [farms] an amenity rather than commercial." Hermanson compares Farmscape to a landscaping service, but with the added benefit of proving food and an interactive space for residents and visitors to sites.

Hermanson, who saw how difficult it was to earn a living while working on an organic vegetable farm, wanted to test an urban model that built beautiful gardens, taught people to maintain them over time, and pass along the benefits of urban farming without having to sell produce. "Within our work, we say the farmer's risk is on the client. If a bunny eats your lettuce, it's not our fault—but we will replant it for you."

Love & Carrots in Washington, DC, adopted a similar model, and started when founder Meredith Sheperd put up fliers advertising installation of raised-bed gardens. Since its founding in 2010, Love & Carrots has grown to a team of 12 and has installed over 500 gardens. It also actively maintains and provides coaching sessions for owners of 125 gardens.

"I call it 'urban farming services,'" says Sheperd, who is proud that the business has bootstrapped its way to profitability. Yet, with the desire to retain strong talent and frequent requests to donate services and materials to community and school gardens, Sheperd is considering a nonprofit arm of the business.

Farmscape is also concerned with retaining talent and making urban farming a career that pays. "We offer good salaries, healthcare, and paid vacation—a lot of things you don't get in traditional agriculture," says Hermanson.

Though Love & Carrots and Farmscape are out of reach for many people—"We're often people's second gardeners, and we're okay with that!" says Hermanson—both organizations prioritize creating good jobs that create positive impacts on urban environments and the communities who enjoy them.

City Animals

From backyard chickens to beekeeping collectives, urban farm animals are on the rise across the country. While a few laying hens in a small chicken tractor or a beehive on an urban farm are the new normal, commercially viable urban livestock farms are hard to find.

The reasons are obvious. Animals by their nature attract more attention than vegetables: they are larger, louder, and sometimes smellier, need more space and are mobile. Cities across the country have regulated their presence for decades, mostly telling chickens, goats, and pigs, "Keep Out."

Urban agriculturalists' new enthusiasm for livestock has led some to include them on their farm. Dorsey Barger, owner of HausBar Urban Farm in Austin, TX, has dozens of chickens, geese, ducks, rabbits, and two small donkeys. Her farm was at the center of a multi-year dispute over urban farming and livestock in Austin after a neighborhood group falsely claimed she was slaughtering 50 chickens a day (Barger says at maximum it was 20 chickens a week). Austin, unlike most cities in the U.S., allows on-site slaughter and owners can sell up to 10 chickens per week per acre of land.



Hollygrove Market The chickens are well-socialized at Hollygrove Market & Farm thanks to visits from many customers and community farmers.

In Pittsburgh, PA, Carrie Pavlik and Doug Placais have a small homestead that includes two Nigerian Dwarf goats, the maximum allowed in the city. They sell the babies to others in the city eager to take advantage of Pittsburgh’s urban farming ordinance allowing goats, to milk them for their own home use.

The couple also owns and operates Steel City Grazers, an 11-goat landscaping company that clears vacant lots and open spaces of brush and weeds. While this type of goat-grazing operation is common in California and Oregon, says Pavlik, Steel City Grazers is attempting to make the model work in Pittsburgh where the grazing season is shorter and the public has less knowledge about urban livestock.

Like cities around the country, Pittsburgh responded to the demand for including traditional livestock animals—small ruminants, chickens, ducks, and bees—by passing a 2015 ordinance allowing for limited numbers of such animals on residential property.¹¹⁸ New York City lifted its ban on

beekeeping in 2010, making urban apiaries legal in the five boroughs;¹¹⁹ cities like Milwaukee, WI,¹²⁰ Sacramento, CA,¹²¹ and Fayetteville, AK,¹²² have done the same through UA ordinances. These policy steps are opening the door to responsible animal husbandry in cities, giving entrepreneurs like Pavlick, Placais, and Barger the chance to see if good animal care can be good business, too.

Innovative Technologies

Farm in a Box

Unused shipping containers, once seen as an ugly side-effect of global trade, are now being turned into controlled environment agriculture (CEA) farms. Entrepreneurs around the country are retrofitting standard containers into hydroponic and aeroponic farms using LED lights and adaptations of CEA technology. These containers, they say, can produce the same amount of leafy greens as 4 to 5 acres of field-grown lettuce with a fraction of the water.

Unlike large-scale CEA operations that benefit from their size, containerized CEA units benefit from modularity, says Eric Ellestad, co-founder and CEO of Local Roots, an “agricultural systems integrator” prototyping such units in Los Angeles.

“I take major issue with the premise that [what we’re doing] is urban farming,” says Dan Kuenzi, Local Roots’ second co-founder. “What we’re doing can be placed anywhere,” including communities in need of fresh produce. Kuenzi estimates that each unit could provide two jobs growing hundreds of pounds of lettuce each week.

Yet, Ellestad acknowledges that to reach true cost parity with field-grown lettuce from California’s central valley, its units and ones like it will require “a lot of automation and people who are more technologically savvy.” While Local Roots does not sell the units yet, others like CropBox

118 Ordinance amending and supplementing the Pittsburgh Code, Title Nine, Zoning Code, Article V, Use Table, Section 911.02, and Use Regulations, Section 911.04.A.2 to expand the allowable zoning districts for all Agricultural Use Zoning Classification categories, and to amend and add additional standards and procedures; amending and supplementing Chapter 912, Accessory Uses and Structures, by amending the subsection for Urban Agriculture; and supplementing Chapter 926, Definitions, to supplement standards for Urban Agriculture accessory uses. (2015). City of Pittsburgh.

119 Smith, M. (2015, March 16). Big Apple lifts beekeeper ban. Retrieved from <http://www.nbcnewyork.com/news/local/NYC-Health-Dpt-Lifts-Beekeeper-Ban-87834542.html>

120 Chapter 78-6 Milwaukee Code of Ordinances (2010).

121 Section 9.44.330 of the Sacramento City Code.

122 City of Fayetteville Code of Ordinances. XV 164.04 (C) Urban Agriculture Ordinance: Bees. Passed 2014.

and Freight Farms are designing shipping containers for individual purchase. Containers vary in sophistication and price: Freight Farms “Leafy Green Machine” costs \$82,000-\$85,000, depending on its features, and the company says it costs approximately \$13,000 to operate annually, including electricity and water.

J.J. Reidy, a Baltimore-based social entrepreneur who founded the container-based Urban Pastoral, agrees that the costs are high. His prototype aeroponic shipping container cost nearly \$85,000 to build, including tens of thousands of dollars in blue and red LED lights, and computerized climate control and nutrient-release systems that can be controlled remotely.

Energy efficiency, steeply reduced water needs and costs, community food security, jobs, high yields and high margins are the promise of mobile units that can be set up anywhere in a city or rural area. These are just a few of the opportunities of containerized CEA, say entrepreneurs; it is a lot to achieve in 320 square feet.

Commercial Aquaponics

Aquaponics, the combination of aquaculture (fish production) and hydroponics (water-based plant production),¹²³ has been traced as far back as Aztec and ancient southeast Asian cultures.¹²⁴ But today, it is gaining popularity as a low-resource, closed-loop system of producing greens and fresh fish protein, particularly in areas where those foods are hard to find.

Successful for-profit commercial aquaponics farms have emerged in the United States, often in peri-urban and rural areas.¹²⁵ Aquaponics is a form of controlled environment agriculture, and thus utilizes a smaller footprint than typical rural production. The “stacking” of production—fish and plants form inputs for each other—not only decreases inputs, but also allows for more diverse, intensive production per square foot than other types of farming.

Aquaponics’ small footprint and productive potential is a strong fit for cities, says Marianne Cufone, co-founder of the Recirculating Farms Coalition (RFC), a New Orleans-based nonprofit that models and advocates on behalf of urban farming, particularly hydroponics and aquaponics. One of RFC’s half-acre lots houses four high tunnels, each of which houses aquaponics equipment growing greens

as well as catfish, koi and goldfish. RFC sells its products through a small, affordable-CSA program, and through restaurant sales which help to subsidize the CSA. It has a strong focus on community engagement, education, and policy advocacy on behalf of urban farming interests.

Community engagement and education are also major products of Oko Farms, an outdoor aquaponics nonprofit in Brooklyn, NY. A collaboration with the Brooklyn Economic Development Corporation, the 2,500 square foot facility raises catfish, tilapia, and leafy green vegetables and herbs. Founder and manager Yemi Amu says that while she hopes to increase sales at Oko Farms, the education mission of the farm is strong and it will continue to act as a resource to youth and community members interested in sustainable farming.



The rear exterior of a Local Roots prototype container farm.

RFC and Oko are like many aquaponics farms located in urban areas. While they are attempting to produce commercially, aquaponics has a unique potential to engage people in conversations about sustainable food and farming.

Nonprofit status does not mean aquaponics facilities are failing to be commercial, says Cufone. “We are not embarrassed to be a nonprofit because it helps our

123 <https://www.nal.usda.gov/afsic/aquaponics>

124 <https://www.milkwood.net/2014/01/20/aquaponics-a-brief-history/>

125 Ouroboros Farms in Half Moon Bay, CA (<http://www.ouroborosfarms.com>) and Sustainable Harvesters in Hockley, TX (<http://www.sustainableharvesters.com/>) are two examples of such farms.

community,” she says, well aware that New Orleans’ reputation as a “food city” is largely for feeding its tourists, not its residents. If aquaponics can grow food for people and improve communities, then it deserves nonprofit status, she says.

But commercial potential is growing. A recent study of the commercial potential of aquaponics shows that producers predict becoming profitable as their businesses mature and operators gain more experience.¹²⁶ Better understandings of aquaponics systems, new technologies, and a growing network of hobbyists and commercial producers are growing fish and greens more profitably around the United States with hopes of doing the same in urban centers.

Recommendations and Considerations to Support Innovation in Urban Agriculture

Consideration: Identify proactive policies that can revitalize vacant properties to the benefit of farmers, landowners, and residents.

Policies that directly address the desire for farmers and property-owners to reap mutual benefits through UA are a strong strategy for cities to chart a course for UA and future development. An easily understood policy for vacant land access for urban farmers can reduce ‘squatter’ farms, encourage participation from vacant property owners, and improve the character of neighborhoods by reactivating vacant parcels.

Consideration: Explore urban farming models that can complement and enhance new development.

New urbanist strategies, revised city codes, innovative development, and creative public-private partnerships provide new possibilities for thoughtful integration of UA into growing communities. A focus on higher-density living with more green space allows for UA to thrive alongside residents who can enjoy its benefits. Mechanisms like community land trusts can also ensure access to such land is affordable.

Consideration: Promote urban farming opportunities that do not rely on owning or renting land.

Urban-based agriculture entrepreneurs are finding new ways to grow food, jobs, and profits without owning land. By treating UA similarly to a landscaping or farm box service, UA businesses can involve more residents and businesses in UA, provide fresh food, and build successful businesses without tying up money or assets in land ownership. This may be particularly attractive in cities where many competing uses drive up the cost of land. The modularity of some of these innovations opens possibilities for including UA in building designs.

Consideration: Analyze costs and benefits of controlled environment agriculture technologies.

The growing popularity of controlled environment agriculture promises year-round production of greens, fish, and more. While the promise of low-water, high-productivity, high-value yields has excited entrepreneurs and investors, more information is needed to determine the conditions and technologies that support these businesses to deliver the level of production, jobs, and return on investment needed for funders to invest in and cities to provide support to CEA businesses.

¹²⁶ Love, D.C. et al. (2015). Commercial aquaponics production and profitability: Findings from an international survey. *Aquaculture*, 435, 67-74. <http://dx.doi.org/10.1016/j.aquaculture.2014.09.023>

Chapter 9: Recommendations to Support Commercial Urban Agriculture

UA has many faces and many purposes. Commercial urban farms—businesses that grow and sell food, provide incomes, support jobs, and contribute to the community—are ambitious ventures without substantive precedent in the rapidly-urbanizing American cities of the late 20th and early 21st centuries.

Commercial urban farms have much in common with very small rural farms, including resource constraints and a sales strategy that focuses on niche products or direct-to-market sales. Their locations offer some of the place-based benefits of urban community gardens, including neighborhood revitalization and ecological services managing rainwater and carbon dioxide. Commercial urban farms share some of community gardens' challenges, too: accessing land, building community support, and convincing city officials of their value.

This report presents 14 different models of commercial urban farms, and examines their business strategies for achieving viability. It analyzes policies, practices, and expectations that encourage or inhibit CUA, including those that make it easier for some people to access resources than others. Emerging strategies for CUA are also presented, the innovations of which potentially indicate new strategies for viability.

Though these exceptional farms are certainly viable by their own standards, their viability must be analyzed with the following five considerations in mind.

1. Commercial urban farms often access land through extraordinary circumstances, including eliminating or reducing land costs that can be prohibitive to entering farming (urban or rural).

The legal right and access to land, and its cost, are the primary determinant of an urban farm's existence. In cities like Buffalo, NY, Cleveland, OH, Detroit, MI, or New Orleans, LA, cities are more likely to sell or lease land to residents for low cost to alleviate the burden of maintaining and policing vacant property. Would-be urban farmers enjoy low-cost land as an end result of extraordinary urban decay. In other instances, cities offer tax rebates to businesses to locate in historically disinvested neighborhoods.

Enterprising landholders—public, private, or nonprofit—occasionally create auspicious circumstances for urban farmers by offering creative, non-traditional lease agreements. An unused rooftop, excess land trust inventory, or even overflow cemetery space have become long-term agreements to farmers seeking growing space. For those who own land not fit for any other use, like an oddly shaped San Francisco lot or a warehouse basement, an urban farm is one of the few opportunities for any activity at all.

And occasionally landowners simply want to enjoy an urban farm on their property. Whether it is a planned part of a community, or a magnanimous gift of unused space, these offers are rare partnerships between landowners and farmers.

In most cases, farmers find access to land far below the average urban land cost. Purchasing land is out of the question for most: they either do not have the capital or will never be able to make back the investment. Below-cost land is not just a value to commercial urban farmers, but typically vital to an urban farm's ability to exist.



Orange County Produce grows on thousands of rented acres and heavily invests in land it is on even for a short time. Here, a fruit orchard has been put in place on a decommissioned military base.

2. Commercial urban farms rarely depend on sales of agricultural products alone.

Commercial urban farms grow and sell food, but for most that is not their only source of income. Half of case study farms included other revenue-generating activities like hosting events or farm dinners, or required that farmers have other sources of income: a catering company, a landscaping service, or a sign-painting business to name a few. Others depend on family members to support the household with off-farm work, not unlike many rural farms. Nonprofit farms with commercial-scale production can solicit grants and gifts to support their operations. But, in each case, simply selling the food from an urban farm is not enough to sustain it.

3. Commercial viability for urban farms depends upon continued demand for local food through farmers' markets, CSAs, and locally-centered restaurants and retailers.

Commercial urban farmers enjoy a proximity to an easy-to-access customer base that most small rural farmers do not. Proximity can result in fresher produce at point of sale, stronger relationships, and, perhaps, customer appreciation of the hard work and dedication farming requires. Commercial urban farms ingeniously situate themselves amongst a customer-base that has a new demand for local food, and who are willing to accept some trade-off—higher cost, less convenience of purchase—as part of the exchange.

Those same trade-offs make commercial urban farms viable. Markets require specialized production (niche, high-value, rapid-succession) and/or access to farmers through direct sales. The high-value niche crops come at a high cost to chefs and high-end retailers, who can justify those costs by serving customers demanding 'hyperlocal' produce. While direct sales through farmers markets and CSAs do not offer the same convenience as grocery stores, and can limit their reach, they do offer many other community benefits. Farmers markets can increase community cohesion through placemaking and often become centers for socializing and celebration for local residents. These direct marketing channels also provide access to farmers, who have necessarily become public figures and occasionally local celebrities. Urban farmers thus are even more available to interface with consumers than rural ones.

CUA has expanded with interest in local food, but not without risk. Large retailers and meal-delivery services increasingly offer similar 'local' product with greater convenience than farmers markets or CSAs. The



Sign at a Bi-Rite Market in San Francisco promoting buying local.

restaurant industry is notoriously fickle, trend-obsessed, and cost-conscious. So while these markets work well for commercial urban farms today, the future is not guaranteed.

4. Commercial urban farms cannot be all things to all people.

It is unreasonable to expect a commercial urban farm, or any farm, to produce food, good jobs, education and training, food access, racial equity, environmental improvement, community engagement, and the many other promises of UA. It is even more unreasonable to expect a farm that can take on even two or three of these goals to do so at a profit, particularly in a city.

High costs of UA production—land, labor, and more—are most effectively covered by high-value produce. While high-value produce, such as vegetables and sprouts, may improve the vitamin and mineral content of diets, these do not provide essential calories needed for human nutritional health. Production of calorie-rich crops, such as grains or potatoes, which can improve food security, cannot be grown in a small space like an urban farm without generous subsidies if a farm aims to survive and fairly pay its labor.

Education and community participation can run at odds with production, which must be highly-skilled and efficient to break even. Community members may want to be involved in a farm and even volunteer, but their lack of skill can be more of a burden to a farmer than a benefit. Education—hosting school groups, conducting workshops—takes time, preparation, and space that a tightly-managed commercial urban farm is not likely to have.

Jobs on commercial urban farms are limited by the size, revenue streams, income, and labor needs of each farm. And except for highly-skilled CEA positions or positions subsidized by grants, they are also unlikely to provide a comfortable livelihood for city dwellers with high costs of living. Skills learned on an urban farm can be plied in other sectors and likely receive better compensation.

In each case, the promise does not and cannot match the reality. Too much is demanded of all forms of UA, and commercial urban farming in particular. Commercial rural farms are typically not asked to be educators, community activists, and workforce programmers. Schools, community centers, and job-training facilities are rarely asked to show a profit in order to receive subsidy from government and other donors.

The goals of a farm must be wholly its own and must match its income streams. If the goal is to have a sustainable for-profit production-based business, it should not be asked to offer social goods for free. If the goal is broad education through small production, it should not be asked why it is not profitable. UA can do many things, but no single urban farm can do everything.

5. Commercial urban farms can provide important social and environmental benefits.

Though commercial urban farms should not be expected to fulfill in equal measure production, environmental, and social purposes, they do have environmental and social benefits that can be difficult to capture or quantify. Some can be considered to be social enterprises that aim to serve an environmental or social purpose through their revenue generation. Others simply see these benefits—from stormwater infiltration to showing children where carrots come from—as an added value to their work.

The social and environmental benefits may be intangible or difficult to measure. They can also be overstated. Attention drawn to some benefits can eclipse negative externalities: the decreased ‘food miles’ in urban vertical farming obscure the energy inputs vertical farming requires; the community benefit of beautifying a neighborhood can invite gentrification that pushes current residents out. More full-cost accounting of urban farms must be done to understand their benefits and blind spots as cities, neighborhoods, and individuals decide the role of commercial urban farms.



Massachusetts Avenue Project tracks its fundraising efforts for its new farm house, a combination of office, education, and community meeting space.

Concluding Thoughts

CUA will never be the sole source of food for American cities, and many commercial urban farms would not be viable if it were not for some extraordinary circumstance of land, markets, or resources. Nevertheless, they can be important anchors for neighborhoods and provide beneficial ancillary services that have been lost in many urban communities: green space, community-gathering space, connection with nature, connection with fresh food, invitations for neighbors to interact, and making neighborhoods vibrant, safer, and healthier. In this process, some entrepreneurs and employees may even earn a living.

Policies, programs, and research already exist to assist urban farmers and those who support them. Some are designed with urban context in mind; others have been traditionally rural resources that hold vast potential to propel CUA. Policy-makers, city planners, UA advocates, and would-be urban farmers would do well to understand existing resources and the reality of how urban farms operate as they plan for the future of UA.

Urban farms’ activities and influence vary widely, and should not be conflated into a single definition or set of expectations. This report has collected the insight of experts across the United States and beyond, and analysis of their experiences and observations form the basis of the recommendations and considerations discussed throughout and listed below. UA will benefit from supportive policy, planning, programming, and research that honors and celebrates the promise of its various forms.

Summary of Recommendations and Considerations to Secure the Promise of Urban Agriculture

Urban Farmers

- Recommendation: Prior to starting a farm, understand and engage the communities where the farm could be located. (Ch. 4)
- Recommendation: Register and receive a farm number through USDA's Farm Service Agency (FSA) to participate in various loan and cost share programs. (Ch. 4)
- Recommendation: Participate in the USDA Census of Agriculture. (Ch. 4)
- Recommendation: Incorporate high tunnels and other season extension into the farm plan. (Ch. 4)
- Recommendation: Include personal and family labor in farm budgets and profit analysis. (Ch. 4)
- Recommendation: Build crop plans to maximize return per square foot, using short growing cycle, high flavor, and rapid turnover crops. (Ch. 4)
- Recommendation: Diversify farm income to include value added enterprises that celebrate the farm location, such as on-farm workshops, farm suppers, or farm tours for fee. (Ch. 4)
- Recommendation: Participate in trainings that build skills for production, business, labor, and risk management, even if only available in rural areas. (Ch. 4)
- Consideration: Charge for farm tours to compensate for time away from production activities. (Ch. 4)
- Consideration: Carefully consider risk management and liability issues on the farm, for hiring labor, managing volunteers, or hosting visitors on the farm. (Ch. 4)
- Consideration: Develop collaborations with community UA efforts to better leverage social outcomes possible through urban farms. (Ch. 5)
- Consideration: Be engaged in local policy and planning decisions by working with others to educate policymakers and communities. (Ch. 7)

Federal Policy

- Recommendation: Raise the profile of FSA Microloan and other USDA programs among urban farmers. (Ch. 4)
- Recommendation: Actively solicit urban farms participation in the Census of Agriculture. (Ch. 4)
- Recommendation: Clearly target resources and grant funding to lead to the sustainable development of urban agriculture. (Ch. 5)
- Recommendation: Explore new models for incubating collaborative UA strategies. (Ch. 5)
- Consideration: Expand the visibility of 'rural development' programs that could assist urban farms. (Ch. 4)
- Consideration: Adapt the Whole-Farm Revenue Protection Program to meet the risk management needs of small, diversified farms in urban areas. (Ch. 4)
- Consideration: Expand visibility of CUA priorities in future US Farm Bills, to support research and education on best practices. (Ch. 4)

Local-Level Policy and Planning

- Recommendation: Clearly target resources and grant funding to lead to the sustainable development of urban agriculture. (Ch. 5)
- Recommendation: Explore new models for incubating collaborative UA strategies. (Ch. 5)
- Recommendation: Ensure that UA policies are coordinated with and supported by other municipal support services. (Ch. 7)
- Recommendation: Ensure local plans, funding, and policies for UA engage and respond to community input. (Ch. 7)
- Recommendation: Review and revise UA policies to ensure broad benefit by the entire community of current and potential urban farmers. (Ch. 7)
- Consideration: Recognize that public-facing social enterprises like commercial urban farms can drive neighborhood revitalization and increase the tax base, with positive and negative consequences to local community residents. (Ch. 5)

- Consideration: Remember that not all urban farms aim to be commercially viable through agricultural product sales alone. (Ch. 5)
- Consideration: Align UA policies to complement other urban priorities. (Ch. 7)
- Consideration: Identify proactive policies that can revitalize vacant properties to the benefit of farmers, landowners, and residents. (Ch. 8)
- Consideration: Explore urban farming models that can complement and enhance new development. (Ch. 8)
- Consideration: Analyze costs and benefits of controlled environment agriculture technologies. (Ch. 6, 8)

Programs

- Recommendation: Expand farm trainings on critical issues to support UA farm success, such as maximizing yields through rapid-cycling crops, using season extension and high tunnels, diversifying income streams, and managing labor. (Ch. 4)
- Recommendation: Raise the profile of FSA Microloan and other USDA programs among urban farmers. (Ch. 4)
- Recommendation: Encourage more urban farms to participate in the NRCS EQIP and other USDA programs. (Ch. 4)
- Recommendation: Explore new models for incubating collaborative UA strategies. (Ch. 5)
- Recommendation: Educate city planners on urban farm functions and best support strategies. (Ch. 7)
- Consideration: Adapt the Whole-Farm Revenue Protection Program to meet the needs of small, diversified farms in urban and rural areas. (Ch. 4)
- Consideration: Invest in workforce development training to benefit CEA and the entire agriculture sector. (Ch. 6)
- Consideration: Explore urban farming models that can complement and enhance new development. (Ch. 8)
- Consideration: Promote urban farming opportunities that do not rely on owning or renting land. (Ch. 8)

Research, Extension and Education

- Recommendation: Invest in longitudinal studies to further explore factors contributing to commercial urban farm viability. (Ch. 4)
- Recommendation: Create a Small Farm Business Summary to support more extensive analysis of urban and rural farm sustainability and profitability. (Ch. 4)
- Recommendation: Reinvest in urban farm educators and service providers to strengthen education and business networks for CUA farmers. (Ch. 4)
- Recommendation: Expand farm trainings on critical issues to support UA farm success, such as maximizing yields through rapid-cycling crops, using high tunnels, and managing labor. (Ch. 4)
- Recommendation: Conduct research to place value on the ecological and social services performed by urban farms. (Ch. 5)
- Recommendation: Explore new models for incubating collaborative UA strategies. (Ch. 5)
- Recommendation: Conduct independent academic research on the costs, output, and environmental and social impact of CEA. (Ch. 6)
- Recommendation: Conduct case study analyses similar to those in this report on commercial CEA businesses to assess community, policy and social factors influencing their viability. (Ch. 6)
- Recommendation: Support research on resource-efficient CEA technologies and approaches. (Ch. 6)
- Recommendation: Sponsor more critical analysis of existing UA policies and educate city planners on urban farm functions and best support strategies. (Ch. 7)

Appendix A: Interview Protocol

Farm & Farmer Description

- What age/year was your farm established?
- Primary farm production manager description
 - What is your age, gender, background? (e.g. are they from the city they farm?)
 - What is your previous farm training?
 - What other skills did you bring to the project?
 - How many years have you been with the farm?
- Founder description (if different than Primary Manager, same Qs)
 - Why did you want to start this farm?
 - What is your current role with the farm?
 - What assets did the founder of the farm bring (e.g. capital, human resources, facilities/land)?

Farm Description and Infrastructure

- Land/Facility tenure
 - Is the land owned, rented, or leased? If leased, terms? (Incl. rent per month)
 - Are there any risks to losing the site?
 - Do you have concerns for long-term business viability?
- How did you get through the zoning/permitting process? Who helped?
- What is your operation type? (e.g. outdoor ground-level, rooftop, adaptive reuse, new construction, combination, etc.)
- Farm size
 - What is your footprint (total square feet or acres, including buildings and roads)?
 - What area is in active food production (total square feet or acres)?
 - What areas is being cover cropped or being rested?
- What is the length of your growing season (how many months in production)?
- What is the length of your sales season (months or weeks)?
- What available on-farm infrastructure does the farm have?
 - Utilities
 - Irrigation
 - Buildings/Structures
 - Refrigeration, cooling or other post-harvest handling equipment
 - Packing facilities
 - Farm stand
 - Tools, equipment, tractors,
 - Fencing
 - Road frontage
 - Vehicles
 - Refrigerated trucks
- Do you have any other businesses operating on your farm and/or are you incubating any businesses?
- Do you do storage (food or equipment) for another farm? Are you an incubatee of a farm?

Farm Community

- How do you characterize your neighborhood?
- Why did you choose to farm here? What made farming here a viable opportunity when you started?
- How has the neighborhood changed since the start of the farm? (Related: is it because of the farm?)
 - Physical changes
 - Community engagement
 - Natural resources/environment
 - Neighborhood safety
 - Real estate value
 - Young people moving in
- How does your farm engage the larger urban and rural farm community? How has your farm benefited from connections to other urban or rural farmers?

Farm Business

Crop Production

- What production practices are employed at the farm (soil cultivation, greenhouse or high tunnels, hydroponics, aquaponics, vertical gardening, aeroponics)?
- What growing philosophies does the farm employ (e.g. chemical free, certified organic, “natural”, “conventional”, permaculture)?
- What on-farm policies and certifications does the farm have (e.g. GAP, OG, food safety plan, etc.)?
- Are you aware of new Food Safety Regulations? How will you approach them (e.g. FSMA)?
- What is the farm’s product mix in 2015?
- Do you specialize in specific crops and/or are there crops that are the most profitable?
- Why does the farm grow this product mix?
- Do you anticipate changes for 2016 or into the future?
- Do you have a record of the farm’s gross output in 2014 and 2015 (cases, CSA boxes etc.)? If not, can you estimate the farm’s gross output?

Marketing and Sales

- What are the farm’s sales channels (direct-to-consumer (CSA, farm stand, farmers markets), direct retail (restaurants, food coops, farm box programs e.g. Blue Apron), regular wholesale (institutions, large grocery chains, etc.))?
- Who are your competitors?
- Are you scaling up production to increase sales in 2016?
- Are you scaling up or shifting focus to a specific sales channel? Why?
- How does marketing happen?
- How does social media play a part in your marketing strategy?
- Do you target a particular demographic in your mission?
- What are the farm’s product/sales philosophies (e.g. affordability, quality, accessibility, high-end/niche)?
- How has the farm’s customer-base grown or changed (e.g. behavior changes, creating or substituting demand, increasing consumption of produce, etc.)?
- Are you involved in the Farmers Market Nutrition Program, SNAP, or other food access programs that bring revenue to the farm?

Other Farm Services

- What other activities does the farm perform (e.g. training, business incubation, youth or community programming, value-addition, community kitchen)?
 - What percent of time is spent on these activities? Who does this?
 - What percent of revenue is generated from these activities, if any?
 - Does revenue generated from these activities support production?
- If the farm has a training program, how many people have been trained?
 - Do trainees get paid as part of their training?
 - How many training graduates go on to work in farming, either urban or rural?

Business and Financial Management

- Do you have a parent organization? What is your relationship with that organization? What does that organization provide you with?
- Do you have a business plan? A marketing plan? How do you use them? Is one more useful than another?
- What is your business structure (e.g. for-profit, nonprofit, public, LLC, mix, etc.)?
 - Why is this business structure appropriate for your farm?
 - Do you file a Schedule F or Form 990 with the IRS?
- Have you received loans to support the farm operation?
- What were the farm's annual gross income for 2014 and 2015? Did you net positive either year?
- Have those percentages changed over the past 3 years?
- What were the farm's total operating costs in 2014 and 2015?
- What are other liabilities/loans that the farm currently carries (e.g. loans, etc.) from getting started?
- Have you ever applied for any local, State, federal grants/programs or private grants/programs?

Taxes & Insurance

- What taxes do you have to pay (e.g. property, stormwater/sewer, sales tax, etc.)?
- What insurances do you have to carry to farm? To hold events? Other liability insurance?

Economic Impact

- How does the farm support other local businesses by purchasing products or services (for inputs, infrastructure, etc.)?
- When and how do you track metrics or evaluate the business?
- What are your key measures of success?

Employees

- What is the composition of your employees (numbers in administration, production (seed to harvest), packing, sales, distribution, other)?
- What were your total wages paid out in 2015?
- How many volunteers do you engage? How many volunteer hours did you log in 2015?
 - What percent of that time was spent on farm-related tasks (e.g. planting, weeding, harvesting, packing, distributing/selling, land preparation, etc.)?
 - What percent of volunteer time was spent on non-farm activities (e.g. canvassing, event-planning, etc.)?
- Do you provide training to new employees?
- Have past employees moved on to other UA jobs?
- Do you pay minimum wage to starting employees? (confidential)
- [Nonprofits only]: Are employees classed as farm employees for tax purposes?
- Do you offer health or other benefits to employees? If so, which?

Resources

- Did you have access to capital at the start? What kind of access to capital would have been helpful?
- Who do you go to for education/guidance? Did you ever work with Extension? Rural resources?
- Have you had any interactions with elected officials? What did that do for you?

Final Questions

- Have any people/policies come about that have made farming easier in this city? Harder? (e.g. food policy council work, nonprofits, new plans or ordinances) Why?
- What are the biggest assets you have that allow you to have a commercial urban farm (e.g. funder, financier, supportive community, die-hard customers, strong advocates, name recognition)?
- What are the biggest continuing challenges to your farm's viability? What policies could change that?
- What would you like to see come from a study like this?
- Do you plan to continue to farm in the city? Why?
- What is the promise of UA?

Total Sales 2015

Earned Revenue (Sales)	Amount (\$)
Crop Sales	
Farm Stand	
Farmers Markets	
CSAs	
Restaurants	
Direct Wholesale (co-ops, individual grocery stores, etc.)	
Wholesale (distributor, terminal market, etc.)	
Onsite Events (parties, dinners)	
Education & Training	
Offsite Speaking & Events	
Offsite Ag/Farm Services	
Other (please describe)	

Additional Income	Operations	Programming	Capital Improvements	Expansion	Other
Grants					
Gifts (incl. fundraising)					
Loans (incl. credit)					

Employee Breakdown

How many paid employees do you have? PT = <30hrs/wk.; Seasonal: more than 2, less than 8 months

Employees	Full-time	Part-time
Year-round		
Seasonal		

Appendix B: List of Expert Interviewees

First name	Last name	Affiliation	UA Role
Michael	Ableman	SOLE Food Farm	Farmer
Lou	Albright	Cornell University	Researcher
Tim	Alderson	Episcopal Archdiocese of Los Angeles	Advocate
John	Ameroso		Educator
Yemi	Amu	Oko Farms	Farmer
Jennifer	Aron	BUFA OSU	Educator
Jessi	Asmussen	Mellowfields Farm	Farmer
Ashley	Atkinson	Keep Growing Detroit	Service provider
Tyler	Baras	HortAmericas	Farmer
Dorsey	Barger	HausBar Urban Farm	Farmer
Rob	Bennaton	UCCE Alameda & Contra Costa Counties	Educator
John	Biernbaum	Michigan State University	Researcher
Dan	Bolin	Ancel Glink	Lawyer
Marc	Bouher-Colbert		Farmer
Allison	Boyd	Farm Alliance Baltimore	Service provider
Kris	Braman	University of Georgia	Researcher
Howard	Brin	Association for Vertical Farming	Service provider
Michele	Bumbier	Fleet Farming	Farmer
Megan	Burley	CCE Erie County	Educator
Winona	Bynum	Detroit Food Policy Council	Advocate
Mario	Camberdella	City of Atlanta	Government
Ron	Carlton	Trust for Public Land	Foundation
Tyler	Case	Mycopolitan Mushroom Company	Farmer
Roz	Ciulla	Evergreen Cooperatives	Advocate
Nicole	Civita	Sterling College	Researcher
Virginia	Clarke	Sustainable Agriculture and Food Systems Funders	Foundation
Steve	Cohen	Bureau of Planning and Sustainability Portland	Government
Anastasia	Cole Plakias	Brooklyn Grange	Farmer
Challey	Comer	NYS Dept. of Agriculture	Government
Michael	Conard	Columbia University	Researcher
Carol	Coren	Cornerstone Consulting	Advocate
Marianne	Cufone	Recirculating Farms Coalition	Lawyer
Sarah	Danly	Vermont Law School	Researcher
Sam	Davis	Juniper Gardens Training Farm	Educator
Bobbi	de Winter	Food Well Alliance	Foundation
Lucy	Deikmann	Santa Clara University	Researcher
Carolyn	Dimitri	New York University	Researcher
Bridget	Dobrowski	Sustainable Agriculture and Food Systems Funders	Foundation
Maggie	Donin	The Intervale Center	Educator

Note: Information provided in this report (including job titles and business descriptions) reflects material provided in interviews conducted throughout the development of this publication. This information may have changed between that time and the time of publication.

First name	Last name	Affiliation	UA Role
Andrew	Douglas		Advocate
Daniel	Doyle	Mississippi Sustainable Ag Network	Advocate
Bruce	Durbin	LA County Department of Regional Planning	Government
Eric	Ellestad	Local Roots	Farmer
Alicia	Ellingsworth	Cultivate Kansas City	Educator
Jill	Elmers	Moon in the Meadow Farm	Farmer
Elisa	Esposito	City of Philadelphia	Government
Haley	Fager	International Network for Urban Agriculture	Service provider
Helena	Farrell	UMASS Amherst	Educator
Brian	Filipowich	Anacostia Aquaponics	Farmer
Ben	Flanner	Brooklyn Grange	Farmer
Paula	Foore	Springdale Urban Farm	Farmer
Ray	Foxworth	First Nations Development Institute	Foundation
Bruce	Fulford	City Soil	Advocate
Caitlin	Galloway	Little City Gardens	Farmer
Lovie	Gilliam	Gilliam Community Farm	Farmer
Lindsay	Gilmour	Organic Planet	Advocate
Stacey	Givens	Side Yard Farm	Farmer
Stephan	Goetz	Penn State University	Researcher
Matt	Gordon	Cully Neighborhood Farm	Farmer
Leo	Gorman	Grow Dat Youth Farm	Farmer
Coby	Gould	The GrowHaus	Educator
Nick	Greens	Nick Greens Consulting	Educator
Courtney	Guerra	Courney Guerra Farms	Farmer
Jaime	Guerrero	Schurz Food Lab	Educator
Ed	Harwood	Aerofarms	Farmer
Karen	Heisler	Mission Pie	Advocate
Destinee	Henton	Ohio City Inc.	Service provider
Glenn	Herlihy	Beacon Food Forest	Farmer
Lara	Hermanson	FarmScape	Farmer
David	Hooper	Neighborhood Association	Advocate
Dan	Howling	Mycopolitan Mushroom Company	Farmer
Lay	Htoo	Karen Fresh Garden	Farmer
Olivia	Hubert Willerer	Brother Nature Produce	Farmer
Haile	Johnston	Common Market	Advocate
Matt	Kauffman	Five Loaves Farm	Farmer
A.G.	Kawamura	Orange County Produce	Farmer
Katherine	Kelly	Cultivate Kansas City	Service provider
Sanjay	Kharod	New Orleans Farm & Food Network	Advocate
Brent	Kim	Center for a Livable Future JHU	Researcher
Sam	Kiyomi Turner	Our School at Blair Grocery	Farmer
Barbara	Knecht	Strategies for Cities	Service provider

First name	Last name	Affiliation	UA Role
Tara	Kolla	Silver Lake Farms	Farmer
Maya	Kosok	Hillen Homestead	Advocate
Dan	Kuenzi	Local Roots	Farmer
Rishi	Kumar	Growing Home, Inc.	Farmer
Elisa	Lane	Two BootsFarm	Farmer
Eric	Larsen	Stone's Throw Farm	Farmer
Pay	Lay	KiKoKo Farm	Farmer
Carolyn	Leadley	Rising Pheasant Urban Farm	Farmer
Mike	Lee	Community Action Organization	Educator
Donna	Leuchten	The Reinvestment Fund	Foundation
Glyn	Lloyd	City Growers	Advocate
Richard	Lukas	Trust for Public Land	Foundation
Becky	Lundberg Witt	Community Law Center, Inc.	Lawyer
Ben	Maddox	Heifer International	Advocate
Edwin	Marty	Austin Food Policy Manager	Government
Olga	Masevich	Urban Till	Farmer
John	McMicken	Evergreen Cooperatives	Advocate
Tom	McNair	Ohio City Inc.	Service provider
John	Mitterholzer	John Gund Foundation	Foundation
Breanna	Morrison	Los Angeles Food Policy Council	Service provider
Danny	Murphy	Mighty Vine	Farmer
Keeve	Nachman	Center for a Livable Future JHU	Researcher
Annie	Novak	New York Botanical Garden Edible Academy	Educator
Rachel	Nugent	University of Washington	Researcher
Sabine	O'Hara	University of the District of Columbia	Researcher
Anne	Palmer	Center for a Livable Future JHU	Researcher
Joel	Pannell	Trust for Public Land	Foundation
Kyle	Pattison	Hazlewood Farms	Farmer
Jonathan	Pereira	The Plant Chicago	Service provider
Alicia	Perez	The GrowHaus	Advocate
Joy	Persall	Dream of Wild Health	Educator
Katie	Pfohl	Massachusetts Avenue Project	Educator
Jeff	Piestrak	Cornell University	Researcher
Richard	Pirog	Michigan State University	Researcher
Kevin	Prather	Mellowfields Farm	Farmer
Andy	Pressman	ATTRA/NCAT	Researcher
Samina	Raja	University at Buffalo	Researcher
J.J.	Reidy	Urban Pastoral	Farmer
Joe	Reynolds	Love is Love Farm at Gaia Gardens	Farmer
Kristin	Reynolds	New York University	Advocate
Harry	Rhodes	Growing Home, Inc.	Educator
Carrie	Richter	Garvey Schubert Barer	Lawyer

First name	Last name	Affiliation	UA Role
Michael	Roberts	First Nations Development Institute	Foundation
Danielle	Rovillo	Massachusetts Avenue Project	Service provider
Tepfirah	Rushdan	Greening of Detroit	Service provider
Jenny	Rushlow	Conservation Law Foundation	Lawyer
Raychel	Santo	Center for a Livable Future JHU	Researcher
Helen	Schnoes	City of Lawrence, KS	Government
Darci	Schofield	Trust for Public Land	Foundation
Kim	Scott	Cleveland Planning Commission	Government
Kyle	Scrimgeour	Archi's Acres	Advocate
Carrie	Scrufari	Vermont Law School	Researcher
Ehle	Shachter	NYS Dept. of Agriculture	Government
Hannah	Shayler	Cornell Waste Management Institute	Researcher
Meredith	Sheperd	Love and Carrots	Farmer
Iesha	Siler	Los Angeles Food Policy Council	Service provider
David	Silverman	Ancel Glink	Lawyer
Laurell	Sims	Growing Power Chicago	Educator
Lydia	Sission	Mill City Growers	Farmer
Andrew	Smiley	Sustainable Food Center	Service provider
Alex	Sorino	USDA RMA	Service provider
Janice	Stevens	Wilson Street Urban Farm	Farmer
Curtis	Stone	Green City Acres (BC)	Farmer
Rachel	Surls	UCCE Los Angeles	Educator
Nat	Turner	Our School at Blair Grocery	Farmer
Kathryn	Underwood	Detroit City Planning Commission	Government
Marlene	Van Es	Trellis LLC	Lawyer
Brian	Versek	Mycopolitan Mushroom Company	Farmer
Ietef	Vita	Green For All	Advocate
Josh	Volk	Slow Hand Farm	Farmer
Bobby	Walker	UFI	Educator
Meredith	Walrafen	Catholic Charities Kansas City	Service provider
Karen	Washington	Rise & Root Farm	Farmer
Tyler	Watson	UCLA	Researcher
Chris	Wayne	Farm Roots Grow NYC	Educator
Greg	Willerer	Brother Nature Produce	Farmer
Bobby	Wilson	Metro Atlanta Urban Farm	Farmer
Heather	Wooten	ChangeLab Solutions	Service provider
Malik	Yakini	Detroit Black Community Food Security Network	Farmer
Lea	Zeise	Intertribal Agricultural council	Advocate
Eli	Zigas	SPUR	Advocate
Tezozomoc		South Central Farms	Farmer

Appendix C: Commercial Urban Farm Case Studies

Mycopolitan Mushroom Company, Philadelphia, PA

Mushroom Production in an Industrial Space

Themes: Signature product – mushrooms

History

“Mushrooms are weird. If you keep putting time in, you get messages,” says Tyler Case, 31, who has been a mushroom enthusiast since high school. He has spent years foraging for wild mushrooms and experimenting with growing them in a home laboratory.

It was a hobby that Brian Versek found a little odd when he and Case were researchers at a Philadelphia nonprofit. Case’s obsession drifted into the workplace, where he convinced Versek to go mushroom foraging with him one weekend.

Thus began the partnership that would grow into Mycopolitan Mushroom Company. Case and Versek continued to experiment with growing culinary mushrooms, and soon began exploring the possibility of starting a business.

In 2012, Case and Versek searched for a home for their to-be-established business. “We looked everywhere within an hour of [Philadelphia],” says Case, but from city parkland to rural farms, they could not find the right fit.

Case posted about their need for space on the Philadelphia Urban Farm Network, a local Google-group of urban farming enthusiasts and supporters. Lindsay Gilmour, a chef and food systems consultant who was working with Common Market (a nonprofit regional food distributor operating in the Mid-Atlantic region), saw the post and invited him to check out the organization’s 10,000 square foot basement.

It was a great fit. Common Market, a local food distributor, had recently purchased a 70,000 square foot warehouse. With this extra space, the leaders of Common Market were inspired to begin the Good Food Lab, which invites



Brian Versek of Mycopolitan Mushroom Company.

businesses to lease space in its building and share its cold storage, loading docks, and other infrastructure and networks.

To finance the deal, which included leasing costs and building out the entire mushroom-growing operation in the empty basement, Case called on his childhood friend, Dave Novak. Novak invested the initial start-up capital, including operating expenses, for a share of equity in the business. By the end of 2013, Case and Versek began to see their vision take shape and called their urban underground mushroom business Mycopolitan.

Community Description

Mycopolitan and Common Market are located at the corner of Erie Avenue and D Street in north Philadelphia. An industrial strip between residential neighborhoods, tractor-trailers barrel up and down Erie Avenue not far from the I-95 overpass.

Common Market decided to operate in this neighborhood not just because the former auto-parts manufacturing building was a good find, but because the organization wanted to bring job opportunities to individuals living here. It's a bold effort: zip codes immediately surrounding the warehouse suffered from a 25 percent unemployment rate and 40 percent of all people lived below the poverty line in 2014.¹²⁷ By comparison, unemployment in the city of Philadelphia was 6.6 percent in December 2014,¹²⁸ and the city's poverty rate hovers around 26 percent.¹²⁹ While the warehouse is in a particularly depressed part of the city, it is not the only one like it: Eva Gladstein, former director of the city's Office of Community Empowerment and Opportunity, said in a 2014 interview that "the single biggest predictor of how a child will do in life is the zip code in which they are born," noting too that Philadelphia is one of the poorest large cities in America.

Philadelphia has a strong history of community gardening and is upheld by some of its most veritable institutions. For example, the Philadelphia Horticultural Society runs the City Harvest program, in which inmates in the Philadelphia prison system grow seedlings in greenhouses, which are given to community gardeners who agree to make some of their produce available to low-income residents through food pantries or farmers markets.

Additionally, Philadelphia is experiencing a culinary renaissance. The New York Times, Bon Appetit, and Travel + Leisure have declared Philadelphia a must-visit destination for its food, famous markets like Reading Terminal and the Headhouse Farmers' Market, up-and-coming chefs, and farm-to-table restaurants.¹³⁰ It is in this arena that Mycopolitan found its niche.

Farm Description

Case, Versek and Novak signed a 3-year lease with Common Market in 2014. The lease, which rented Mycopolitan the 10,000 square foot basement for \$550 per month, was set to double each year of the lease, though Case negotiated to delay that doubling until the 1.5 years into the lease, to allow the business to grow.

The lease also requires a Common Area Maintenance fee of \$250 per month. The fee covers snow plowing for the parking and maintenance of the bathrooms, service elevator, loading docks, and other shared non-refrigerated space. Common Market has slowly repaired and renovated parts of the warehouse, using this fee for some of the costs.

Electricity is Mycopolitan's other big cost, at \$260 per month. It does not require any gas, and is not hooked up to the building's HVAC unit. It also rents a pallet space in Common Market's 10,000 square foot cooler for \$50 per month. Any backhauling Common Market's trucks do for Mycopolitan, as when it picks up grain and flour-waste from Castle Valley Mill in Doylestown, PA, costs \$50 for the first pallet and \$20 for the second.

Though the costs are substantial, Versek says simply being allowed to use the space as they wanted made Mycopolitan possible. "They were open to this theoretically crazy idea other people would balk at," he says, noting that he and Case were given free rein to build out the space as they saw fit.



Close-up of innocuated bags of mushroom substrate incubating at Mycopolitan Mushroom Company.

127 ACS 2014 for zip codes 19134 and 19124.

128 Bureau of Labor Statistics. (2016, March). Philadelphia City/County, PA. Retrieved from https://www.bls.gov/eag/eag.pa_philadelphia_co.htm.

129 Ibid., ACS 2014

130 See for example: Sheehan, Jason. "Travel + Leisure Calls Philadelphia 'America's Next Great Food City.'" Philadelphia Magazine, January 16, 2015. <http://www.phillymag.com/foobooz/2015/01/16/travel-leisure-calls-philadelphia-americas-next-great-food-city/>; "Places to Go In 2015." New York Times, January 11, 2015.

http://www.nytimes.com/interactive/2015/01/11/travel/52-places-to-go-in-2015.html?_r=0; Jenkins, Kristina. "Bon Appetit Magazine Names Philadelphia's High Street on Market the #2 Best New Restaurant in America." Posted August 19, 2014. <http://www.uwishunu.com/2014/08/bon-appetit-magazine-names-philadelphias-high-street-on-market-the-2-best-new-restaurant-in-america/#sm.0000mf7v8h4o9eyqbb1u2nrkcjbe>

Most of Mycopolitan’s infrastructure—its incubation and grow rooms, its home-made sterilizer, its inoculation room—are moveable; they had to be built piece by piece underground, which allows them to take most of their capital investments with them should they decide to move out of the basement.

The inoculation room is at the south end of the basement, upwind of the incubation and grow rooms to prevent contamination. The incubation room and grow rooms are sealed high tunnels, 16x38’ and 15x56’, respectively. Their entrances face one another, making transport of fruiting mushroom bags from incubation room to grow room easy. Each is fitted with narrow wire racks that hold the grow-bags of mushroom media, the mushroom inoculum substrate, mycelium, and, eventually, mushrooms.

Humidity control is important in the grow room, as it is one of the conditions of healthy and robust mushroom fruiting. A homemade humidifier made from a store-bought fogger on a blower keeps the grow room at the correct humidity, as does the power-washer used to spray the interior walls and ceiling of the grow room several times a day. The steam from the humidifier that’s pumped into the grow room also helps maintain heat and humidity in the winter months. The incubation room is not humidity controlled, though it can become slightly humid as the mushroom inoculum develops in the grow-bags.

Other infrastructure they have added to the basement includes their homemade mushroom substrate sterilizer, handwashing sink, kitchenette, and a cot for long days.

Production Practices

To grow mushrooms, a batch of substrate comprised of the right ratio of ingredients is loaded 6 pounds at a time into plastic grow-bags. Mycopolitan uses a mixture of woodchips, sawdust, flour dust, rye grain, and chaff from coffee beans. This substrate is sterilized to kill off any unwanted microbes that could interfere with mushroom growth. The sterilized substrate bags are then inoculated with spawn, the living culture of fungal mycelium—the threadlike network from which mushrooms grow. Mycopolitan either buys its spawn or experiments with some that Dan Howling, the fourth member of the Mycopolitan team, concocts at his home-lab.

Inoculated bags are moved to the incubation room, which is warm and humid. Depending on the type of mushroom, bags can take anywhere from 10 days to 3 months to colonize. Colonization occurs when spawn have grown in the bag and consumed enough energy from the substrate to “fruit” or produce mushrooms.

Once bags start to fruit, they are moved to the grow room, which is much cooler but still very humid. Mushrooms continue to emerge and are harvested between 1 and 2 weeks after first visible, but before they release spores, which could contaminate the entire system. After the first crop of mushrooms is harvested, bags can produce one or two more flushes but of smaller quantities of mushrooms.

Spent substrate and mycelium can be composted to form new soil. Mycopolitan has been experimenting with vermicomposting and has 20 bins of worms that consume the substrate blocks. Versek has begun selling vermicomposting bins as the worms multiply.



Close-up of inoculated bags of mushroom substrate close to blooming in Mycopolitan’s incubation room.

Mycopolitan works with several local vendors to source growing substrate, including Castle Valley mill for bran, rye grain, and sweepings; La Colombe Coffee Roasters for coffee chaff and burlap sacks; and Lehigh Valley sawmills for sawdust, for which it competes with large horse farms that use it for bedding. Much of their spawn is generated in a home lab; the remainder is first-generation spawn purchased online. Purchased spawn accounts for 5 to 10 percent of their total spawn needs.

Regarding Mycopolitan’s regenerative practices, Versek says, “Mushrooms are typically thought of as a waste-product consumer: we’re growing off stuff that other people wouldn’t really use.” Using local inputs for their mushroom substrate keeps costs low while pulling materials off the local waste stream.

“If we went for organic certification, we’d get [certified organic] rye grain and wheat bran, [and] we’d have to get it from somewhere else [further away],” says Versek, “It would be less sustainable and more expensive in the long-run.”

Mycopolitan’s growing season usually runs mid-September through June. Though the basement provides a geothermal buffer against temperature extremes, the uninsulated warehouse radiates enough heat to make mushroom production impossible in summer without intense air conditioning. Case, Versek, and Howling decide which varieties of mushrooms to grow throughout the year depending on the projected and actual temperature of the basement. At different points in the season, Mycopolitan grows King Trumpet, Lion’s Mane, Pioppini, Nameko, and Shiitake. Usually two or three varieties can grow at a time in similar conditions, though their choices are highly dependent on temperature.



Lions Mane growing on substrate.

Though the business is still relatively new, Case says mushrooms’ short growing cycle allow them to adapt their systems rapidly. “It’s an interesting point for mushroom farms. You get pretty quick feedback; you don’t have to wait a season. Growth and learning cycles are faster.”

They have visited other mushroom farms to see how other systems operate, but Versek says it is hard to translate some practices from system to system. “There are so many individual differences in the environment from

farm to farm. Every single component effects [mushroom production]. It’s your job to figure out which components are [influencing production]. That’s where the learning curve really is.”

Business Structure

“The only thing we really understood was potential yield of mushrooms and space,” says Versek of the launch of the business. “The whole plan from the beginning was in Tyler’s brain and morphed into reality depending on the variables of the next step.”

Case, Versek, and Novak established Mycopolitan Mushroom Company as an LLC in late 2013. Novak, a real-estate investor with a business background, pushed Case and Versek to “go big,” and committed to helping them assemble the necessary capital so the business would not risk failure from lack of investment.

“We had heard from the online mushroom community, ‘start small,’” said Case, but Novak was still pushing for scale. After rejecting a loan offer that was too small with too high an interest rate, Novak agreed with Case and Versek to fund the smaller venture.

“[At first] we felt like, ‘Start medium,’” says Case, “but you see how important it is to start small because with every generation of mushrooms you’re learning so much. To jump into it all at once would have been dumb.”

“Unless you’re an experienced grower going into it, you should take a stepwise approach,” agrees Versek. “In this economy, you can be an economically functional and profitable farm, [but] it’s a balancing act. You can spend a lot of money and build a place that looks like what you imagined yourself farming in, but the realities of workflow and employment would be disastrous if you started from scratch on that. You have to build your niche: every environment is different, every locale is different, customers are different, things are always changing. If you stay small, you’re flexible. And then when you’re comfortable, you take that next step.”

Marketing and Sales

“The market analysis was ambiguous even after some research,” Versek recalls. “You can call people and ask them to buy your mushrooms, but if you don’t have the mushrooms to sell... it’s hard to bring somebody a lion’s mane you haven’t grown. We shopped around some early [products], but for the most part, it’s getting a sense of the pulse of the city for mushrooms.”

Philadelphia's chef community were particularly excited about city-grown specialty mushrooms. Philadelphia is just 30 miles from Kennett Square, known as the Mushroom Capital of the World, where many large mushroom producers are located. Though technically "local," chefs were looking for mushroom varieties diners were unlikely to see from Kennett Square.

Case and Versek began developing relationships with chefs eager to incorporate new tastes and textures into their menus, particularly in the winter months when local produce is hard to come by. By 2016, Mycopolitan was serving 15 restaurants and food service companies, including University of Pennsylvania's dining program.

Mycopolitan's reputation for quality mushrooms seems to have surpassed its novelty as an urban mushroom farm. "[Most people] never even ask if we're a legitimate business or where we're growing, unless it's out of curiosity," says Case. Versek continues, "They're more like, 'We don't know what you guys do, we assume you're doing great. Thanks for the mushrooms.'"

Nevertheless, Mycopolitan is pursuing Good Agriculture Practices (GAP) certification, and is writing it with the guidance of Gilmour, the food systems consultant who helped them access the Common Market space. The plan includes food safety and recall procedures, as well as the necessary recordkeeping to show the business and its employees are in compliance.



Incubation room.

"Because they have to be really careful about their culture, it lends itself to food safety," says Gilmour of the precautions mushroom cultivation necessitates. "They can't be going in there with dirty hands because they're going to contaminate things. Mushrooms make food safety an imperative."

"Because there's such a low risk [of food-borne illnesses from properly handled mushrooms], it's more about self-preservation," says Versek. If a customer reports a possibility of a food-borne illness from mushrooms, GAP procedures enable Mycopolitan to check with other customers and confirm whether or not there is cause for concern.

Yet, mushrooms still have an air of the mysterious for many people. Mycopolitan had stands at several farmers markets in Philadelphia, where people expressed fear ("Some are poisonous, you know"), false familiarity ("I saw that growing in my yard"), or simply bewilderment ("What IS that?"). "With mushrooms, there's a learning curve of the consumer base," says Versek.

To further complicate selling at farmers' markets, the height of market season is summer, which is the worst season for mushrooms. Table displays risked product spoilage. In the end, the effort—physical, logistical, mental, and social—was not worth the small earnings from each farmers market.

"On a good day I would bring in \$300—it's still not worth it," says Versek, "It'd be just as easy to spend that time at the farm and sell to one restaurant that wants to take it all at once, and get a little less money for it. It's just time away from the farm, and not doing [what] you actually need to do to make the mushrooms."

To serve individuals directly, Mycopolitan has started a mushroom CSA, which operates in quarterly cycles and features its mushrooms and value-added products made from its mushrooms. In 2016, it had three pick-up locations around Philadelphia.

Media coverage of Mycopolitan's rise has helped attract new customers, says Case, which he thinks "legitimizes us" in customers' minds. It has a new website and online store, and Facebook and Instagram accounts. Instagram, which many chefs use, has been particularly helpful, as visuals help get chefs excited about new mushrooms.

Employees

Dan Howling is Mycopolitan's only employee, working 50-60 hours a week in the growing season and 30 or less in the summer. Howling is the backbone of Mycopolitan's

spawn production, inoculation, and growing, while Case and Versek build the business with new customers and better equipment. Versek and Case plan to take owner withdrawals as the business grows. Versek says the business's next hires will be himself and Case.

Though they plan to grow to the point of hiring yet another employee, the prospect is unsettling. "It takes a special person," says Versek, "If Dan [Howling] wasn't actually a real person, it would be pretty hard to find somebody to fill his shoes and liberate us enough to get our sense of what it means to have an operating farm business."

"[Production] is the heart of the operation, and it needs to be chugging along very consistently. So you need somebody very consistent to do that kind of stuff," continues Case. "I wouldn't even necessarily trust myself to the level I trust Dan to handle spawn. You have to be OCD to stay on top of that, and to make sure you're being super careful."

"But I do that because I love these guys and know what they want to do," says Howling. "To hire in that [expertise] would be more expensive, because you're hiring somebody who doesn't know these guys."

The team constantly fields inquiries about internships and volunteer opportunities from other mushroom enthusiasts eager to see how a small indoor operation like Mycopolitan functions. But, as Case explains it, the highly-skilled work that Howling does—which is the most interesting to hobbyists—is not the work interns can do. They have hosted a few interns and volunteers, who mostly find themselves sweeping and cleaning. It is help they enjoy, as it frees them up to do higher-order work.

In an ideal world, says Case, an intern would spend a few years doing the lower-skilled work and slowly building up to the higher-skilled work. But, he says, Mycopolitan is years away from providing this type of apprenticeship experience.

Other Activities/Services

Education is a strong part of Mycopolitan's mission. Case began teaching a mushroom production class at Saul High School for Agricultural Sciences in Philadelphia in 2012; one of his students was so strong that Case worked with the high school administration to find a sponsor to pay him to intern with Mycopolitan.

Versek, meanwhile, has taught mushroom classes at urban farms around Philadelphia, and has helped some farms inoculate logs to grow shiitake mushrooms outdoors. He



Steam sterilization of mushroom substrate bags.

has also worked with the Philadelphia Orchard Project, which plants and supports orchards in Philadelphia, to demonstrate how outdoor decomposers like Winecap mushrooms can be utilized in forest gardens and orchards.

Case sees education and training as a potential avenue for Mycopolitan in a few years' time. "When we are more established and show that it can be done in an urban basement, then we can do more of that [education work]."

"You can't gain confidence about something you've thought about but haven't embodied yet," he says.

"I think there's so much we could do outside the farm," agrees Howling, "[Case] puts the majority of thought into that, and the restriction there is that we still need him at the farm. So the stuff that he could do... realistically there's no time to, because there's no way to outsource something you haven't developed."

Support

Mycopolitan relied heavily upon Novak's investment and Common Market's eagerness to bring on tenants for its start. But, they were able to win the confidence of their investor and landlord because of their own mycological expertise. Case, a hobbyist since high school, had taken a seminar with renowned mycologist and author Paul Stamets. Howling had received a scholarship to study at Aloha Medicinals in Carson City, NV, training on spawn production and medicinal mushroom cultivation.

"[Howling] got little tips and tricks that you don't start to think about until you're more advanced," says Versek, which are "super applicable to a bunch of schlubs starting

a farm who thought they could do the same things as when they were just growing mushrooms in the basement. When you're running mushrooms in the same space all day long and growing spawn, there are a lot of factors that can derail the whole train."

They spoke with local extension agents early on, who told them about FSA loans. They ultimately decided FSA or small business loans were not a good fit when their growth trajectory was unknown.

"Most ag extension focuses on Kennett [Square] because it's the major economic boon in regard to mushroom growing," says Versek. "We could benefit from information from Kennett Square and we've definitely picked up a thing or two here or there and applied it to us, but growing button [mushrooms] and creminis is a totally different business.

"We are independent and isolated not by choice, but by the nature of what we're trying to pull off. What's behind us is this cool group of people growing mushrooms as hobbyists and sharing information online. They're doing what we've done, amassing information, small-scale farming, and making it work in their locality."

Policies Impacting Success

Because what it is doing is relatively unprecedented, especially in Philadelphia, there are remarkably few policies that help or hinder Mycopolitan's mushroom production. The nature of the business—small, underground, utilizing former industrial space with few productive alternative uses—does not create land use issues. And because waste products are composted and air is ventilated as an essential part of the production process, there are few environmental impacts.

Assets and Challenges

Few policy burdens do not mean that Mycopolitan's path to success is clear. It is still a very small business, and Versek and Case do not pay themselves a salary yet. But, even with just one employee, payroll taxes make it difficult for them to get by.

"It is difficult for us to pay an employee, let alone pay the taxes on top of that salary. For every 100 dollars we pay our employee, we pay over 40 dollars in taxes—most of that Federal quarterly payroll taxes," says Case. He is committed to hiring employees and paying them a fair wage, but acknowledges these taxes are "the reason many farms employ undocumented workers and pay below minimum wage."

Scaling mushroom beyond the hobby-level into a production facility, then growing that facility, is costly. There is "a leap in infrastructure costs when getting above a certain size," says Case. HVAC to allow summer production and steam sterilization of large volumes of substrate are two big production hurdles for Mycopolitan's expansion.

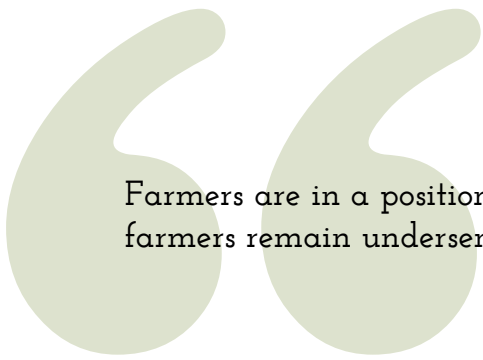
A third challenge is one of marketing. Case, Versek, and Howling have heard of "local" and "small" mushroom farms outsourcing production to large factories or purchasing ready-to-fruit mushroom blocks from overseas. Though he cannot verify those claims, Case said they are just two ways the ethos of local small production is being watered down by larger interests.

Mycopolitan's embodiment of that ethos, however, has helped it attract its biggest assets: the chefs who buy its mushrooms. Case says chefs appreciate the high-quality mushrooms and the ease of communication from placing an order to delivery. And because these chefs value what Mycopolitan does, says case, "they are providing us with the dollars-per-pound that will keep us operational."

The chefs are also willing to be flexible about what varieties Mycopolitan has to offer. Case describes Mycopolitan's ideal customer as "one who orders 40+ pounds each week and will take whatever [varieties] we give them."



Nameko mushrooms grown on sterile substrate.



Farmers are in a position to help feed the underserved, but as long as we farmers remain underserved we are forced to sell every last scrap.

– Tyler Case
Mycopolitan Mushroom Company

Promise of Urban Agriculture

Case, Versek, and Howling are more than mushroom fanatics or foodies. Rather, they are deeply invested in growing mushrooms because of their unique ecological, nutritional, and even pharmacological properties.

“Considering what foods a lot of folks are eating, having even one meal a day be packed with things like phytochemicals, fiber, pro-biotics, pre-biotics, beta glucans, vitamins, minerals, etc. would have a noticeable effect” on the health of urban populations, says Case. Though Mycopolitan’s mushrooms fetch a high price, he hopes it can continue to provide education to help Philadelphians think more critically about the foods they eat.

“Nowhere is the population of folks with inadequate nutrition and problematic health more concentrated than in urban areas,” says Case. “If urban farmers are supported

to the point where they can afford to divert a portion of cosmetically-challenged produce to systems that prepare nutrient-dense and even pharmacologically active foods into, say, school lunch programs (and other places with captive audiences of individuals with need for good food), then I feel strongly that not only will folks feel better, think better, but there would be savings to be had in areas like E.R. visits.”

Though Mycopolitan may seem worlds away from community farming and traditional food justice activism, it shares the vision of better food for urban people. “Farmers are in a position to help feed the underserved,” says Case, “but as long as we farmers remain underserved we are forced to sell every last scrap.”

Little City Gardens, San Francisco, CA

Risky Business on Land Not Secured

Themes: Land access, Urban ag policy, Community revitalizing, Value-added products, On-farm events, Signature Product – flowers.

History

Caitlyn Galloway and Brooke Budner, friends and artists who had more than a decade of farming and gardening experience between them, began growing food in two backyards in 2008 when they found themselves living in San Francisco. Avid gardeners surrounded by the city's growing interest in local food and urban farming, they wondered whether people could grow food in the city and make a living, too. To find out, they went looking for a larger tract of land to launch their "experiment."

When they found the property that would become Little City Gardens in 2009, they knew that permanent was a relative term. The owner who inherited the weedy, garbage-strewn lot was actively pursuing development. However, when Galloway and Budner proposed to farm, beautify and maintain the lot, the owner offered them a 1.5-year lease, rent-free.

The residential parcel has changed hands twice since then. In 2011 it was sold to a developer, whose proposal to build condominiums stalled out before reaching public comment. Following that failure, it was sold again in 2014 to the Golden Bridges School, a Waldorf-inspired school with agriculture and outdoor components that intends to build a campus on the site.

The subsequent landowners saw value to continuing to offer Galloway and Budner rent-free leases as they pursued development. Galloway suspects the farm's tenure has continued in part because she is providing free maintenance and beautifying the lot. The farmers were eager to become good neighbors from the beginning, and met with the local neighborhood association to share their plans before planting their first seeds in 2010. The neighbors grew fond of the farm, and its presence kept them at ease.

But, unease has erupted as the neighborhood protests the school's planned multi-building campus. Beyond the noise, traffic congestion, and flooding it would cause, they said, they would be losing what has become a cherished community greenspace and gathering place. Golden Bridges' plans ultimately passed the zoning board, and it



Little City Gardens co-founder Caitlyn Galloway is also a sign-painter, a talent that has come in handy in promoting her urban farm.

terminated Little City Gardens' lease at the end of 2016. Looking back on triumphs and forward to an uncertain future, Galloway says the "experiment" has succeeded in ways more important than just being profitable.

Community Description

Little City Gardens was in the Mission Terrace neighborhood of San Francisco, just beyond the bustling Mission. Blocks of single-family homes built in the 1920s ring the farm. David Hooper, the President of the New Mission Terrace Improvement Association, which has taken the charge of protecting Little City Gardens from impending development, says the neighborhood hasn't changed much since he moved there 30 years ago: houses come up for sale infrequently, and people born in the neighborhood tend to stay there.

"I think this is different from the rest of the city," says Galloway, who can think of only one home on the block in the process of a sale. "It's hard to say that anyplace in SF is insulated from development pressure, but it does seem like people are still anchored here. It's not changing as nearly as quickly or disruptively as other neighborhoods."

Before the Mission Terrace neighborhood was built, the San Francisco Public Utilities Commission buried the Islais Creek that ran through the neighborhood; hydrology maps show a creek running directly through Little City Gardens' parcel.¹³¹ The underground creek combined with a high water table overloads the aging stormwater sewer system and causes neighborhood flooding during heavy storms.¹³²

Farm Description

Little City Gardens thrived on a $\frac{3}{4}$ acre lot shaped like an elongated hourglass, with one means of egress on Cotter Street. Its irregular size is due to street-facing housing development—it is nearly surrounded by the backyards of other homes. Though the parcel does experience occasional flooding in some areas, Galloway still manages to cultivate between $\frac{1}{3}$ and $\frac{1}{2}$ acre.

The farm had a small greenhouse made of reused materials and two toolsheds. Two sinks with a hose hook-up acted as a wash-station, aided by a nearby shade structure and counters for packing. When they first started working the land, they used a rototiller to loosen the soil and shape beds. Afterward, production and crop-rotation were bed-by-bed, and a broadfork, shovels, and hand tools were their primary field equipment.

For electricity and refrigerator space, Galloway relied on the farm's neighbor, Bob, who would run an extension cord from his house if they need power for a tea kettle or string lights. After getting to know Galloway over the first years of Little City Gardens, he allowed them to put a refrigerator in his garage for cold storage. Bob did not charge them for electricity, she says; he took his payment in chard.

Water was a similarly neighborhood-affair at the start when production was limited. A neighbor several houses away ran a hose from his spigot under the fence of the farm. He charged them the difference from the previous year's bill, but since it was a top-tier residential rate, the deal wasn't cheap. Galloway installed a water meter in 2011 when, after several visits to and conversations with the city water department, the department launched a rebate program to cover the approximate \$7,000 cost of installing a meter for garden-use.

Production Practices

Galloway managed the $\frac{1}{2}$ acre of production space through intensive growing, quick successions planting, and cover cropping. She says she never pursued organic certification because it's not necessary to appeal to her Bay Area customers, who seem to value her proximity and transparency over certification. "We've always called what we're doing a hybrid of biointensive with some permaculture philosophies thrown in as well," she says, suspecting that certification would be prohibitively expensive for her operation.

The farm was productive from about February through early December. Salad mix was the farm's primary crop, comprised of lettuces, brassicas like arugula and mustards, cress, and cuttings from the fava-pea cover-crop mix. The amount grown depended on sales. While salad mixing is a way to be creative and earns good revenue, it is very labor intensive.

Year-round crops included cooking greens, white turnips, radishes, beets, carrots and culinary herbs in spring and fall. Galloway also plants rare and unusual vegetables, both for sale to restaurants and for the curiosity of her neighbors: cardoons, salad burnet, society garlic, bronze fennel.

Cut flower production increased over time and became a significant revenue stream in 2015. Galloway likes that flowers can be cut for bouquets, and some can be sold as edibles or part of the salad mix. She's grown more varieties over time and sees it as a way to stay viable, should the farm continue.

Given the possibility of losing the farm, Galloway chose to focus on quick succession crops for the 2016 season. She continued to grow flowers, as she says sales picked up momentum in 2015.

Business Structure

Galloway and her founding partner Brooke Budner, who moved from San Francisco in 2012, decided at the outset that a for-profit partnership would work best for what they called the "experiment." Both lived in the city and had gardening and farming experience, but they wondered if they could pay themselves a livable wage by farming. "We needed jobs and were noticing that in order to have access to space to grow things, you had to have a lot of free time.

131 Sunnyside History (2015, November 13). The Creek that Ran through Sunnyside. <https://sunnysidehistory.org/2015/11/13/the-creek-that-ran-through-sunnyside/>

132 See Lagos, M. (2014, December 25). Low-lying neighborhood flooded again, despite S.F.'s promise." *SF Gate*, <http://www.sfgate.com/politics/article/Low-lying-neighborhood-flooded-again-despite-5979140.php>. and Mullaney, A. (2015, February 19). Mission Terrace Homes Flood—Again. *Ingliside-Excelsior Light*, <http://www.ielightsf.com/2015/02/19/mission-terrace-homes-flood-again/>

[But with] the excitement here and the kind of market and industry here to support food production, we just wanted to know if it would be possible to make a living, or even a supplemental living, doing this work. And if that could lead to any more permanence: not relying on constant funding and fund-raising grants and make it something a little more permanent.”

“And I think neither of us had a lot of interest or experience in grant-writing and trying to raise funds,” she continues, “and thought that a lot of the benefit that comes from the more nonprofit structures in urban ag—a lot of the educational components—could still be inherent in a business but funded and structured differently.”

Galloway’s social entrepreneurial approach is one of the reasons Karen Heisler, founder and owner of the social enterprise restaurant Mission Pie, was eager to work with her. “People in the Bay Area are biased against business and for-profits,” she says, “But if the resources to support them decline, then what?” She hopes businesses like hers and Little City Garden “can help people in cities understand more about food and make agriculture more accessible.”

Galloway and Budner wrote a business plan when they were still looking for land and formed a legal partnership. They had a Kickstarter campaign to raise money for site development: 243 backers pledged over \$20,000. Galloway says the business plan is now superseded by the annual plan she draws up every year based on the previous year’s yields and sales.



Little City Gardens’ greens are one of many local farm products represented at Mission Pie, the San Francisco restaurant and social enterprise dedicated to supporting local food and good jobs.

Galloway attributes her increasing sales and profits to “getting smarter on what we’re spending our time growing.” While she admits her record-keeping is not meticulous, she’s become more focused on testing the experiment’s financial viability.

Marketing and Sales

Little City Gardens sold directly to restaurants and had a CSA. She says the CSA became more flexible in recent years, running for two-to-three months every spring and fall when there was a wide variety of vegetables. Rather than signing up for a season, Caitlyn offered a week-by-week CSA, emailing her CSA customer list and taking pre-orders. She got 10-30 sign-ups each week, though says 20 was the tipping point where harvest and hosting the pick-up become viable. Members paid \$20-25 per week, depending on the share.

Flowers were the main focus of summer months, which Galloway sold as bouquets to restaurants and a few independent grocery stores. The 2015 season was the first year Galloway used this seasonal approach: a spring CSA and lots of salad mix, followed by flowers in the summer, and as flowers wane in the autumn reintroducing salad and announcing a fall CSA.

Galloway sold to middle-to-high-end restaurants nearly the entire harvest season. Salad greens were the bulk of sales, while atypical varieties of culinary herbs, edible flowers, and “baby” radishes, beets and carrots round out orders. The salad mix, which is part of CSA and restaurant sales, Galloway says was “a mainstay of our identity. We don’t have much of a logo... but I think our salad mix, funnily enough, serves as a branding image for us. It’s a product we’ve created from the beginning, and a unique product that we continue to market.”

While some restaurateurs, like the world-renowned Bar Tartine, are accustomed to buying expensive, high quality ingredients, others, like Heisler whose Mission Pie food costs are more price sensitive, buy greens and edible flowers in part to tell the story of Little City Gardens.

Little City Gardens never needed for more marketing, says Galloway. “We’ve never approached our business the way others might need to, coming strong out of the gate with real aggressive promotion or marketing. People from the beginning have been interested, and that [interest has] grown. There’s always been a core customer base at the ready.” She is confident that Little City Gardens has maintained a good reputation among the restaurant community because of their methods and quality.

While restaurant sales and CSA memberships were attracted mostly by word of mouth, Little City Gardens also had a well-tended Instagram account. Instagram had occasionally proven helpful in moving a few extra pounds of unsold salad mix, Galloway thinks of it as “more of a communication piece around the running of the farm and not so much a marketing tool,” though recognizes pictures of plants being grown and harvested can serve as marketing.

Though Galloway says there is no intentional demographic Little City Gardens markets to, she acknowledges that their produce may not be accessible to lower-income people (when CSA members signed up for seasons, however, Little City Gardens experimented with subsidized CSA shares, but with limited success). Farm visitors included neighbors seeking recognizable vegetables and green space, and San Franciscans from the other end of town who traveled all the way for the salad mix.

Employees

After Budner left in 2012, Galloway farmed Little City Gardens by herself for one year. In 2014, Galloway’s friend Peter Woods joined as an on-farm partner. They are the only two people who received an income from the farm’s operations.

Galloway says she never intended the farm to provide her with full-time income. She says she is more comfortable approaching it as a part-time job, supplementing her farm income as a sign-painter. While she likes the idea of earning full-time income from farming (“It’s definitely full-time work,” she says), their unstable land tenure made having two income streams a risk management strategy.

“In talking about the viability of urban farming as a profession, I think it makes sense as a part-time profession regardless of the cost of living,” she says. Part-time farming affords “the combination of the cultural richness you get in the city and a connection to soil and more natural and agricultural systems.”

Little City Gardens offered open volunteer hours 12-4 pm most Wednesdays. A consistent core of volunteers participated most of the 2015 season and provided an opportunity for Galloway to connect with and teach others about farming.

Galloway also offered a summer flower apprenticeship program in the 2015 season. During the two-and-a-half-month apprenticeship, three participants came once each week to learn flower-specific production practices, help with harvest, and arrange bouquets. The apprentices traded their time and bouquet-making for education, experience, and produce and flowers to take home.



Caitlyn Galloway talks to neighbor and New Mission Terrace Improvement Association President David Hooper, a key supporter of the farm.

Other Activities/Services

Though a production farm, Little City Gardens also doubled as a park and community space: “Neighbors have said that we’ve made the neighborhood feel more safe by activating the space. They’re CSA customers or people who like to come walk, enjoy the space, bring the kids while we’re working. There’s an appreciation for us using the space this way.”

There were formal events, too: Galloway organized poetry readings, dinners, open houses, and pop-up farm stands, which provided about 15% of the overall farm income. Little City Garden hosted a Winter Fair featuring local artists and craftspeople selling holiday gifts, music, food, farm tours, and other activities. The free event also offered a raffle for prizes donated by partner restaurants and other vendors as a fundraiser for the farm. In May 2016, the farm hosted a Spring Fair with many of the same activities, and included a plant sale and educational opportunities to teach attendees how to grow food and flowers in their backyards or on fire escapes.

Sales of crops, however, was the core income for the farm.

Support

One of Little City Gardens’ earliest supporters was its original landlord. Though he was actively trying to sell it for development at the time, Galloway says he recognized the benefits of having a farm on the once vacant, weedy parcel: “we were actively using the space, keeping it safe and locked-up, generated a lot of neighbor goodwill, and [were] essentially his caretakers while he pursued development.”



A neighbor shows support for Little City Gardens by posting “Save The Farm” flyers, as did many of the farm’s neighbors.

David Hooper agrees: “[This empty parcel that] had been kept at arm’s length became a common link [for the neighborhood]. A few neighbors might not get along with each other, but everybody gets along with Caitlyn. Instead of it being a barrier, the farm became a point of unity—people wanted this to happen.”

Neighbors also attended the packed planning commission meeting where public comment was heard regarding proposed UA legislation. Galloway and Budner were responsible in part for the commission review in the first place. They had partnered with Eli Zigas of SPUR, a Bay Area planning and urban advocacy organization, to petition the commission to allow a zoning change that would make Little City Gardens legal.

When Little City Gardens started, said Zigas, “it was a grey area in planning code.” A zoning administrator determined that the farm’s produce sales were commercial activity in a residential neighborhood, which was prohibited. “They could have decided to pursue conditional use, or try to change the zoning code,” said Zigas. “But Caitlyn and Brooke, being the activists they are, said, ‘let’s change the law.’”

The zoning ordinance, passed in 2011, allows, among other things, “neighborhood gardens” of less than one acre in any zone, with the ability to sell from the site. Little City Gardens was the site of the press conference where

Mayor Ed Lee, accompanied by Supervisors David Chiu and Eric Mar, signed the legislation into law. Galloway also spoke in support of the law and urban farms at the event.

The neighborhood association continued to be a proponent of Little City Gardens. Their “Save The Farm” campaign posted yellow signs with the slogan in nearly every neighborhood window, and when District Supervisor John Avalos came to the neighborhood association to discuss the school, 75 of 77 neighbors who attended spoke to him in favor of the farm.

Policies Impacting Success

Former San Francisco Mayor Gavin Newsom issued an executive directive in 2009 pushing city agencies to advance policies to provide ‘healthy and sustainable food’ throughout the food system.¹³³ Galloway and Budner referenced that directive frequently as they advocated for zoning changes and raised money for their endeavors, reinforcing the importance of what Little City Gardens was attempting to do.

Little City Gardens gained legal status and legitimacy following the passage of the UA zoning amendment, but it still faced the challenge of land tenure. Even before the property came up for sale again in 2013, Galloway worked with several advocates, including Heisler who had previous experience with rural land trusts, to determine whether a land trust purchase might be a viable option. While the group could not come up with financial numbers that might entice a land trust, it did discuss the possibility of a tax incentive to encourage landowners to work with urban farmers.¹³⁴

Galloway and Budner successfully petitioned the San Francisco Public Utilities Commission for assistance installing a water meter. Neither of the property owners was interested in paying \$7,000 for meter installation, and the farm could not afford to do it, particularly with no sure land tenure. Galloway and Budner met with the water department several times explaining their situation, and within a year of their conversations, they were invited to apply to be the first grantees of newly-initiated Community Garden Irrigation Meter Grant Program. The program subsidizes the cost of hook-up and meter installation for qualifying applicants.¹³⁵ Little City Gardens got its own water meter in 2011.

133 Executive Directive No. 09-03. (2009, July 9) “Healthy Sustainable Food for San Francisco.”

134 California State Assembly Bill 551, establishing urban agriculture incentive zones, was passed in 2013. San Francisco was the first city in the state to adopt and implement it in August 2014.

135 For more information on grant details and qualifications, visit <http://sfwater.org/index.aspx?page=469>

The city also offers a landscape rebate program, which offers discounted water use for uses, like agriculture, that do not contribute to stormwater runoff into the city's combined sewer system.¹³⁶ Nevertheless, Galloway says her water rates, which are based on her residential zoning, are still high. "If I had long-term tenure here, and we were geared up to tackle the next big issue, I would start arguing for some conversations on water rates for ag use," she says.

Assets and Challenges

Framing Little City Gardens as an "experiment" made it easier for Galloway to communicate failures and challenges. "That framing is helpful for me and the community because the dialogue and the observations we're collecting are as important as whatever profit we make or our final product," she says.

Galloway said that the geological history of the site is one of her greatest assets because while it was long considered undevelopable, it was suitable for farming. Despite the investment in the soil and creation of a community space, Galloway says visiting developers viewed it as an empty lot, even as they praise its bounty.

"A lot of the successes we see here aren't quantifiable," she continues. "Like the relationships and the appreciation people have for even just the aesthetics of the site. [And that appreciation] gets more developed and nuanced from there. But, none of that is quantifiable in the eyes of whoever's wanting to know."

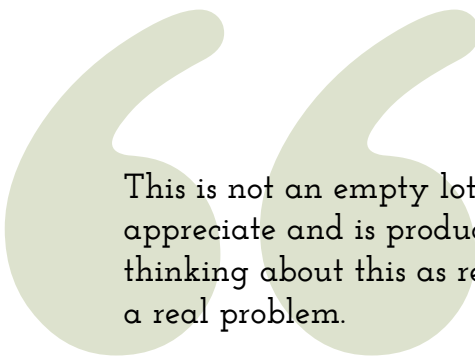
Ultimately, the local zoning board found in favor of a developer eager to build on the parcel, and Little City Garden's lease was terminated. Galloway now faces new challenges of determining if and where she might farm next.

Promise of Urban Agriculture

Galloway, an artist as much as a farmer, considers Little City Gardens "closer to an art project than anything else... a set of constantly-evolving questions and constantly-evolving techniques and media even [more] than a conclusive, confident set of answers."

While Little City Gardens became a profitable business supporting two farmers part-time, Galloway says its success feels secondary to what happened on the farm. "So much of what we do is community-oriented and community-focused...and it's clear to me that our selling of vegetables and marketing of edible flowers and arranging of bouquets is...not so much our product as our currency: the way that we allow for the space to exist. To me, the produce and flowers we grow are the means to the end, which is the existence of this place."

"I think that's something unique about urban farming. Whereas, a rural farm is a place for a family, or a collection of families, or the immediate community, I feel like placing that kind of activity in a city allows for the appreciation and enjoyment by such an extended community. It doesn't come across in any of the financial figures—they're just a snapshot of how we're keeping this going. But, what we're keeping going is so much more than the business itself: it's such a place [we've created] in the city."



This is not an empty lot: it's got a very valid use on it that a lot of people appreciate and is productive. But, for all intents and purposes, when you're thinking about this as real estate, it's empty and unused. And that feels like a real problem.

– Caitlyn Galloway
Little City Gardens

136 http://www.urbanaglaw.org/water/#Water_Discounts_and_Subsidies

Karen Fresh Garden, Kansas City, KS

New Americans Rooted through Farming

Themes: Full-time owners, Owner food security, Multi-farm efforts, Incubator farm trainee, Signature product — ethnic vegetables.

History

“I don’t know if we really have a farm here,” laughs Lay Htoo, a Burmese refugee in her fifties, as she flicks her hand toward the area behind her house. She has farmed for nearly three decades, but her modest one-acre plot in northwest Kansas City, KS (known locally as “KCK”) is the first she has wholly owned, since resettling in the United States.

With her daughter acting as interpreter, she and her friend and fellow farmer, Pay Lay, agree that American’s “don’t do farming like they do in Myanmar.” Still, says Lay Htoo, with her other options of working for a factory or company, she would rather be farming. “It was my plan when I moved here,” she says.

Lay Htoo and Pay Lay are among the hundreds of Burmese refugees who have settled in Kansas City. They are both of the Karen ethnic minority, one of 130 recognized ethnicities in Burma, or Myanmar.¹³⁷ Other ethnic Karen people, including Pay Lay’s sister and farming partner, Beh Paw, as well as other Burmese ethnic groups live in northeast Kansas. Somali, Congolese, Bhutanese, and now Syrian refugees have also been resettled in Kansas City in significant numbers.

Catholic Charities of Northeast Kansas is one of several agencies helping refugees acclimate to their new home. It provides immigration and legal services, translation, English language courses, and connects refugees to other agencies for health, social, and cultural services. In 2008, Catholic Charities launched a new refugee support program called New Roots for Refugees in partnership with Cultivate Kansas City, an urban farm and UA advocacy organization. The four-year program recruits refugees to farm ¼-acre plots at its 9-acre training farm at Juniper Gardens, a public housing development in northeast KCK.

Refugees invited into the program are given their plot to farm all four years they are in the program. Supplies are subsidized, and tools, refrigeration, and transportation are



Lay Htoo shares a taste of her spinach crop with visitors to Karen Fresh Garden.

provided free of charge. Refugee farmers keep all money they earn from selling their produce. New Roots has stands at several area farmers markets where trainees sell collaboratively, and as farmers build their skills, New Roots helps them establish their own stands at farmers markets.

But, New Roots is more than a farm incubator. Trainees participate in weekly classes, including interpretive services for those who cannot understand or are learning to speak English. Classes vary based on seasonal tasks, from seeding schedules to marketing skills, and are supported by the option to participate in ESL classes to help farmers communicate with customers.

Katherine Kelly, Executive Director of Cultivate Kansas City, says the choice to focus on direct retail at farmers’ markets was deliberate. “Farmers markets are the best place to develop your skills, and your business,” she says, particularly because farmers get direct feedback and are challenged to communicate.

Catholic Charities helps New Roots trainees set up savings accounts for their earnings. The goal, says Kelly, is that trainees save the money they earn while farming at

137 Refugee Populations. (n.d.) Kansas Department of Health and Environment. Retrieved from <http://www.kdheks.gov/olrh/RefugeePop.htm>

Juniper Gardens to be able to purchase their own plots upon graduation. They also help trainees obtain their own tax ID number and FSA farm number and help them set up their farm businesses as sole proprietorships.

Kelly says engaging refugees in farming works because it is a skillset from their home country. New Roots helps refugees gain confidence and acumen in other areas by building on their farming skills and desire to farm. For many, it is also an opportunity to grow and sell fruits and vegetables that are native to their home countries, but hard to find in Kansas City.

Lay Htoo says she knew she wanted to farm in Kansas City before she even arrived. Pay Lay agrees, saying she hoped to do what she had done back in Myanmar. The women are two of four who graduated as New Roots' inaugural class in 2011—they expedited their training, and Lay Htoo, who joined in 2010, only farmed at Juniper Gardens for two years before purchasing her own land. According to Alicia Ellingsworth, the Cultivate Kansas City's Program Manager for the training farm, they are some of the most successful farmers of New Roots' graduates.

Community Description

Since 2006, 148,957 Burmese have resettled in the United States. Burmese refugees make up 24 percent of all accepted refugees to the United States, more than any other country.¹³⁸ According to the Office for Refugee Resettlement, housed in the U.S. Department of Health and Human Services, 951 Burmese were resettled in Kansas between 2012 and 2015, making up nearly half of resettled refugees in that time period.¹³⁹ Though KCK's Burmese refugee population is not the largest in the country—parts of Texas¹⁴⁰ and Indiana¹⁴¹ outnumber them—they have been the largest refugee group in Kansas for most of the past ten years. Ellingsworth says there are many ethnic community gardens in KCK, and they are one of the primary places from which New Roots recruits.

Lay Htoo's farm is behind her modest single-story home on the one-acre lot she purchased with her family in 2011. She says she chose this house because it came with good soil. By all accounts, the neighborhood is changing: though Lay Htoo's neighbors are "American," there are "a lot of

Burmese people moving to the neighborhood." Lay Htoo, Pay Lay and her sister, and another New Roots graduate each have farms within a mile and a half of one another.

Farm Description

Lay Htoo cultivates about a half-acre of her long, narrow lot. Crop rows run north-south, taking advantage of the lot's length. There are several large trees in neighboring yards that provide some early and late-day shade. The lot is fenced in on all sides—low enough to interact with neighbors but not high enough to keep deer out of the garden. In 2015, Lay Htoo built a high tunnel after receiving an NRCS EQIP grant.

Lay Htoo's farm set-up is similar to her friend Pay Lay's: irrigation is done by hand with a hose—no drip tape—which runs off the house meter. They pay residential water rates, including sewage and stormwater tax, but Ellingsworth says KCK Water Services Department is working on a solution to this. Neither have a need for any other utilities on the farm.

Tool sheds hold hand-tools (most work is done by hand), as well as weedwackers and lawn mowers. Lay Htoo and Pay Lay each own a Tillie electric walk-behind tiller, which they use for bed preparation. Pay Lay has a shade structure and wash station; Lay Htoo does not, but would like to build one. Neither has cold storage, and Lay Htoo says keeping produce in her cellar until market does a good job for now.

Lay Htoo pays the mortgage on her home and lot, as well as property taxes. Both farmers are required by the farmers markets at which they sell, to carry product liability insurance at a rate of \$35 per week.

Production Practices

The farming practices of New Roots graduates are nearly identical, as all receive the same training. Seeding of early crops begins in February, and the growing season spans from April to October.

New Roots teaches trainees about using organic practices, which are not too different from how many trainees were accustomed to farming in their home countries. It does not encourage farmers to become certified organic, in part because their customers do not demand it, and because

138 Zong, J. and Batalova, J. (2015, October 28). Refugees and Asylees in the United States. *Migration Policy Institute*. Retrieved from <http://www.migrationpolicy.org/article/refugees-and-asylees-united-states#Refugee%20Countries%20of%20Origin>.

139 Office of Refugee Resettlement. (2015, November 24). Refugee Arrival Data. Retrieved from <http://www.acf.hhs.gov/orr/resource/refugee-arrival-data>.

140 Toppa, S. (2015, October 13). 'It Will Be Better': Burmese refugees struggle on road to America. NBC News <http://www.nbcnews.com/news/asia-america/it-will-be-better-burmese-refugees-struggle-road-america-n440421>.

141 Puente, M. (2007, September 30). Burmese refugees find new home in Indiana. Retrieved from <http://www.npr.org/templates/story/story.php?storyId=14841071>.

obtaining and maintaining certification can be difficult for refugees with low English proficiency. Lay Htoo says she plans to pursue organic certification in the future.

Ellingsworth and Sam Davis, the site manager at Juniper Gardens Training Farm, work intensively with trainees to keep records: seeding dates, planting and transplant dates, yields, and sales. They say Lay Htoo is an excellent record keeper not shy about her skills. Ellingsworth says her fellow farmers look up to her for her expertise in recordkeeping, growing, and marketing.

Lay Htoo, Pay Lay, and their graduation cohort still learn from one another. Ellingsworth says they often consult with one another about production issues before asking Davis, who maintains close relationships with graduates.

New Roots trainees are coached in planting varieties that grow well and are in high demand, but make their own crop planning choices. Instructors give trainees advice but don't prevent them from making mistakes—Davis says it is the only way to become a better grower. Trainees learn to make annual cropping plans, and Lay Htoo and Pay Lay say their cropping plans are their primary planning documents. They try to rotate crops seasonally and do not practice cover-cropping in winter.



Lay Htoo of Karen Fresh Garden erected a high tunnel in her backyard where she also grows a wide variety of crops outdoors.

Lay Htoo says she grows a little bit of everything. She grows “American vegetables” to sell at the farmers market like cooking greens, arugula, and spinach. She also grows “Burmese vegetables” and will keep them for home use

or sell to friends or other family members. Lay Htoo says she has tried to sell Burmese vegetables at the farmers market, but customers said they did not know what to do with water spinach, lemongrass, or Thai chili peppers. But, American customers do like Thai eggplants, she says.

She continues to expand her production as well as her cropping choices. Lay Htoo grew ginger, turmeric, and galangal for the 2016 season. She also successfully grows tropical papayas and pineapples, and maintains banana trees—an impressive feat in an area that can chill to -10F. Lay Htoo is growing more spinach because of her high tunnel, and devoted more space to fall-planted garlic.

New Roots graduates continue to participate in group-purchasing of inputs for their individual farms. New Roots puts in bulk orders for chicken manure, straw, and compost, which graduates pay for and arrange for pick-up or drop-off. Similarly, Catholic Charities purchases marketing supplies like paper pulp quart containers and bags in bulk for New Roots trainees and graduates, reducing costs.

Though graduates like Lay Htoo and Pay Lay know about crop planning and keeping produce fresh for market, they are not familiar with other food safety regulations. This, says Ellingsworth, is one place where New Roots needs to expand its training. “At Juniper there are workshops for harvesting and post-harvest handling: keeping food at temperature, safe handling practices, etc.,” she says. And though trainees know how to wash produce carefully and keep it cool, they do not have written plans. She hopes to incorporate food safety planning and mobile cooling units for transport to market at Juniper Gardens in the future.

Business Structure

Meredith Walrafen, Catholic Charities’ New Roots for Refugees Coordinator, says Catholic Charities tries to make setting up a business as easy and straightforward as possible for trainees. They help register trainees as sole proprietors of businesses, and register them for sales tax ID numbers and licenses in their own names: Kansas charges sales tax on all food.

The trainees also receive classes in business planning, marketing and sales, and their records and crop plans provide guidance to the business from year to year. Catholic Charities offers a workshop for all refugees on taxes and works with farmers to report their farm income. Most farmers and trainees work with a local Burmese-run tax preparation service, which mitigates language and literacy challenges.

Marketing and Sales

New Roots trainees begin selling their produce at farmers markets around the city, first collectively through the New Roots stand, then on their own. Once they graduate, farmers usually stay at the same farmers markets to build on the customer base they developed over several years.

Lay Htoo sells at two farmers markets in the Kansas City area, including the Overland Park Farmers Market which is held on Wednesdays and Saturdays in a large outdoor pavilion. She used to have a CSA, as Pay Lay does currently, but stopped it in 2014 because of the growth in her market sales.

Graduates can also market produce through Cultivate Kansas City's Gibbs Road Farm. Gibbs Road Farm is a model and demonstration farm that hosts workshops and apprenticeships, and earns over \$100,000 in annual revenue. It sells to farmers markets, its 40-member CSA, and to restaurants, and has started moving extra product from graduate farms through its own distribution system to restaurants. The Gibbs Farm coordinates with Lay Htoo to sell her late-winter high tunnel spinach to area restaurants, freeing her up to prepare her farm for the next market season.

The Kansas City metro area had 36 farmers markets in 2016, many with two market days per week, and competition for customers is high. Sometimes graduates even find themselves competing against the New Roots stand or other trainee farmers at their farmers markets. Though Lay Htoo says farmers at her markets are mostly American, Ellingsworth estimates that up to 40 percent of farmers at all farmers markets in the Kansas City metro area (including KC Missouri) are Asian.

"You have to be really nice to the customers and encourage them to try things," says Lay Htoo. She knows enough English to have basic conversations at the market. Customers often ask her about where she comes from and how people farm in Myanmar.

"Even if I can't speak the language, I will keep smiling and engage them," she says through an interpreter. "You have to try to engage everyone at the market." She believes that a farmer has to show up at the market every week and have a continuous presence to build customers' trust.

Lay Htoo's daughter set up a Facebook page for Karen Fresh Garden, but Lay Htoo rarely uses it or email. Instead, she believes that her best marketing is her market displays. "The merchandising is great, and the produce is really pretty," she says proudly.



Cultivate Kansas City, which runs the Juniper Garden Training Farm, occasionally assists Juniper Gardens graduates with distribution, using its truck to deliver to local restaurants.

Employees

Lay Htoo does not have any employees. She manages and executes all aspects of the farm, though family members will help her with some tasks. Lay Htoo's family is rewarded with access to the produce she grows—an amount that is significant for household security, but that she and most farmers (regardless of ethnicity) do not track.

Support

Lay Htoo, Pay Lay, and other New Roots graduates provide one another constant advice and support. They buy seeds together for lower prices, lend one another equipment, and talk about production problems.

New Roots for Refugees provides many support services to graduates, including technical farming advice, opportunities to apply for micro-grants, and continued connection to Catholic Charities' services. Lay Htoo and Pay Lay say Davis and Ellingsworth are their main sources of information about farming, and Walrafen helps with legal and tax issues.

This tax-filing aid is particularly helpful in filing state sales taxes, which are nearly nine percent on all food in Kansas. Walrafen explains that sales tax can only be filed online, making it particularly difficult for refugee farmers who lack English and computer proficiency. And for those farmers who sell in both Kansas and Missouri, it is a double burden. "The sales tax system is just not set up for small urban [farm] folks," she says.

Lay Htoo received a Get Growing KC mini-grant, a grant program set up by Cultivate Kansas City and Kansas City Community Gardens which helps urban growers start and expand their farms. Her award from the NRCS EQIP program helped pay for her high tunnel, which in February 2016 had already produced more spinach than her farm produced without it in all of 2015.

Lay Htoo is eager to expand her network beyond KCK. She has attended the Immigrant and Minority Farmers Conference four times since 2011. The conference is free for farmers, and all workshops are interpreted. Walrafen, who organizes New Roots trainees and graduates' conference logistics, says there are many ethnic Karen farmers at the conference. One reason Lay Htoo is eager to become organic-certified is to be able to share this with other farmers at this conference.

Policies Impacting Success

Kansas City, KS has been slower to embrace UA than Kansas City, MO (KCMO). Cultivate Kansas City, and other advocacy groups, petitioned the KCMO city council for zoning ordinance changes to permit UA, which it did in June 2010. KCK has not passed such an ordinance yet, though agriculture is a permitted use on some agriculturally zoned parcels within the Unified Government of Wyandotte County and Kansas City, KS. Non-livestock agriculture is permitted on some residentially zoned parcels, including Lay Htoo's property.

The Wyandotte County Unified Government Board of Commissioners passed an amendment in 2015 easing fees and restrictions on farmers markets. The KCK Farmers Market Board, recognizing the health and community benefits farmers markets provide, advocated for the change, which reduced the special use permit fee required to hold a farmers market and lightens the administrative burden on market officials.¹⁴²

Ellingsworth says she does not think there are any particular policies at New Roots that have positioned farmers like Lay Htoo and Pay Lay to be some of the most successful farmers the program has ever graduated. She thinks they may have been some of the best-prepared and most eager participants, though all program trainees value the opportunity to farm and learn at Juniper Gardens. "It's great if someone has been growing in a community garden for a couple years," she says, "because they have an idea [of what it takes] and a connection [to] farming."

Assets and Challenges

Lay Htoo is grateful for the support she continues to receive from New Roots for Refugees and Catholic Charities. Davis has become a friend, and he helped her till her fields when she first bought the property. He and Ellingsworth continue to give Lay Htoo and all other graduates production advice and sales support.

Aside from the deer that continue to wreak havoc among the vegetables, Lay Htoo's biggest challenge is communication. While she is talkative and expressive in her own language and highly respected among Burmese farmers, she is reluctant to speak English beyond her well-rehearsed market conversation.

"In the market, I have to do many things: understanding paperwork, applications, selling. If New Roots didn't help fill out paperwork or translate letters, I would have a much harder time running my business," she says. Though she took English classes when she first arrived in the U.S., she did not have time once she began farming.

Promise of Urban Agriculture

Lay Htoo says she plans to farm in Kansas City, KS "forever." She has no desire to move to larger land and is comfortable with the size of her farm and what she is able to produce for farmers markets and her family and friends.

While Karen Fresh Garden earns a good income for the family, it is the food, not the money, that Lay Htoo finds the most valuable. She says the promise of UA is "that we can have our own vegetables and not buy them. Unlike families at the market, we do not have to buy food." After years in refugee camps and now 8,000 miles from Myanmar, Karen Fresh Garden provides specialty vegetables not locally available and assures food security for Lay Htoo and her family.

142 <http://growingfoodconnections.org/news-item/coo-wyandotte-county-ks-ordinance-change-keeps-farmers-markets-flourishing/>

Our School at Blair Grocery, New Orleans, LA

Rebuilding a Community through Farming and Food Access

Themes: Land access, Urban ag policy, Community revitalizing, On-farm events, Provides education and training, Incubator farm trainee, Livestock.

History

“Someone said, ‘Do you want to garden?’ And I said, ‘Sure,’” remembers Nat Turner, 44, founder of Our School at Blair Grocery (OSBG) in New Orleans Lower Ninth Ward. From that simple start grew an urban farm and education center that has faced complex and challenging circumstances that tested former staff and students’ trust and his own will to continue the project.

Turner, who is known to all by his last name, is a former history teacher at New York City’s Beacon School. Three months after resigning his teaching post in 2008, he moved to New Orleans, where he had taken his classes on volunteer-trips since Hurricane Katrina and its aftermath decimated the area in 2005.

He started a New Orleans garden of his own when Pam Broome, the former deputy director of the New Orleans Food and Farm Network (NOFFN), offered him 25 cubic yards of soil and 25 tomato plants. He planted them next to the building at 1740 Benton Street in the Lower Ninth Ward, formerly a neighborhood store known as Blair Grocery.

The farm came together slowly at first: elderly neighbors would come by to visit the tomatoes, then the baby chicks, who eventually roosted in a chicken tractor. Turner was joined by former Beacon students to launch an alternative school in Blair Grocery. Its curriculum would combine paid farm-work, job-readiness training, and sometimes even a place to sleep for teenagers in the Lower Ninth Ward.

From its mission to its milieu, Our School at Blair Grocery quickly became a darling of the UA movement. Local and national funders were eager to provide funding for the project, which addressed the basic needs of some of New Orleans’ most resource-poor residents. Since its start, it has drawn over 12,000 service learners from 49 states and eight countries to learn and contribute to its cause.

Yet, OSBG nearly folded. In 2011, a schism among Turner’s young staff over management and organizational direction led to half of the staff and many students abandoning the organization. Around the same time, OSBG’s handling of grant-moneys was drawn into question, leading to an



Inspirational messages under a shade structure at Our School at Blair Grocery.

8-month audit of the organization’s finances by USDA, which eventually cleared it of wrongdoing. Then on July 26, 2013, city building inspectors abruptly evicted Turner and his staff from the former grocery.

Three years later, OSBG is rebounding with a modified mission. While youth engagement and education are still central to its purpose, OSBG will refocus its efforts on providing food for the Lower Ninth Ward. It is expanding to include a new school and a grocery store to serve the community.

Turner says people often tell him to just focus on one thing. But, if OSBG is only doing one thing, he counters, “how do I change the neighborhood?”

Community Description

Many of the lots around Blair Grocery were abandoned after Katrina, as were several houses among the ones still standing. For the residents who remained, there were few services and no grocery store.



Devastation of the Lower Ninth Ward 6 months after Katrina.

The Lower Ninth Ward¹⁴³ is a 1.6 square mile rectangle bordered to its north and west by shipping canals, to its east by St. Bernard Parish, and to its south the Holy Cross neighborhood along the Mississippi River. In 2000, the population of the Lower Ninth was 14,008¹⁴⁴; ten years after Katrina flooded the neighborhood, the population is only 3,300. Though there has been a noticeable increase in people moving to the area, the majority of its former residents have not moved back.

Though the population has slightly increased, housing stock continues to decline as more abandoned homes are demolished. There were 5,600 housing units in the Lower Ninth Ward in 2000, just over 2,000 in 2010, and in 2014 just 1,600.¹⁴⁵ The vacancy rate has fallen since Katrina, but in 2014 was still an astonishing 34 percent.¹⁴⁶

Ninety-six percent of Lower Ninth residents are African-American. That is a slightly lower percentage than in 2000 (98.6 percent) and far higher than Orleans Parish then or now (66.7 percent in 2000 and 60.5 percent in 2014).¹⁴⁷ The median income in 2014 was around \$25,300, with approximately 28 percent of families living below the federal poverty level.¹⁴⁸

Ten years after the storm the neighborhood still has very few services. A single small grocery store opened in 2015 to much acclaim¹⁴⁹, offering mostly packaged and shelf-stable foods. There is one charter school in the Lower Ninth Ward, one of a network of charters whose success in improving primary and secondary education in New Orleans is hotly debated.¹⁵⁰ Approximately one in three neighborhood residents, 18 years or older, has not graduated from high school.¹⁵¹

Farm Description

OSBG owns six lots, four of which it bought from the New Orleans Redevelopment Authority (NORA) and two from private owners. It has typically also farmed other abandoned lots adjacent to its own that are vacant and whose owners either do not visit or cannot be contacted. They set up an agreement with the Blair family to use its former grocery for the classroom, equipment storage, Cool-Bot-powered cold storage, and washing and packing space.

The Blair Grocery building fills the entire corner lot of 1740 Benton St. The building that housed OSBG's earliest efforts in providing education and a safe space for local youth is a simple construction of whitewashed cinderblocks and mint-colored siding. Bars on the doors and windows lock out trespassers—in spring of 2016, they were finally approved for a building permit to redevelop the site.

143 U.S. Census ACS 5-year, 2014.

144 U.S. Census 2000 Demographic Profile

145 U.S. Census 2010 Demographic Profile

146 *Ibid.* U.S. Census 2000, ACS 2014

147 *Ibid.* Census 2000, Census 2010 and ACS 2014.

148 *Ibid.* Census ACS 2014.

149 Netter, S. (2016, April 7). How one man single-handedly opened the only grocery store in one of New Orleans' poorest wards and inspired Ellen DeGeneres. *Washington Post* website. Retrieved from <https://www.washingtonpost.com/news/inspired-life/wp/2016/04/07/how-one-man-single-handedly-opened-the-only-grocery-store-in-one-of-new-orleans-poorest-wards-and-inspired-ellen-degeneres/>

150 See for example Cimarusti, D. (2015). Policy Brief: should Louisiana and the Recovery School District receive accolades for being last and nearly last? *The Network for Public Education*. Retrieved from http://networkforpubliceducation.org/2015/08/policy_brief_louisiana/#_edn1 and Gabor, A. (2015, August 22). The myth of the New Orleans school makeover. *New York Times* online. Retrieved from <http://www.nytimes.com/2015/08/23/opinion/sunday/the-myth-of-the-new-orleans-school-makeover.html>

151 Lower Ninth Ward Statistics. (n.d.) *The Data Center*. Retrieved from <http://www.datacenterresearch.org/data-resources/neighborhood-data/district-8/Lower-Ninth-Ward/#educational-attainment>

Blair Grocery spills over to the adjacent lot where a lean-to attached to the side of the building provides shade, storage, and affirmations painted on the building wall and hanging from the rafters. Across the lot, a handmade 15x50' high tunnel with a shade cloth houses Rupert, an enormous pig, and occasionally the 22 white goats that would rather be in the yard or naughtily exploring the lots nearby. A chicken run at the back of the property hosts a handful of hens.

Across Roman Street are OSBG's main production lots. A 30' high tunnel is used for transplant propagation and sprout-production. The other four on this block are used for production and composting.

In 2016, OSBG gained access to four more lots on the block through a NORA agreement, as part of a pilot project for blighted property maintenance. It uses a moveable electric fence to graze its goats on a different portion of the ten lots under its control to demonstrate an alternative to traditional vacant property maintenance.

"Anyone who was on the fence about the goats are convinced and falling in love. They are the cutest and quietest lawn mowers," says Sam Kiyomi Turner (no relation to Nat Turner), Projects Manager at OSBG.

One lot has a water meter hook-up for watering and irrigation. Overhead sprinkler systems are most often used for irrigation. The farm has a DIY feeling of reuse and adaptation: plywood is balanced atop old barrels which substitute for greenhouse benches, and most of its inputs come from what it can gather for free (see Production Practices).

The farm's single piece of large equipment is a "Life Trac" tractor, designed, built, and donated by Open Source Ecology, founded and operated by physicist and inventor of the "Global Village Construction Set" Marcin Jakubowski.¹⁵² The Erector-Set-like tractor breaks down from time to time, says Turner, who was awaiting Jakubowski's assistance with a recent mechanical problem. In the meantime, he and his crew will move compost with shovels.



Escaped goats clear the bramble that surrounds the Our School at Blair Grocery property.

Production Practices

Since 2008, Turner has focused on building up the soil over the abandoned lots, which do not show any serious contamination—remarkable since they once held houses and then were under several feet of contaminated water. It is treated with horse-bedding from a nearby stable and compost.

Sorting through compostables and making compost is a big task at OSBG. The on-site compost pile is fed by donated produce from a Whole Foods Market a few miles away. The farm absorbs 10-15 produce cartons of compostables five to six days a week. Some compostables are siphoned off for feeding the animals. The rest goes atop a colorful four-foot pile, yielding approximately 130 cubic feet of compost.

Still, OSBG chooses crops and planting techniques that minimally disturb the soil, and in 2016 began to practice no-till farming. Its main crop since 2010 has been arugula, which Turner says has the double value of being high-value to customers and low-value to neighbors who may not know what it is. In the height of the season, Turner estimates they sell about 100 lbs of arugula a week.

¹⁵² Open Source Ecology and Jakubowski's work have been profiled in *The New Yorker* and *The Atlantic*, among other places, and Jakubowski's TED Talk has been viewed 1.3 million times. Its partnership with OSBG was turned into a documentary, *Reversing the Mississippi*, which aired on the PBS program *America Reframed* April 14, 2016. For more on Open Source Ecology, see <http://opensourceecology.org/>

Peas, beans, tomatoes, peppers, and eggplant also grow in smaller quantities. Turner says they are often given away to youth working for OSBG, neighbors, or disappear, likely into other homes in the Lower Ninth Ward.

Turner prefers to call the farm “sustainable,” saying he does not have any intention of certifying the city properties as organic. In addition to horse-bedding and compost, the farm uses OMRI-certified fertilizers of blue-green algae and composted chicken manure, and makes its own pesticides with soaps, cayenne pepper, garlic, and essential oils.

Produce is usually harvested and sold within the same day, and transported into the denser parts of the city in Turner’s well-worn Subaru. The southern growing season allows the farm to produce and sell nearly year-round, though Turner says the summer heat can make it difficult to convince the youth employed by OSBG to show up for work.

The farm now separates its production farming from its educational garden areas. The strategy gives students a place to learn without damaging crops destined for market.

“There’s a difference between teaching-farming and production-farming, and often the teaching-farming messes up the production-farming,” smiles Turner, who is eager to do both. Since its inception in 2009, the organization estimates it has grown over 80,000 pounds of food.

Turner, who has no agricultural background, says he learned farming techniques through trial and error, advice from older neighbors who grew up on farms, and from a course with Growing Power in Milwaukee. Growing Power even brought a group of volunteers to New Orleans to help OSBG build its sprouting and transplant hoop house, which Turner says cost about \$1,500 in materials to build.

Business Structure

OSBG has been registered as a nonprofit since 2009. Its nonprofit status was revoked in November 2014 due to delinquent paperwork, according to Turner. NOFFN continues to act as its fiscal sponsor as it works to regain its independent nonprofit status.



Microgreens and other starts in the high tunnel balance on makeshift tables, part of OSBG’s philosophy of repurposing waste.

After losing nonprofit status, two of OSBG’s staff and Turner’s former high school students, Kiyomi Turner and Alex Goldman, split off the production and sales portion of the business into Blair Grocery LLC. While OSBG sorts out its business filings, the LLC continues to sell produce and work to fix other aspects of the business.

The organization’s business difficulties began in late 2010. That year OSBG received hundreds of thousands of dollars in grants and donations, including a \$50,000 grant from the W.K. Kellogg Foundation and \$299,600 in a USDA Community Food Program grant to fund its youth education program, to help its growing operation come to scale, and complete other community development activities.

After the organization could not account for how it spent about \$200,000 of its grant-money and filed for an extension on its taxes, its grant was audited by USDA. The funds were frozen for eight months before the USDA cleared the organization of any wrongdoing.¹⁵³

Kiyomi Turner and Goldman have taken on much of the recordkeeping, bookkeeping, grant-writing and liaising with city agencies. Meanwhile, Turner focuses on the expansion of OSBG. It received a \$150,000 low-interest loan through the Healthy Food Financing Initiative to make improvements to its grounds, renovate the grocery building for educational programming, and start planning for an actual grocery store.

153 An investigative report of OSBG was conducted in 2011 regarding its finances and staffing (see *Employees*). Cohen, A. “Pioneer of urban farm and school learns lessons of his own, hopes struggles lead to success.” *The Lens*, August 11, 2011. Accessed August 7, 2016 at <http://thelensnola.org/2011/08/18/pioneer-of-urban-farm-and-school-learns-lessons-of-his-own-hopes-struggles-lead-to-success/>

The planned grocery store is slated to sell OSBG produce and produce from other local growers alongside pantry staples and even some packaged and processed foods. It may be difficult to get their neighbors comfortable with a different store environment focused more heavily on fresh and whole foods, admits Turner. “But then how do we move people a little bit out of their comfort zone to bring it up a notch? And where are those battles to be fought?” Turner sees the next battleground for the Lower Ninth Ward in the grocery aisle.

Marketing and Sales

Restaurants have been OSBG’s primary sales outlet since it began to get press in 2010. Celebrity chef Emeril Lagassi began buying from the farm, as does the Link Restaurant Group which includes James Beard Award winning restaurants Cochon and Pêche.

Turner says the Link restaurants, which are near one another in the Lower Garden District, are particularly great customers. Not only does their proximity make delivery easy, but their high standards for quality and freshness, along with white-tablecloth prices, mean that OSBG can charge seven dollars per pound for its arugula. “You can’t beat seven dollars a pound with a stick!” declares Turner.

Media coverage of OSBG has provided much of its free publicity and marketing. Goldman manages its Facebook, Instagram, and Twitter accounts after receiving advice from social media consultants. Social media, says Turner, is geared more toward raising awareness about the farm and its programming, which attracts customers interested in their work.

About 28 percent of OSBG’s total revenue in 2015 came from hosting educational events and trainings, off-site speaking engagements, and sales of compost and merchandise. These earnings plus produce sales allowed OSBG to cover 83 percent of its 2015 budget. The remainder came from grants and fundraising, which includes fundraising for educational programming and capital improvements to the farm.

Employees

OSBG’s staff has grown and shrunk based on its programming and finances. Turner brought on his former students from the Beacon School, including Goldman and Kiyomi Turner, to help with all aspects of the operation, from production through educational programming. Turner’s husband, Rob Huffman, does production and facilities construction at OSBG.

In the past, OSBG has hosted Americorp volunteers to work as classroom and farm-based educators. It also occasionally hosts full-time apprentices from colleges in and around New Orleans as well as agriculture-oriented colleges around the country. It has hosted and worked with more than 20 of such long-term staff since its start.

Seven full-time staff, Americorp volunteers and apprentices, abruptly left OSBG in 2011 in what Turner describes as “the coup.” In late 2010, Turner halted the education program due to budget difficulties that related to its troubled recordkeeping and cash-based system of farm and program management. Many of the staff, in their late teens and early twenties, were furious that the programming they were brought on to execute was halted, and quit.¹⁵⁴

“Some of it feels like the growing pains of a small organization that grows rapidly,” says Kiyomi Turner, who weathered the organizational turmoil. “There wasn’t any good system set up for dealing with conflict and differing ideologies. Also, [the staff were] inexperienced people given a lot of say and a lot of power, who had been working for a long time without being compensated much, and not getting the spotlight or recognition. All those things balled up into conflicts.”

In addition to building productive conflict resolution and what Kiyomi Turner calls a “lexicon of critique” into its organizational culture, the organization is looking to hire more experienced staff. “We are moving to having interns who are coming out of farming programs who come with some basic knowledge and recommendation of their people,” says Turner, who hopes to have three apprentices each season.

On average the organization employs 12 youth aged 15-18 throughout the year, though in 2015 it decreased its youth staff. Each works for eight hours a week to do basic farm work alongside OSBG staff and receive \$50-100 in cash per week. According to Turner, most youth do not have bank accounts, and cash is easier for them to use. OSBG staff work with the youth on the same principles they teach in afterschool programming, incentivizing youth to participate by paying them for their work.

“Having kids [work on the farm] is tough,” says Turner, who relates stories of youth not coming to work yet wanting to be paid, coming late, doing low-quality work, and lacking respect for the people around them. But, that is the work, says Turner, not a deterrent to it.

154 Cohen, A. 2011.

OSBG gets hundreds of volunteers each year, says Turner. “Everyone wants to come save New Orleans,” says Turner wryly, “especially the poor black kids in the Lower Ninth Ward.” Still volunteers from other urban farming organizations, schools, colleges, and church groups around the country visit the farm every year to work on construction and repair projects at the farm.

Other Activities/Services

OSBG offers summer and after-school programs and has worked with over 140 youth in New Orleans. Its after-school program runs for two hours a day, four days a week, and is open for youth to join. One hour is dedicated to classroom time, which focuses on a curriculum meant to empower youth with life-skills: “being respectful, being on-time, respecting yourself and others, dealing with stress,” says Turner. These topics are reinforced in the second hour outside when youth learn about farming principles and can become responsible for their own projects.

OSBG employs its “good work rubric” to help youth develop and measure the growth of their soft-skills and capabilities. The rubric, which OSBG staff use as well, has proven effective also at cultivating accountability and leadership in participants.

Support

OSBG is one of the few farming organizations that has managed to purchase property from NORA. Its original purchase of four lots was not part of a program, and Kiyomi Turner says it has become increasingly difficult to purchase land in New Orleans.

OSBG struck up a new agreement with NORA through its Growing Green program, which manages vacant lots by providing them to urban gardeners and farmers. OSBG maintains Growing Green lots on its block by grazing its goats, piloting a new potential business. Though Growing Green requires at least one million dollars in liability insurance, a program through New Orleans nonprofit Parkway Partners has helped OSBG and other members get free liability insurance for Growing Green properties.

OSBG has received funding from several regional and national funders, including the Bornstein Family Foundation, the Greater New Orleans Foundation, the W.K. Kellogg Foundation, and the USDA Community Food Program (see Finances). It also accepts individual donations and regularly applies for smaller grants.

Turner received a scholarship to attend Growing Power’s Commercial Urban Agriculture training program. Over the course of the five-month program, says Turner, Growing Power’s founder Will Allen, gave him stern advice: “You can’t do educational stuff and grow food—you have to do one or the other, Nat.” But Turner, who saw Growing Power doing both itself, was unmoved and further emboldened to push forward.

Policies Impacting Success

The New Orleans Food Policy Advisory Council, of which NOFFN is a member, advocated with other interested groups for a change to the city’s comprehensive zoning ordinance regarding urban farming. The updated comprehensive zoning ordinance, released in August 2015, allows farm office buildings and water catchment for farms, both previously illegal.

Still, there are problems with the ordinance. Marianne Cufone, Founder and Executive Director of the Recirculating Farms Coalition and an agriculture lawyer, was deeply involved in writing the ordinance, but says educating city officials takes time. She and her colleagues are working to amend overly-restrictive portions of the ordinance, including a stringent definition of “processing” (cutting greens off a carrot counts as processing in the current definition) and the inability to sell produce on the farm.

“I’ve seen produce sales happen on the street like drug deals,” says Cufone, who also works at the state level to make UA viable.

Cufone also says New Orleans’ Sewer and Water Board has made it possible for property owners who use a lot for nothing other than farming to reduce their water bill by eliminating the sewage charge. However, the City’s demanding requirements to receive this reduction and the high cost of necessary infrastructure do not make it an accessible option.¹⁵⁵

Prior to these changes, OSBG received a variance to farm in 2012. Turner says the process was relatively easy. An intern at the time compiled agricultural zoning ordinances and policies from around the country—Cleveland, Ashville, Milwaukee, and others—and the OSBG team compiled those they thought the most relevant to their situation and the city. It also asked its neighbors to sign a petition agreeing the farm was a good idea.

155 Vickery, K.K. 2014. Barriers and Opportunities for Commercial Urban Farming: Case Studies from Austin, Texas and New Orleans, Louisiana. Accessed August 22, 2016 at https://austintexas.gov/sites/default/files/files/Sustainability/vickery_report_20142_2_.pdf

Yet, gaining long-term access to land is still difficult, says Cufone. NORA leases are just two dollars per year, but are revocable any time, making it difficult to plan a farming business. Parkway Partners offers some land for lease, but does not sell it. Meanwhile, says Cufone, “There are 40,000 empty lots in the city, but nobody can get it. People are sitting on it hoping that New Orleans becomes the next Dubai. And if they’re willing to let you use it, the terms are so disadvantageous as to not be worth it.” Thus it seems OSBG’s early moves to farm in the city had advantages that are now out of reach for many would-be urban farmers.

Assets and Challenges

Our School at Blair Grocery’s high profile in local and national media has been both an asset and a challenge. It has won them customers, funding, and invitations to speaking events around the country. Yet, it has also drawn negative attention.

“There are so many haters, people who belittle the work we do,” says Turner. “Some people don’t like us because of our ideas,” he says, referring to some of the more progressive messages of empowerment and self-determination OSGB teaches youth.

But, Kiyomi Turner sees the organization’s “tendency to blame things on external factors” as a greater inhibitor of its potential success. “We have a tendency to not ask what we can do differently, and it prevents us from learning and growing. We fall easily into holding patterns to wait for other stuff to happen rather than chugging along and adapting. I feel like we’ve wasted time on waiting for things to happen.”

Another challenge is getting the farm to look presentable for volunteers, tourists, and neighbors. “We have more people coming through here, and if I could get some grant money to just fix it up and make it look nicer, that would be great,” says Turner. Though the DIY-approach has helped the farm survive, Turner says he thinks it would be more successful if the team could “make it look nice: put up a nice fence, get some tools, rewrap our hoop houses, so they don’t look so raggedy, buying some real shelving.”

Kiyomi Turner also notes that basic inefficiencies compound over time: “We’ve been working on a lot of things that take a long time that shouldn’t take as long: tools not in the right place, stuff lost, hoses not rolled up. They become pretty big mental barriers. We waste energy and time on things that should be good to go.”

This lack of detail-oriented organizing impacts the farm’s financials, too. “I’m still paying for problems from 2009,” says Kiyomi Turner. “No one here really has experience in running a business or nonprofit, so the finances

seemed like an afterthought,” he says. He realizes with hindsight that hiring an accountant, “which seemed like an unnecessary expense” at the time, could have and still can help. “We have some semblance of a system, and it’s working,” says Kiyomi Turner, who still thinks an accountant or financial advisor would be beneficial and acknowledges that “everyone is more diligent” with financial records now.

OSBG’s positive press and strong partnerships are growing, and Turner is focused on the future ahead: a renovated school, a grocery store, better jobs for youth, and eliminating the Lower Ninth Ward ‘food desert.’

Promise of Urban Agriculture

“If you’re falling off the side of the mountain and I am helping you up, what’s more helpful? If I grab your finger by my finger, or if I grab your wrist with all five fingers, and you grab mine?” asks Turner. This is his analogy for how he hopes Our School at Blair Grocery can change the Lower Ninth Ward: a wrap-around approach to ending food deserts.

“Open a grocery store in a food desert with its own farm. Buy as much locally-sourced [product] as you can. Do the impossible,” says Turner. “It’s literacy, poverty, home environment, schools, violence, drugs, all these things. You have to move all those things to move it along.”

Like Our School, Turner hopes the future Our Store at Blair Grocery can help the neighborhood and pique the interest of people looking to make changes to their lives or the world around them.

“For the Millennial generation, there’s a real interest in changing: themselves, their society, their parents, the things that are wrong, the things that they perceive are wrong,” says Turner. Urban farms, he says, can act as a showcase for young people looking to make those changes and even inspire young people to take up farming.

“The next generation of people who will feed America will not be born on farms but will come from the city and go out onto a farm. That’s what I’m doing with my life.”

Note: After some hoped-for funding for an urban-rural hybrid farm fell through, Turner decided to close Our School at Blair Grocery in 2018. While former employees of the farm have moved on to other pursuits, urban agriculture continues to blossom in the Lower Ninth Ward.

Rising Pheasant Farm, Detroit, MI

Focus on Efficiency and Costs to Farm Debt Free

Themes: Land access, Urban ag policy, Full-time owners, Community revitalizing, SNAP/Double-up programs, Owner food security, Signature product – sprouts.

History

“My husband has a degree in urban planning, and I’m a farmer. That’s how you end up as a farmer in the city, I guess,” jokes Carolyn Leadley, owner of Rising Pheasant Farm.

In truth, it was farming that brought Leadley to the city. After earning a degree in plant ecology at the University of Michigan, she moved to Detroit to take a job with Greening of Detroit, a nonprofit organization working to improve life in Detroit by creating beautiful and productive green spaces. The AmeriCorps position placed her at Catherine Ferguson Academy, a public high school for pregnant teens and young mothers, where she worked with science teacher Paul Weertz to operate its renowned school garden which included orchards, livestock, and a barn.

That first farm job launched Leadley into a tour of possibilities for UA in Detroit. She worked for Earthworks Urban Farm, a nonprofit farm and project of the Capuchin Soup Kitchen east of downtown Detroit. She also worked on a healthy corner-store project for SEED Wayne with Dr. Kami Pothukuchi, Associate Professor and Interim Chair of the Department of Urban Studies and Planning at Wayne State University, whose scholarship made food and agriculture part of the urban planning agenda across the country.

In that position, Leadley talked with every liquor store owner on the east side of Detroit about offering fresh vegetables for sale. “It was a helpful experience,” she says, “getting the perspective of these store owners who say, ‘Well, I provide fresh vegetables but they cost money, and people don’t buy them, and they rot.’ You sympathize with them.”

While she was still working at Earthworks, Leadley thought she may try some growing on her own. She and her husband, Jack VanDyke, were living in a cooperative house, the garage of which had a broken bar display refrigerator. She borrowed grow-lights from acquaintances, installed



Pea shoots emerging in the greenhouse at Rising Pheasant Farm.

shelves in the refrigerator, and began growing sunflower shoots in the retrofitted grow room. Rising Pheasant Farm was born.

The couple moved to the tiny neighborhood known as Farnsworth at the end of 2009, rented a house from Weertz, who had been buying and renting houses in the neighborhood for several years, and moved Rising Pheasant to the house’s tiny attic. Space grew tight as their family grew bigger, and in 2011 they purchased their current home in the same neighborhood.

“When we started, what we were doing was illegal,” Leadley says. But, through slow, incremental growth from the refrigerator to their $\frac{3}{4}$ acre of land in 2016, Leadley and VanDyke have turned a hobby and side-business into a farm that fully supports their family of five.

Community Description

The Farnsworth neighborhood is part of the larger Poletown neighborhood, so-called because of the high density of Polish-Americans who lived there. Today

Poletown, like much of the east side of Detroit and Detroit generally, feels empty: acres of vacant lots are sparsely studded with houses—some occupied, some vacant.

But Farnsworth Street, for which the neighborhood is named, is an anomaly. Brightly-painted houses with well-kept yards line both sides of the Farnsworth between Elmwood and Moran Streets. Paul Weertz, the Catherine Ferguson Academy science teacher who retired when the school shuttered in 2014, had moved to the block in the early 1990s and began buying and renovating houses around his own home. Working with other long-term residents of the block, they began to stabilize the neighborhood and bring in like-minded, community-oriented people into the area.¹⁵⁶

Leadley and VanDyke moved from their rented house on that block to their farm around the corner on Moran Street, which more closely resembles the larger area's decimation: empty lots and shuttered or crumbling houses. But, those vacancies have allowed the couple, as well as other people in the neighborhood, to access open space. Rising Pheasant is the only commercial farm in the neighborhood, but many residents have purchased and maintained side lots as small gardens or parks.



Row covers help extend the season in the high tunnels at Rising Pheasant.

Poletown is a Polish-American and African-American neighborhood, and most of its older residents weathered the increasing vacancies, crime, and economic disinvestment. The Farnsworth section, however, is younger and whiter than the surrounding neighborhood.

Leadley says that if she could start Rising Pheasant over again, she would have made a greater effort to engage her neighbors, the long-time residents of the area. It was not until the fall of their first growing season at Moran Street that she started going door-to-door to neighbors, only to learn some were upset about the farm.

“I totally blame myself,” she says. “Most people in this neighborhood have lived here a long time, are older, and are often from the south where they have a history of sharecropping in their family or they chose to move a city to get away from farming. It feels like going backwards [to them]. It gave us an existential crisis for a few years and continues to make us question if we’re doing good or bad.”

But, she says, she prioritizes being a good neighbor: taking feedback, being respectful, and keeping the farm looking tidy. “For the most part, [the feedback] is positive,” she says, and soothes herself with the knowledge that the farm is safer and more well-regarded than the drug house it used to be.

Farm Description

Leadley and VanDyke own 11 total lots, including their house, for a total land area of approximately $\frac{3}{4}$ acres. That same year they began growing food on two lots behind their house, eventually adding a third. In 2016 they have ownership of those three lots, the three lots adjacent to the north side of their house, and another four lots further north on Moran Street.

They consider the three lots behind their house their market garden, totaling about one-fifth of an acre. This area holds their 30x60' hoop house that they constructed in 2015 with the help of an NRCS EQIP grant. The lots adjacent to their house hold their 20x24' heated greenhouse and packing area—which Leadley now laments they made too small—and their family garden. The four lots down the street, purchased at the end of 2015, had not yet been incorporated into production.

Leadley and VanDyke are particularly careful about lead contamination in the soil. Two of their most recently purchased lots tested high for lead, and they are weighing

¹⁵⁶ For more detail on how Weertz and other residents stabilized the neighborhood, see Jackman, M. “How Paul Weertz helped stabilize the tiny Detroit neighborhood you almost never hear about.” *Detroit Metro Times*, May 13, 2015. <http://www.metrotimes.com/detroit/how-paul-weertz-helped-stabilize-the-tiny-detroit-neighborhood-you-almost-never-heard-about/Content?oid=2343926>

their options on how to proceed. Leadley says she feels lucky that there are no lead issues on any of the six lots they currently cultivate, as she does not want to risk the health of their customers, employees, or family. They have a goal of soil mapping the entire ten lot area to make smart decisions about where and what they grow.

The first thing Leadley and VanDyke built in their house was a 5x6' walk-in cooler, powered by a CoolBot, a controller that will manage an off-the-shelf air conditioner such that it can be used to cool a storage space to 36 F without freezing the unit. They also have tool sheds for their hand-tools. In early 2016, they received delivery of a BCS walking tractor and 26" mower to mow the new lots and prepare fields.

Rising Pheasant's irrigation and wash-water runs off the house water meter, the bill that VanDyke painstakingly separates out at tax-time every year. They are considering getting flow meters to make this process easier.

Production Practices

From the ten trays of sunflower shoots she grew each week in 2009, Leadley has grown the shoots business to include sweet pea, mixed radish, and buckwheat shoots, which she grows year-round in the greenhouse. She grows 10-15 field-based crops each year, focusing on things she knows she can grow well, succession plant, and maximize the output of her limited acreage, including scallions, kale, chard, beets, and sun gold cherry tomatoes.

The field-growing season usually begins in mid-April and harvest extends through October. She also focuses on raising healthy transplants to give her crops a strong start. With the addition of the hoop house in 2015, Leadley was able to grow spinach most of the winter for sale at one of their markets. By March 2016 she had already exceeded spinach sales of the previous year. But, she says, there is a learning curve with hoop house production, and she's eager to improve her systems for better yields.

The extreme caution that Leadley applies to her soil extends to her plants. Though Rising Pheasant Farm is not organic certified, she purchases only organic seed for the sunflower shoots that make up the bulk of the farm sales. Leadley self-effacingly describes her trepidation about spraying highly-diluted Dr. Bronners soap in the high tunnel to ward off the many infiltrating aphids. Diatomaceous earth and row covers are her typical lines of defense.

Part of that defense, too, is care for soil. Leadley brings in 30 cubic yards of compost each year to turn into the soil. She builds soil by recycling media from transplant trays onto the growing areas.

Leadley would like to start tracking her time to find out which of her crops is the most profitable. She does figure for revenue earned per row-foot but thinks when she adds time into the equation, crops "that aren't that sexy, like chard" will prove to be more profitable than high-revenue crops like tomatoes. But by far, the tray-grown shoots are her most profitable crop, and "the bread and butter" of their operation. Year-round availability and a retail price of \$20 per pound have helped the farm earnings grow by up to 40 percent each year since 2009.

Business Structure

Rising Pheasant is a sole proprietorship, a simplicity-focused business decision that illustrates Leadley and VanDyke's minimalist philosophy. "We appreciate a simple life that doesn't have a lot of expenses, and our business is modeled on a low-resource future of peak-oil," says Leadley.

They focus on reuse, recycling, and low-impact solutions. "It might take more time, or more creativity, but it can help your bottom-line business-wise," says Leadley, especially because those solutions are less expensive or resource intensive.



Tomato transplants for the high tunnels.

One example of this low-cost, low-impact philosophy is the way they transport their produce to restaurants and farmers markets: by bike. They own a Dutch cargo bike, a regular bike, and two cargo trailers made by Iowa company Bikes at Work. Not only do they avoid expenses related to fuel, vehicles or insurance, says Leadley, they also get to interact with their neighbors and build familiarity.

“Everybody in the neighborhood, whether they know our names or not, know our kids, and know the crazy bike we ride them around in,” Leadley laughs.

Leadley registered Rising Pheasant Farm for an FSA farm number to apply for an NRCS EQIP high tunnel grant, after which Leadley says, “We [became] somewhat legitimate in the government’s view.” The registration for an FSA farm number, which is done at a local FSA or USDA service center, is a prerequisite for farmers to access USDA programs, including loans or grants, as well as includes the farm in the National Agriculture Census.

Marketing and Sales

Rising Pheasant’s first sales were at Detroit’s Eastern Market farmers market through the Grown In Detroit Cooperative, operated by the urban farm advocacy and support organization Keep Growing Detroit. As part of the cooperative, Leadley and VanDyke did not have to be at the market every week or carry the one million dollars liability insurance policy, which they now must hold to sell at market.

“That was wonderful because [customers thought] sunflower shoots were pretty weird, they didn’t know what to do with them,” says Leadley. But, there were drawbacks: a cooperative table meant she and VanDyke could not promote their own products, which could be overwhelmed by other growers’ produce on the same table.

“When we got our own table at Eastern Market, our production and sales skyrocketed,” she says. Though they sell at two other farmers market in the summer, Eastern Market continues to be their biggest retail location with more than 40,000 visitors every Saturday.¹⁵⁷ The Saturday farmers market is open year-round, and Rising Pheasant can be there every week with its shoots, and now spinach.

They also offer what Leadley calls a “market-based CSA,” in which a customer invests \$100 or more at a time and can draw down from his or her account through farmers market purchases. The investments are tiered, and with each increasing tier Rising Pheasant credits the customer an extra percentage to spend at their farm stand.

Leadley says that the system is a win-win for both customer and farmer. “They don’t have to remember to bring cash, we don’t have to box CSAs. They can pick whatever they want, not come for a month and come back, go on vacation and not miss out on shares. And they have the flexibility of using it beyond the main season.”



Sunflower sprouts emerging.

Rising Pheasant retails its shoots for between \$20 and \$28 per pound. “The diversity of customer base at Eastern Market also gives you a diversity of opinions about what produce should cost,” she says. “When you’re next to a wholesaler who’s selling a whole flat of strawberries for five dollars, five dollars for a little bag of shoots seems astronomical.” But, she says, Eastern Market’s EBT and Double-Up Food Bucks program have helped them build a base of SNAP-recipient customers to whom a bag of shoots is less risky if they can stretch their money further.

Restaurants make up the remainder of Rising Pheasants sales and are almost exclusively based on shoots. VanDyke delivers entire trays of shoots, which yield about 1.5 lbs of product, to eight to ten restaurants each week. One of their first and most consistent customers, Mudgies in the Corktown neighborhood, was buying so many each week that Leadley has started cutting, washing, and bagging the shoots for them for a higher price; the restaurant, she says, is happy to pay it. Restaurants don’t get field produce—there is not enough to go around, and sometimes Rising Pheasant struggles to have field produce at Eastern Market past noon on Saturdays.

“With the limited field produce we don’t want to stretch ourselves thin by going to more markets, but just adding Tuesday [at Eastern Market] and a new market in Corktown on Thursday evening, even though those are smaller markets, just being able to get more shoots out in the week has made a big difference. And we’ve increased our restaurant sales as well. We used to only sell

157 “Saturday Market.” Eastern Market website: <http://www.easternmarket.com/attend/saturday-market>

sunflower, but now people are getting the variety. More offerings for restaurants helps. But, each year the soil is better, I am getting better. Productivity is improving on a square-foot basis.”

Rising Pheasant’s least profitable, but in some ways most important, market is right outside their house. Since 2012 they have had a farm stand on the corner of Moran and Frederick Streets. “Sometimes we’ll make five dollars, but that’s not the point,” she says. “It is a nice way to [interact with] people who were interesting in buying stuff, but also people who had questions or concerns, just to be open and available to them, so they have the opportunity to make connections.”

Employees

Leadley ran Rising Pheasant Farms by herself at its start while VanDyke had a non-farm job. But, as both the business and their family grew, Leadley says, “It got to the point where, with small kids, either we needed to pay for childcare or all put into this effort together.” Leadley and VanDyke work full-time on the farm, about 40 hours per week each. It is their sole source of income.

They hire one part-time employee for the season, about mid-March through October. The employee focuses on production and deliveries, working about 30 hours per week at the height of the summer.

Leadley typically pays between \$9-11 per hour, based on experience. The 2015 season was their first in which the worker was an official employee, rather than an independent contractor. Leadley says that, in that transition, “we realized that if we paid him a living wage, he’d be making more money per hour than we were. I am all about the \$15 minimum wage, but I don’t make \$15 an hour. It’s hard to imagine paying an employee more than you pay yourself when you’re taking on all the risk and trying to feed a family.”

Rising Pheasant Farms does not have many volunteer opportunities. Leadley says that “Unlike a lot of farms that can benefit from a huge swarm of volunteers, I don’t ever want my farm to look that bad that I need a huge swarm of volunteers to weed everything. It’s small enough that I try to keep it neat and tidy.”

Nor does it host interns or apprentices. Leadley says her previous work experiences frustrated her with the lack of quality, reliability, or consistency in volunteer labor. She likes the idea of hosting a seasonal Detroit youth intern but also needs to do what is best for the farm.

“As a small business owner, you’re constantly thinking about the pay-back to you. Not to sound selfish, but I only have so much time or energy. How much is [an intern] going to benefit the business?”

Other Activities/Services

Having worked for several educational and nonprofit farms, Leadley values the work they do but does not attempt to do it at Rising Pheasant Farms. “Through my nonprofit experience, I realized that farm education with youth was probably the most important work going on, but not necessarily the work I was meant to do,” she says, with the exception of educating her own three children.

Leadley now sits on the board of Keep Growing Detroit and has hosted the organization’s farming classes at Rising Pheasant. The farm is a frequent stop on Detroit farm tours, which Leadley says is brief but valuable outreach.

Support

Rising Pheasant Farms owes much of its expansion to Leadley’s strategic application and creative use of small grant funding. They received a grant from the Eastern Market Co. and Citizen Bank’s collaborative Growing Communities Micro-Grant Program in 2012 to build their greenhouse, and a second one the following year for irrigation inside the greenhouse.

They were able to purchase and install the heating system for the greenhouse with the help of a \$10,000 New Economies Initiative grant from the Community Foundation for Southeast Michigan. Paul Weertz helped Leadley and VanDyke install it, bringing his Bobcat to dig the trench.

“He’s a very generous person who sees the big picture,” says Leadley of Weertz. “It’s relatively recently that people like us are buying houses, becoming owners and investing instead of renting. He wants to encourage that growth of support for the neighborhood.”

Keep Growing Detroit has also been a big supporter, Leadley says. Not only does it include Rising Pheasant on its farm tours and provide educational resources, but it also disseminates information about grant opportunities relevant to urban farms.

Leadley sees many opportunities where grant funding would be helpful. She is in touch with the local NRCS office about another EQIP grant for a second high tunnel, having experienced early success with the first one. It would likely

go on one of the new parcels of land, the improvement of which is Leadley's next big priority. The land will require a water hook-up and possibly some soil remediation or new soil additions. In the meantime, she will mow them with her BCS walking tractor, which was also purchased with an Eastern Market grant.

Policies Impacting Success

The 2013 passage of Detroit's UA ordinance was a relief to Leadley and VanDyke, who had knowingly farmed the empty parcels behind their house since 2011 before they owned the land. While the city never investigated them, they feared that a neighbor's complaint could shut down the farm.

They have been visited by city inspectors on multiple occasions for "blight violations" and were cited for illegal dumping after finished compost had been delivered to their property. "To someone who doesn't know what it is, it looks like illegal solid waste dumping," Leadley admits, "so there's been a lot of back and forth about what is and isn't solid waste." She says some neighbors, who are unfamiliar with finished compost, worry about rats and call the city, but the city does not come to the farm on its own accord.

"There are lots of blight violations in the neighborhood! But, the city doesn't drive around giving people tickets. It's complaint based."

Kathryn Underwood, the city planner with the Detroit City Council's Legislative Policy Division and the so-called "godmother of urban agriculture"¹⁵⁸ in Detroit, says it is not just neighbors who lack knowledge. Despite passing the UA ordinance, city agencies do not cooperate with one another regarding UA, and many agency personnel lack sufficient knowledge to apply the ordinance appropriately, as in the case of a pile of finished compost.

Leadley and VanDyke purchased three of their 11 parcels from private owners and the rest from the City of Detroit. Three lots were purchased through the city's side lot program, which allows residents to purchase lots adjacent to their homes for \$200 per lot through an expedited purchasing system. The city had more complex rules for purchasing non-adjacent lots, though Leadley and VanDyke went through that process as well.

Leadley applied directly to the City of Detroit for the purchase of all the city-owned lots, including five that were purchased from the city that were not part of the side lot program, for \$300 each. Since then, the City of Detroit set up the Detroit Land Bank Authority in 2014, to which it

transferred all vacant parcels. The land bank processes and approves sales and rehabilitates vacant homes for auction. Leadley says that despite the streamlining the land bank was meant to provide, she knows many urban growers who are still not able to purchase the land they farm.

She is not sure whether the legalization of urban farming has helped or hurt land acquisition. When she applied for her parcels, she listed the reason for purchasing them as "greening," as urban farming was still then illegal. Though it is now legal, she sees fellow farmers having a more difficult time purchasing through the land bank.

Leadley is now thinking about how to protect that land. Rising Pheasant has a one million dollar market insurance policy for its farmers' markets, but she does not have a home or farm insurance policy. She is thankful, however, for expanded Medicaid, which allowed her entire family to have health care. "We consider our food budget part of our health care budget, but being able to have emergency services and not having to worry as much is huge."

Assets and Challenges

Its land and surrounding community are Rising Pheasant's biggest assets, and its most consistent challenge. Leadley is eager to get her newly-acquired land into production and expand her market. She knows that she and VanDyke have been able to expand at the rate that they have, in part, because of policies that make it easier and less expensive to purchase land.



Late harvested beds from the previous season.

158 As described by Winona Bynum, Executive Director of the Detroit Food Policy Council, in a phone call January 19, 2016.

At the same time, with that ownership comes risk. Leadley is reluctant to leave any equipment or obviously valuable permanent infrastructure on those lots because they are farther from the house, and harder to watch. Crime still exists in Farnsworth. The family's home has been burglarized, and arsonists still burn down houses, including one across the street. She wants Rising Pheasant to be open and available to neighbors, but not vulnerable to neighborhood crime.

And while Rising Pheasant Farm and the family that runs it have been embraced by their immediate community and the larger Detroit food scene, Leadley recognizes that urban farmers like her, who moved from the suburbs when in their 20s and buy or squat on empty lots, are controversial.

"There are a lot of dynamics that differentiate; class and racial dynamics of the city are extremely important and intense. All folks growing in the city, especially if they're new to it, [race and class] have to be at the forefront of the work they're doing, even if they're not a social justice organization or nonprofit. You can't ignore it in Detroit."

Leadley makes clear that she does not think that Rising Pheasant Farms represents all of UA in Detroit. "We're just doing what we do, and there are amazing people doing a variety of work. I've lived here ten years, but wouldn't want to give the impression that we represent 'urban'."

Promise of Urban Agriculture

Is Rising Pheasant Farms an average urban farm? An exception? These are the questions Leadley asks when she thinks about the larger world of UA. She confesses that she is focused on her farm and family, and wonders how the farm compares to others around the country.

Much of the promise for Rising Pheasant is rooted in staying true to its philosophy of minimalism.

"It's a constant debate: 'is the key to our success our scale?'" Leadley states. She says she knows farmers with 40 acres and large CSAs bringing home about as much money as she and VanDyke do from their 1/5 acre and greenhouse full of sprouts because Rising Pheasant's costs are so low. They spend \$20 in fuel a year and have the ability to ride a bike to their customers, which would be impossible on a rural farm.

She and VanDyke will continue that debate as they think of expanding their production—who can they sell to on their current bike routes? Should there be a minimum order? How could they get into a major grocery store? While they envision growing their business, they believe that expansion should not compromise the values by which they grew Rising Pheasant from a retrofitted refrigerator into a thriving farm.



Growing Home, Inc, Chicago, IL

Providing Job Readiness Skills through Farming

Themes: Urban ag policy, Community revitalizing, SNAP/Double-up programs, On-farm events, Provides education and training.

History

The idea that became Growing Home, a nonprofit dedicated to helping chronically unemployed, underemployed, and housing-insecure people gain job skills through farm work, was hatched nearly two decades before its first training session. William “Les” Brown, founder of the Chicago Coalition for the Homeless (CCH), had been helping people find permanent housing and jobs when he realized that a suite of services, including workplace readiness training and work that produced tangible results, could help people gain and maintain employment.

Brown hired Harry Rhodes in 2001 to realize this vision. If one of the main barriers to ending homelessness is employment, then one of the main challenges to employment is giving people job experience and teaching them job skills. Rhodes’ charge was to teach those skills through farming.

Nine people enrolled in Growing Home’s inaugural 2002 program at its farm in Marseilles, IL, 75 miles southwest of Chicago. CCH acquired the ten-acre parcel through the Federal Surplus Property Program via the McKinney-Vento Homeless Assistance Act of 1987.

Growing Home expanded to urban sites, including in the Englewood neighborhood on the south side of Chicago. Broadly known for crime and unemployment, Rhodes and Growing Home were eager to bring its job training and employment program to area residents. Ultimately, Growing Home chose to root itself in Englewood, selling



One of Growing Home’s urban farm sites in the Englewood neighborhood of Chicago.

the rural farm and giving back its other sites to invest fully in the community. Since 2002, it has graduated over 400 people from its job training program, contributed to rewriting the city’s zoning policy, and has made a significant impact on Chicago’s UA movement.

Community Description

Englewood faced several decades of disinvestment following its population height at more than 97,000 residents in 1960.¹⁵⁹ The 2010 census recorded 37,260 residents in the three square mile census area;¹⁶⁰ though Rhodes says Growing Home reaches to the greater Englewood area, home to around 65,000 people.

The neighborhood is 97 percent black, and nearly half of residents live below the poverty line.¹⁶¹ It has one of the city’s highest rates of crime, including violent, property,

159 Englewood. (n.d.). *Encyclopedia of Chicago* website. Retrieved from <http://encyclopedia.chicagohistory.org/pages/426.html>

160 Englewood neighborhood in Chicago, Illinois (IL) 60621 detailed profile. (n.d.). City-Data.com Retrieved from <http://www.city-data.com/neighborhood/Englewood-Chicago-IL.html>

161 *ibid.*

drug and vandalism crimes,¹⁶² though overall crime has decreased since a 2006 peak.¹⁶³ The unemployment rate has hovered around 21 percent since at least 2010.¹⁶⁴

Englewood has officially been called a “food desert,”¹⁶⁵ with little access to healthy food. Through summer 2016, Greater Englewood was served by one grocery store and an ALDI discount grocery store. A Whole Foods store opened in the neighborhood in fall 2016,¹⁶⁶ and has been making efforts to hire new employees from the neighborhood.¹⁶⁷

In 2006, Growing Home started a farm on their Wood Street property in Englewood. Rhodes says that the neighborhood has made significant changes since the farm started in this location. The farm was started in conjunction with the Green Healthy Neighborhoods plan, which includes building an Urban Agriculture District in Englewood.¹⁶⁸ Rhodes says the plan would turn vacant land into productive space including farms, community gardens, produce stores, farmers markets, cafes and restaurants.

Farm Description

Growing Home began the precedent-setting process of acquiring its Wood Street property in 2006. It worked with several city agencies for over a year to develop a redevelopment agreement and arrange the transfer of the city-owned land to Growing Home. Because there was no definition of “urban farm,” the City designated Growing Home as a “technical institute,” which added expensive landscaping and parking requirements.

With the transfer settled and ready to start building, Growing Home faced another 9-month delay in attempting to get building permits. The problem, says Rhodes, was that “there hadn’t been a permit for a farm building in 100 years [in Chicago], so how do you do that?”

The Wood Street Farm finally opened its doors in the summer of 2009 to a 0.6-acre farm with three high tunnels, outdoor growing areas, and a two-story building

housing administrative offices, classrooms, a wash station, walk-in cooler space, and storage and potting areas. A covered pergola attached to the building near the Wood Street entrance acts as the farm stand site. The farm runs the length of the lot to Honore Street.

Walk out the Honore Street exit and turn left, and just under the culverted tunnel beneath a former elevated rail line is Growing Home’s second farm, which was started in 2011. The Honore Street Farm parcel (0.9 acres) was the result of a partnership with NeighborSpace, an independent nonprofit community land trust with support from city agencies, which manages Chicago’s open spaces. NeighborSpace has given land to and helped start community gardens, but Growing Home was the first farm on trust-protected land in the city limits.

Production Practices

Growing Home cultivates 0.8 acres of the 1.5 it controls, including its five high tunnels. Initially, the growing areas were covered in at least 12 inches of wood chips and compost to compensate for the compacted earth beneath.

Both farm sites are certified organic by the Midwest Organic Services Association. One of Growing Home’s goals since its start, says Rhodes, is to demonstrate and promote organic farming as a means of caring for people and the environment.

Production is overseen by Farm Enterprise Director Stephanie Douglass, who coordinates the planting of 50 different crops representing over 200 crop varieties. She says that while the farm grows varieties well-known by most Chicago residents, there are chefs, artisans and wholesalers interested in a wider variety of produce. “We’re trying to figure out how we can diversify so we’re not as deeply dependent on direct sales, but for the next few years that’s going to be the bulk of sales,” she says.

162 Tu, Chau. (2013, February 11). An economic breakdown of Chicago’s Englewood neighborhood. *Marketplace* website. Retrieved from <http://www.marketplace.org/2013/02/11/wealth-poverty/guns-and-dollars/economic-breakdown-chicagos-englewood-neighborhood>

163 Crime reports in Englewood. (n.d.). *Crime in Chicagoland* website. Accessed December 6, 2016 at <http://crime.chicagotribune.com/chicago/community/englewood>

164 Ibid.; Marketplace (2016).

165 Chicago Policy Research Team. (2010, May). *Deserted? A policy report on food access in four South Side Chicago neighborhoods*. *University of Chicago*.

166 Bomkamp, S. (2016, January 7). Whole Foods gets personal in effort to impress Englewood. *Chicago Tribune*. Retrieved from <http://www.chicagotribune.com/business/ct-whole-foods-englewood-0107-biz-20160106-story.html>

167 Englewood Whole Foods sessions for prospective workers begin this week. (2016, March 15) *Chicago Tribune*. Retrieved from <http://www.chicagotribune.com/business/ct-englewood-whole-foods-jobs-0316-biz-20160315-story.html>

168 Green Healthy Neighborhoods. (n.d.). City of Chicago Planning and Development. From http://www.cityofchicago.org/city/en/depts/dcd/supp_info/green-healthy-neighborhoods.html

Fred Daniels, Site Manager and 2010 graduate of the job training program, says salad greens tend to be the most profitable crop. The high tunnels he manages are able to produce kale, arugula, lettuce, mizuna and other Asian greens year-round. In 2015, the farm produced over 30,000 lbs of produce, earning revenues close to \$100,000.

Business Structure

Beyond demonstrating organic practices, Growing Home demonstrates social entrepreneurship. While Rhodes has a goal of increasing the percentage of the total budget covered by earned revenue every year, he acknowledges that it is a serious challenge. In 2015, earned farm revenue covered 1/3 of the farm budget, and just under ten percent of the organization's total annual budget.

One of the biggest challenges to the nonprofit, says Rhodes, is the cost of wages, which has driven up the overall budget. Employee-enrollees of the job training program earn minimum wage, which is set to increase in Chicago from \$8.50 in 2014 to \$13.00 by 2018. Though job training organizations were exempt from the increase, trainees and full-time staff wanted to see Growing Home progress with other employers, and trainees were paid ten dollars per hour in spring 2016, and \$10.50 per hour starting in July 2016.

Rhodes agrees with this philosophy as livable wages are a goal of social entrepreneurship. Yet, it is difficult to earn enough income to cover all costs, he says. "Everybody talks



Low tunnels add further protection to crops in a high tunnel.

about, 'you have to be [financially] sustainable! You have to make it on your own!' But, it's not really possible for our programs," he says.

Marketing and Sales

According to Rhodes, the only way to have a successful social enterprise and turn out successful graduates is "to have a successful farm and good product." Though moving toward more wholesale sales is a goal, about 90 percent of sales occur at one of two Chicago farmers markets or at the weekly farm stand on Wood Street.

Growing Home has a stand at the Green City Market near Lincoln Park from April through December on Saturdays, and at the Logan Square Farmers Market on Sundays. The customers have different attitudes from market to market, says Rhodes. This gives trainees, who sell at the stands, a key experience: customer service. And while farmers markets make a lot of money and are a chance to talk about the mission, Rhodes knows "you can't just say, 'We have a great social mission! Buy our food!' You have to have a really good product." And it is their certified organic, hyper-local produce that distinguishes the farm from other vendors, says Rhodes.

Both markets accept SNAP, via Illinois Link Card, and participate in the LINK Up double-dollar program: for each dollar charged to their Link Card, patrons can receive an additional dollar to spend on fruits and vegetables at the market.¹⁶⁹ Growing Home added its own double-dollar program and now uses grants from Kraft Heinz Company Foundation and others to offer additional SNAP-based incentives to market shoppers.

Though the farmers markets and farm stand are highly successful, Rhodes agrees with Douglass's assessment that more focus on restaurants and wholesale is critical to working toward greater financial sustainability. Farmers markets' weather dependency can make sales unreliable, and though Growing Home can donate unsold produce on Monday morning, developing wholesale relationships will make for more stable income.

Growing Home began working with Local Foods, an upscale locally focused grocer in trending Bucktown neighborhood. After unexpectedly high potato yields in 2015, Douglass has sold over 1,000 pounds to the market-café hybrid. Douglass is thrilled to continue to work with the store, though laments that its model is not affordable to Growing Home's target audience.

169 Link Up Illinois. (n.d.). *Experimental Station* website. Retrieved from <http://experimentalstation.org/linkup-overview/>

Employees

Growing Home has 15 full-time employees, including six full-time, year-round farm employees. Another goal of the training program is to hire graduates as full-time employees. In 2016, three of the six farm employees were program graduates.

Forty people were employed as trainees in 2015, over the course of three training seasons (spring-summer, summer, and summer-fall). Trainees work six hours a day: four in the field working alongside farm staff, and two for classroom study and training in customer service, soft skills, and interview techniques.

“That’s one of the keys...giving trainees a real salary,” says Rhodes. “It is not enough to make a living, but it is enough to give them stability until they find full-time work.” The fast-paced environment of a production farm is a great training ground, and Rhodes says staff regularly hear from former trainees that it is a transformational experience.

Full-time staff also includes a director of community outreach who organizes volunteers. “There is more interest in volunteering than we have projects for them to do,” says Rhodes, “But now having a director, we’re able to provide more volunteer opportunities. Regular weekly volunteers work with staff on production-related activities, while schools or other groups work on separate projects. But, Growing Home is not dependent on volunteers for their labor. “For the people we’re training, it’s important that we rely on them for their work,” says Rhodes.

Other Activities/Services

Growing Home’s commercial farm is designed to meet its social mission: impact and transform people’s lives. It’s a curriculum-based training with a combination of work and classroom time. Trainees also have time with an on-staff case manager who works with trainees to get their lives on-track and connect them to legal services.

More than 60 percent of graduates have some sort of felony background, and about 90 percent have some contact with the criminal justice system. Growing Home’s graduate recidivism rate within three years is around 13 percent, compared with 50 percent for the state.

“When people come to us, they’re very much in survival mode: they want a job,” Rhodes says. “But when you talk to them one-on-one and ask them what they



Fred Daniels, the site manager at Wood Street Urban outside one of its several high tunnels.

want to do with their lives, many of them have never been asked that. But here, for 14 weeks, they’re given an opportunity to be more introspective and figure out what they’re good at and what they want to do, rather than work at McDonalds for three to four months and find they can’t make a living and then go do something else.”

Training sessions run March through October, though Rhodes would like to expand to a 1.5-acre parcel to extend training year-round. By the end of 2016, over 400 people will have graduated from the program.

The program tracks its graduates for three years to find out what happens after the program. In 2014 and 2015, 85 percent of graduates found full-time jobs (up from 70-75 percent since starting in 2002). Most work somewhere along the food chain and Growing Home works with employers to help keep graduates in their jobs. Now that new indoor farms, like Gotham Greens, have moved into the Chicago area, graduates have the opportunity to continue to work in food production.

Support

This highly-supportive, integrated training program requires a lot of individual attention, expertise, and other resources. About ninety percent of Growing Home’s budget is funded by foundation and corporate grants, government grants and programs, and individual donors.¹⁷⁰ Relying on outside funding for the majority of the budget can lead to financial uncertainties that hinder growth and make business timelines unpredictable. One contract with

¹⁷⁰ For an example of donor lists and annual financial reports, see Growing Home Annual Report 2012-2013. Retrieved from <http://growinghomeinc.org/docs/GrowingHome12-13AnnualReport.pdf>

the state's Department of Corrections for \$50,000, small but still significant, was held up for nine months as the state's budget crisis froze such disbursements.¹⁷¹

Rhodes says most of the foundations interested in their work are Chicago-based, though he hopes there may be national foundations who see value in Growing Home's mission. They have received two USDA grants: a 2011 FMPP grant for \$79,300 to build the farm stand and cold storage, and support programming; and a 2015 LFPP planning grant for \$25,000 to conduct a community engagement outreach process for farm and program expansion.

Chicago has several food policy and farming advocacy organizations that have brought food and farm issues to the fore [see Policy]. Advocates for Urban Agriculture (AUA), of which Rhodes was a founding member, is a coalition of individuals and organizations focused on community gardens and urban farming issues in Chicago. While he sees its value in informing Chicagoans interested and active in UA, he says it lacks diversity.

"If you look at AUA, it is mostly a white membership. And, it's something we talk about. People doing community gardens are often people of color. Maybe they don't see a need to be involved, or maybe there is a lack of awareness," he wonders. Which is why he is part of another group called Grow Greater Englewood, started by former Growing Home and led by then Growing Home Outreach Director Sonya Harper. Rhodes says that though he has been working in the neighborhood for a decade, some meeting attendees are suspicious of his presence since he doesn't live in the community. Despite Growing Home's progress, racial tension continues among South Side communities.

Policies Impacting Success

Growing Home, AUA, Growing Power Chicago, and several other organizations influenced the rewrite of Chicago's zoning policy regarding UA. Following Growing Home's three-year process to open its Wood Street Farm and other similarly onerous processes, the city started to look at the zoning code in 2010.

Six-term mayor Richard Daley's administration first supported passing a UA ordinance, but its late 2010 draft ordinance was largely criticized by UA practitioners and advocates as being too restrictive.^{172,173} After Mayor Rahm Emanuel took office in 2011, advocates convened to advise on a revised ordinance, which was passed in September 2011.

Chicago's UA ordinance expressly defines community gardens and urban farms, outlines zones where each activity is permitted by right or as a special use, identifies where sales of farm product may take place (including on-farm sales), and exempts urban farms from some landscaping and parking requirements in some areas.¹⁷⁴ The codification in the zoning code was intended, in part, to make launching new urban farms easier, as it was for Growing Home in 2011 when they started the Honore Street Farm.

The city's Green Healthy Neighborhoods Plan, passed in March 2014, goes further to put efforts like UA at the fore in Greater Englewood and other neighborhoods.¹⁷⁵ It envisions an integrated transit system, clustered housing and retail around transportation centers, and more opportunities for open space and productive landscapes.¹⁷⁶ Growing Home was praised for its groundbreaking work in the neighborhood, and is written into the plan as a cornerstone for UA in the community.

171 The state of Illinois did not pass a budget for over one year, and had not passed a full budget as of December 2016. See Belkin, D. and Pierog, K. (2016, June 30). Illinois lawmakers pass bills to unblock state's budget impasse. *Reuters*. Retrieved from <http://www.reuters.com/article/us-illinois-budget-idUSKCN0ZG16N>.

172 Eng, Monica. (2011, January 3). The city that grows. *Chicago Tribune*. Retrieved from http://articles.chicagotribune.com/2011-01-03/news/ct-met-urban-agriculture--20101228_1_city-farm-urban-farming-urban-agriculture/2

173 Rhodes, H. (2011, April 12). Consensus still lacking in Chicago on proposed urban agriculture zoning changes. *Mother Earth News*. Retrieved from <http://www.motheearthnews.com/homesteading-and-livestock/urban-agriculture-zoning-chicago-zb0z11zkon.aspx>

174 Substitute Ordinance. (n.d.). City Council of the City of Chicago. Retrieved from http://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Urban_Ag_Ordinance_9-1-11.pdf

175 Green Healthy Neighborhoods (n.d.). City of Chicago. Retrieved from http://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Green%20Healthy%20Neighborhoods/GreenHealthyNeighborhoods_PC_Low_Res_pt_2.pdf

176 Drummer, D. (2014). Green Healthy Neighborhoods Plan Adopted by Chicago Plan Commission. *Teamwork Englewood*. Retrieved from <http://www.teamworkenglewood.org/news/7457>

“The City seems to catch up after things happen on the ground,” says Rhodes, smiling. “But a lot of [the recent work] is focused on farming and food policies. [I’ve] certainly seen a lot of policy change since I got started in 2001.”

Assets and Challenges

Growing Home enjoys many of the assets afforded to Chicago nonprofits doing similar work, including Growing Power Chicago (offshoot of the Milwaukee organization) and Windy City Harvest, an accredited apprenticeship program of the Chicago Botanic Garden. These organizations and others have been instrumental in changing city policy while fulfilling social missions to support farming and healthy communities across Chicago and beyond.

“[Nonprofits like us] share a lot and work together,” says Rhodes. “We talk about programming and different funding streams. But, when it comes to going after them, we each have our own funding department.”

Rhodes says he has seen funders increase the level for competition, too. For example, the Kinship Foundation’s “Food to Market Challenge” Competition will award \$500,000 in October 2016 to a team that “can conceive the most innovative solution to what we see as one of the biggest barriers to local and sustainable farming.”¹⁷⁷ While these types of pitch-contests are not new, Rhodes says he would rather see funders incentivize groups to work together to address Chicago’s complex problems, and share funding and resources.

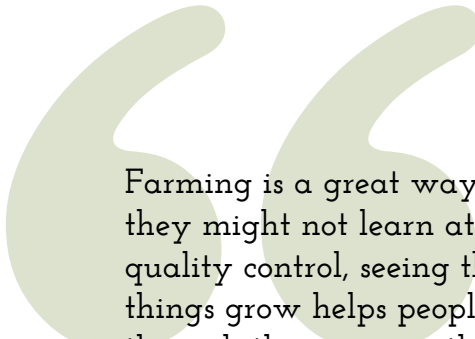
The question of competition is particularly difficult for a social enterprise that aims to promote urban farming, provide job training and affordable food, all while paying a living wage. And as the minimum and living wages continue to rise in Chicago, Rhodes says these will continue to be the most persistent challenges for Growing Home.

Promise of Urban Agriculture

Growing Home’s urban farm is a path to better job opportunities and livelihoods for trainees, and better healthy food access to Chicagoans in Englewood and beyond. Farming, paired with mentorship and social services, has proven to be a successful model for increasing job opportunities and wellbeing for Chicagoans with few resources or supports. Its graduates draw on their new skills and experiences to get and keep jobs all along Chicago’s food value chain.

“Most of the people we train are not interested in going to rural farms. They grew up in Chicago and aren’t interested in leaving,” says Rhodes, who emphasizes that farming’s transferrable skills make graduates excellent candidates to work in food production, processing, restaurants, or other green industries in Chicago.

And that is why “home” is as important to the mission as “growing.” “Our vision has been ‘Healthy People, Healthy Communities,’ and that’s the bottom line of what we’re measuring,” Rhodes says, “that we’re able to help people become healthier and help the community where we’re working.”



Farming is a great way to get people back into the workforce. It teaches skills they might not learn at other jobs, like working in a fast-paced environment, quality control, seeing the process of prepping beds, planting seeds, seeing things grow helps people grow. We hear regularly from people who’ve been through the program that it’s a transformative experience.

– Harry Rhodes
Growing Home, Inc.

¹⁷⁷ Family Farmed. (2016, February 1). Food to Market Challenge offers \$500,000 for best idea to grow Chicago’s good food supply chain. *Good Food on Every Table*. Retrieved from <http://goodfoodoneverytable.org/2016/02/01/food-to-market-challenge-offers-500000-for-best-idea-to-grow-chicagos-good-food-supply/>

Brother Nature Produce, Detroit, MI

Integrating Urban and Rural Production and Value Added Products

Themes: Land access, Urban ag policy, Full-time owners, Community revitalizing, Value added products, Owner food security, Signature product – salad mix.

History

Not long after Greg Willerer bought his house in Detroit's North Corktown in 2005, he planted a garden. He was a teacher in the Detroit Public School system at the time and hoped a garden would help make him more self-sufficient. In 2008, after 15 years teaching, he quit to farm full-time.

Olivia Hubert, his wife who joined him in co-operating Brother Nature Produce, has had a green thumb much longer. Her horticultural interests started in elementary school and led her to pursue agri-science vocational training in high school, a horticulture degree from Michigan State University, and a year of intensive study at the Royal Horticultural Society in London. During this internship, she learned plant-breeding techniques, effective and efficient use of hand cultivation tools, and best practices for managing vegetable production in small spaces.

Today the couple's backyard production has grown to nearly an acre over ten lots on their block of North Corktown. They have also become vocal advocates for urban farms and gardens, meeting with other urban farmers and talking about common concerns. They raise awareness about farmers' issues at local government meetings, as well as, the issues of the neighborhood, community, and cultural organizations in which they participate.

"A lot of people who are making more money [than us] are not activists. That takes up a lot of our time. It's easy to focus on making money when you're not involved in the community," says Hubert. Brother Nature Produce is a lot more than just growing produce.



Greg Willerer looks out at the winter fields near a sculpture on the farm.

Community Description

"This used to be the most densely populated neighborhood in Detroit," says Hubert of North Corktown, a neighborhood of older homes and, now, vast tracts of vacant land. Formerly an Irish immigrant neighborhood named for County Cork, Corktown is Detroit's oldest neighborhood and once one of its most vibrant.¹⁷⁸

Irish-Americans began moving out of the neighborhood at the end of the 19th century toward more upscale neighborhoods north and west of Corktown.¹⁷⁹ Polish immigrants, who were the largest immigrant population in Detroit during the early 1900s,¹⁸⁰ began moving to Corktown, as did, African Americans and immigrants from Mexico and Malta.¹⁸¹

178 Corktown Historic District (n.d.) *Detroit Historical Society*. Retrieved from <http://detroithistorical.org/learn/encyclopedia-of-detroit/corktown-historic-district>

179 Corktown Historic District (n.d.) Detroit1701.org. <http://detroit1701.org/Corktown.htm>

180 http://polishroots.org/Research/History/detroit_immigrants/tabid/230/Default.aspx

181 Woodford, F.B. and Woodford, A.M. (1969) *All Our Yesterdays: A brief history of detroit*. Detroit: Wayne State University Press.

Starting in the 1950s through 1970, new freeways intended to promote economic development in downtown Detroit cut off and cut through Corktown. Businesses began leaving future highway corridors like Corktown long before the highways came, beginning an era of depopulation and neglect. The portion of Interstate 75 that runs through Detroit was completed in 1970, three years after race riots devastated the city, isolating Corktown's African American and Polish residents physically and culturally from the rest of the city and creating North Corktown.

Some of those older residents still live nearby, says Willerer, and have been his source of information about lots that used to hold the clapboard houses that stood edge-to-edge along the sidewalks. He says houses stood as recently as 2004 on some of the lots he now farms. Several of these homes were demolished and dropped into their basements and then covered with fill dirt, leaving a lead legacy of paint and pipes behind well below ground level.

Since the early 2000s, Corktown has been one of the sites of Detroit's revival.¹⁸² Locally-minded restaurants and new businesses run by native Detroiters and recently-arrived residents are some of the neighborhood's biggest attractions. Though this most recent wave of renewal has not spilled into North Corktown yet, the neighborhood's many vacant parcels are an opportunity for people like the Willerers.

Farm Description

The Willerers farm on just less than an acre of land on one contiguous block in North Corktown. Willerer was able to buy the lot (typically 30 feet by 100 feet) behind his house through Detroit's Side Lot Sales program,¹⁸³ and his neighbors bought three others for him to farm. He also bought the house two lots south of his, whose lot is also being cultivated.

The Willerers also farm on several lots still owned by the city, which they have been unsuccessful in purchasing from the city or from Detroit's Land Bank Authority. "They would throw out our application every year for the other lots," Willerer says, "Someone at the city said that if they see the application is for a farm, they throw them out."

Deterred by difficulties with the city and eager to keep farming, the Willerers purchased nearly seven acres in Riley, MI, about an hour's drive northeast of Detroit. The

land has heavy clay soil and is much wetter than their urban plots. It is also about ten degrees cooler than Detroit, says Hubert, which allows them to extend their season on some cool-weather crops.

The Willerers move their New Holland tractor between Detroit and Riley on a dump trailer to prepare fields. They have a rototiller attachment, plow attachment, and Brushhog "for when things get a little out of control," says Willerer. Other equipment includes a walk-behind rototiller, a six-row seeder, and a Quick Cut Greens Harvester from Johnny's Select Seeds. But, most labor is done by hand, from bed preparation to greens harvest.

Land Access in Detroit

Greg Willerer's experiences attempting to purchase land have been notably different than Rising Pheasant Farm's Carolyn Leadley. Leadley was able to purchase her non-adjacent parcels directly from the City of Detroit before it moved land transactions like these to the Land Bank Authority.

According to Detroit urban planner Kathryn Underwood, the Land Bank Authority is holding onto land more tightly than the City did, in part to leave room for potential—though not planned—typical development and economic opportunities (housing, retail, etc.).

Winona Bynum, Detroit Food Policy Council Executive Director, says the council and Detroit's Food and Fitness Collaborative have been working to identify the source of these problems. She says two areas have been preliminarily identified. First, farmers point to inconsistencies in the land acquisition process. Second, some Land Bank officials report that farmer applicants appear unprepared to manage or without a business plan for the property, leading to fears that the land will remain or become an eye-sore in the community. Bynum and others are working to educate farmers and the Detroit Land Bank about how they can make land transfer easier by addressing these issues.

¹⁸² There's a reason for all the hype about Corktown. (2013, February 18). *Visit Detroit*. Retrieved from <http://blog.visitdetroit.com/entry/there-s-a-reason-for-all-the-hype-about-corktown.html>

¹⁸³ Side Lot Sales (n.d.). *Building Detroit*. Retrieved from <http://www.buildingdetroit.org/our-programs/side-lot-sales/>

Willerer tested the soil on the lots several years ago and found that despite their history lead contamination was low. He built up the soil with topsoil brought in to increase depth, and continues to build the soil with compost he makes using manure from the Detroit Zoo, spent brewers' grains from a nearby brewery, coffee grounds, and cut-down trees and leaves from the property.

Water for drop and spray irrigation is drawn from the Willerers home meter. This includes irrigation for their three hoop houses, in which they have been experimenting with overwintering cold-hardy greens for winter salad mix. They would like to put hoop houses on their Riley property in the future, as well as, build a small home there in order to stay longer than the one or two days a week they spend there currently.

Production Practices

Brother Nature Produce's production is centered around their salad greens, which have become their signature product. The salad greens account for the majority of crop sales, including at farmers markets and to restaurants (see Marketing & Sales).

"Olivia made [the salad mixes] more standardized, because some greens are spicy," says Willerer. "When we were still dating, she made a mild, medium, and spicy [mix], like hot sauce." Hubert explains her rationale was consistency, which customers could count on.

Their salad mix changes throughout the season and includes spinach, arugula, field peas, baby cabbages, mizuna and other Asian greens, as well as nasturtiums and other edible flowers. They also grow kale, collards, herbs, and what Hubert calls "CSA vegetables" like tomatoes and peppers, which supply their CSA (see Marketing and Sales).

They have even started crossing varieties and saving seeds of plants that overwinter particularly well. Hubert taught Willerer how to cross varieties and harvest seeds from bolted greens, which he stores in an old library card catalog. They hope by saving winter-resilient seed, they will be able to produce locally adapted varieties all year long and be less dependent on commercial seed sources.

"That's why hoop houses are so important," says Willerer about Brother Nature's winter production. By winter 2017 they hope to achieve year-round production. The Willerers also have one of their acres in Riley in arugula production, though they say the area floods with heavy rains.

The couple does not use any synthetic sprays on their crops and focuses on weed control, through plastic mulch and manual labor. They add compost at every planting and have seven to eight percent organic matter in the fields.

A good portion of their production is for their own home use. Willerer says they try to grow new things every year, including 300 lbs of potatoes Hubert grew for home use. They have a converted trailer which houses laying hens, whose eggs they eat or barter with friends for goods for their own use. He hopes one day to have feeder pigs, presently illegal under Detroit zoning laws.¹⁸⁴

Business Structure

Willerer incorporated Brother Nature Produce as an LLC in 2011. The business currently supports the couple and their daughter, Wren, and accounts for about 70 percent of their total income which Willerer says about equals his former teaching salary. The business has grown by approximately five to ten percent each year, but "it's also two steps forward, six steps back occasionally."



Brother Nature Produce experiments with no-till, using a black plastic weed barrier over its winter cover crops.

184 At the time of writing (September 2016) it was not legal to have any type of livestock in the City of Detroit. An effort was underway to legalize chickens, bees, rabbits, and goats. See: Detroit Code of Ordinances §6.1.3; and Sysling, A. (2016, February 2). "From Cars to Chickens: urban livestock ordinance considered in Detroit." *Seedstock*. Retrieved from <http://seedstock.com/2016/02/02/from-cars-to-chickens-urban-livestock-ordinance-considered-in-detroit/>

“One of the issues is that we keep expanding the farm and have to rearrange things,” says Hubert, who is also the farm’s bookkeeper and accountant. “People talk about making \$140,000 on an acre and a half. That’s easy to do if you’re not expanding your size, building outbuildings, and renovating a house.” Meanwhile, increasingly unpredictable weather like Michigan’s extreme heat in the summer of 2016 threatens the farm’s viability, Willerer says.

Marketing and Sales

Brother Nature Produce makes the majority of its sales at three Detroit farmers markets. Other sales are through their CSA and to restaurants, though Willerer says they tend not to focus on restaurants because they are inconsistent purchasers or go out of business as trends change.

Brother Nature Produce has stands at Eastern Market, the Wayne State University Farmers Market, and the Corktown Farmers Market (which they helped to start in 2015). The Detroit Institute of Bagels, a shop in Corktown, started a weeknight farmers market in its parking lot, which Willerer and Hubert, who are community activists in the neighborhood, helped advocate for, organize, and publicize.

Eastern Market, their highest-volume sales outlet, has slowed in sales in recent years, says Willerer, even as attendee volume of the market has grown. Eastern Market Corporation, which runs the farmers market and other markets and events in the space, has promoted the market as a destination for Detroiters and tourists, and raised millions of dollars to renovate the sheds under which the Saturday farmers market and other events are hosted. But, as more out-of-towners visit the market, Hubert has noticed regular Detroit customers have stopped coming. “You used to see a lot of middle-aged black women coming down there with their daughters or granddaughters, [but] you don’t see a whole lot of black people down there anymore,” she says. She and Willerer also complain that parking is so bad that they have been blocked in by visitors. They suspect it is one of many reasons their former customers no longer shop at the Eastern Market.

Meanwhile, they have seen sales go up at the Wayne State University farmers market, a much smaller market by comparison. The Wednesday market is an opportunity for Brother Nature Produce to offer a value-added product that has gained popularity: prepared salads. They got a USDA permit to produce salads in a restaurant kitchen, prepared from their own greens and edible flowers, packaged in clamshells for purchase by university students and staff.

This convenience model has been a great way to grow the business, says Willerer, but he is wary of adding more toppings or homemade dressings. The USDA permit allows for a farm product pack, but more ingredients or processing would require health department permits and inspections—costs and complications that he and Hubert do not think will earn them more revenue.

The family was happy to help launch the Corktown farmers market in 2015 both as an asset to their neighborhood and as a convenient sales outlet just one mile from their home. They say promoting the market to chefs was a great start, as chefs at new Corktown restaurants would come to buy ingredients. But, their commitment waned, says Willerer, as the summer wore on and restaurants slowed in the summer months.

Brother Nature Produce’s CSA has been a decreasing share of the farm’s income over the past several years. At one point, says Hubert, they had 30 CSA members, but would often find themselves with leftover CSA shares when members did not come for pick-up.

Now, says Willerer, the five paying members of the CSA are loyal and come back year after year. “We don’t advertise it,” he says, “People find out about us by word of mouth, and that’s who we want. We don’t want to twist someone’s arm to come here.”

They also offer CSA members the opportunity to work on the farm for their share in full, which makes up a small pool of volunteers who help on the farm. Willerer says he doesn’t badger volunteer members into working, as he finds that people are eager to work for their share and have a deeper commitment to the farm after having helped grow its produce.

Employees

CSA volunteers help with bed preparation, seeding, weeding, compost application and harvesting. Willerer estimates that volunteer time makes up between five and 20 hours of total work hours at Brother Nature per week. And while he and Hubert could run the farm without volunteers, the longer days, greater stress, and forced mechanization are not as promising as working with others.

Willerer and Hubert work full-time on the farm, including staffing farmers’ markets. They hope to hire an employee who would live in one of the houses they own, which would make it easier for them to split time between their urban plots and their rural acreage.

Other Activities/Services

When they are not farming, the Willerers spend much of their time serving their community both as volunteers and fee-for-hire. Willerer provides custom farm work and will take his tractor to other farms in the neighborhood to plow and till lots, usually in early spring and late fall. “It’s something we do because we want to grow a movement,” he says.

He also uses the tractor in winter for snow removal on the parking lot next door to their house. The winter of 2015-2016 was a snowy one, and Willerer spent a lot of time plowing for that lot and other businesses. He says that earnings from snow removal could be up to a third of the family’s income.

Willerer and Hubert are thinking about business expansion through value-added processing. They ferment their own apple cider vinegar from apples they gather from abandoned trees around the neighborhood, which the Michigan Cottage Food Law¹⁸⁵ allows them to sell. They hope to make salad dressings made from their own vinegars and herbs, too: “If we sell salads, we should sell salad dressing!” Willerer reasons.



The winter fields at Brother Nature Produce against the low horizon of the surrounding neighborhood; many of the nearby homes were razed during Detroit’s recession and its recovery.

Support

Eastern Market vendors are eligible for its Growing Communities grant program, which will fund up to \$5,000 for capital investments to grow urban farm businesses. Brother Nature received grants in 2012, 2014 and 2015 which allowed them to purchase a pressure canner, dehydrator, the greens cutter, its plow, and a 96’ hoop house kit.

The farm also received a NEIdeas grant through the Community Foundation of Southeast Michigan’s New Economy Initiative. The \$10,000 grant helped purchase a tractor and begin the custom tilling service to assist other residents with converting vacant land into gardens and farms.

Keep Growing Detroit has been a longtime supporter of Brother Nature. Early in the farms development, it sold greens at the Grown in Detroit table run by Keep Growing Detroit at the Eastern Market. Keep Growing Detroit also brought out volunteers to help build the farm’s hoop house. This type of in-kind labor assistance is most favored by the Willerers, who say they would rather barter, trade and grow their community than apply for grants.

This mentality of involving people to grow a movement that Brother Nature Produce presents is instilled in its operators in part by Paul Weertz, the former science and agriculture teacher at Catherine Ferguson Academy. “We try to give something back the way he has done,” Willerer says of the man who has supported many urban farmers at their start and helped to revitalize his neighborhood. As he is for Carolyn Leadley at Rising Pheasant Farm, Weertz is a handy farm resource for Willerer and Hubert. Willerer will swap out tractor attachments with him, driving the three miles between their two houses to switch out equipment—about 30 minutes by tractor.

Policies Impacting Success

“Before the [UA] ordinance passed,¹⁸⁶ there were a few crazy people like me who didn’t care if it was legal or not,” says Willerer. He easily purchased the lot behind his house through the city’s adjacent lot purchase program; his neighbor used the same program to purchase three lots which he offered to Willerer to farm.

185 Michigan Cottage Foods Information. (n.d.) *Michigan Department of Agriculture & Rural Development*. Retrieved from http://www.michigan.gov/mdard/0,4610,7-125-50772_45851-240577--,00.html.

186 Underwood, K.L. and Buhl, L. (2013). *City of Detroit Urban Agriculture Ordinance Abridged*. Retrieved from http://detroitagriculture.net/wp-content/uploads/2013_Sharable_UA-Ordinance.pdf.

The UA ordinance, passed in 2013, affirmed UA as a by-right land use on residential parcels like the lots Brother Nature Produce farms. This means an applicant who wishes to purchase city land either directly from the city or the land bank can list “urban garden” or “urban farm” as their intended use of the land.¹⁸⁷

But, in Willerer’s experience, the combination of Detroit’s UA ordinance and the creation of the Detroit Land Bank Authority have made accessing farmland in Detroit more difficult. Willerer suspects that the City of Detroit and the land bank are not eager to sell city property for UA. He would apply to purchase the land every year, and every year he would get no response to his applications.

“We don’t really want more land in the city, we just want ownership of what we’re growing on right now,” says Willerer, who in spring 2016 was gearing up for another attempt to purchase land on his block. Still, their rural land is insurance against continuing difficulties with land purchases.

Willerer does see the ordinance as good for Detroit’s urban farming movement they so strongly support. “Now that it’s technically legal, you see a few more people taking a risk to build a farm,” he says, “It’s not a guerrilla act of defiance anymore.”

Assets and Challenges

It is clear that Willerer thinks one of Brother Nature Produce’s biggest asset is his wife, Olivia. With her extensive education and experience as a horticulturalist, he says, she has helped him become a better farmer.

“She’s coached me on how to rake it so it’s concave in the center and higher on the sides, so the seeds don’t wash out the side when they’re pelted with rain,” he says, as Hubert recalls exams at the Royal Horticultural Society where holding a rake wrong or using it incorrectly could fail a student.

Hubert has also taught Willerer the art of seed collecting and saving, helping them to become ever more self-sufficient, one of their primary goals at Brother Nature. They believe the house they recently purchased will help them toward self-sufficiency: they hope to install a sunken-pit greenhouse in the lot between their two houses to start growing dwarf tropical and sub-tropical produce

to supplement their home consumption and trade with others. The house could also be future employee housing, as an employee would enable them to care for both their urban and rural plots and take on more side-jobs like tilling, snow removal, and value addition.

Whether or not they could continue to farm all the land under cultivation as Brother Nature Produce is unknown. They continue to prepare the fields on city-owned plots they hope to someday legally own as part of Brother Nature Produce and are hopeful that new illustrated plans will sway Detroit’s Land Bank Authority toward allowing them to purchase land when they next apply.

Promise of Urban Agriculture

“Every year we have a theme,” says Hubert, who declared 2016 “the Year of Permanence and Efficiency.” With two farms, two houses, three hoop houses and a full market-season ahead, thinking about how they can grow more on their land is as important as gaining tenure to that land.

Willerer and Hubert are proponents of Detroit’s UA movement as a way to reclaim land, and also as a way to reclaim their family’s food sovereignty. Their plans for future farm enterprises—livestock, fruit—might be marketable, but are primarily designed to save money on their grocery bills. In so doing, they can remain committed to some of the community development activities that compete for attention with rows of arugula and mizuna.

The promise of UA that Willerer and Hubert seek—activating vacant land, growing healthy food, supporting a family, and fostering a community—is embodied in Brother Nature Produce. Rachel Baker, a Ph.D. candidate at York University and one of the farm’s long-time volunteers, says no one in Detroit could do it better. “I think that everybody in Detroit sees Greg and Olivia as the big crazy dreamers, but they actually follow through on everything they say. They’re doing it all.”

¹⁸⁷ Detroit’s urban agriculture ordinance differentiates gardens and farms by size: an urban garden as less than one acre, and an urban farm as one acre or more. See Underwood, K.L. and Buhl, L., p. 3

Side Yard Farm, Portland, OR

Chef's Hobby Becomes Vibrant Farm Business

Themes: Full-time owners, Value-added products, On-farm events, Provides education and training, Signature product – flowers.

History

Stacey Givens, 34, came to farming through the kitchen. A professional chef at notable restaurants in Portland, Oregon, her first experiences growing food were on the rooftop of Rocket, the restaurant where Givens worked in 2006.

Rocket's rooftop garden began with the help of Marc Boucher-Colbert, a career farmer with experience in rural and urban settings. His community-supported farm, Urban Bounty, which he later formed into the nonprofit Zenger Farms, was one of the first in Portland.

At Rocket, Boucher-Colbert was responsible not just for designing its innovative rooftop garden, but for coaching its chefs on herb and vegetable varieties, harvest techniques, and seasonality. "Having the rooftop garden, makes a wider range of options available for the chefs," says Boucher-Colbert, who, in winter 2016, was producing specialty winter endives atop the building for Rocket's successor sister-restaurant, Noble Rot. Givens, who joined Rocket's opening team, was enthralled. While chefs help with harvest daily, Givens volunteered to participate further—weeding, transplanting, and lugging soil to the top of the four-story building.

"Being a cook, being able to grow things and bring it to the kitchen and be in charge of that process was new to me and a connection I never had before," Givens says.

After leaving Rocket when it closed in 2008, Givens asked Boucher-Colbert to collaborate on a new urban farm project. They looked for land in the northeast Cully neighborhood, where inexpensive rent and a smattering of homesteaders welcomed agricultural experimentation. Boucher-Colbert, whose own urban farming business was



At Side Yard Farm from left to right, the edge of the office, the walk-in cooler and lean-to, a tool shed, and, at far right, a pergola for gatherings along the edge of Side Yard Farm.

thriving, stepped away from the endeavor but continued to act as Givens' mentor over the next seven years, as she assembled three parcels that became collectively known as The Side Yard.

Community Description

Portland is a city of nearly 602,000 residents.¹⁸⁸ Notable among Portland's land use policies is its urban growth boundary (UGB), a designated development area designed to restrict development on farm and forest land outside the UGB. Oregon passed its Oregon Land Conservation and Development Act in 1973, a measure to curtail sprawl¹⁸⁹ and is one of three states (plus Washington and Tennessee) that requires its cities to designate UGBs.¹⁹⁰ Portland's UGB covers the City of Portland and portions of three counties surrounding the city.¹⁹¹

188 U.S. Census. 2010 American Community Survey 5-year estimate; 2014 American Community Survey 5-year estimate.

189 Abbot, C. and Howe, D. (1993). The Politics of Land-Use Law in Oregon: Senate Bill 100, twenty years after. *Oregon Historical Quarterly*, 94(1), 4–35.

190 Oregon Senate Bill 100. (1973).

191 For an in-depth description of Portland's UGB, including its borders and regulations, visit Urban Growth Boundary (2016, September 2). Metro. Retrieved from <http://www.oregonmetro.gov/urban-growth-boundary>

The Metro Council, the regional nonpartisan legislative body that oversees the UGB, declined to extend its boundaries in 2015, the first time in its history.¹⁹² Instead, it opted to increase density in the Metro area, including recommendations to encourage the development of more condominiums and multi-family homes.¹⁹³

From 2010 to 2014, the 7-county Portland metropolitan area population grew by 5.2 percent.¹⁹⁴ This includes migration from California as Silicon Valley employees relocate to the so-called “Silicon Forest” of Oregon’s booming tech industry.¹⁹⁵ The influx of high-earning young people searching for lower rents and an alternative urban lifestyle has in-part ushered in skyrocketing rent prices at an annualized rate of 14 percent in 2015.¹⁹⁶ And while new residents and the developers who cater to them can afford higher land prices,¹⁹⁷ young people in the creative and service industries of Portland are finding it harder to rent or buy.

The tree-lined Cully neighborhood in northeast Portland is approximately three square miles, with the majority zoned for high-density single-dwelling residential units¹⁹⁸. “The Cully,” as some residents call it, is a diverse community. While majority white (62 percent),¹⁹⁹ its significant minority groups include African Americans, Latinos, and Hmong and Somali refugees.²⁰⁰ Approximately half of the dwelling-units are owner-occupied, the rest rented. Lot sizes in the Cully are variable, from as small as 5,000 square feet up to an acre or more.²⁰¹

Givens was drawn to the neighborhood with its plentiful backyards, low rents, and open-minded property owners who have farm aspirations of their own. But, as her business has grown, so has the neighborhood’s attractiveness: easy access to some of Portland’s main transportation arteries, alternatively-minded operations

like the Side Yard, and growing pressure on rents and density in Portland’s urban core (see Policy section) led to an influx of new residents. “Maybe three years ago, houses were selling for \$175-200k,” says Givens. “And now they’re going for \$400k.” A recent search on the real estate website Zillow found 11 homes for sale in the neighborhood found an average sale price of \$437,600.²⁰²

Farm Description

In 2015, the Side Yard Farm was made up of three residential parcels that total about 1.75 acres, of which approximately 60 percent (1.2 acres) was under cultivation. Its main location is one acre on Simpson Street which includes an office building, a small greenhouse, a 30x72 foot hoop house, washing and packing stations, a walk-in cooler, shade structures, and a cob oven under a single-pitch pole barn. There are three off-street parking spaces, including one handicapped space. Givens gained access to the Simpson Street site at the end of 2014 when homeowners on the property abutting the back of the lot acquired it and provided her a 12-year lease for farming at \$150 per month, significantly lower than market value.

The growing site (½ acre) at Givens’ own rented home houses a wash-pack station, a tool shed, and a space for chickens and goats Givens kept in the past. Givens original ¼-acre site is just blocks from the Simpson Street farm, and was rented on a year-to-year agreement with the landowners. She will lose the site after the 2016 growing season, however, when it is developed for housing.

The farm’s full name is The Side Yard Farm & Kitchen, combining Givens’ other passion: cooking. The Side Yard runs a year-round catering company and supper club, purchasing food from its own farm, as well as, other urban and nearby rural growers. The Side Yard hosts dinners and events at its one-acre Simpson Street location, including movie screenings and grief groups.

192 2015 growth management decision. (2016). Retrieved from <http://www.oregonmetro.gov/sites/default/files/Growth-management-factsheet-20160115.pdf>

193 *ibid.*

194 Christensen, N. (2015, March 26). Portland region grows to 2.35 million residents, Census estimates, with newcomers leading the way. Metro News. Retrieved from <http://www.oregonmetro.gov/news/portland-region-grows-235-million-residents-census-estimates-newcomers-leading-way>

195 Rogoway, M. (2015, October 18). Portland tech’s gains add to city’s housing strain. *The Oregonian*. Retrieved from http://www.oregonlive.com/silicon-forest/index.ssf/2015/10/portland_tech_booms_adding_to.html.

196 Hammill, L. (2015, October 14). 14 percent annualized rent growth in Portland ‘landlord’s market,’ report finds. *The Oregonian*. Retrieved from http://www.oregonlive.com/front-porch/index.ssf/2015/10/14_percent_annualized_rent_gro.html

197 Rogoway, M., 2015.

198 Single Dwelling Zones. (n.d.) City of Portland Zoning Code. Retrieved from <http://www.portlandoregon.gov/bps/article/64609>

199 2010 Census Data for Portland. City of Portland. Retrieved from <https://www.portlandoregon.gov/oni/56897>

200 Cully Main Street: A plan for community-serving improvements. (2009). PSU Planning Workshop Project. Retrieved from https://www.pdx.edu/sites/www.pdx.edu.usp/files/CullyMainStreet_FinalReport.pdf

201 Cully-Concordia Community Assessment. (2008, September). City of Portland Bureau of Planning. Retrieved from <https://www.portlandoregon.gov/citycode/?c=35201&a=272094>.

202 Search conducted on March 22, 2016 on www.zillow.com.

“Starting a catering company and a supper club wasn’t even in my mind until the second year,” Givens says. She uses kitchen space at a nearby restaurant to which she also sells produce. The Side Yard also has a catering trailer. When she started, Givens worked full-time at the farm and full-time in restaurants to get the operation going. But, she left restaurants behind when the catering business took off: for the past five years, Side Yard takes about 80 hours of her week during the growing season.

Production Practices

Givens grows a variety of vegetables, specialty culinary herbs and edible flowers in her acre-plus of production space. The Side Yard relies on high-value, quick-succession crops for restaurant sales. Givens planted persimmon, fig, apple, and heirloom peach tree on the site of her rented home, which she hopes to purchase in order to secure access to its land. She has also planted grapes and blueberries on the Simpson Street site. She grows using organic practices, but does not feel the need to become certified organic: “The chefs know I’m organic [in my growing practices]. That’s the only way to grow in Portland.”

The Side Yard also has a high tunnel in which Givens grows kale and other hardy greens through much of the winter, though usually only enough to supply the catering business. The high tunnel was constructed in 2015 via an NRCS EQIP grant. She worked closely with her local NRCS office to improve soil quality management on the one-acre



Late-winter permanent rows and NRCS-reimbursed high tunnel at Side Yard Farm.

parcel where a home had stood some years prior. NRCS provided soil testing and necessary soil amendments (lime, azomite). Givens also brought in soil to build 3x50 foot raised beds.

Givens has an electric walk-behind cultivator which she uses to build beds at each site. The soil type varies, and she is attempting to build organic matter in the sandiest soils on the new Simpson Street site. There is composting at each site, though it is insufficient for the farms’ needs; Givens purchases compost for all three sites each spring, which costs about \$1,200 each year.

The Side Yard’s growing season starts in late-February or early-March and produce is marketed to its customers from late-March through November. The catering business, however, operates year round and purchases approximately 25 percent of The Side Yard’s total yield of produce and flowers. The remaining 70 percent is sold to the Side Yard’s 15 restaurant clients. The Side Yard does not have a traditional CSA; instead, it grows approximately five percent of its produce to provide to employees and interns as a “free-SA.” This weekly box of farm-produce, plus meals at the farm, and free tickets to on-farm events comprise part of employee and intern compensation.

Business Structure

The Side Yard has been incorporated as an LLC since 2008. At first, Givens says, she started the farm “mostly to stay connected to growing my own food. There wasn’t really a motive—I didn’t have a business plan in place at the time, I just wanted to get a piece of land and start growing food.”

Givens said she thought about incorporating as a nonprofit when proposals arose for adult education workshops, a kids’ summer camp, and other educational activities. Ultimately she decided, “I’d rather do workshops that are sliding-scale and [pay] the [guest-instructor] who’s hosting it all of the money,” less any materials Givens provides for a workshop. “Because our rent is so cheap, I want to give back what my [Simpson Street] landlords have done for me. And my other landlords don’t charge me that much, so, why profit [from workshops]?”

While she has basic business plans, Givens says she largely grows her business in her head. “I think, ‘Next year we’re going to do this.’ And I’m happy I have a great bookkeeper who keeps track and [tells me], ‘This is what’s working, this is what’s not.’”

Givens is hoping to expand the catering portion of The Side Yard in the coming years, building out a catering kitchen and other facilities. At that point, “Yes, I will have an updated business plan,” she says. That plan is to

build a catering kitchen that can double as a sliding-scale commissary for small food businesses and food trucks. “[Portland commissaries] have gone nuts charging people [running food carts and other start-up food businesses] \$25-30 an hour [to rent kitchen space]. How can a food cart make money? We want to do \$10-15 an hour, sliding scale.” As with The Side Yard at present, Givens sees the future of her business built by supporting others doing similar work in and around Portland.

Marketing and Sales

Givens began by selling to restaurants where she knew and respected the chefs. She slowly grew her business with restaurants, and also began hosting suppers and workshops. For the first two seasons, she continued to cook in restaurants, working at the farm all day and in restaurants all night. But, as catering scaled up in 2011, she quit restaurant work to focus on her business full-time, or more: on average 80 hours a week during the growing season.

The Side Yard has been selling to restaurants since its inception, Givens says, because “I just wanted to supply my buddies with the best stuff.” She built a customer base from chefs she’d worked with previously in restaurants. “We have the same food philosophies. We choose each other.”

Givens relies heavily on word of mouth to connect with new restaurant and catering clients. Because production is limited and the Side Yard can design catering menus to absorb any excess production, she has no problem turning chefs down whose attitudes or philosophies do not match with her own. “I don’t sell to just anybody because they’re a big name,” she says, preferring to stay loyal to chefs who visit the farm and attend brunches and suppers which affirms “we really understand each other.”

Givens takes orders by call and text, and she or one of her farm managers delivers to clients Tuesdays and Fridays. Harvest is complete no later than 2:00pm, and deliveries follow, usually complete by 5:00pm.

More urban farms have cropped up in the Cully since 2008. “There’s a little bit of competition, but for the most part [the Cully urban farmers] are all buddies,” Givens says. At one point, the farmers attempted to start a Cully Grange to work together and discuss common issues. Some farmers proposed selling collectively to restaurants and through a combined farm stand. For Givens, whose hybrid business has well-established relationships that create a balance between catering and farm sales, such a marketing collaboration wasn’t attractive. Instead, she encouraged the other urban farmers to build new restaurant relationships and “spread the love” of urban farms.



The Side Yard Farm’s catering trailer.

Givens says that while a formal Grange never formed, farms respect one another’s relationships with customers. When a nearby farmer asked a restaurateur for the Side Yard’s price sheet, then dropped his prices to sell to that same restaurant, Givens says, “it took a lot to get it through [the farmer’s] head that we’re in this together.” But, Givens does not expect to be her restaurants’ sole source of local produce. “There’s no point [competing] when someone else has more land and can [grow something] better than me. So why not put [my land] into something like arugula that pays nine dollars per pound and get two or three harvests out of one bed.”

Though the Side Yard has more than 1,700 followers on Instagram and posts frequently, Givens says that both chefs and catering clients are more likely to “choose me because they like what I do. It’s urban, and it’s fresh, and we’re harvesting it day-of, so it’s going to last a long time. They spend a little extra money, and they’re okay with that.”

Employees

The Side Yard employs two part-time farm managers through the season (March through November). Givens says her best farm managers have both farm and culinary experience. In 2016, one such farm manager will also be Givens’ sous chef and help with some large catering events. Farm managers work about 25 hours per week, usually Tuesdays, Wednesdays, and Fridays. They work with Givens on production and distribution, including seeding, transplanting, cultivating, harvesting, packing and delivering orders, and farm maintenance and projects. Farm managers are paid \$12.50/hour and receive produce as part of their compensation.

The Side Yard also offers space for two internships each season, often as part of a culinary or urban farming program. Interns work 15-20 hours per week, are trained by Givens and the farm managers, and perform the same tasks.

The Side Yard's managers and interns have gone on to work on other farms and, in one instance, start her own farm.²⁰³ Givens plans to continue to offer formal and informal learning opportunities, and hopes to grow the business in order to provide more consistent hours for employees.

People often ask to volunteer at the farm, and support basic maintenance, production or larger projects. Givens believes these opportunities provide impromptu education and community connection. She tells the story of a Spanish-speaking neighborhood woman who asked if there was an opportunity for her adult daughter, who was suffering from depression, to help at the farm. Engaging people in the therapeutic, hands-on work of farming is a point of pride for Givens.

The Side Yard also hires servers and dishwashers for catering events. These independent contractors make an hourly wage plus tips. Givens also hires culinary students looking to gain catering experience to assist her with on-site preparation and presentation.

Other Activities/Services

Farm tours, dinners, and brunches are where the Side Yard's farm business and catering business converge. Visitors to the Side Yard include students of the Oregon Culinary Institute, Portland Community College, the National College of Natural Medicine in Portland, as well as apprentices with Oregon State's Beginning Urban Farmer program. Most visiting groups offer to pay for their visits.

Support

The Side Yard benefitted from knowledge and resource support throughout its evolution. Along with the high tunnel grant from NRCS EQIP, two of her landlords have furnished her with equipment, like a walk-behind cultivator or financial support to offset the costs of establishing the farm.

Givens also points to the assistance of Boucher-Colbert: "[Marc] helped me start the Side Yard when it came to finding the property, all the licensing, the irrigation... he's always been my mentor." Boucher-Colbert strongly believes season-extension like a hoop house "can launch you into a different level. If you struggle along with wrong equipment or scale, you may fail not because you're not driven or smart, but because you couldn't step up to the level of production." Givens feels well equipped to work toward that scale.

Steve Cohen, Manager of Food Policy and Programs at the City of Portland's Bureau of Planning and Sustainability, also provided key support as Givens navigated Portland's yet-untested application and permitting process for urban farms. While building the Simpson Street site, Cohen helped Givens assemble appropriate documentation to challenge zoning requirements that would have forced Givens to install a sidewalk, a fight Cohen was happy to take on, as Simpson Street does not otherwise have sidewalks.

Givens also attributes the Side Yard's initial success to her appearance and win on the Food Network's "Chopped." Not only did she gain local fame, she was also able to invest her prize money into the farm. "They keep showing reruns," she says, and so the Side Yard stays on television.

Policies Impacting Success

Three key activities since the early 2000s have supported UA development in Portland. First, a group of food system activists convened a Portland Food Policy Forum in early 2002, which led to city and county resolutions; establishing the Portland Multnomah Food Policy Council (FPC) that May.^{204,205} The FPC, which served from 2002-2012, was instrumental in educating city and county bureaus on food-related issues. These issues included zoning barriers for food-based businesses, inspiring healthy retail initiatives, and convening actors across the regional food system to integrate food access, justice, production, and distribution into city and county plans.

Second, under advisement from the FPC, the City created a Food Policy and Programs Manager position under its Office of Sustainable Development (later moved into a combined Bureau of Planning and Sustainability, or BPS).²⁰⁶

203 See for example Lacey Riddle's Small Heart Farm in Portland: www.smallheartfarms.org

204 City of Portland Resolution No. 36074. Retrieved from <https://www.portlandoregon.gov/bps/article/481225>

205 Multnomah County Resolution No. 02-093. Retrieved from <https://multco.us/file/17026/download>

206 Interview with Steve Cohen, January 27, 2016

Beginning Urban Farmers Apprenticeship

Givens and other urban farmers have accepted interns and taken on employees who have participated in the Beginning Urban Farmers Apprenticeship (BUFA) program through Oregon State University Extension. BUFA offers separate community farming and market farming tracks, with the more intense market farming track comprising of more than 75 hours of classroom instruction and 500 hours of field instruction over the course of a season.

BUFA instructor Jen Aron starts talking to students about profitability and the bottom line from the first day. She grows high-value crops alongside melons and other space-hogs so students can see for themselves how unprofitable some crops can be.

Aron's advice to trainees? "Don't quit your day job. And hone your skills." But, those that do so can be big assets to area urban farmers.

Side Yard's reputation has extended all the way to Japan, where she has traveled for the past four autumns to meet with farmers, business executives, and other activists who, like Americans, are concerned about their aging farmer population and the dearth of young people in the profession. Her visits inevitably spike further curiosity, and Japanese educational and tour groups visit the Portland farm throughout the season. Visitors pay for a farm tour and catered on-farm lunch, and discuss with Givens how to raise the "cool-profile" of farming for Japanese youth. These groups see Portland, with its many urban farms and reputation as a hip, young city, as a useful model to inspire more young farmers in Japan.

Along with tours and catered lunches, The Side Yard hosts dinners featuring produce from the farm and other nearby farms. "Dinners are now an average of \$80 (per person), and that's with alcohol pairing. So, it's a pretty good deal. If we do more than four courses, then it may go up to \$100-120. But usually, it's about four courses. If it's a big collaboration dinner with other chefs, we'll charge more so everyone gets paid out." Despite the high ticket price, the farm does not see much profit from the dinners. "Those are all for marketing. They don't make that much money," she says.

A regular community has begun to develop around the Side Yard brunches and dinners: regular attendees include local chefs who buy from or know Givens, other farmers, and, in a sign of the changing Portland demographic, more affluent people from Portland's wealthier neighborhoods and similarly-endowed recent arrivals. "You can spot them when they pull up in the BMW or Range Rover. It used to be the old Hondas and now it's a mix." Givens is happy to see new people are getting excited about urban farming, and for the Side Yard those visits have the potential to spark future catering opportunities.

The Side Yard hosts free movie screenings and other informal events during the summer at its main location. Givens talks with pride about the farm's grief group, which convenes about four times each year. After losing her father in 2011, Givens wanted to create a safe, non-triggering space for people dealing with the loss of a loved one to share stories and provide support. Called "The Lost Table," the events are potluck style, and discussion is driven by attendees. "We eat, share our stories, cry, laugh. It's nice. Farming is really therapeutic," she says, and is happy to make the farm a place of healing.

Steve Cohen has held this position since its establishment in 2003. As one of the first cities in the U.S. to install full-time staff support to understand and integrate food systems issues into city policy and programs, Portland reflected its reputation as a food-conscious community by adding food and agriculture to its planning agenda.

This planning agenda as related to UA was largely shaped by the third major policy event: the Diggable City project. Conducted in three phases between 2005 and 2007, this series of reports identified city-owned land with potential for agricultural use. The reports inventoried all open city-owned land, launched pilot projects on three sites owned by different city bureaus to test the mechanisms for farming on city-owned property, and then evaluated both the pilots and the initial land inventory to present a measured assessment of agricultural potential on city property. The 2007 Diggable City Phase III report found just 13 sites where urban agricultural activity was possible. It also noted that much of the vacant city-owned land identified in Phase I would be needed for housing or other uses in the future to maintain the UGB.²⁰⁷

Steve Cohen suggests that a growing population within the static confines of the UGB will continue to put pressure on urban farmers. Though he manages food policy including UA for the city, Cohen is also pragmatic about reserving city land for future development. The city keeps an inventory of land for future housing, commercial, and light industry needs in order to encourage development within the UGB. Cohen says he and the city planners he works with have to ask themselves, “Do you want to grow food for a few families or do you want to put houses in? What are the needs of the city? If we don’t have the inventory [of available land for development of residential, commercial, or agricultural activities], we’d have to [place that development] outside the UGB,” which is antithetical to its anti-sprawl purpose.

Limits on city-owned land access did not stop urban gardeners and would-be farmers from planting seeds. BPS conducted a 2011 study, with funding through Centers for Disease Control and Prevention’s Communities Putting Prevention to Work program, of Portland’s zoning. The study recommended draft zoning policy changes regarding agriculture. City Council adopted the report with

amendments in 2012, which included, among other things, a designation for “market gardens” which made sales-driven farm operations an accepted use on all residentially zoned parcels.

Yet, changes to zoning code did not necessarily equate to a shared understanding of agricultural use and appropriate permitting among the city’s other bureaus. For Givens, this resulted in a long and costly build-out of the Simpson Street parcel. “Every [city agent] would [say something] different every time they came here,” she says of the lack of coordination among of the Portland City bureaus. “Yes, urban farms are commercial by nature, but we are allowed to farm on residential land. But, they slapped me with a bunch of commercial fees.”

Building her office and storage space was slow and expensive: “The permitting fees [for the building] alone were just as much as this building. It was about \$7,000,” she says. Meanwhile, the Bureau of Transportation, considering the Side Yard a standard commercial site, required handicapped parking (“It cost about \$4,000,” says Givens).

Givens enlisted the help of Steve Cohen in 2015 when the Bureau of Transportation told her she would have to put in sidewalks near the street. “There are no sidewalks in the Cully, [but they told me] ‘Well, then you’re going to have to appeal.’” Cohen and Givens documented the farm site and the neighborhood to show the inconsistency of the sidewalk requirement and contextualize the urban farm. It took another month and a half from the appeal until it was processed and Givens could proceed with construction.

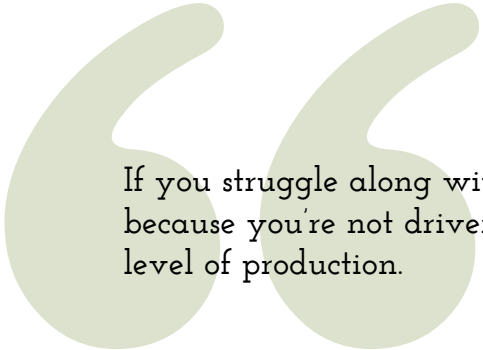
Informed in part by his experience helping Givens appeal to the Bureau of Transportation, Cohen suspects education on dealing with market gardens is still needed at the city level. “I’ve been focused on external education for a while,” he says, “Now it’s time to do some education within the bureaus.”²⁰⁸

Assets and Challenges

Givens identifies challenges beyond the difficult permitting and building process. The farm pays residential rates for water, which in FY 2015-2016 were \$3.94 per hundred cubic feet (or 748 gallons) plus service fees, as well

207 For an excellent summary of *Diggable City* and other pertinent history, please see Hatfield, M.M. and Cohen, S. (2016). A Case Study: Urban agriculture in Portland, Oregon 2002-2012. In S. Brown, K. McIvor, and E.H. Seyder (Eds.) *Sowing Seeds in the City*, 373-388.

208 Steve Cohen Interview, January 27, 2016



If you struggle along with wrong equipment or scale, you may fail not because you're not driven or smart, but because you couldn't step up to the level of production.

– Stacey Givens
Side Yard Farm

as taxes like storm-water tax.²⁰⁹ Portland offers non-residential, commercial, industrial and institutional water users a Clean Water Charge rate (\$0.96 per hundred cubic feet) for water that is diverted through a storm sewer other than a combined storm sewer;²¹⁰ Givens says this does not apply to irrigation, and the rule assumes irrigation water goes into the storm sewer. However, the City does eliminate sewage fees for urban farms. Without “black and white urban agriculture laws” about how to categorize farms at every level of government, Givens fears that even education within city bureaus will not help farmers navigate through paperwork and bureaucracy to establish urban farms.

As for financial challenges, the farm was able to pay for its employees and its water in 2016, which can be more than \$600 quarterly. The catering portion is more profitable, and from which Givens is able to pay herself. She is hoping to grow the catering side of the business to sustain the farm, and find funding or other assistance to build a catering kitchen and reach critical scale.

For Givens, the greatest asset the Side Yard possesses is its landlords. Their generosity not only helped establish the Side Yard, it also helped pay for the expenses that came as a result of a formalized zoning code. The Simpson Street landlords paid for the permitting fees for the office

building. When Givens paid for the street trees to be trimmed back in 2015, they accepted the service in lieu of rent; as of January 2016, they had not charged her for using the land.

Promise of Urban Agriculture

No matter how large the catering business becomes, Givens expects she will always have the Side Yard Farm. “We will never be a bigger scale farm. I like being here, being urban. We can be so many different things because of where we're located and what we do. There are more things that we can create and do than [if we were] a large-scale [rural] farm that mass-produces.”

Givens hopes more urban farms pop up in the future, but fears “we'll see less and less [of them] unless there are good people like my landlords who are willing to let people farm.” “Being urban and being able to connect with regular people every day is important,” whether through a hands-on course, a casual group-therapy potluck, or a sit-down dinner for 100. “We change people's lives in different ways,” says Givens, and growing food is only one of them.

209 Rates & Charges (n.d.) Portland Water Bureau. Retrieved from <https://www.portlandoregon.gov/water/29415>

210 Sewer and Drainage Rates and Charges (2016). Retrieved from <https://www.portlandoregon.gov/bes/article/538411>

Wilson Street Urban Farm, Buffalo, NY

Family Homestead Incubates a Farm Business

Themes: Land access, Full-time owners, SNAP/Double-up programs, Owner food security, Multi-farm efforts.

History

“I run an oversized hobby,” laughs Janice Stevens, describing Wilson Street Urban Farm. When she and her husband, Mark, decided to move from rural Covington, NY, 50 miles west to the east side of Buffalo, they did not plan to become well-recognized urban farmers. Rather, they intended to live much as they always had—including growing their own food.

Janice, Mark, and their eight children moved to Buffalo in 2007 as part of what Janice refers to as the family’s “missionary” vision²¹¹. Homesteading and practicing self-reliance in rural Wyoming County was their philosophy, says Janice, but the family was eager to incorporate a broader community. By bringing their home and homestead to the city, their simple way of life could touch more people and strengthen communities beyond their household.

A friend living on Fillmore Avenue on Buffalo’s East Side told the family when the house next to his went up for sale. The large house came with a second adjacent lot—a must for the Stevenses—and backed up to a large tract of vacant land. Conveniently, their friend and new neighbor also worked at Buffalo’s City Hall, and helped the family approach city government to get access to that land.

The lots on the Stevens’ side of their Fillmore Avenue block back up to Wilson Street. Formerly a street of smaller clapboard houses behind the grand homes of Fillmore, the lots had been vacant for many years, demolished as Buffalo’s population declined by more than half in the second half of the 20th century. Perhaps, they thought, they could get permission to farm the vacant lots.



Onion flowers emerging midsummer at Wilson Street Urban Farm.

News of the Stevenses’ farm aspirations spread quickly. Local activist and the city’s unofficial anthropologist, David Torke, volunteered to help Mark and Janice navigate city bureaucracy to get a land lease. Torke connected the Stevenses with Brendan Mehaffy, who then worked for the City of Buffalo’s legal department. The former land use lawyer drafted the Stevenses’ first lease—a five-year agreement to use 25 lots on Wilson Street for farming for a total cost of one dollar per year

The Stevens have purchased two of the 25 lots from the city, which they did in preparation for a sculptural installation meant to connect art and agriculture.²¹² They would like to purchase the remaining lots, but at \$1,500 per lot are reluctant to do so without financial assistance.

211 Parisi, N. (2021, May). “Wilson Street Farm: The Stevens Family.” *Buffalo Spree*. Retrieved from <http://www.buffalospree.com/Buffalo-Spree/May-2012/Wilson-Street-Farm-The-Stevens-Family/>.

212 As of July 2016 the art project, Art Farms, had stalled and the Stevens had not been contacted by organizers about installation of the sculpture.

The city has not renewed the Stevenses' lease since it lapsed in 2014. Mehaffy, now Executive Director of the city's Strategic Planning Department, told them they would go month-by-month as the city finalizes its Green Code, a comprehensive land use plan based on Smart Growth principles that have been translated into a form-based code.^{213,214} Centered on appropriate use and sustainable practices, the code aims to green and revitalize Buffalo, and include UA.

Still, the Stevenses are operating on an informal agreement—nothing has been signed since their initial lease. And while land tenure looms in the background, she finds herself daily more consumed with another situation that seemed unlikely back in Wyoming County: turning the “oversized hobby” that made the family into the face of Buffalo UA into a business.

Community Description

Wilson Street is a far cry from Wyoming County. One block from the epicenter of the city's Broadway-Fillmore district, one can hear thoroughfare traffic and frequent police sirens from the farm. The farm is bordered by a dollar store parking lot to its south on Broadway, dilapidated homes up the block to its north, and the backyards of homes on the next block to its west.

The Broadway-Fillmore district had been home to Buffalo's swelling Polish population in the late 19th and early 20th centuries.²¹⁵ The Broadway Market, which is still in operation one block from Wilson Street Urban Farm, is still considered a Polish-American cornerstone of Buffalo, boasting retailers selling kielbasa, pierogis, babka and more.

Polish-Americans began moving away to nearby suburbs in the 1940s, and the city's African-American population, which grew from 17,000 in 1940 to nearly 100,000 in 1970, began to move to the East Side.²¹⁶ As the city's manufacturing sector moved away over the same period, the predominantly African-American East Side—a collection of neighborhoods spanning the five miles from the edge of downtown to the city border^{217, 218}—became known for its crime and poverty.

Wilson Street is near the middle of the 14212 zip code which runs along Broadway and encompasses much of the district, where the unemployment rate was around 16 percent in 2014,²¹⁹ compared to the city's 5.6 percent unemployment rate at the end of 2014.²²⁰ The poverty rate is about 35 percent, with a median household income of \$34,089.²²¹ Whites make up 46 percent of the population (many of Polish ancestry), African-Americans make up 37 percent, and the district is home to a growing population of Bangladeshi Muslims moving from New York City to Buffalo.^{222,223}

Though vacant lots and boarded-up buildings still characterize the neighborhood, Janice says new immigrants and young people have begun rehabilitating some neighborhood homes. Surprisingly, she says, there is not much palpable racial tension. “All types of people come to the farm stand,” she says, “And their feedback is all positive.”

That does not necessarily mean the neighborhood is well-integrated. The Stevenses started a block club on their street when they moved in, seeing that residents were disenfranchised from participation in local government. Block club members are mostly new residents, but members of the longtime African-American community “don't seem to trust it,” says Janice.

213 For more information, visit the Buffalo Green Code website at <http://www.buffalogreencode.com/>

214 The City of Buffalo released an updated version of its Green Code on September 15, 2016, and held two public hearings in November 2016: http://www.buffalogreencode.com/September2016/UDO_Complete_Sept_2016.pdf

215 Excerpts from Broadway-Fillmore, Buffalo, NY Intensive Level Historic Resources Survey (n.d.). Buffalo Architecture and History website. Retrieved from <http://www.buffaloah.com/h/pol/hist/#History>

216 Hsu, Charlotte. (2010, April 17). Exodus: A quick-and-dirty history of Buffalo's Broadway-Fillmore Community. The Buffalo Story Project website. Retrieved from <http://www.buffalostoryproject.com/2010/04/17/exodus/>

217 East Side Maps. (n.d.). University at Buffalo Map Collection online. Retrieved from <http://library.buffalo.edu/maps/buffalo-wnymaps/location/buffalo-neighborhoods/es.html>

218 Buffalo District Map. (n.d.). Buffalo Architecture and History website. Retrieved from <http://www.buffaloah.com/a/bamsec/buffalodist.jpg>

219 American Community Survey, 2014 for zip codes 14206, 14211, and 14212.

220 Bureau of Labor Statistics. (2014, December). Buffalo-Cheektowaga-Niagara Falls, NY Metropolitan Statistical Area. Retrieved from https://data.bls.gov/timeseries/LAUMT361538000000003?amp%253bdata_tool=XGtable&output_view=data&include_graphs=true

221 ACS 2014.

222 Ibid.

223 Esmonde, Donn. (2016, May 28). Muslims moving against East Side blight. *The Buffalo News*. Retrieved from <http://www.buffalonews.com/columns/muslims-moving-against-east-side-blight-20160528>

“There is a lot of churning in this neighborhood,” says Janice, referring to the transient nature of some neighborhood residents. Still, the farm has proven to be an unlikely neutral territory, and the Stevens have seen very little gleaning or vandalism over the years.

“We try to keep the farm clean and fit into the neighborhood,” she says.

Farm Description

Wilson Street Urban Farm is comprised of 25 contiguous lots totaling 1.75 acres. About a half-acre was in production in 2016, with the rest left for setback, pathways, and a cut-through path to the adjacent street.

The growing area is split into 11 30x60’ beds, a small strawberry patch, and two high tunnels which are in production most of the year. The family originally began growing in boxes and on raised beds, but has begun planting in the ground as they improve the soil.

The heavy clay soil is low in organic matter and suffers from high alkalinity. Though the houses that once stood here did not have basements, construction debris and low-quality fill resulted in high soil pH. The Stevens apply compost and peat heavily, and cover-crop in winter to build up the soil. The soil can be difficult to work, particularly in dry spells, though the family is aided by its 30hp Kubota tractor, and a BCS walk-behind tractor it purchased in 2015.

Other than soil alkalinity, the Stevens biggest production hurdle is water. They have two 350-gallon rain catchment tanks filled off the roof of their greenhouse, and two more on their own property across Wilson Street. But, aside from the greenhouse, which is drip-irrigated, the rest of the farm is hand-watered. While Western New York was experiencing a drought in July 2016, the Stevens were spending four to five hours a day hand-watering their crops from two water tanks pulled behind the tractor and filled from a hose at their house. Eventually, says Janice, she and Mark would like to dig a well on one of the two farm-lots they own, and run an irrigation system from it.

It would be easier to make that commitment if the Stevens owned all of the land they farm, though Janice says that, as a pilot-project of the city of Buffalo, their lease was lenient and no city officials came to monitor the farm. During the lease, she submitted annual reports to Mehaffy, and though the lease has lapsed, she is confident that Mehaffy’s relationship with the farm will protect their tenure.

The land is still considered “vacant” for tax purposes, but the Stevens do pay user fees, including trash collection. Janice hopes that the Green Code will recognize urban farms as sinks rather than generators of waste and stormwater, though is not confident the code will be approved any time soon.

Production Practices

The Stevens grow a wide variety of vegetables and rotate their plantings as much as possible, from year to year, to reduce pest pressure. Pests are still an issue, however, and their crop mix has adapted to those pressures. They have a screened-in cucumber house to keep out cucumber beetles, and have moved their pepper production to the lot next to their house to reduce pressure from pepper maggots.

In addition to building soil with peat and compost, they get bedding from a nearby equestrian center. The compost is from the Farmer Pirates’ compost program, of which Wilson Street Urban Farm is a founding member. The burgeoning compost program has residential and commercial compost pick-up contracts, and receives deliveries of compostables from the city’s waste department.

“The compost is getting better,” says Janice Stevens, who says weed seeds have been a big problem in the compost. She says leaf mulch, which does not have weed issues,

Farmer Pirates

The Farmer Pirates are a cooperative of Buffalo urban farms that seeks to support and offer services to others growing food in the city. A struggle for land access as well as land retention after improving it through farming brought the Pirates together as they wanted to be proactive to retain use of their plots. They share a farmers market stand, discuss policy and neighborhood issues, share knowledge and equipment resources, buy farming inputs in bulk, and started a composting project called Compost Buffalo. Working with the City of Buffalo to receive leaves left curbside by residents, it composts leaves, lawn clippings, and some food scraps for use by the other Pirates and, if there is extra, to sell to area gardeners.

mixed with peat and covered in plastic mulch was one of the best combinations for bed-preparation she has tried yet. Heavy feeding brassicas were responding beautifully to the treatment.

Business Structure

Wilson Street Urban Farm is the accidental poster child for UA in Buffalo, largely because the Stevenses did not initially have a plan to grow it into a business. Nearly half of the food grown on the farm feeds the Stevens family of seven children plus Janice and her husband Mark (their oldest child has moved from home and has her own farm nearby). But, Janice says a recent expansion of its production space aims to meet the demand for its produce.

“We would be doing this whether we made money off of it or not. It’s just what we do,” says Janice.

The farm’s income is supplemented by Mark’s work as a carpenter, it looks more and more likely that the farm could earn enough to be the family’s sole source of income, and Janice has dedicated herself to treating what was a hobby more like a business.

“I am trying to separate all the finances out and think more strategically in my planting and different markets,” she says, “and make sure that I have enough and think more economically. Using my space a little more wisely, pulling things out if they’re not worth keeping instead of saying, ‘Oh wait, that will give me one more picking—I can’t throw that out!’ But yeah, I can, because it’s not economical to keep it.”

Recordkeeping has proven particularly difficult, especially as she tries to determine what kind of records she needs to keep. Though recordkeeping and paperwork take up more of her time than ever before, she says it has helped her think about her goals for the farm, which are not necessarily to make as much profit as possible.

She says putting parameters on what she wants to achieve—not just on the farm, but in life—has helped her to focus on increasing her efficiency and maximizing the sense of enjoyment and well-being she derives from farming:

“These people who make six digits on half-an-acre, [I think], ‘I could do that!’, but then [realize], ‘No, you don’t need to. Relax. You can enjoy this, too.’”



Cabbage being grown on black plastic to improve growth and with row covers to protect plants from insects.

“I want to get better [at recordkeeping], [the farm] needs to make more money than it does now, but it doesn’t need to be all-consuming 12-months of the year,” she continues. “When I go to Bidwell [Market] and [farmers are] all selling all this stuff, it just makes it easier for me to sit back and say, ‘I don’t need it because I’m doing okay.’ Why should I stress about making it huge? Or go beyond my comfortable stress-level? I don’t need to find 100 markets because I can probably do what I need to do with the markets that I have already. If I just get a little better organized and cut out some of its inefficiencies... it makes my dreams more reasonable. If [we grow] beyond that, fine, but I don’t need to.”

Marketing and Sales

Wilson Street Urban Farm has a 14-member weekly CSA that runs 22 weeks from early June through the end of October. CSA members are some of her best advertisers, says Janice, and many new members or customers at the farm’s stand or farmers market stall hear about the farm by word of mouth.

It operates its on-farm stand every Saturday starting in July, which is frequented by neighbors from the area. The clientele, says Janice, is completely different from her customers at the Elmwood-Bidwell Farmers Market, as are their tastes.

“At the farm we sell a lot of collard greens, mustard greens, okra, and turnips,” says Janice, “but at Bidwell people ask, ‘What is a turnip? What do you do with it?’” Farmers market customers are more likely to buy the farm’s Swiss chard, kale, and heirloom tomatoes.

The Stevenses sell at the Elmwood-Bidwell Farmers Market, in the more affluent Elmwood district, with their fellow Farmer Pirates. The market accepts SNAP and offers a Double Up Food Bucks program. Unlike some of the other Pirate farms, the Stevenses do not have an EBT reader for their own farm stand, though they believe many people who visit likely receive SNAP benefits.

Wilson Street Urban Farm also sells its produce to a handful of restaurants in downtown Buffalo, though Janice admits she does not know the best way to work with restaurants. She says her scale is not quite right for restaurants, even though they are happy to get her produce. Any excess produce after markets, CSAs, and restaurant sales is easily absorbed into the Stevens family larder.

Along with excellent media coverage and Janice's blog, which she shares on the farm's Facebook account, Wilson Street Urban Farm is a frequent stop on bicycle tours of the area. Tour de Farms, organized in part by the Massachusetts Avenue Project, is an annual bike tour of urban farms, where the Stevens' farm is often a stop. David Torke also leads bicycle tours of Buffalo's urban decay and forgotten landmarks, and rides cyclists down Wilson Street for a refreshing look at the city's potential.



Janice Stevens in her high tunnel.

Employees

The Stevens' family operates like many farm families do: every family member does something on the farm. The Stevenses home-school their children, and the farm is

a laboratory for learning science, math, mechanics and more. It is also one of their responsibilities, and their fourteen- and fifteen-year-old children will spend four to five hours a day in the summer watering, weeding, and harvesting alongside Janice and Mark, when he is not working off-farm.

The other four children who live in the house also work on the farm, but less frequently, between four hours and one day a week (their eldest, Alex, is married and operates a farm a mile away with her husband and oversees the Farmer Pirates' compost site). Their work is project-based: tractor-work, landscaping, or building a new washing station and rain catchment system.

The Farmer Pirates also assist one another, but usually only for large projects like building high tunnels. Occasionally they do more formal work-exchanges, but the labor primarily comes from the family.

"I am losing my labor force," says Janice of her maturing children. It is further incentive to make the farm run more efficiently, she says, hoping that she could afford to hire one person with greater efficiencies that grow more crops with less labor.

Other Activities/Services

Along with her own farm, the block club, and the Farmer Pirates, Janice provides technical assistance to Journey's End Refugee Services, Inc. The Christian community-based organization with a strong inter-faith approach provides services for refugees relocated to the Buffalo area, many of whom are Muslim. Their programming includes the Green Shoots for New Americans program, which builds upon refugees farming skills with business and marketing training. Janice has worked with program coordinators and participants on basic organic farming practices, potentially growing the number of urban farmers in the area.

Support

The Stevens family's early support from neighbors and advocates eager to see positive change on the East Side helped them connect with the city officials who eventually approved their lease. Though the family initially wanted to purchase the land, the permissive lease they negotiated made it possible to start the farm.

News of their victory in winning over city officials spread and the Buffalo News published an article that galvanized support for the project. It also led to them being asked to participate in many organizations and projects to revitalize Buffalo, including adding their voice during the formation of the Green Code.

Interest in urban farming and zoning changes are happening in tandem, says Janice, though one is not directly related to the other. Mark Stevens served on the city's steering committee for community gardens when the family arrived in Buffalo, which was an early precursor to the Buffalo-Erie Food Policy Council that formed in 2013.

Asked if she is worried about changes to the zoning code threatening the farm, Janice says, "I think [the City] knows if they tried to do anything, that they would be facing a huge battle. We are the face of urban agriculture in the city right now."

The Stevenses have never applied for or received a grant or any other monetary support from outside sources, though they do benefit from free, no-tax access to 23 city lots. They also did not take on any loans to start the farm and are debt free, a fact Janice considers an asset in itself.

She is looking into possibilities, however, for leveraging grant support to make capital improvements. A new irrigation system and a walk-in cooler are sorely needed, she says, but would be easier to invest in if she and Mark were able to purchase the land—another area where they could use assistance.

Policies Impacting Success

Wilson Street Urban Farm has thrived as the result of a lack of policies around urban farming in the City of Buffalo. The Stevenses and their supporters were able to convince the City to pilot the land-lease project. Prior to this, the city leased land for farming only to community-gardening and farm-education-based organizations like Grassroots Gardens for Western New York and the Massachusetts Avenue Project. Because of this first lease to an individual farm, Wilson Street Urban Farm is demonstrating what a commercial urban farm might look like in Buffalo.

Janice has many ideas of how policies could be shaped to encourage responsible urban farming that would be good for farmers, neighborhoods, and the City. Stormwater diversion, for example, is a huge benefit of 1.75 acres of greenspace, particularly for Buffalo's aging combined sewer system. "If we could get credit for as many gallons of water we save the city [from processing]..." says Janice wistfully. "But that's probably too far reaching."

Assets and Challenges

Janice says that without many of the people and circumstances that exist—finding the house, gaining the support of influential people, receiving their initial lease agreement, or getting help from their children—Wilson Street Urban Farm would not look the way it does. But, she says, that doesn't mean they would not grow food.



Row covers help protect plants from insects and can speed plant growth.

"Not to sound selfish, but probably our biggest asset is our determination: this is who we are and this [is] what we do. If you give me ten square feet, I'm going to garden it. If you give me two acres, I'm going to garden it."

One of their greatest challenges, however, is gardening these particular soils. Low fertility and weed pressure are persistent problems for any farmer, but on Wilson Street the Stevenses started at almost rock-bottom. And compost, which can increase their organic matter, can also increase their pH, which borders on too high.

Labor and land tenure are longer-term challenges, but Mark and Janice are working toward solutions slowly as the threats become clearer, and the means of solving them more viable. Improving business operations and intensifying their growing with tighter succession planting and judicious use of space could help the family earn more, and potentially purchase land or afford to hire an employee once the children leave home.

In the meantime, Janice is working on recordkeeping systems in order to analyze the business, and is hopeful for more networking opportunities to learn from others. The Stevens family finds itself at the forefront of Buffalo's burgeoning UA movement, a position they did not expect or prepare for when they moved to the city, but are eager to see how others have found success as urban farmers.

Promise of Urban Agriculture

Though the Stevenses became Buffalo's preeminent urban farmers just by being themselves, Janice Stevens thinks Buffalo is finally ready to embrace farms in the city. "Green space is huge, vitally necessary, and appreciated by the neighborhood. Whether they know that they want that

greenspace, when they see it, it's a breath of fresh air. Over and over again, we get that feedback, so it's satisfying on the community level.

"I don't know that you'll make a million dollars off of it. There are a lot of people that hand you that hope, those people that make 6-digits are exceedingly efficient. And more power to them.

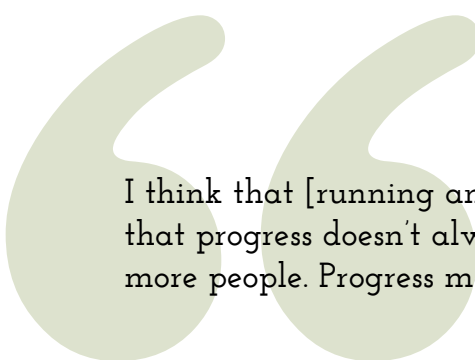
[But] I think there is an aspect of independence [to urban farming]. On so many levels it's so satisfying: doing something beautiful, nurturing something, those spiritual, psychological needs that we have are met very easily in urban agriculture."

"The atmosphere right now is a lot of demand for local food. So there is a place for urban agriculture, and it is well received. A lot of the people who are into urban agriculture are young, 20- or 30-somethings, without a lot of experience. But, I think that because there is a demand

for it, people are more aware of their food, governments are becoming more aware of the fact that there is poor access to good food... I think there is a place.

"The atmosphere will improve. As long as we do it right, being mindful that we are in a city setting and not in a rural setting. We do not have the right to farm, this is not a "right to farm" neighborhood! And so we have to be very careful about how we proceed. We can't have shoddy compost piles that have rats everywhere, we can't be stinking up the place, we can't be leaving weeds growing all over and not making it look like a park."

"The promise is that it will be embraced by cities. It is being embraced by cities, and it will be embraced by Buffalo ... I think that it will get easier as governments realize that progress doesn't always just mean better streets and bigger buildings and more people. Progress means a better way of living."



I think that [running an urban farm] will get easier as governments realize that progress doesn't always just mean better streets and bigger buildings and more people. Progress means a better way of living.

– Janice Stevens
Wilson Street Urban Farm

Love Is Love Farm at Gaia Gardens, Decatur, GA

Unique Partnership with Homeowners Secures Farm's Future

Themes: Full-time owners, SNAP/Double-up programs, On-farm events, Multi-farm efforts, Provides education and training.

History

Love Is Love is not a physical place. Rather, says its founder and farmer Joe Reynolds, it is the business name and farming philosophy that he and his wife, Judith Winfrey, have cultivated since its establishment in 2008. The farm's name comes from a song lyric: "love is love in the shape things take,"²²⁴ as Reynold's farming endeavors have taken many shapes over his farming career.

Reynolds began farming in 2004 in a "very part-time" position at Crystal Organic Farm in Newborn, GA. Over the next four seasons, he transitioned to more full-time work, commuting the 50 miles between the farm and his home in Atlanta, occasionally bringing restaurant deliveries back with him. He took on production, marketing, sales, and helping to open a retail space in Atlanta, which was open two-and-a-half days per week.

He says that experience helped him learn not just how to grow, but how to think about profitability and marketing. Reynolds says he was shocked when customers started to treat him as a produce expert.

"I would have to learn more about the produce than I necessarily would have if I had just been working on the farm," he says. "I developed that interest in the customer interaction side, sharing the excitement of what's happening on the farm."

With the encouragement and mentorship of Crystal Organics' farmer and other rural growers they had come to know, Reynolds and Winfrey accepted an offer to farm at Glover Family Farm in Douglasville, GA. There they began Love Is Love, and for three years leased a portion of the certified organic land to grow produce for sale at farmers markets in and around Atlanta, where they still lived.

Reynolds heard about an opening for a farmer at East Lake Commons' Gaia Gardens, a planned community with a 1.5-acre farm in Decatur, through the then-small network of young growers who circulated among leased parcels in



A poem and mosaic greets visitors to Gaia Gardens.

the region.²²⁵ Gaia Gardens' farmer at the time, a friend of Reynolds, encouraged him to apply to work its land. The community invited him to become its farmer, and Love Is Love started his 2011 season at Gaia Gardens.

Land—where to find it, who owns it, how to care for it, and how to protect it—is often on Reynolds' mind. Love Is Love at Gaia Gardens is a profitable farm with a growing business on protected land.

Community Description

Gaia Gardens is five acres of open space and woods, part of the 20 acres that make up East Lake Commons, a co-housing community in Decatur, DeKalb County. Just four miles east of downtown Atlanta, its 67 densely-clustered townhouses are arranged around pedestrian pathways, and residents park their cars near the entry gate at the property's edge. Residents share resources, agree to sustainable living practices, and participate in a variety of cooperative governance committees through the East Lake Commons homeowners' association (HOA).

224 Lungfish. (2003). Love Is Love. *Love Is Love*. Dischord Records.

225 Geering, D. (2010, October 29). One farmer's switcheroo sparks opportunities for others. *Atlanta* magazine. Retrieved from <http://www.atlantamagazine.com/dining-news/one-farmers-switcheroo-sparks-opportunities-f1/>

One HOA committee oversees Gaia Gardens, which is partially separated from the houses by a large stormwater catchment pond. Five farmers, each for several seasons, have been invited to farm at Gaia Gardens since East Lake Commons was founded. The entire HOA contributes to the farm's budget through its HOA fees, which the committee oversees and the farmer manages. The budget includes money for purchasing and maintaining equipment, utilities, soil testing, and fees associated with organic certification.

Reynolds says the structure is rooted in the question, "How could someone make a living, living in the city, and running a really small farm operation, and create a relationship between the community and the farmer?" It was developed with the intent of having a professional farmer, not the residents, grow food for the community, though residents do use the farm's pathways for recreation, and will also pick the blueberries on the property.

East Lake Commons, where the majority of residents are white, is in the primarily African American neighborhood of East Lake.²²⁶ Reynolds says early residents of East Lake Commons considered the area dangerous, but crime has decreased since then. Much has changed in the neighborhood since then, and partnerships between city agencies and nonprofits like the East Lake Foundation have brought mixed-income housing, youth programming and even a grocery store to the neighborhood.



Favas, onions, and beets thrive in the 100 ft. high tunnel at Love Is Love Farm at Gaia Gardens.

Farm Description

The East Lake Commons HOA leases Reynolds the 1.5-acre growing area at Gaia Gardens for one dollar each year with two-year leases. The farm is zoned residential, though the HOA covenant states the five total acres of Gaia Gardens will remain a farm and open space. The covenant states either party can void the lease with 90-days' notice, but builds in clauses that encourage mediation of differences to maintain the farmer-community relationship.

East Lake Commons is sited on an old dairy farm, and Gaia Gardens has always been open, undeveloped space. As a result, says Reynolds, the soil is rich and well cared for—a rarity amongst heavy Georgia clay. A robust cover-cropping and composting program has been in place for the 19 years it has been farmed.

The farm is bordered by woodlands and a stormwater catchment lake that Reynolds uses to drip irrigate crops. There is also an irrigation meter installed to draw municipal water, which does not incur sewage fees. Reynolds says he prefers to irrigate from the lake by pumping it through his drip irrigation rather than municipal water. Though he does not pay his utility fees, Reynolds is dedicated to making as much of the farm thrive off natural systems as possible.

Wet fields are a constant challenge at Gaia Gardens. Reynolds has seen wetter springs and heavier rainstorms since he began farming in 2004. At his previous farm, his fields were washed out by a flood. Assistance with erosion control, from both the HOA and NRCS EQIP, has helped mitigate the impact, but Reynolds says extreme weather has impacted his and other farm businesses in the area.

The sloped growing area is separated into 11 fields and has one 30x100' high tunnel, helping Reynolds to grow nearly year-round. A pole barn houses the HOA-owned Kubota tractor, BCS walk-behind tiller, washing station and hand tools. There are also two free-standing walk-in coolers, a small toolshed, and a glass greenhouse Reynolds uses for seed propagation. Stone paths connect the primary growing area to the residences, the blueberry patch and bee hives on the opposite side of the property, and to a large compost area managed by Compost Wheels, an Atlanta-based compost pick-up company.

"It's a beautiful farm, and it's a benefit, right?" remarks Reynolds. "I don't have to pay to have access to this primo farm with primo infrastructure." Reynolds has a lot of respect for how the community is trying to support this small farm, and says he hopes to leave the farm even

better than the pristine shape in which he came to it. If he ever moves on from Gaia Gardens, he may be taking his t-posts and trays, but will leave the greater improvements, like the hoop house, for the next farmer.

Production Practices

Gaia Gardens is certified organic, and Reynolds maintains its organic practices and records while the HOA organizes and pays for inspections through Florida-based Quality Certification Services. He grows around 60 types of vegetables, plus blueberries, grapes, fruit trees, and shiitake mushrooms he grows on inoculated logs in the wooded areas. The perennials were planted by earlier farmers or the community.

The farm is contractually obligated in its lease to grow a variety of food crops. “Literally in my lease it says that I have to, and that’s what my customers want from me,” says Reynolds. “But we don’t have to grow a diversity of food crops that don’t make a profit if we can find ways to keep the diversity theme without spreading ourselves too thin.”

Love Is Love has less land at Gaia Gardens than it did at its previous location, and Reynolds says he is always aiming to be more productive and efficient to net a higher profit from the smaller space. He eliminates any varieties he cannot produce in great enough quantity to supply his 110-member CSA.

Reynolds says he can grow 12 months a year, but his ability to produce in marketable quantities in winter is limited. “A lot of people would tell you the season looks different [now]. We’ve got a very short springtime, cool weather. But, then we have a very short fall, but we have a monster summer. And in that sense, we do grow crops seasonally. Things that are leafy or root crops you just can’t grow through the bulk of the summer,” he says. The market season wraps in mid-December, and he begins seeding again in mid-January.

Aside from profit, two of Reynolds’ measures of success are soil organic matter and biodiversity in the field. Every field is cover cropped at least once in the season. He tests the soil biannually, and the water from the pond is tested annually by the farm or the community for contamination. Because it’s a small space, says Reynolds, physical observation of wildlife—birds, frogs, insects—is their primary means of measuring biodiversity, but he and the community, which holds the wetlands and woodlands in equal regard to the farm, always work toward mediating between wild areas and the farm.

“The biggest thing I try to promote is the ecology of the farm,” says Reynolds. “How does the farm impact the water, the creatures that live in the woods and the air and around the pond? I focus on the ecological benefit of a farm and how we try to minimize the impact that farming has. Farming is manmade and a pretty destructive thing to the environment. Even in the way we [farm], we walk that line all the time.”

Business Structure

Love Is Love is registered as an LLC in Atlanta, GA. Reynolds has registered with DeKalb County’s FSA board and has a farm number. He never mentions thinking about other business structures, having learned to farm from for-profit organic farmers and similarly treating Love Is Love as his business and full-time occupation.



Joe Reynolds looks out at the inoculated mushroom logs. Homes in East Lake Commons can be seen behind the trees. The farm and the neighborhood are inextricably linked since their founding and have developed in concert.

Marketing and Sales

Love Is Love’s lease requires that it offer a CSA and that the community get first access to join the CSA. If the farmer has extra capacity, says the lease, he or she can offer it to a wider community.

Reynolds does just that in his 110-member CSA, which he offers in two sessions to cover the long growing season. To give financial incentive to the East Lake Commons residents, he charges non-resident CSA members a “membership fee,” which he then distributes as farm-

product coupons to all residents—whether or not they choose to become CSA members. He also offers plant sales or weekly pre-order opportunities for residents who want less-than-CSA quantities.

Love Is Love's weekly CSA is \$28 per week and includes products Reynolds cannot produce himself, like goat cheese from a nearby dairy. For the first time in 2016, he partnered with another farm to expand the CSA offerings and open it to more members. Matthew Bagshaw, a former employee at Love is Love who left to farm in the Northeast, returned to the Atlanta area and opened Hungry Heart Farm: a diversified vegetable farm on land rented from a goat dairy. Reynolds and Bagshaw planned their crops to complement one another, and Bagshaw grows produce to supplement Gaia Gardens' CSA.

Reynolds says he is different from previous farmers at Gaia Gardens in that 75 percent of his sales are through CSA, as opposed to a more even split between CSA and farmers markets. Love Is Love has sold at two farmers markets in the past, but Reynolds planned to cut out produce sales at farmers markets in 2016, do spring plant sales at two farmers markets and at Gaia Gardens, increase his CSA membership to 130, and more seriously pursue restaurant sales.

"The number of farmers [at farmers markets] has grown vastly, but the growth has been uneven," says Reynolds. He says the proliferation of farmers markets means he sees other farmers going to two, three or more farmers markets to sell what, in previous years, a farmer should be able to sell at one market, which is the reason for his marketing switch.

The name, 'Love Is Love Farm at Gaia Gardens,' is a branding compromise Reynolds struck with his HOA committee, which was happy to have his business's name so long as he maintained theirs. Reynolds, who serves on the board of Georgia Organics and served on his farmers market association board, sees Love Is Love as a personal, as much as a business brand, and his involvement in farming and food organizations as a way he markets himself and the farm.

The CSA is marketed primarily by word of mouth. "There is a mythology that it's impossible to get in," says Reynolds, which seems to create excitement and more demand from would-be members. The farm launched a revamped website in 2016, and has a presence on Twitter, Facebook,



Pepper seedlings in Love Is Love Farms at Gaia Garden's heated greenhouse. Some will be planted in the field, while many will be sold at the annual spring plant sale.

and Instagram. Reynolds says Twitter supports professional name recognition among industry leaders, while Instagram and Facebook are ways for people to interact with the farm.

Love Is Love Farm has partnered with Wholesome Wave Georgia to accept SNAP benefits via EBT for its CSA shares, as well as benefit from its double-dollars program.²²⁷ Reynolds has not sold a CSA share this way yet and expects it will take time to reach people, particularly renters in the adjacent neighborhoods, who use SNAP benefits and get them involved. "It will be a great way to connect, especially as we're trying to pull back the marketing from other neighborhoods," says Reynolds.

Employees

Reynolds has one full-time year-round employee, less the month the farm is not in production, and one half-time employee who works nine months of the year; both are focused on production tasks. He has also hosted summer interns from colleges and businesses, including students from Emory University who are paid by the university for their time.

"[The Emory interns] make more than anyone who works here gets paid. The university has a living wage initiative, so they get paid \$14 an hour," says Joe with a wistful smile.

227 Double Value Coupon Program. (n.d.). *Wholesome Wave Georgia*. Retrieved from <http://www.wholesomewavegeorgia.org/double/>

Love Is Love also has volunteers, primarily through CSA workshares, in which members get a discount on their CSA if they help with harvest or pick-up days. While this does provide some needed extra labor in the height of the season, it is also an opportunity for Reynolds to grow the farm community and share more about the farm.

Though it can be difficult to find knowledgeable, dependable people to hire, says Reynolds, “I’ve always liked the people who work for me: they’re always interesting and exciting, and I’ve always tried to make opportunities for them as I can.”

He imagines fostering those relationships in a future version of Love Is Love Farm. “It’s a pie in the sky dream, maybe, but instead of me going out and buying that one Love is Love farm and farming it myself, maybe I gather up people who’ve worked with me, and we all have diverse skills and we form a partnership and buy a common piece of property and work it together. So you sort of have everybody do something they’re good at, and have that community aspect.”

“You hear that from people further out [in rural areas]: that it just gets really lonely.”

Other Activities/Services

Besides his work on various boards and organizations, Reynolds does not do much off-farm work. He does, however, make opportunities for entrepreneurs to use Gaia Gardens to develop complementary businesses. For example, he works with a professional beekeeper to keep honeybees on the property, which pollinate the blueberries.

He also helped broker the arrangement to have Compost Wheels develop a site at Gaia Gardens. Compost Wheels picks up compostable materials from restaurants and residential customers, and brings it along with sawdust and woodchips to Gaia Gardens. HOA residents can also bring compostables to the site. Compost Wheels helps Reynolds build his composting skills to manage the compost, which is then available for use by Love Is Love Farm.

Love Is Love Farm has worked with East Lake Commons to host farm dinners, harvest festivals, and bazaars with activities, bands, and aerialist performers, which helps generate about 19% of the farm income.

“I think my customers get really excited about [farm events]: seeing the interdependent nature between the farm with the community and with the ecology around the farm,” says Reynolds.

Residents of East Lake Commons derive services from the farm beyond food production. They appreciate it for its beauty, and as a place to exercise or walk their dogs. Residents will also volunteer to help with large farm projects, like building the irrigation pipe system from the pond.

Support

Reynolds’ first experiences farming in rural Georgia still inform how he operates Love Is Love Farm at Gaia Gardens. He considers the farmers at Crystal Organics, and others selling at the same markets as mentors, and says he still calls them with questions. He thinks about the previous farmers at Gaia Gardens the same way, and has built professional relationships and friendships in which they can mutually support each other’s farming endeavors.

East Lake Commons homeowners are supportive in their governance, financing, and general enthusiasm. Contributions through HOA fees fund farm utilities, equipment, maintenance, infrastructure, and even cover crop seed. The committee in charge of Gaia Gardens and the farm’s budget meets with Reynolds once per month to discuss plans and issues that may arise, a level of communication he says he did not have with other landowners.

While this level of landowner involvement keeps good will strong and problems small, Reynolds says it can be challenging to receive constant feedback. In one instance, some homeowners wanted to ensure that the farm did not encroach on the wild areas of Gaia Gardens, a



Love Is Love Farm pays tribute to its supporters each year.

principle with which Reynolds agrees but took a long time to negotiate. “Then there’s the dog poop issue,” says Reynolds, smiling about some of his feedback to residents. “It’s everything from very serious things to things that aren’t necessarily deal-breakers.”

“They’re very thoughtful,” he says. “They see the farmer as the expert in residence.”

Reynolds continues to hone his expertise through involvement with organizations like Wholesome Wave Georgia, Georgia Organics, and the National Sustainable Agriculture Coalition, each of which, he believes, is effectively promoting support for and consumption of small-farm grown and organic food. He has also been the beneficiary of support for beginning farmers, including the NRCS EQIP grant that assisted with his high tunnel and implementation of a soil quality and erosion control program.

Media coverage of Love Is Love, and other beginning farms has helped promote local, and particularly urban farms says Reynolds, “It captured their attention for a while,” he says, though now perceives media interest waning. But media, particularly the internet, has helped him become a better farmer.

“The internet is awesome! Insect identification is 1000 times easier now because you’ll be like, ‘Which insect folds the leaf of your beet plant and makes a web,’ and you look it up, and it’s the codling moth, and you’re like, ‘What is that? I’ve never seen it before!’”

Policies Impacting Success

East Lake Commons, including Gaia Gardens, is zoned for small-lot residential mix, which DeKalb County determined was appropriate zoning for what the zoning ordinance calls “urban or community gardens” under five acres.²²⁸ Gaia Gardens, thus, operated in a grey area for many years as farming was not technically legal on the property. The county changed its zoning code in 2015, prior to which growing produce for sale was illegal.

Though the legislation change has brought peace of mind, says Reynolds, it has not changed the way he or other DeKalb County farmers outside the city of Atlanta do business: “Nobody’s gone and gotten permitted or gotten licenses. I don’t think anybody’s quite figured out where to go, and the county hasn’t come knocking just yet. When they do, I reckon [licensing] will happen.”

Aside from an FAQ-sheet outlining how to permit and register an urban farm business in DeKalb County, Reynolds says he would like to see more policies to keep space open and available for agriculture. East Lake Commons’ covenant states that it will not develop the five acres set aside for Gaia Gardens regardless of its zoning. Reynolds fears that new development threatens open space, and advocates that the city of Atlanta and surrounding counties use conservation easements to prevent encroaching development.

But, he is heartened by the political support behind local and urban farming: “When I first started working on farms, to think that the mayor of Atlanta would say how important agriculture or local food is to the city... I just would’ve never thought that [could happen].”

In 2010, Atlanta Mayor Kasim Reed announced the Power to Change plan, a sustainability plan for the city that includes a goal to bring local food within ten minutes of 75 percent of all city residents by 2020.²²⁹ And in 2015, Mayor Reed hired the city’s first Urban Agriculture Director, Mario Cambardella, who is charged with making accessible local food a reality.

Though Love Is Love Farm at Gaia Gardens is outside of Atlanta’s jurisdiction, this positive political influence is stretching beyond the city limits. Cambardella is developing land use policies through which landowners



Spring fava beans blossom in the Love Is Love Farm high tunnel in mid-February, months before field crops emerge.

228 Draft Zoning Code. (2015, January). DeKalb County. Retrieved from <http://planningdekalb.net/wp-content/uploads/2015/01/finalDraftZoningCodeJan20151.pdf>

229 About the Office of Sustainability. (n.d.). City of Atlanta Mayor’s Office. Retrieved from <http://www.atlantaga.gov/index.aspx?page=153>

can receive tax incentives for hosting an urban farm for ten years. He has also compromised with the city's water authority to change water meters on vacant residential lots to irrigation meters, eliminating stormwater and sewage fees, for any registered community garden or farm that applies. Such policies, if adopted across the Atlanta metro region, could usher in many new community gardens and urban farms.

Assets and Challenges

Love Is Love Farm has grown and thrived, in large part, because of the East Lake Commons HOA commitment to incorporating a farm in their co-housing development via Gaia Gardens. The HOA does not pay Reynolds a salary, and all money he earns through the farm belongs to his business, which is central to Gaia Gardens purpose: provide a farmer with the land and tools to make a sustainable livelihood.

"[The homeowners] worked hard to make sure that both parties are really comfortable. And you won't find that sort of agreement [with other landlords]," says Reynolds.

Reynolds points out that the HOA also benefits. Beyond access to fresh produce and a beautiful natural environment to enjoy, the \$3,700 annual farm budget from HOA dues is likely far less than the HOA would have to pay a gardener or landscaper to maintain a nonproductive space. And the farmer and residents mutually benefit from a sense of community and respect.

Though access to Gaia Gardens is the biggest current asset to the Love Is Love Farm's viability, the arrangement does have some drawbacks. Reynolds does not own land or any of the infrastructure at Gaia Gardens, and he agreed to leave his hoop house should he ever stop farming there.

His agreement with the HOA also limits how much land he can bring into production. Homeowners value wooded and open spaces for recreation, says Reynolds, and he cannot likely grow Love Is Love's footprint beyond its current 1.5 acres. This limits business growth, the ability to retain employees as inflation pushes up labor costs, and how much Reynolds can pay himself. Though he pays himself a salary, he recognizes that Winfrey, his wife who left farming to work with a start-up business, will continue to make double his salary despite his long hours.

"We're at that scale where everything has to count," he says. "If we can't get the tractor in the field, maybe we can do something else, but we're a little too big to do it all by hand and a little too small to say, 'Wet fields are inconsequential.'"

Human-created environmental impacts are also a challenge. "I spend a lot of time thinking about gas stations or dry cleaners, or being next to residentially dense areas," Reynolds admits. Several years ago, an underground gas storage tank was uncapped, polluting the stormwater catchment pond and requiring serious remediation. Urban farms are by nature very vulnerable to what goes on in the surrounding neighborhood, says Reynolds, whether social or environmental.

Should he decide to move Love Is Love Farm away from Gaia Gardens, Reynolds says he sees far more opportunities than ever before that would not require that he start from scratch. The farm has primarily acted as an incubator, says Reynolds, as young farmers have launched their businesses and then moved on, though he believes the HOA's original intent was to find a farmer to use the land for his or her entire career.

While he plans to continue to farm at Gaia Gardens, he says his brain works differently now and he still thinks of creative ways to grow Love Is Love. Reynolds is not as worried about the next shape Love Is Love Farm takes, as he sees new possibilities for land tenure abound, so long as he is flexible enough to realize them.

Promise of Urban Agriculture

By incorporating UA into urban design, Reynolds hopes cities will become more accountable for the way policies impact the environment. "Thoughtful design can reap pretty large rewards," he says, and sees East Lake Commons and Gaia Gardens as a leading example of how communities can support UA.

He hopes that growing food in a population-dense area can make cities consider appropriate land use in a different way. An environment fit to support urban farming should be the standard, not the exception. If an area is environmentally unsafe for growing food because of water or air pollutants, can a municipality really claim to promote sustainable land use?

Reynolds thinks that Love Is Love at East Lake Commons' Gaia Gardens can prove that thoughtful land use can include thriving agriculture. "Most of our victories have been through winning people over with the farm's inherent beauty," says Reynolds. And he is much more powerful protecting that beauty, and productivity, with his CSA members, his customers, and the entire community of East Lake Commons behind him.

Springdale Farm, Austin, TX

Multiple Business Ventures Support Farm's Growth

Themes: Land access, Urban ag policy, SNAP/double-up programs, On-farm events, Multi-farm efforts, Provides education and training, Livestock.

History

Glenn and Paula Foore bought a five-acre tract of commercially-zoned land two miles from downtown Austin in 1992 to house their landscaping business, Texas Trees and Landscapes. The land, which came with a low interest rate and a requirement that they hire low-income employees, was part of Austin's Economic Redevelopment Program designed to bring new businesses to the economically depressed east side of the city.

For 15 years, the Foores operated a successful landscaping business as the Austin housing market grew, and then bubbled. In 2007, as the housing market crashed and the country began to slip into recession, says Glenn, his customer base began shrinking, as did his interest in landscaping.

"He just wasn't fulfilled anymore planning St. Augustine lawns," remembers Paula.

"I almost talked myself out of jobs," Glenn adds.

Eager to keep their six employees on full-time payroll, they began to think about how they could activate their own five acres. "We'd always had a good play-around garden, half an acre-ish, and we could share food with our neighbors," says Glenn, who has a horticulture degree from Texas A&M.

Though Paula realized it would take "quite a few bunches of greens" to support the property, the business, and their employees, in 2008 they shifted their focus to growing and selling food. At the time there were three other urban farms in East Austin taking advantage of the former floodplain's alluvial soil, inexpensive (at the time) land prices, and an eight-year-old zoning revision that permitted urban farms. The Foores built relationships with these farmers and grew into the three acres of production that is now Springdale Farm.

As the farms grew, opposition to the farms also grew, and in 2012 came to a head when HausBar Farm, less than a quarter-mile from Springdale Farm, caused a literal stink



Hours, prices, and goods for sale are written on the blackboard wall inside Springdale Farm's main building, which serves as a storefront, staff kitchen, and an office for the farm and its caterer partner.

in the neighborhood when its black soldier fly compost system malfunctioned. Thus began over three years of protests, planning commission meetings, and public debate over whether urban farms should continue to be legal in Austin.

Arguments against urban farming included everything from noise and odors to race and gentrification. Opponents were few but vocal and politically influential, and it took three years for the Foores to reestablish Springdale Farm under the new zoning code that resulted from the fracas.

In 2016, with the legality to farm and hold events reestablished, the Foores wonder what lies ahead for Springdale Farm.

Community Description

Race and racial tensions characterize the evolution of the area east of Interstate 35 known as East Austin. Austin legally segregated African Americans from whites and Hispanics in its 1928 master plan that identified East Austin as the "Negro district."²³⁰ As Austin closed segregated

230 Clarksville, TX. (n.d.). *Texas State Historical Association* website. Retrieved from <https://www.tshaonline.org/handbook/online/articles/hpc01>

schools and stopped providing services to African Americans in other parts of the city, African Americans moved to East Austin.²³¹ Home-based businesses sprouted up next to formal ones while the city neglected to enforce zoning codes in the area.²³²

Austin has experienced rapid growth since its founding, with its population doubling roughly every 25 years.²³³ Its most recent migratory influx, fueled largely by Austin-housed tech companies that are one of the city's economic engines, saw a concurrent and dramatic increase in white non-Hispanic residents in East Austin.^{234, 235, 236} Enclaves of hip restaurants and shops catered to younger white residents, while middle-class black residents have moved out of East Austin to better school districts beyond city limits.²³⁷

According to the 2014 American Community Survey, 53 percent of residents identify as Hispanic or Latino in the 78702 zip code, down from nearly 68 percent in 2011. In the same area, 30 percent identify as non-Hispanic or Latino White (up from 7.5 percent in 2000), and around 16 percent identify as non-Hispanic or Latino Black or African-American (down from 24 percent in 2000).^{238, 239, 240}

This demographic and economic shift characterizes the gentrification of East Austin.²⁴¹ Some residents saw white-owned urban farms—made possible, in part, by the low



Paula Foore looks at the farm's spring greens.

cost of residential properties in what was a low-resource area, and existing zoning that made urban farms legal—as a catalyst for gentrification.

When a foul odor began emanating from HausBar Farm, neighborhood activists rallied against it and three other farms within one-quarter mile, including Springdale. Led by People Organized in the Defense of Earth and her Resources (PODER), an environmental activist group with a majority Chicana/o staff and board working on behalf of communities of color, UA opponents cited historically racist zoning policies, the decreasing stock of affordable

231 For a map of racially-motivated planning policies, see History of Austin's racial divide in maps. (n.d.). *Austin American-Statesman*. Retrieved from <http://projects.statesman.com/news/economic-mobility/>

232 For a rich description of this period see, Hill, S. (2016, June 3). The Empty Stairs: The Lost History of East Austin. *Urban Renewal Trumps Historic Preservation*. Retrieved from www.gato-docs.its.txstate.edu

233 City of Austin. (2009, December 11). Demographic and Housing Trends. In *Community Inventory Report*. Retrieved from ftp://ftp.ci.austin.tx.us/GIS-Data/planning/compplan/community_inventory_Demographcs_v1.pdf

234 Tang, E. and Ren, C. (2014). Outlier: The case of Austin's declining African-American population. *The Institute for Urban Policy Research and Analysis, University of Texas at Austin*. Retrieved from http://www.utexas.edu/cola/iupra/_files/pdf/Austin%20AA%20pop%20policy%20brief_FINAL.pdf

235 Top ten demographic trends in Austin, TX. (2016). City of Austin Planning and Zoning Department. Retrieved from <http://www.austintexas.gov/page/top-ten-demographic-trends-austin-texas>

236 Petrilli, M.J. (2012, June 14). The 50 zip codes with the largest growth in white population share, 2000-2010. *Thomas B. Fordham Institute*. Retrieved from <http://edexcellence.net/commentary/education-gadfly-daily/flypaper/2012/the-50-zip-codes-with-the-largest-growth-in-white-population-share.html>

237 Top ten trends (2016).

238 Selby, W.G. (2013, October 30). Austin's 78702 may have surged in white residents, but it's not second in the nation in gentrification. *PolitiFact*. Retrieved from <http://www.politifact.com/texas/statements/2013/oct/30/daniel-llanes/austins-78702-has-gentrified-its-not-no-2-gentrifi/>

239 U.S. Census 2000

240 ACS 5-year 2014; *Ibid*.

241 Selby (2013).

housing, environmental concerns, and traffic congestion as reasons to ban urban farms. But, the racial undertones causing these deep divisions were also clear: one PODER representative declared “the whole urban farm movement is generally a white movement.”^{242, 243}

Farm Description

The Fooses cultivate approximately three acres of their five-acre commercially zoned parcel. Their house is also on-site, as well as storage for equipment used for landscaping and farming. The property is registered as agricultural for tax purposes, less one-half acre for the house. A creek bisects the property and causes the only gap in its perimeter fencing.

Visitors parking includes ADA parking spaces as required by the conditional use permit they needed to continue to farm after the zoning was changed in 2013. A one-story building just off the parking lot hosts the farm stand on Wednesdays and Saturdays, as well as offices, and a small kitchen. Other buildings include toolsheds and a large walk-in cooler. One unique asset is a mobile kitchen trailer for Eden East, a farm-to-table prix fixe restaurant by Chef Sonya Coté, who has rented space for the trailer and collaborated with Springdale Farm since 2013.



Beyond the gate is the trailer and picnic area where Eden East hosts dozens of guests for dinners and special events.

Additional infrastructure for the farm includes hand tools, a tractor and two 30x100' high tunnels, which the Fooses used when the landscaping business was more robust. Today, one high tunnel grows crops and the other acts as a greenhouse for seedlings and winter crops. The Fooses have never had to fire their 250k BTU heater in their greenhouse: heat mats and extra lights do the job.

As he did as a landscaper, Glenn hard-pipes irrigation underground and uses volume-controlled emitters spaced one foot apart, which run off their own well. The farm landscaping itself is pristine: manicured entryway, well-kept lawn and pathways, and tools and compost strategically hidden by fences and ornamentals. Glenn says his landscaping background helps keep the farm looking good for them, their staff, visitors, and neighbors.

Production Practices

Austin's year-round growing climate allows the Fooses to grow at least 75 different varieties of vegetables, fruit and herbs at Springdale, as well as raise chickens and ducks for eggs and keep bees for honey. They say Glenn's horticulture background was good preparation for growing a wide variety of produce. In 2015, they grew and sold approximately 38,000 lbs of produce.

In 2015, Springdale received a grant from the Austin Food & Wine Alliance to subsidize growing experimental crops for area chefs. Their trials included luffa gourds: they sold young luffa as a zucchini substitute to chefs, and let others mature to dry into luffa sponges which they sell at their farm stand. Paula is working on an all-natural soap line to sell with the luffas as a value-added product.

Glenn says they are trying to reduce tilling and do as much crop rotation as they can on their three acres. The year-round harvest season means they don't often plant cover crops, though they do add compost each time they prepare the soil for a new planting.

Springdale Farm is not certified organic, though they use organic practices and invite anyone to visit their farm on Wednesdays and Saturdays during market hours. “Our deal is, come and see [the farm],” says Glenn. “The chefs wonder why we would need to [be certified organic]. Well, we want to be the best. [But] they say, ‘Well, it looks like you're already there now.’”

242 Toon, A. (2013, April 12). Communication Breakdown. *The Austin Chronicle*. Retrieved from <http://www.austinchronicle.com/food/2013-04-12/communication-breakdown/>

243 The public dispute over East Austin farms' rights to farm and other issues cited by the opposition are too complex to thoroughly discuss herein. We attempt only to highlight the issues that impact the viability of Springdale Farm. More thorough reporting of the issue can be found in *The Austin Statesman*, *The Austin Chronicle*, and other local publications.



Springdale Farm has fostered relationships between local food and farm businesses, and proudly acts as a connector.

Business Structure

Springdale Farm is “Doing Business As” (DBA) the Foore’s original landscaping S-corp, Texas Trees and Landscapes, which is still in business. Paula says the move from landscaping to farming was not difficult on the business administration side, though she says, “I haven’t read a novel since we started farming. Just research and development.”

But, even with their agriculture exemption on property taxes, their profit margins were much better in landscaping. Their taxes on 4.5 acres of agricultural land were about \$17,000 in 2015. They also pay stormwater tax for the footprint of their land, but no sewer tax on irrigation, which is drawn from the well.

At the end of 2014, they launched a nonprofit, Springdale Center for Urban Agriculture, to separate their educational activities from production. It is the nonprofit world, says Paula, that is much different from anything she and Glenn have ever done. They updated their general farm insurance policy at the beginning of 2015 to cover the increasing number of school groups and children touring the farm, which they hope to subsidize through grants to the nonprofit.

Marketing and Sales

The Foore’s launched Springdale Farm in the shadow of two well-known urban farms less than a quarter-mile away: Boggy Creek Farm, founded in 1992 and serving Austin-area chefs; and Rain Lily Farm, founded in 2000 and launching pad for the proprietor’s second business, Farmhouse Delivery, a local food home delivery service.

Glenn and Paula saw the farms as allies, not competitors. They remember talking with Carol Ann Sayle of Boggy Creek about scheduling their farm stand on different days than hers out of respect for her clientele. Paula remembers that Sayle, rather than feel threatened by the Foore’s farm stand, encouraged them to have it on the same day to make the East Side of Austin a destination.

“That’s kind of the spirit that’s around our four little urban farms,” says Glenn. Whether Rain Lily needs fennel for deliveries, or HausBar needs eggs for a hosted brunch, the farms act more as collaborators than competitors.

Springdale and Boggy Creek’s coordinated farm stand days have succeeded in making East Austin a destination for chefs. Both farms operate first-come-first-served, rarely taking preorders or letting a single chef take all of any single product. Most chefs go to both farms, creating a chef community on Wednesday and Saturday mornings at the Springdale.

The chefs themselves have helped to grow Springdale’s business. The Foore’s fondly remember the farm’s early days when one chef who, upon hearing they had thousands of pounds of unsold tomatoes, immediately started texting colleagues. “Within a half hour, all those tomatoes were sold. That was our first foray into this food community,” says Paula.

Springdale offers chefs a ten percent discount, which while Paula admits is not much, business is still booming: the farm supplied produce to 50 restaurants in 2015. She remembers Sayle advising them early on, to know their costs and not sell themselves short. “We are really conscious of our pricing here, we don’t want to be undercutting [the other farms],” says Paula, though they price competitively and do not try to be the most expensive farm in the area.

The farm stand is open to the public, too, and customers often chat with chefs about how to prepare produce. The farm now accepts credit cards, and because of the credit card reader’s transaction tracking, they can see that at least 30 percent of customers each week are first-time shoppers. It is a sign that their customer base is growing.

Springdale Farm worked with the Sustainable Food Center (SFC), an Austin nonprofit that builds community capacity to strengthen the local food system, to begin accepting SNAP benefits. SFC secured city funding to help underwrite a dollar-for-dollar matching program (up to \$30 per person) to extend SNAP, WIC and FMNP benefits. SFC also helps farms like Springdale navigate the USDA system and get free wireless EBT terminals. The Foore’s haven’t yet received many SNAP-benefit sales, but planned a farm

open-house for the neighborhood to advertise that they accept SNAP. In the three census tracts within one mile of the farm, approximately 1,200 households, or 28 percent of total households, received SNAP benefits in 2014, the most recent year for which Census estimates are available.²⁴⁴

Besides open houses and the advertising from being listed on chefs' menus, Springdale Farm markets itself through Facebook and Instagram. Paula and Glenn, both in their fifties, barely used Facebook and had never used Twitter or Instagram before they started farming. But, after seeing new people come to the farm because of a picture of their tomatoes posted to Twitter, they took to it immediately. Now, says Paula, her pictures of produce artfully displayed on Instagram are the availability list for chefs.



Austin's Springdale Farm sign.

Employees

Springdale Farm/Texas Trees and Landscapes has six full-time, year-round employees who work on both the farm and its landscaping maintenance contracts. Often two employees work on the farm, and the other four help only when there is a big job, like installing infrastructure or harvesting sweet potatoes.

The Economic Redevelopment Program through which the Foores originally bought their land in 1992 required that they hire people from the neighborhood to ensure the business's economic benefits stay in the neighborhood. All six employees, live nearby, and some have been with the Foores for over a decade.

Paula says hiring people from the neighborhood is the ethical thing to do, and the loyalty between the Foores and their employees is one of the reasons they started farming: to keep their people employed. And while Paula and Glenn were doing battle with the planning commission and city agencies, "our wonderful crew picked up our slack for sure," says Paula.

Both Foores do a bit of everything to keep the farm going, including production, sales, education, and outreach. They also invite volunteers to help out at the farm stand, restocking and cashing out purchases. The Foores and employees are the only production-tasked people at Springdale.

Other Activities/Services

The Foores have been pleasantly surprised by how much interest people have in Springdale Farm, and many of their non-farming activities have evolved from the expressed interest of outsiders.

During a fundraising event to help launch the farm in 2009, a volunteer approached the Foores and asked if she could get married at the farm. Thus began their wedding and event business; since then they have hosted dozens of weddings, private dinners and other functions on the farm.

"It takes a special person that wants to get married [here]," says Paula. "The compost pile is right behind the wedding tree [where ceremonies take place]. But, people wanted to come! People never wanted to come when we were a landscaping business."

Other groups started coming to visit, too: school and university classes, visiting officials, and people interested in starting their own gardens and farms. The Foores say it feels like a civic duty, as an urban farm, to make themselves available to give tours and answer questions, despite that it takes time away from production.

244 U.S. Census ACS 2014, census tracts 8.01, 9.02, 21.11.

Paula is adamant: “If we’re as passionate as we are about [farming], then we have to catch these kids” and teach them about growing and eating healthy food. The combined sense of duty and business sense led them to launch the Springdale Center for Urban Agriculture. Their goal is to build a curriculum to use with schools and support farm visits for children from low-resource families through grant funding.

Springdale charges visiting school classes a per-student sliding scale between \$0-20 for a visit that includes a farm tour, different activity stations, and an opportunity to dig in the dirt. This last portion, says Paula, is still evolving—separating production from young people eager to pull carrots out of the ground is difficult.

She is hoping to get funding through the nonprofit to support their educational work. As of February 2016, the Springdale Center had yet to receive funding, due in part, Paula suspects, to resource competition with other land and farm based education centers. She hopes to use funding to work on curricula with an education professional.

The capstone event of each season that combines education, farming and food is the East Austin Urban Farm Tour. Organized by Springdale and the three other nearby urban farms, the guided tour gives the community an opportunity to get to know the farms and farmers, and share a meal prepared by local chefs. The fundraiser benefits the Farm and Ranch Freedom Alliance, a national independent advocacy organization for farmers and ranchers, and has started selling out every year.

Interest continues to grow, but as the Fooses look back over the past several years of turmoil, they recognize that peoples’ desire to be on the farm is largely why the farm has survived. “If that girl hadn’t asked if she could get married here,” says Glenn, “and we said we don’t really do weddings, but we’ll try one... we’d be out of here. This land would probably be developed.”

Support

Chefs and customers eagerly supported Springdale Farm when its right to farm and hold events was called into question. After HausBar’s compost system went awry, all four farms in the neighborhood were targeted by PODER and a few activist politicians that identified urban farms as the catalyst for the gentrification of East Austin.

Andrew Smiley, Deputy Director of SFC, which helped Springdale accept SNAP, says that, while careful not to engage in the fray around race and class differences, his organization supported urban farms like Springdale because of what they could do—offer accessible, fresh, healthy food. Besides being part of the larger local food economy, that is providing jobs and healthy food, he says, these urban farms were a small part of the “shifting sands neighborhoods” of East Austin and could not be proven to drive up property values with so many other factors at play.

Over the multi-year ordeal, the Fooses invited and gave tours to nearly every commissioner in two city council cycles, planning commissioners, and county legislators (who determined whether Springdale Farm qualified for an agricultural tax exemption—it did), trying to convince them of urban farming’s legitimacy. It even continued to host out-of-town visitors for tours and events at the request of other city agencies eager to show how urban farms contribute to Austin.

Glenn says that, for most people, once people came to the farm, they understood it. “We challenged [officials] straight on up,” says Glenn. “Come on out, get out of your cubicle, come to the farm. If we’re not legit, we’ll back off.”

“We got pretty good at it,” he continues. “[Some officials] would say, ‘who’s running y’all’s PR campaign? We’ve never seen a grassroots thing like this. We’ve never seen handwritten letters [of support].’ But, it’s us and our people. That’s our thing. Everybody’s writing their own letter and telling you how they feel, not a form letter. We had a lot of support.”



Springdale Farm keeps its outbuildings and grounds tidy as it often serves as a wedding venue and outdoor restaurant.

Policies Impacting Success

Before the 2013 and 2014 zoning changes that followed the public debate spurred by PODER, urban farms were approved uses in most zoning districts, including all residential districts. Raising small animals including chickens and ducks was allowable, as was animal slaughter (with a limit on number of animals per day), and onsite sales.

But, some activities were oddly illegal. The Foores remember the first day a local baker, who bakes in a commercial kitchen, brought her pies to the farm stand to sell. The city health department arrived 20 minutes later after reading a tweet about the pies and forced their removal because Springdale does not have a commercial kitchen, even though the pies were baked, packed, and labeled by another legal operation.

The 2013 ordinance revisions loosened some rules—sales of value-added products produced off-site are legal if they account for less than 20 percent of retail space—and tightened others, including banning animal slaughter in residential zones and limiting events on residentially-zoned farms to six per year.

Springdale, the only commercially-zoned farm in Austin, still faced challenges after new zoning measures were passed. By 2013, a large part of its business relied on events—it could not survive on six per year. The city said the Foores must get a conditional use permit. In so doing, they discovered the property was in an outdoor entertainment overlay district that prevents landowners from holding spectator events including music festivals, formula one races, and, incongruously, weddings.

A new wave of anti-farm activism began, focusing on Springdale's events and Eden East's presence on the farm, which account for at about 25 percent of the farm's total revenue. Banning events, which the council did briefly, would force the farm to close.

It took another year of council meetings, letter writing, and rallying advocates before Springdale Farm negotiated a change to the overlay and received its conditional use permit. The agreement limits it to 20 events per year and being closed by 9:00pm on Fridays—a condition, says Glenn, that was a demand from a hold-out councilmember who was a critical vote to passing the regulations.

The Foores say that while the city seemed to try to understand what they needed to survive, some requirements of their conditional use permit were onerous. "We are probably the only farm you're going to come across in America that has illuminated exit signs that glow in the dark in case anyone should get caught on the farm in a fire," laughs Glenn.

At the beginning of 2016, with three years of opposition and zoning changes behind them, the Foores estimate they have spent upward of \$80,000 for the right to farm as they had farmed prior to 2012.

"I thought we'd plant a seed and it'd be a quiet thing," says Paula, "But it was public and political."

We are probably the only farm you're going to come across in America that has illuminated exit signs that glow in the dark in case anyone should get caught on the farm in a fire.

Assets and Challenges

The Foores are heartened by their victories, but are no less secure in their future. "Just as we got our revenue increasing and things starting to go good, we got into this fight and every nickel went that direction," says Glenn "We just finished this \$30,000 parking lot project, and we're wondering 'Can we make it? Can we get our head above water?'"

They attribute much of the farm's success to its location. They say rural farmers visiting Springdale marvel that their urban operation brings people to the farm in a way a rural farm never could. The proximity to downtown Austin also helps maintain strong relationships with chefs, who the Foores say are some of their biggest advocates and advertisers.

The Foores plan to capitalize on these assets to grow and sustain the business. They are eager to find an employee to help with fundraising for the nonprofit and further develop its education program, which will subsidize the time spent on education rather than producing on the farm.

Another area they want to expand is value-added production and adult-classes, made possible by installing a commercial kitchen. From preparing high-end ingredients with their own produce to hosting and teaching food preservation classes, they hope Springdale will become a place for adults to learn as well as shop.

These multiple revenue streams which make Springdale viable are challenging to manage. "I don't know if we're the poster child" for urban farming, says Paula, "because this place seems very unique to me. The location is good, it's beautiful, we still have a maintenance business, we can have a food truck at the front and rent that space, we can have events here. But like my mother says, it's like holding three basketballs under water."

Promise of Urban Agriculture

Springdale Farm is unique in its set of activities, but not in its reliance on multiple revenue streams. Paula looks at the neighboring urban farms and sees each relying on other revenue streams to keep farming in Austin: Boggy Creek has 20 acres in a rural county, Rain Lily has its distribution business, and HausBar has a bed and breakfast and off-farm income.

“I’m concerned that people are learning more about [urban farming], and think it sounds cool, it’s a pretty hip thing to talk about, but the economics are bad,” says Glenn. He says it is a dark joke not too far from truth among the East Austin farmers when they tell one another they’ve only lost \$5,000 in the past month.

Even as they look toward retirement, the Foores insist that healing the wounds in the community and expanding their business are a far better option than selling their property to would-be buyers who knock at their door.

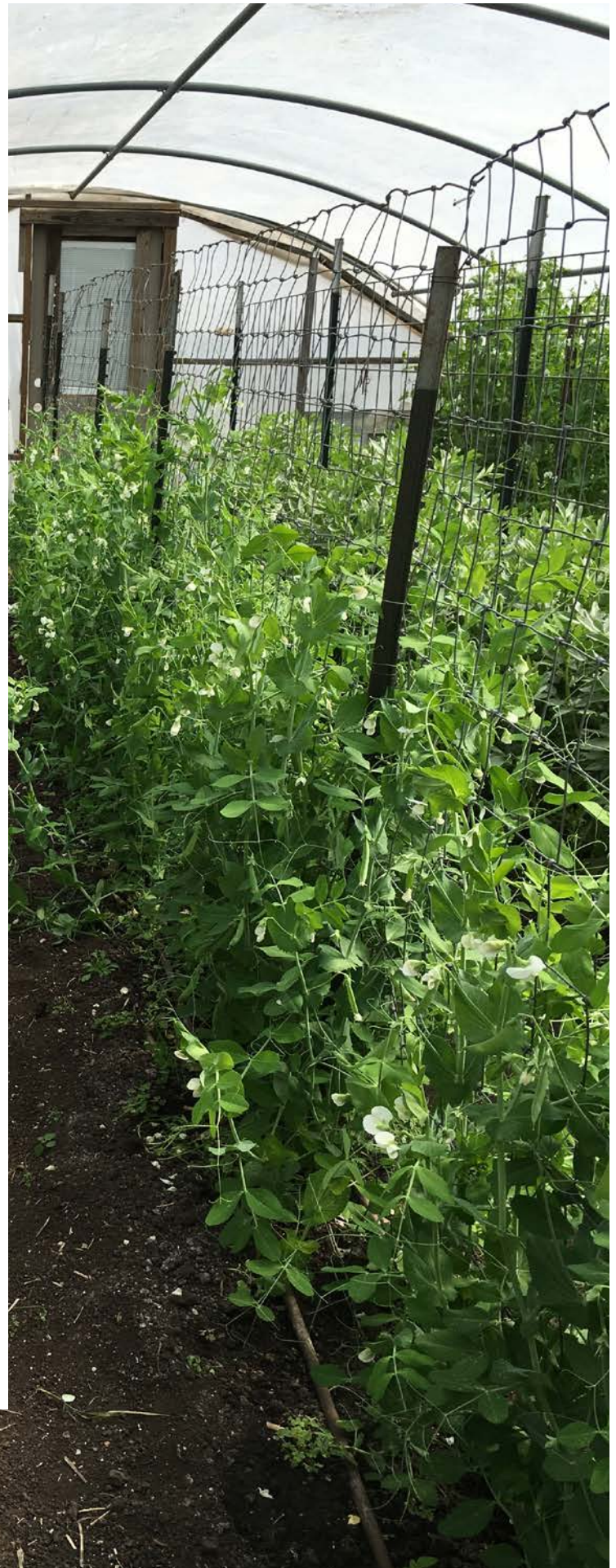
“We tried to figure out how it got so heated,” says Paula of the protests against the East Austin urban farms. “People look at white people farming in black communities, and it looks bad. I don’t want it to be that way.”

“Gentrification is real,” she continues, but wishes the community could remember back to 1992 when they bought the property and hired people from the neighborhood. If Springdale had lost its zoning battle and been forced to close, says Paula, unless a PODER supporter had purchased the land it would have likely become dense condominiums inaccessible to low- and middle-income residents.

“The farm is so beautiful, and we want people to feel welcome here,” says Paula, hoping it can be a platform for community healing.

“We’re not done with this yet,” says Paula, “The people we touch, the good we do. And now we’ve launched the soap business! I mean, we’re just not done yet!”

NOTE: While the farm is going stronger than ever, Paula and Glenn will be retiring in August of 2018 for personal family and health reasons. Another local urban farmer will be assuming leadership for the farm.



Brooklyn Grange, Brooklyn and Queens, NY

Intensive Roof Top Farm Managed for Profit per Square Foot

Themes: Land access, Full-time owners, On-farm events, Provides education and training.

History

Ben Flanner, 36, the president and farmer of Brooklyn Grange (the Grange), is an industrial engineer by training. After college, he found himself working at desk jobs crunching numbers, building databases, and conducting cost-based analyses of large businesses. While working at a consulting company, he spent four months with the company in Australia conducting business analysis for a winery and became fascinated with the agricultural side of the numbers he had gotten good at crunching. “I wanted to move more, and was always fascinated with agriculture,” says Ben. “I thought I could do a pretty good job with it.”

Flanner had no agricultural experience, but started connecting with other New Yorkers whose expertise meshed with his vision: a farm on a roof. In 2009, he co-founded Eagle Street Rooftop Farm in Brooklyn’s Greenpoint neighborhood with Annie Novak, Manager of the Edible Academy at the New York Botanical Garden and longtime local farm and food advocate, in partnership with green roofing company Goode Green and building-owner Broadway Stages, which agreed to use of its rooftop.

Throughout 2009, Flanner met likeminded people who also dreamed of farming on the roofs of the city. He left Eagle Street late in the 2009 season and, with four others who shared his vision for a new rooftop farm, incorporated as Brooklyn Grange.

Community Description

Brooklyn Grange started not in Brooklyn, but in an industrial and railroad corridor dividing the neighborhoods of Long Island City and Sunnyside in Queens, NY.



Brooklyn Grange’s roof top farm at the Navy Yard.

The mixed commercial-industrial strip of Northern Boulevard has remained relatively stable while these two neighborhoods have experienced rapid gentrification over the past decade.²⁴⁵

Five miles south, Brooklyn Grange’s second site sits atop Building #3 at the Brooklyn Navy Yard on Flushing Avenue in Brooklyn. The city-owned former navy shipyard on the East River has been reinvented as a modern manufacturing complex, where traditional fabrication and distribution companies neighbor movie production studios, artists, craftspeople, and a coffee roaster.

Like Long Island City, this area saw a several-decades decline that has made a rapid turn in recent years. With the reemergence of small manufacturing in the Navy Yard has come a housing boom along Flushing Avenue: developers have quickly constructed both income-restricted and market-rate condominiums, with some fetching prices nearing two million dollars.²⁴⁶

245 For documentation and commentary, see Malone, N. (2013, July 8). Sushi, Muffins, and Hipsters. *New Republic*. Retrieved from <https://newrepublic.com/article/113759/new-york-times-gentrification-guide>, Goldschein, E. (2011, November 10). Gentrification can’t come fast enough for the new residents of Queens. *Business Insider*. Retrieved from <http://www.businessinsider.com/gentrification-cant-come-fast-enough-for-the-new-residents-of-queens-2011-11>, and Abt Associates. (2015, May 21). The effects of neighborhood change on New York City Housing Authority Residents. Retrieved from http://www.nyc.gov/html/ceo/downloads/pdf/nns_15.pdf

246 Hughes, C.J. (2015, October 30). Reinventing the Brooklyn Navy Yard. *New York Times*. Retrieved from http://www.nytimes.com/2015/11/01/real-estate/reinventing-the-brooklyn-navy-yard.html?_r=0

Farm Description

Flanner and his partners secured a ten-year lease for the Queens site, its first, at the beginning of 2010. The negotiation was made more appealing to the building owners by the New York City Green Roof Tax Credit (see Policies Impacting Success). The team fundraised the \$200,000 to purchase materials to start the farm, and in the spring of 2010 began bringing soil and compost onto the roof and commenced planting on nearly one acre of space.

Two years later, they secured the second site in the Brooklyn Navy Yard. Atop the 11-story 'Building #3' at the Navy Yard, the Grange has 1.5 total acres of growing space, more than doubling its original capacity. The founders negotiated a 20-year lease with the nonprofit Brooklyn Navy Yard Development Corporation, which oversees the complex. This time, the deal was secured when the Grange and the Development Corporation co-applied for and received a New York City Department of Environmental Protection Green Infrastructure Grant of nearly \$600,000. Each entity kicked in \$100,000 to complete the \$800,000 farm installation. The Navy Yard's support and NYC DEP funding were essential for Brooklyn Grange's expansion to a second site.

Both roofs feature 42" exterior walls and are interrupted by exhaust outlets, elevator equipment encasements, and other roof structures typical of industrial buildings. The remainder, which Flanner estimates is a bit more than two acres, is prepared with several membrane layers meant to protect and waterproof the roof and provide drainage. Using cranes and blower tubes, they installed Rooflite, a green roof growing medium that is lighter than typical soil. After years of yield assessment, the Brooklyn site has been more productive on a square-foot basis than the Queens site, for many reasons, though in part, because they worked with the Rooflite company to come up with a more vigorous agricultural mix.

The Brooklyn site has a freight elevator that goes to the roof, while the Queens site has a roof-access passenger elevator and a top-floor freight elevator. Both farms have wash-stations and CoolBot-powered cold storage: 4x8' in Queens, and half of an 8x20' shipping container in Brooklyn. The Brooklyn site has a second shipping container that has been retrofitted as an office, as well as an outdoor kitchen that is used for workshops, events, and staff cooking. They also have an office on the 11th floor of their Navy Yard building. There are two greenhouses in Brooklyn and another in Queens, each around 12x32'.

The Grange pays for electric (for its small office and Coolbot) at both sites, and water at its Brooklyn site only. It is looking into large-scale rain-catchment systems that could feed irrigation lines and other innovations to reduce its need for piped water; New York City water for irrigation can be a large expense for Brooklyn Grange.

Production Practices

Flanner can say with confidence which of the farms performs better on a square-foot basis because the Grange's production practices are rooted in knowledge of each crop's impact per square foot. "We list our crops in a spreadsheet, and look at different sales channels—CSA, Market—the area it occupies, and get a metric of dollars per square foot. To do it as accurately as possible, we incorporate a unit of time. We look at [costs] in terms of square-foot per season, but it is hard to get [an exact estimate] per unit of time."

This is some of the same analysis Flanner performed in his previous career, but with farming he sees the nuance that dollars-per-square-foot doesn't capture. "Certain things, like ground cherries, have a high value per square foot, but they're not scalable," Flanner says. The Grange focuses many dozens of crops with different yields, but puts an emphasis on high-value crops like salad mixes, leafy greens, edible flowers, specialty peppers, and tomatoes.

Microgreens are grown for restaurants year-round in the greenhouses, with production slowing in order to accommodate the start of the outdoor planting season in mid-April. The main outdoor harvest season is from May through November. The farms use a combination of drip irrigation and low-set 'wobbler' type sprinklers to minimize irrigation water lost to the winds that perpetually blow off the East River.

Because of the shallow depth of the growing medium (12"), most work is done with hand tools. The farm harvests its salad greens with knives and a Farmer's Friend baby leaf harvester.

"But there's a certain pride in growing some calorie crops versus just garnishes," says Flanner, who wrestles with the rooftops' soil depth, drainage, and the high costs of production to both earn a profit and be as accessible as possible for the outer-borough communities in which it farms. "Garnishes are not feeding people in the same way. I don't think I'd still be doing this if all we did was grow garnishes," says Flanner.

The type of crop analysis Flanner conducts to make cropping plans from year to year has been crucial to Brooklyn Grange's success. Flanner oversees production on both farms, though each has a separate farm manager and different, but complementary, annual crop plans based on each farm's unique environment and soil conditions. According to Flanner, when discounting for the huge capital expense in getting the Brooklyn farm up and running, the Grange began to be net positive in 2012.

"The truth is the numbers don't lie. You can use them to help guide your decisions: what to plant this season, or what to focus on today. Time is always limited."

These numbers result from activity-based cost accounting, the method Flanner uses to calculate net dollars-per-square foot, which includes depreciation, amortization, and allocation of resources like compost, water, and electricity.

A wider variety of crops in small quantities do appear. "It's for our CSA, farmers market, and our general ethics and philosophy, we want diversity on the farm," he says. While they have mostly stopped growing deep-feeding brassicas like broccoli and cabbage, there is still an emphasis on variety: "When there's more variety, [there can be] less risk," says Flanner, referring to pests, crop failure, and even Brooklyn Grange's diverse revenue streams (see Other Activities/Services).

"At beginning, everyone wanted us to grow different stuff, but we'd grow it, do the numbers, and [realize we should've] said no. Now I have an intuition about what's going to be good. If we're 90 percent sure it's not going to work we say no." Brooklyn Grange doesn't require contracts to grow for restaurants, so rather than waste time and space, and risk disappointing customers with no or unpredictable harvests, Flanner says they would rather experiment on their own and offer options to chefs. Instead, the farm maintains the flexibility to grow what sells well and works with trusted customers, who share that flexibility to incorporate Brooklyn Grange's produce into their menus or on their shelves.

The farm uses organic practices but is not certified. They are working on a Food Safety plan, GAP, and HACCP plan, which will be helpful for future growth and events at the farms. Restaurant clients are not particularly concerned with food safety certifications or labels—knowing the farmer and the social cachet of purchasing high quality products from an urban rooftop farm are enough to make sales.

Business Structure

Year-to-year cropping plans and analyses are more influential than each farm's pre-launch business plan, which Flanner says the team still looks at occasionally. The plan was always to be a for-profit farm, but since the beginning, the founders recognized that education would be part of their mission, particularly involvement with K-12 schools.

In 2011, Brooklyn Grange splintered off its youth education functions to support the founding of City Growers, an independent 501(c)3 that runs hands-on educational programming for inner-city students. Since its founding, more than 20,000 children have visited Brooklyn Grange, where City Growers rents plots for educational purposes, for field trips, multi-visit workshops, and afterschool programming.

"There's only so much you can focus on," says Flanner regarding youth education at Brooklyn Grange. "If we had set up an education focused arm of the Grange, how would the financials look, who would run it, and where would the passion come from? Better to have a separate partner organization that has the passion and primary mission, and work together as partners in the same space." Instead, Brooklyn Grange has remained focused on their mission of profitable farm production.



Flavorful shushito peppers growing on the roof.

Marketing and Sales

Brooklyn Grange has three main marketing channels for its crops: a farm stand on Saturdays at its Queens location, a booth at the McGolrick Park Farmers Market in Greenpoint, Brooklyn, and direct wholesale to restaurants and small groceries, which are the majority of its sales.

The farm stand is also an opportunity for people to visit the Queens farm, while the farmers' market stand is the Grange's opportunity to be out in its community, sharing the work it does. It also hosted a few U-Pick events in 2016, as a similar community outreach measure.

The CSA, which runs for 24 weeks and has in the past swelled to more than 70 members, was cut back to 55 members in 2016 in order to improve the quality and shift more produce to lucrative restaurant sales. The shift makes it easier to execute the CSA and keep quality higher for all sales channels. Small adjustments among sales channels happen every year to help the farm stay efficient.

Brooklyn Grange has had a restaurant presence since its founding, aided by Flanner's experience and connections – some going back from working with Eagle Street Farm, and even older. Direct wholesale became more efficient and made its trajectory clear as the farm's bread-and-butter, when one of Flanner's partners took on sales as a nearly full-time endeavor in 2013. That consistency meant more standing orders and someone ready to take a call from a chef at any time.

The Grange owns a gutted minivan used for Tuesday restaurant deliveries in Brooklyn. For nearly three years, it worked with a small local distributor to do Friday deliveries in Brooklyn and Manhattan deliveries both days. But, when the distributor closed its doors in summer of 2016, the Grange went back to doing its own deliveries again—a move it had avoided because it does not own a refrigerated van. Maintaining high product quality with proper post-harvest handling is particularly important for working with chefs, says Flanner, who have high standards for their ingredients.

"Chefs are challenging because you can miss an order just by missing one phone call," says Flanner. "They're cooking, they get 15 minutes to do the ordering, and if you don't answer they might go on to the next option. They also text you at midnight. It's exhausting for farmers to keep up with sales in this manner. Chefs and other customers can make orders to most large distributors, sometimes past midnight, and the product will be at their before noon the next day."



Mixed lettuce greens being grown in a special soil mix suited to rooftop farming.

But, chefs are also a consistent, year-round market. Farmers markets typically fetch a higher price, but require more labor and have more variables affecting sales.

"If you looked at it financially, you'd say, 'Maybe we should drop the farmers market,' but it's crucial to everything we do: have that variety there and our prices are totally fair. And, people can interact with us. And, being there and meeting people leads to other opportunities. Plus, it's fun (but tiring). It's a balancing act between a philosophy and having to make it work financially."

"You may get pushed toward [growing] more expensive, high-end [products], but at the same time we're [thinking] about how to keep this approachable," says Flanner. Though it prices its produce competitive with other farmers market stands, its executive team is conscious that the farm has a reputation for being out-of-reach for many low-income or low-access Brooklynites.

Despite its deep thinking regarding its production and sales philosophy, Brooklyn Grange does not spend much extra time, beyond direct-sales interactions, on marketing: "We focus on marketing events and workshops and installations of other farms more, because the vegetables don't really need it as much right now," says Flanner. "We focus [marketing] efforts primarily on things that can grow." [See, Other Activities/Services]. "But of course we try to post frequent engaging photos of our harvests, farm crew at work, farm stands, and urban ecosystem up at the farm."

Facebook and Instagram are its main marketing tools. Though Flanner can't quantify the value of a good Facebook account, he does believe there is some value to it, including perceived legitimacy from a customer perspective, contributing to its name recognition. In years past, the Grange had goals for Facebook followers (it has over 15,000 "likes" as of May 2016), and has recently come to appreciate the power of Instagram (over 30,000 followers).

"I've had random people in Soho tell me they follow our Instagram when I was shopping for shoelaces and showed them my card," says Flanner, "It's a pretty powerful tool. We don't really have a specific message on social media—it's mostly just branding, engagement, and only a message if we have one or are helping someone else spread the word about something." A dedicated staff member tends social media, and posts are meant to draw people in and be interesting and fun.

Employees

Brooklyn Grange has twelve full-time year-round employees, including Flanner and three other original founders. There are also over a dozen part-time seasonal employees, who work in farming, events, and offsite installations and maintenance.

Flanner says the founders weren't specifically friends prior to launch, which they've agreed was good luck for business: "We have respect for each other, can have business conversations and be frank with each other, which might [be] more challenging if you're also best friends." Today co-founder and Vice President Anastasia Cole Plakias heads up communication and events, and co-founder and Chief Operating Officer Gwen Schantz leads external projects including rooftop garden installation and consulting, as well as many facilities improvements.

The Grange has also taken on part-time apprentices enrolled in Farm School NYC, a UA education and certificated program housed within Just Food NYC. Some Brooklyn Grange apprentices have gone on to start their own farms in both urban and rural areas.

Other Activities/Services

While Brooklyn Grange is a production farm, it does a lot more than just production. "At any given moment, you go up there and it's kind of great, like a zoo: kids group on one end, harvest on another end, there might be a tour, there could be a photoshoot happening, and we may be setting up for an evening event."

As the farm-to-table movement has taken Metropolis by storm, there is an increasing demand from urbanites who want to experience a farm without leaving the city—with a great view, to boot. Events like farm dinners and weddings have grown to become a key component part of the overall business. Flanner says that doing these types of events regularly, and having the staff and infrastructure to do so, is what makes them a good business financially. They also hosted between eight and ten weddings in 2016. The events are an important stabilizing revenue stream with healthy margins, plus deposits often come in during the winter months when cash flow is tight.

The Grange also hosts many workshops and educational events, including adult-education workshops. Backyard gardening, mushroom cultivation, starting a small business, and more have been subjects of workshops taught by Grange staff or outside instructors. "We're pretty generous with sharing of pay with instructors and some material costs," says Flanner. Because of their high overhead and limited upside, however, these events are not critical to the bottom line. Still, workshops, like events and photoshoots are excellent tools for community engagement and marketing.

The Grange achieves direct community engagement through partnerships with other organizations, such as City Growers and the Refugee Immigrant Fund, as well as the farm's own programs aimed at creating access points as diverse as the populations it serves. It also offers three different types of tour opportunities. The farm hosts an open house every Saturday, in season, which is free and



Farming on a roof includes working around building infrastructure.

open to the public. Ticketed, public tours are offered four times per week for ten dollars per person, and private tours for groups of up to 25 attendees range from \$175 to \$500 for one to two hours.

“We consciously decided that’s what the {tours} are worth, and should cost,” says Flanner. “The tours are critical to our mission, but they decrease what we can accomplish in a day, and we take pride in following through with promises to our team, fixing things promptly, and supporting each other with tasks.” The Grange priced the tours based on the value of their institutional knowledge, which they share during the visits in keeping with their philosophy that an industry as nascent as UA requires open discourse and shared information to evolve.

Regularly found on the roofs are one of several groups who rent space from the Grange. City Growers rents plots for its workshops and demonstrations, as do small composting and flower-growing start-ups. Flanner calculates the rental costs based on his average per-square-foot revenue from the previous year; as their production becomes more efficient, the rental price rises with it.

“Rentals are based on opportunity cost,” he says. “What revenue would we make otherwise? What else would we do with the space? That makes it fair.”

Installation of rooftop gardens on other buildings “fell into our lap in 2012,” says Flanner. The West Village Italian restaurant Rosemary’s wanted a farm on their roof to supply the restaurant. Since then, COO Gwen Schantz has led installations as well as maintenance contracts for rooftop farms, green roofs, and some potted vegetable gardens at residences and restaurants. The revenue from installation and maintenance has been a large area of growth for the company, and constitutes a substantial part of the Grange’s total revenue.

The Grange also received a SARE Sustainable Community Innovation Project grant in 2013 to pilot a composting facility serving the Navy Yard. The \$14,900 grant helped to pay for infrastructure, coordination, and staff time to operate a ground-level container-based composting facility. Navy Yard neighbor, Kings County Distilling, and nearby Brooklyn Roasting Company brought their spent

grain and coffee grounds, respectively. While the pilot produced good compost, Flanner says the operation was not sustainable at its small scale: “If you’re paying someone \$15/hr to turn it manually, the price per yard is probably at least \$400 or \$500.” Both farms make compost from organic waste produced on the roof, and have other sources for good compost at a reasonable price when it is needed.

Support

Though Flanner did not have any agricultural training before leaving his desk job to start Eagle Street Farm, and then the Grange, he says that his previous career “crunching numbers, building databases, making slides showing growth trends and how to cut costs” “helped a lot.” The information that helped him start and expand farming operations came from “books, conferences, instincts, and lots of mistakes.”

In addition to the NYC DEP grant, financial support came from selling equity, holding fundraising events at restaurants and galleries, a Kickstarter, and private loans. The Grange raised \$200,000 to launch its first farm in 2010 and another \$160,000 in 2012 for expansion.

Policies Impacting Success

The first Brooklyn Grange site launched with help from a creative funding source: the New York City Green Roof Tax Abatement program. When the program launched in 2008, it allowed a one-year tax abatement of \$4.50 per square foot up to \$100,000 or the total tax liability of the building, whatever is less.^{247,248} The Grange’s landlords in Queens were able to take advantage of that tax abatement after installation in 2010.

Green roofs and rooftop production can improve local stormwater management. The NYC DEP Green Infrastructure Grant program, which awarded nearly \$592,730 to the Brooklyn Navy Yard Development Corporation in its first round of granting in 2011, is designed to incentivize private property owners in combined sewer areas to divert at least one inch of rainwater from their impervious surfaces. DEP provides the funds to design and construct the green infrastructure

247 Green Roof Tax Abatement. (n.d.). New York City Mayor’s Office of Sustainability. Retrieved from <http://www.nyc.gov/html/gbee/html/incentives/roof.shtml>

248 New York State, which grants the authority to New York City to offer property tax abatements, expanded and extended the program in 2014, increasing the per square foot abatement to \$5.23 up to \$200,000. See: New York Real Property Tax Law § 499-bbb. Real property tax abatement, retrieved at <http://codes.findlaw.com/ny/real-property-tax-law/rpt-sect-499-bbb.html>

For history of the bill, see Crauderueff, R., Dalski, E., and Margolis, S. The New York City Green Roof Tax Abatement Policy Lessons. Retrieved from http://swimmablenyc.info/wp-content/uploads/2013/01/SWIM-Green-Roof-Assessment_paper.pdf

system, which can include an agricultural component. The Brooklyn Navy Yard Development Corporation has a goal of making the site “the greenest industrial park in the country,” and had the goal of managing over one million gallons of stormwater per year, partly facilitated through the Grange project.²⁴⁹

While Flanner points to these two policies as key to the Grange’s success, he has developed a deeper relationship with rural farmers and would like to see policies that benefit them as well. While he sees new large urban farming operations, like Aerofarms in Newark, NJ, as a potential benefit to a struggling city, he recognizes “rural economies are also struggling all over New York State, all over every state. We need to look after cities because we know they’re going to continue to grow, and they’re crucial to our future, but also we don’t want to forget about rural economies.”

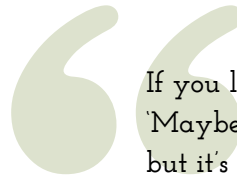
Assets and Challenges

Forward-thinking landlords, long-term leases (10 and 20 years), and buildings built for both snow-load and access (passenger and freight elevators) are some of Brooklyn Grange’s most crucial assets, says Flanner. While it was challenging to find a building of the right size with these assets, he suspects “it would be difficult to get a 20-year lease at ground level anywhere in the five boroughs of New York City.” The lease for the Queens site has been renewed until 2024. Brooklyn Grange will also launch its third site in 2017 in the Sunset Park neighborhood of Brooklyn.

The added asset of the tax abatement, stormwater management grant, and support from landlords allowed Brooklyn Grange to hit firm financial footing more quickly, says Flanner. The Navy Yard’s willingness to contribute to the cost of installation also helped the Grange reach a financially-stable scale with less debt and investor equity.

Expansion has its challenges, especially for a farm with so many activities happening simultaneously. Flanner says the leadership team is figuring out how to grow the different revenue streams of the business—production, sales, events, consulting, education—at the same time and in the right proportions to balance goals with time. Meanwhile, he sees staff retention as crucial, especially as he and his team are getting older: “we’re not all in our 20s, as we were at the beginning; people are having kids and want

free time. And you want to reward people with raises—it might not be much, but it has to be something. We have young, ambitious, talented people, and keeping everyone incentivized and excited to stick around is important.”



If you looked at it financially, you’d say, ‘Maybe we should drop the farmers market,’ but it’s crucial to everything we do people can interact with us, and being there and meeting people leads to other opportunities... It’s a balancing act between a philosophy and having to make it work financially.

Promise of Urban Agriculture

Flanner is realistic about the power of UA, and of larger institutions to support it. “I am a big believer in urban agriculture, and we have been very grateful for the advice and support from agencies and institutions. But, if institutions like USDA and American Farmland Trust want to support urban agriculture, we [need to be clear] on goals, especially if it’s not always a workable urban agriculture business model.”

He also recognizes that the Grange business model, while profitable, is “fun and challenging and focused on high quality, it’s not feeding the city. The scale is not there.” But, just because Brooklyn Grange cannot be everything to everyone doesn’t mean it isn’t making an impact: “We’ll see what kind of legacy it has. These are tiny bites at change for society, but it’s certainly helping make change.”

“I consider it a blessing to do these things, which are mostly rural activities and extremely exciting to me, and to do them in a place that I love.” says Flanner. “We’re proud of what we’ve accomplished in seven seasons farming on New York City’s rooftops, but we have a lot of progress to make. We hope to contribute our findings in areas such as nutrient management and water savings towards the larger community of agrarians both urban and rural. We will continue to strive to engage more community members through programming and events, and adding green space to New York and other cities around the world. We can help to change the way urbanites think about food and farming, and make positive changes to how cities are developed and designed in the future.”

249 Sklerov, F. and Saucier, M. (2011, June 9). DEP Awards \$3.8 million in grants for community-based green infrastructure program projects. *New York City Department of Environmental Protection*. Retrieved from http://www.nyc.gov/html/dep/html/press_releases/11-46pr.shtml#VOMS25MrKRt

Mellowfields Urban Farm, Lawrence, KS

Incubating a Business to Eventually Scale up on Rural Land

Themes: Land access, Urban ag policy, Full-time owners, SNAP/Double-up programs, Multi-farm efforts, Provides education and training, Incubator farm trainee.

History

When Jessi Asmussen and Kevin Prather moved to Lawrence, KS, in 2005, the decision was not farm-based. Asmussen, the daughter of a row crop and small grain farmer in South Dakota, and Texas-native Prather met in college. They spent time after college falling in love with their big vegetable garden near Asmussen's hometown. Itching for a new environment, they moved south to Lawrence with vague ideas of pursuing their interests for growing food.

While the couple got "day-jobs"—Prather a public school history teacher, Asmussen in social work—they continued to dream of their own farm. Prather got a seasonal job at Wakarusa Valley Farm outside of Lawrence, and that farmer helped Asmussen get an internship with another farm in the same organic CSA cooperative. "I loved it, and learned a lot," says Asmussen.

The following season Asmussen was accepted into the Growing Growers program,²⁵⁰ a farmer apprenticeship and training program offered by Kansas and Missouri extension, land grant universities, and farmer advocacy organizations. For one season, her on-farm work was complemented by the program's workshops and internships. "I was immersed in it," Asmussen recalls, "I felt like I had the tools to do something."

After the program, and while Prather was teaching full-time and Asmussen took on more non-farm work, they continued to grow produce in their 1/3 acre backyard—far more than they could eat. They started a friends-only CSA in 2007, and began leasing land elsewhere to grow their burgeoning business. Mellowfields Farm was born.

By 2009 the couple was ready to open their CSA to a wider audience. Asmussen had quit her job and started farming full-time. As the business continued to grow, they rented more land, and for three seasons were farming on up to five different plots spread throughout Lawrence.



Jessi Asmussen and Kevin Prather stand one of the several greenhouses they will co-operate as an indoor farm and seedstarting business in addition to their 3-acre farm nearby. The building is a former nursery and also offers an opportunity for a permanent retail outlet.

Tired of the commute between farms and eager to find a place of their own, the couple applied to the City of Lawrence's brand-new Common Ground program in 2012, a community garden and farm incubator program utilizing city-owned vacant land to grow food. Their application was accepted, and they started growing on two acres at the incubator farm just a three-minute drive from their house, where they still farm.

In 2016, Asmussen, Prather and their four-year-old son, Elliot were preparing to grow on three acres in their first year as a certified organic farm. But, there are more ways to grow, they say, whether or not they stay "urban."

Community Description

Lawrence, KS, about thirty miles west of Kansas City, KS, is a college town most notable as the home of University of Kansas (KU) and in 2012 had a full-time population of around 90,000 plus a student body of just over 23,000.

250 Growing Growers. <http://www.growinggrowers.org/about.html>

Common Ground

The City of Lawrence's Common Ground program has made land available to dozens of community gardens and urban farms on ten sites, including a community orchard and cooperatively-managed permaculture garden. In return for land access, farmers and gardeners create a Community Benefit Plan, which can include activities that give back to the community such as donating produce to a local food bank and hosting workshops to build skills. In 2015, its 186 gardeners and farmers donated 1,900 lbs of produce, valued at \$54,300.

According to a study by the City of Lawrence, nearly 75 percent of the population has earned an associate's degree or higher, with 23 percent holding an advanced or professional degree.²⁵¹

The North Lawrence neighborhood where Asmussen and Prather live is cut off from the rest of the city by the Kansas River. Their half-acre property is twice the size of most others in this residential neighborhood, and ideal for their home farm site.

The Common Ground site, just up an old commercial strip at the intersection of two major roads, is five acres of river bottom land at the edge of a floodplain, and held by the city as overflow space for the neighboring cemetery. "When you're out there it feels pretty rural," says Asmussen of the city-annexed area: just beyond the site are fields of corn and row crops for miles.

Lawrence's proximity to rural land and their strong local food movement can make for a welcoming but competitive market, Prather says. "There's a lot of demand, but there's also a lot of supply. [When you hear of farms] where there's a lot of demand but not much supply, they can have a 250 member CSA. We can't get that because there are so many CSAs in this small town, the demand is saturated." Yet, it is this dedication and enthusiasm that lead the city to launch Common Ground and other programs to support local food and farmers.

Farm Description

Asmussen and Prather cultivate approximately 1/3 acre at their home. They built a 25x55' high tunnel, which they use for season extension. They also built a 6x12' cedar-sided walk-in cooler that can be moved on skids. The cooler is next to their outdoor washing and packing area. In addition to some row crops, which are covered with low tunnels at cooler parts of the year, they have planted perennial berry bushes and plan to do more perennials in the future.

The couple shuttles tools between their home farm and the Common Ground Incubator Farm just over a mile away. Common Ground is designed to incubate commercial farm businesses by offering them land and water access to expand their production. The flat five-acre site borders a floodplain and features Class I soils.

Mellowfields started with one acre at Common Ground in 2013, added a second acre in 2014, and was given access to a third acre after another incubatee left. Two other commercial production farms at Common Ground cultivate the remaining 1.6 acres at the incubator. A city-subsidized water hook-up and water meter were installed at the front of the property. The three farmers share via spigots along the alleyways for crop irrigation and split the water costs.

Asmussen and Prather bought a 37hp Kubota tractor to work their new land, as well as disc, single-bottom plow, middle buster, cultivator, Brush Hog, flame weeder and a handmade bed shaper Prather fashioned from an old cultivator. They store their implements in a garage shared with the other farmers at the front of the property. Prather built a tiller from the base of an old cultivator to start establishing permanent beds. The area is open with no tree-breaks, resulting in winds that can blow off cold-season row covers. The couple uses drip irrigation at both farms.

The Common Ground program offers the farmers three-year rolling leases for one dollar per acre per year. Currently, the rolling lease means that if the City asks them to leave, they can still finish out the season and the two following before relocating. This, rather than formal education or provision of professional services, is the way the City incubates the farms, allowing them to grow their businesses without the ambiguity of a year-to-year lease. While the three-year limit has not been strictly enforced in the past, this may change in the near future as the City considers the best ways to support new farmers at Common Ground.

251 City of Lawrence. (2013, November). Local Economic Profile. Retrieved from http://lawrenceks.org/assets/ecodev/Final--Economic_Profile_Report.pdf

Production Practices

Mellowfields offers 30-40 different crops throughout the season to supply their CSA and farmers market stand. In their first few seasons at the incubator farm, they were able to grow all they needed for both markets on two acres and planted the remaining acre in “placeholder crops” like corn and winter squash to keep the space in production without intensive labor.

Asmussen says that will change in 2016 as demand has increased (see Marketing and Sales). Gone are the placeholders to make way for high-value small crops like salad greens, which can be planted in rapid succession. Innovative growing strategies, like the use of stale seedbeds and flame weeding to control weeds, have helped decrease labor costs. Prather says they have honed their production and products to what they know they grow well and can sell, and have let go of novelty vegetables with less marketability.

2016 is also the first year that Mellowfields operates as a certified organic farm, which the couple has been transitioning to since their first season in 2013. “I don’t think [organic] certification has as many barriers as people think it does,” says Asmussen. “Once we actually went through the process it was easier than we thought.” She said the certification has taught them to keep better records and laughs saying, “but we have had people telling us since the beginning that we have to keep records.”

Business Structure

Asmussen is the sole proprietor of Mellowfields Urban Farm. “Kevin [Prather] is my volunteer,” she jokes, though both work the farm full-time and their household draws from the farm’s profits. The decision was based on ease of tax filing, and has not inhibited them from growing the business.

Asmussen developed a business plan through a small farm business planning course taught through the Kauffman Foundation in Kansas City, MO, which offers grants and programming to foster entrepreneurship.²⁵² She said the business plan resulting from that course, as well as the production and marketing plans she developed while enrolled in Growing Growers, prepared them to apply for the Common Ground program.



Jessi Asmussen and Kevin Prather built a two-zone walk-in refrigerator at their home. The unit is built on pallets and can be moved by forklift.

“We had a lot of things going that made us stand out” among applicants, says Asmussen. The farm had a growing market base, and Asmussen was one of the founders of the community-based Lawrence Food Garden Tour, a volunteer-run self-guided annual tour of personal and public gardens.

The farm also had to submit a Community Benefit Plan to meet Common Ground’s Community Benefit Agreement requirement. Their plan includes volunteer and education opportunities at the farm for new farmers, commitment to provide assistance with farm-to-school efforts to two local elementary and middle schools, and produce donations to Just Food. Asmussen says that donations make up a small portion of their total product and they have enough unsold produce to meet the agreement.

Marketing and Sales

There are many farmers in and outside of Lawrence working for a piece of the city’s enthusiasm for locally-grown food, and Asmussen and Prather have worked hard to stand out. Asmussen credits her husband’s “high aesthetic standards” for much of their success at Lawrence’s Saturday farmers market.

“Jessi [Asmussen] did a nice job giving us the right materials—tablecloths and baskets—to make [the market table] look nice, then it’s my job to lay it all out on Saturday and do the merchandising. I’m pretty uptight about how it looks,” Prather admits.

252 Ewing Marion Kauffman Foundation. <http://www.kauffman.org/who-we-are>

“That’s been part of how we’ve been able to compete in a pretty tight market,” he continues. “Lawrence isn’t big, and there are already quite a few vegetable growers. But, the way we’ve been able to get our foothold is standing out from the others aesthetically. We set a high price, but we make it look like it’s the best that’s available.”

Pricing, Asmussen says, is informally determined at the farmers market. “There’s an understanding among vendors that we don’t want to undercut—we all know how much work it takes. As a community of vendors, we’re always trying to see what we can get for it. We do not want to take advantage of customers! So we ask one another, ‘What’s the price of spinach this year?’”

Still there is competition among the vendors. Together with Jill Elmers, owner of Moon on the Meadow Farm at the edge of Lawrence, they’ve coined it “cooperatition.” Prather says some farmers at the market resent Mellowfields’ no-cost land access, but he sees it as an opportunity to scale up their systems and marketing, similar to many of the next-generation farmers at market who inherited land.

The Lawrence Farmers Market accepts SNAP and participates in the Double Up Food Bucks program through Heartland Collaborative, a double-dollar program for SNAP customers.²⁵³ In a stroke of luck, Mellowfields’ booth is the nearest to where customers get their Market Match tokens, and while Mellowfields’ prices are higher than many other farms at the market, says Asmussen, they get a lot of token-based sales.

Their higher prices at market covered their costs while transitioning to organic, and Prather suspects organic certification will open the doors to more robust wholesale accounts. Mellowfields sells to the Merc Co-op in Lawrence, which was eager to buy more variety and in greater quantities as certification grew nearer.

Organic certification was spurred, in part, by an opportunity to join Common Harvest CSA, the only all-organic CSA in the Lawrence area. Five area organic farms, including Mellowfields, grow produce for the 200+ member CSA. This will represent a significant portion of Mellowfields’ production starting in 2016. Asmussen says they will shrink their own CSA, which had 40 members in 2015, but because of the strong relationships with members couldn’t think of giving it up completely.

When Asmussen and Prather launched their CSA in 2009, they traded a share to a designer who created the Mellowfields logo and a flyer for advertising. “It’s the fanciest thing we’ve ever had,” reminisces Prather. Since then, they have grown the CSA through farmers market interactions.

That branding carries through to their Facebook page, Instagram account, and website, which they update frequently. “I’m not really convinced that Instagram or Facebook lead to more sales,” says Asmussen, “but maybe there’s some education happening, and engagement with the public that have to be somewhat beneficial.”

“It solidifies the community,” agrees Prather. “It doesn’t necessarily grow it a whole lot, but it reminds people of us. And they get to feel more part of the farm. If they scroll through their feed, they may think of us.”

But Asmussen says they are not out to make farming always look pretty and easy. “The trend with social media, or just how humans are, is that we highlight the positives. I think a goal [of our social media presence] would be to be honest.”

Employees

In addition to their own full-time labor, Asmussen and Prather hire two part-time employees to work with them throughout the season. The two new crew worked with the couple at the start of the 2015 season, and the quality of their labor inspired the couple to give them a one dollar per hour raise within their first month.

The two employees are coming back in 2016, and have been given another raise to \$11 an hour. “They’re so worth it,” Asmussen says, “We felt like we could afford [to pay their employees more] to avoid having to train someone over and possibly risk getting a dud or someone we couldn’t rely on.”

Prather adds, “[Their new raise] pretty much eats up any of the profit that we make with their help, but we found that with their help, our stress level goes way down.” Adding labor allows the couple to focus on improving their crop selection, production and handling systems, and marketing, all to boost income.

“Eventually we’ll be able to grow to the point where we’ll still be paying \$11 an hour and make more profit,” Asmussen says.

253 Douglas County previously ran a highly successful double-dollar program called Market Match. Based on its success, it collaborated with Fair Food Network, the Mid-American Regional Council, and other partners to launch the regional program. According to Helen Schnoes, Sustainability and Food Systems Planner for Douglas County, the collaborative includes Cultivate Kansas City whose double-dollar program, Beans & Greens, similarly has been folded into the Double Up Food Bucks Heartland Collaborative (<http://www.doubleupheartland.org/>.)

Mellowfields offers one day a week for volunteers to come to the farm. Regular volunteers will text whether they are coming and Asmussen and Prather make a plan for their help. While volunteers are not as efficient or reliable as paid employees, they say, working alongside people interested in farming is a chance to interact with others.

“And make friends!” cries Prather. “It’s hard to make friends. We need an opportunity to hang out with people.”

Other Activities/Services

Though farming and raising a family takes up a lot of their time, Asmussen and Prather are active in the local food scene beyond their work at Mellowfields. Asmussen co-founded the Lawrence Food Garden Tour, which has led seven successful tours. She also worked with the Sunrise Project, a local nonprofit organization focused on social justice through food and environment, to launch an annual plant sale.

Prather and Asmussen have taught classes at The Merc Co-op as well. They see these one-off paid classes, with themes like “prepping your garden for spring,” as an additional marketing opportunity for their produce in the store.

Prather is currently on the board of the Sunrise Project, and says the experience has been valuable for its connection to the community and for expanding their professional circle. While Asmussen would like to lessen her time volunteering, she agrees with Prather that it builds Mellowfields’ reputation and helps market their brand.

Support

Asmussen credits her farm internship, along with the Growing Growers program and the Kauffman Foundation’s business planning course as instrumental to Mellowfields’ growth. But, those were facilitated in part by the strong community of farmers in Lawrence.

Mark Lumpe’s Wakarusa Valley Farm, Prather’s first farm employer and where the couple once rented land, has been an informal incubator to several newer farmers in the Lawrence area. Elmers got her start there, as did another farm member of Common Harvest CSA. “Probably to [Mark’s] chagrin,” laughs Prather. “[Mark] is not all that excited about growing the competition, but he’s done a lot to help people learn in their own way.”



The Merc Co-op sells produce from many local growers, including Mellowfields Urban Farm.

Another early Mellowfields supporter was Linda Cottin, who owns Cottin’s Hardware in Lawrence. Before buying their house, Asmussen and Prather lived near downtown Lawrence across the street from Cottin’s where they grew produce and distributed their CSA. When weather forced them to find an indoor space for CSA pick-up, Linda Cottin offered space in the hardware store. Customers liked the availability of fresh produce so much that Cottin decided to open her parking lot to start a weekly Thursday night farmers market. Cottin’s Hardware Farmers Market has grown to over 20 vendors, a local brewer, and live music since 2010.

“Having [Cottin as] a commercial neighbor helped with marketing,” Asmussen says, which, along with access to land and building relationships with neighbors, is one of the benefits of being urban.

Prather’s part-time winter job not only supports the family, but has grown its circle. He packs orders for Seeds From Italy, owned by Dan Nagangast and Lynn Byczynski, the founder and former publisher of the popular farmer newsletter “Growing for Market.” “They’ve been so encouraging and so willing to give their information and their resources,” he says, from giving away pallets to watering the transplants Mellowfield grew in their greenhouse.

Asmussen and Prather have not yet applied for grants. They are interested in getting an NRCS EQIP grant to build a larger high tunnel, but have held off because of space constraints and possible moves. “We’ve always been hesitant to invest in large structural stuff,” says Asmussen, as there is always a thought that larger acreage could be on the horizon.

The couple nearly purchased 80 acres with another farming couple, and was approved for a loan before they decided against it, as the farm was far from Lawrence. While they got assistance from family as the farm grew to scale, they have never taken out a loan or mortgage and, Asmussen says, they are reluctant to do so, “I think people who own 40 acres will tell you that having a loan on 40 acres isn’t necessarily something you strive to do.”

I think people who own 40 acres will tell you that having a loan on 40 acres isn’t necessarily something you strive to do.

Policies Impacting Success

Common Ground was one of the first programs to come out of a food system assessment initiated by the Douglas County Food Policy Council. A county-led initiative launched in 2010, it became a joint city-county advisory board in 2013 intended to address barriers to a “successful, sustainable local food system” in the county.²⁵⁴

Helen Schnoes, Food Systems Coordinator for Douglas County, says the Common Ground program intentionally did not set up many restrictions in order to encourage creative use of the spaces. Aside from the incubator farm, sites include several community gardens, a community orchard, and a demonstration permaculture garden.

“Agriculture has always been allowed in city code. Production of food is not something we’ve had to reinstate,” says Schnoes. While this has advantages, Schnoes, who is part of a team that worked on a new UA ordinance, says defining an urban farm in a rural county is difficult. She says the question they faced was “How do we recognize [urban farms] given that we are a city with a strong rural influence on its fringe?”

In May 2016, the Lawrence City Commission passed a UA text amendment to the city’s zoning code. Among other advances like the inclusion of bees and small livestock in residential areas, it defined an urban farm as “urban

agriculture that is operated for commercial purposes and is a larger scale than other forms of agriculture (home or community gardens, residential limits on numbers of animals).”²⁵⁵ Urban farms will need to apply to the planning commission for a special use permit, though urban farms existing before the amendment is adopted will be grandfathered in with an automatic special use permit.²⁵⁶

“Helen and Eileen [Horn, Sustainability Coordinator for the city and county] are extremely supportive. [What] they’ve worked on with Common Ground has created policy that has made it possible to farm the way that we have,” says Asmussen. But, she and Prather are skeptical whether a new UA ordinance will be helpful to their operations, though are happy it will galvanize support in the community.

Prather and Asmussen are disappointed that the zoning text amendment does not include a policy to subsidize water meters for agricultural use. “That was my biggest hope—that there’d be a way to incentivize additional [agriculture] meters or changing the metering for properties” that have farms, says Prather. They said the Lawrence-Douglas County Planning staff decided water-related programming was out of its purview.



A repurposed tiller becomes a homemade tiller at Mellowfields’ farm on land rented from the City of Lawrence.

254 Food Policy Council. Douglas County Kansas. <http://www.douglascountyks.org/fpc/who-we-are>

255 Miller, M. (2016, February 17). Memorandum City of Lawrence Douglas County Planning & Development Services. Retrieved from http://worldonline.media.clients.ellingtoncms.com/news/documents/2016/03/19/Urban_Ag_changes.pdf

256 *ibid.*

Asmussen thinks a handful of these types of policies could be helpful for urban farmers who want to grow their businesses, including subsidizing utilities for urban farms, or creating tax incentives to make property taxes more in line with rural land tax rates. She says she suspects she and Prather would have used other programs, like micro-loan programs for infrastructure, had they not had the capital to build their cooler and high tunnel.

Assets and Challenges

Asmussen says their best asset at the moment is access to the Common Ground land: “We have it good. So, it may make us spoiled. We don’t want to leave this good thing unless there’s something really good.”

Despite this expanded acreage, they still face space constraints at their house where the high tunnel, washing station, crops, and a personal flock of chickens all compete for space. Asmussen says their neighborhood is eclectic enough that all of this activity does not phase neighbors, but she knows that might not always be the case.

“This isn’t a permanent situation,” she says of working at Common Ground, “Our goal is to move to our own land.” But, she says waiting for the right farm to come on the market has been a challenge. “Soil and location. We’re looking to be close, and we’re not going to settle for second-class soil. The types of markets we do, we can’t be 60 miles from Lawrence, or even be 30 miles from Lawrence. Childcare, time and gas would eat it all up,” she says.

Time has been a challenge all along. “Having the time and energy to make creative markets,” says Asmussen, has been difficult, giving as an example the five years it took to get their organic certification that has now opened up many new market opportunities.

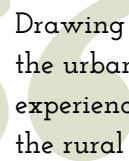
“But as an organic farmer, we are creating a wonderful soil. It takes years,” Asmussen says, and will be difficult to start over. They’ve struggled with many of these more permanent decisions: perennial crops, semi-permanent structures, a larger hoop house. “There’s a lot we would like to do [on the Common Ground] land but can’t do because it’s not ours, and it wouldn’t be worth it.” Still, she is willing to be patient for the right opportunity.

In the meantime, when difficulties from financing to childcare come up, Asmussen and Prather say they can still rely on their families to help. “They don’t totally understand what’s going on,” says Prather, but “they give a lot of encouragement.” Speaking of Asmussen’s farmer-father, Prather says, “He’s coming from a different kind of farming. He saw what we were doing as having a garden. I don’t think he understood that there’s a potential to make a living off it.”

Promise of Urban Agriculture

Asmussen jokes they can always drop the “Urban” from the farm’s name, but recognizes being in Lawrence benefits the business and their lifestyle. “I don’t know if Mellowfields will be IN the city. It depends on the land.”

But, she looks at herself and Prather as examples of how growing in urban areas can move young people into farming. “Drawing young people into farming in the urban setting, and as they gain more experience and passion, moving that into the rural realm could be a way to move people into agriculture in general,” she says. “You start small, and you move from the city to the country. I think it’s valid and so valuable.”



Drawing young people into farming in the urban setting, and as they gain more experience and passion, moving that into the rural realm could be a way to move people into agriculture in general.

NOTE: After several years of a nomadic farm existence, Mellowfields farm has now graduated to four acres on the outskirts of Lawrence, Kansas.

Green City Growers Cooperative, Cleveland, OH

Year Round Employment Through Hydroponic Lettuce

Themes: Land access, Full-time owners, Community revitalizing, Provides education and training, Signature Product – lettuce.

History

Looking over the hundreds of floating rafts upon which thousands of heads of lettuce are growing, it is hard to remember that Green City Growers is just one piece of an initiative to rebuild the greater University Circle area of Cleveland. Its hydroponic system grows lettuce and herbs, but the business is part of an effort to grow community wealth and the local economy.

Green City Growers is the third worker-owned cooperative incubated by Evergreen Cooperative Corporation (ECC), a 501(c)3 founded as part of the Cleveland Foundation's Greater University Circle Initiative (GUCI). GUCI was launched to address systemic inequities and disinvestment in some of Cleveland's poorest neighborhoods. Supported by some of Cleveland's largest anchor institutions, GUCI planned to tap into these institutions to spur new business development to serve institutional needs.

Founded as the Evergreen Cooperatives Initiative in 2008, before securing its nonprofit status as ECC, Evergreen was created with a mission to provide economic opportunities for residents and rebuild the local economy. Its cooperatives target residents of the surrounding low-income community to employ full time in living wage jobs and with no-cost health benefits. Its cooperative model also provides for wealth-building opportunities, as member-employees can buy ownership in the company and share in its profits. It is loosely modeled on the Mondragon Corporation cooperative model from Spain's Basque country, a federation of more than 250 cooperatively-managed businesses and ranked the best employer in Spain.²⁵⁷

Evergreen's first two cooperatives, Evergreen Laundry and Evergreen Energy Solutions (formerly known as Ohio Cooperative Solar), were opened in 2009 and 2010 respectively. Both social enterprises were designed to address needs presented by anchor institutions, particularly hospitals, which became core customers as the businesses expanded.



Green City Growers seeds and grows its greens in mobile rafts under a greenhouse structure. Rafts move down the 300 ft long pools as plants grow, and are harvested at the far end. Above, automatic shades extend and contract as sun intensity changes, keeping the light optimal for plant growth.

Similarly, Green City Growers was conceived to supply anchor institutions with fresh local greens year-round. It would be a more capital-intensive project than the first cooperatives, and Evergreen raised \$17 million in financing, largely low-interest loans. The funds helped identify developable parcels; relocate three families to new homes; purchase, assemble, and remediate the land into one 11-acre parcel; build its 5.35 acres production facility, which includes 3.25 acres of indoor plant growing space; and provide for some working capital.

Green City Growers officially opened for business in 2013. Its successful fundraising effort, strong support from politicians and media, and few significant operational hiccups as the facility came on-line were a strong start. However, sales-related difficulties, including market penetration and pricing, kept it from self-sustaining as early as Evergreen leaders had hoped. In 2016, it was moving closer to profitability, having learned some tough lessons about agriculture and community-focused business development along the way.

257 See Mondragon Corporation, <http://www.mondragon-corporation.com/eng/>

Community Description

The Green City Growers facility is located in the Central neighborhood, adjacent to Cleveland's University Circle. University Circle is home to many of the city's landmark educational, cultural, and healthcare institutions including Case Western Reserve University, the Cleveland Botanic Garden, and the Cleveland Clinic. Roughly, one out of eight full-time jobs in Cuyahoga County are at Greater University Circle anchor institutions.²⁵⁸

Though University Circle is an economic driver for greater Cleveland, the neighborhoods surrounding it, including Central, have seen decades of rapid decline and disinvestment. In the 1950s while manufacturing moved outside the city, jobs left the neighborhood, incomes shrank and the housing stock, already old, fell into disrepair.

Today the neighborhood experiences around 31 percent unemployment. More than half of all people live below the federal poverty line, with more than 70 percent of children under 18 living in poverty.²⁵⁹ The story is the same in the other neighborhoods bordering University Circle: the average household income in this area is \$18,500.²⁶⁰

About 87 percent of Central residents are African American; ten percent are white, and two percent identify as Latino. The Cleveland Foundation acknowledges that racial tensions in the neighborhood have existed for decades, fueled by unrest over poor living conditions and contentious relationships with law enforcement.²⁶¹ Evergreen Cooperatives chose to focus on the neighborhood to end the cycle of joblessness and poverty, and help restore community vitality and engagement.

Farm Description

Green City Growers (GCG) sits on ten acres of land purchased from the City of Cleveland at fair market value, over \$350,000, by the Evergreen Real Estate Corporation, a for-profit entity also under the ECC umbrella. The total facility is 5.35 acres, including the 3.25-acre glass greenhouse.

The greenhouse takes advantage of natural sunlight, supplementing with 1,200 thousand-watt light fixtures on cloudy days for consistent production. Its ceilings

have automatic retractable shade curtains that mute light too bright for the crops and reduce winter heat loss. There is also rooftop and side ventilation for airflow, which decreases disease pressure in the warm, humid environment.

Within the greenhouse, 13 330-foot hydroponic ponds are fed by filtered, oxygenated water with added nutrients to grow GCG's lettuces, herbs, and microgreens. Eighty percent of the water comes from rain run-off or snowmelt from the greenhouse roofs. At any given time close to one million gallons of water are circulating through the facility. Water, nutrients, energy and other operations are monitored and adjusted using systems from Priva, a Canadian controlled environment agriculture (CEA) systems manufacturer.

The seeding room, where plants are started before being transferred to the ponds, is adjacent to the large greenhouse. This is also where GCG experiments with new varieties of greens and tests alternative hydroponic and aeroponic growing methods to improve its own production strategies.

The GCG facility has a separate packing line in which staff cull, package, and box lettuce for wholesale and retail sales. A large walk-in cooler holds the day's yield, which is usually picked up by distributors or delivered in less than 24 hours.

Evergreen's CEO John McMicken and several other ECC staff have their offices at GCG. There are also staff breakrooms and lockers, and a large conference room where member-employees gather for meetings.

Production Practices

GCG grows a variety of lettuces and tender herbs, including butterhead, green leaf, red oak leaf, basil, and Cleveland Crisp, their trademark brand. Cleveland Crisp was developed by a Dutch company specializing in hydroponic greens, and is marketed as an iceberg-romaine cross excellent for salads and sandwiches.²⁶²

Greens are seeded in the seeding room, then once they have developed a true leaf is transplanted to a growing raft that can hold 36 plants. They are floated in the nutrient-dense water until they grow large enough to transplant

258 Glanville, J. (2013). Cleveland's Greater University Circle Initiative: Building a 21st century city through the power of anchor institution collaboration. The Cleveland Foundation.

259 American Community Survey 2014

260 Glanville (2013).

261 *Ibid.*

262 Chilcote, L. (2015, August 24). Green City Growers doubles sales in the past year. *Crain's Cleveland Business*. Retrieved from <http://www.crainscleveland.com/article/20150824/BLOGS16/150829915/green-city-growers-doubles-sales-in-the-past-year>

into a second raft of the same size, but with 12 spaces for plants, increasing their growing acre. Rafts are labeled in date-coded lots, so member-staff know the age of the plants and how close they are to harvest.

Time elapsed from seeding to harvest is about 40 days, though McMicken says that depending on changes made to production to meet future demand, the life cycle might be shortened. Each head of lettuce consumes approximately one gallon of water during its growing cycle. Rafts are harvested at one end of the ponds near the entrance to the packing line. Some lettuce is harvested with roots intact (aka “living lettuce”) and others without roots, depending on customer specifications. Heads weigh between seven and nine ounces.

Lettuce is sold in a 16-count box for wholesale, or in 12 individually-packed clamshells per case for retail sale. In May 2016, GCG produced 5,000 cases per week, which represents about 86 percent production capacity using current production methods.

GCG releases about 9,000 ladybugs each week to keep aphids and other common lettuce pests in check. Ventilation has also proven an issue, as the initial ventilation system did not move enough air to keep leaf tip burn and disease pressures at bay. In the spring and summer of 2016, it installed downdraft fans to increase ventilation to reduce these issues.



Green City Growers upholds high quality standards. These heads of lettuce have been deemed not appropriate for sale.

Business Structure

All Evergreen cooperatives have parallel business structures, and though they operate independently from one another they do share oversight from Evergreen. Each cooperative’s finances, business development, and human resources are managed by Evergreen Business Services, a separate LLC operating within ECC.

The reason for the strong ECC presence in GCG was a lesson learned from ECC’s first two cooperatives. Originally cooperatives ran their businesses independently, but faced difficulty when member-employees, many of whom lacked financial skills or management experience, were asked to make decisions beyond their capacity. Eventually, when the cooperatives are mature and member-employees have gained more skills and experience, business operations will be brought back in-house.²⁶³

Cooperative membership is similarly staged to meet the needs of Evergreen’s target population: residents of the GUC who are low-income, formerly incarcerated, refugees, new Americans, and/or other low-resource groups. Rather than a traditional buy-in model, in which members contribute money to become co-op members, cooperative member-employees build toward their own membership through work. If a person works for the co-op for one year, they can be voted into the co-op by other member-employees and receive a raise of one dollar per hour. Of that one dollar, \$0.50 pays for the member’s share via payroll deduction, until the member pays the share price of \$3,000.

Membership empowers member-employees to be part of group decision-making with other members and Evergreen staff, and gives access to a patronage equity account. The Evergreen goal is to have each equity account be worth \$65,000 in less than ten years, funded by company profits.

Though GCG had 17 member-employees as of September 2016, GCG had yet to become profitable. McMicken estimates GCG’s greenhouses must operate at 90 percent capacity to break even or start seeing a profit. As of September 2016, it was operating at about 86 percent capacity to match production to sales and market demand.

“[Our breakeven point is] a moving target because we haven’t needed to push [our production] yet,” says McMicken, who notes that tighter environmental controls over carbon dioxide, light, and heat could raise the facility’s productivity.

263 For an excellent summary, see Anderson, J. (2015). *Impact to Last: Lessons from the Front Lines of Social Enterprise: Evergreen Cooperatives*. REDF.org.

Despite that GCG is a controlled environment, its productivity slows in overcast conditions and in winter's deep chill. Heating and lights stave off sluggish growth, but the high cost of electricity keeps GCG far from profitable in cloudy or winter months. McMicken believes that lower electricity costs through negotiation with its utility company and retrofitting with LED lights for additional energy savings could improve profitability year-round.

Marketing and Sales

Another reason that GCG is hovering below profitability, says McMicken, is that its prices are lower than they should be for a high-end product like pesticide-free, just-picked living lettuce. Grocery stores retail a clamshell-packed head of living lettuce for about \$2.99, though during the early summer when Ohio and Michigan farmers harvest field lettuce the GCG retail price dropped to two clamshells for three dollars. Sales typically dip during field lettuce season.

McMicken says about 35 percent of the retail cost of a head of lettuce is packaging, but is an expense the cooperative cannot do without, to preserve the quality of the crop. Marc's Stores, a local grocery chain, was the first big retailer to start carrying GCG's Cleveland Crisp and butterhead lettuces, and now carries it in 60 of its stores.

While most GCG produce is marketed under its own brand, the cooperative does have private labeling contracts with some area produce brokers. Thirty percent of its total production in 2016 was private labeled for brokers selling into grocery stores.

GCG relies on regional and broadline distributors to access both retail and wholesale markets. It owns a small cargo van to deliver locally and to its stand at the Westside Market (see inset), but distributors run all other logistics.

"It makes it tough for sales," says McMicken, who works with GCG's one full-time sales person on sales and marketing. "Opportunities come up to sell to places like Buffalo [NY], but we couldn't get [the product] there."

Despite its logistical issues, GCG's distribution partnerships have moved its product and sphere of influence far beyond Cleveland. Retailers in Detroit, Pittsburgh, and Indianapolis receive weekly deliveries of its lettuce and herbs. While GCG's goal is to serve more customers in a tighter radius to Cleveland, it spreads its market-reach as far as possible to make sales, manage risk and get the business off the ground.



Green kale microgreens at Green City Growers.

Though California-grown lettuce is always a competitor, McMicken believes GCG has differentiated its lettuce as a higher-quality local product. While other large hydroponic growers do exist within the regional market, he says customers are beginning to value GCG as the local choice.

The local choice is still difficult for many GUC institutions to make. University Hospitals and the Cleveland Clinic offer GCG lettuce in their executive dining rooms and cafeterias, but Roz Ciulla, ECC's Director of Finance, says it is still too expensive to put on patients' plates. Institutional food service, particularly those operated by food service management companies like Bon Appetit or Sodexo, typically have multi-year contracts locking in their supply and low prices, a reality for which ECC had not prepared.

Furthermore, GCG does not offer the chopped, bagged lettuce upon which many institutional kitchens rely. It is hard to know whether adding convenience through chopping and bagging would convince institutions to buy, however, as light processing further adds to the wholesale price.

Despite this, some GCG produce does get to those most in need. As part of its launch, GCG signed an agreement with the Cleveland Food Bank to donate a minimum of one percent of its production in perpetuity. It donated far more than that as its production and marketing stabilized: ten percent in its first year, five to six percent in its second. In 2016, donations were approaching the one to two percent range. GCG also donates to many smaller organizations like churches and soup kitchens, so long as recipients can pick up the product at the GCG warehouse.

Employees

GCG had 36 full-time employees in summer of 2016 and plans to have 50, when it has reached its full production capacity. Seventeen have become member-employees, and two more were preparing to join them on the GCG board of directors later in 2016.

Employees start at ten dollars per hour. On-the-job training is provided to new employees, and employees specialize in seeding and transplanting, harvesting and packaging, sanitation and food safety, or facilities maintenance.

After one year, employees are eligible for a minimum one dollar raise and can be considered for member-employee status. Current member-employees vote whether to invite candidates to become member-employees based on their commitment, reliability, and teamwork. If a candidate is voted in, they can buy equity in the business and share its future profits. It is at that point that \$0.50 per hour is deducted pre-tax toward the purchase of an equity share priced at \$3,000.

Member-employees can continue to earn raises, with a goal of attaining a living wage of \$12/hour as quickly as possible. Meanwhile, they are building equity and will share future profits, helping to build their long-term wealth. Member-employees also receive free health care coverage, disability coverage, and no-cost life insurance.

Other Activities/Services

ECC offers additional programs to build member-employee wealth and eliminate barriers to full-time employment. Transportation is one such barrier, as car ownership is low among neighborhood residents. Through a pilot with the Cleveland Foundation, ECC began offering low-interest car loans to member-employees who qualify, helping them get to work and purchase a vehicle.

The Evergreen Housing Program similarly helps member-employees purchase low-cost homes in GUC neighborhoods in need of revitalization. Working with the Cleveland Housing Network, the program helps member-employees purchase a home in five years with low mortgage payments and property tax abatements. Eliminating housing instability and helping locate member-employees close to work helps with retention and employee success, says McMicken.



Lettuce heads leave the Green City Growers packing room in boxes ready for shipment.

Both programs are available only after an employee has been voted in as a member-employee. Member-employees interested in the program must participate in financial training and meet certain qualifications before they can be part of the program. Loan payments for both programs are payroll deductible.

Support

Just as its sister companies had, GCG received overwhelming political, media, and financial support as it was developed and launched. At its launch party in 2013, Cleveland Mayor Frank Jackson declared GCG “a model of how Cleveland can become truly sustainable.”²⁶⁴

U.S. Sen. Sherrod Brown helped secure a U.S. Dept. of Housing and Urban Development Section 108 Loan (HUD 108 loan) for ten million dollars. U.S. Rep. Marcia Fudge was on hand to express their support. Fudge, who advocated for New Market Tax Credits to fund GCG, heralded it as “an outstanding example of the promise and potential for urban agriculture.”²⁶⁵

PNC Bank and the National Development Council purchased the New Market Tax Credits, the money from which was made available to build GCG through the Evergreen Real Estate Corporation. The Cleveland Foundation and the City of Cleveland also contributed funds, including a \$450,000 loan from the city.

264 Nation’s largest urban food production greenhouse officially opens in Cleveland. (2013, February 25). The Cleveland Foundation. Retrieved from https://www.clevelandfoundation.org/news_items/12501/

265 *Ibid.*

Much of the support was based on the vision developed by ECC's original leadership and the work of the Democracy Collaborative, policy and research organization which investigates community wealth building and social entrepreneurship policy. Democracy Collaborative principals introduced the Mondragon model as a possibility for Cleveland, a concept that resonated with anchor institutions and investors.

Evergreen Cooperatives have enjoyed overwhelmingly abundant and positive coverage of their efforts to turn around ailing neighborhoods and give low-resource people the opportunity to become business owners. But, ECC leadership has become wary of continued publicity, particularly as GCG and its sister businesses have struggled to deliver on some of their early promises.

Assets and Challenges

Scaling operations is the key to GCG's success, says McMicken, who was brought on as ECC's CEO shortly after GCG launched to correct mistakes and miscalculations in its design, business model, and operation. ECC leadership readily admit that a lack of industry experience led them to assume that anchor institutions would purchase their product immediately, and have steadily built their sales force and connections to anchor institutions.

After three years at the helm of ECC, McMicken sees profitability within reach. The key, he says, is scale. Ninety percent capacity is still the projected magic number to start to see profits, though McMicken acknowledges that the greenhouse's high-energy costs and slim margins are not ideal for fast wealth-creation.

Still, he sees opportunities to increase profits by decreasing other costs. ECC's board and anchor partners are working with it to negotiate lower electricity rates with the city-run utility company. They are also looking into renewable energy options, though their attempt to build a wind turbine on-site stalled because their proximity to GUC hospitals was a danger to emergency helicopters.

ECC is also hoping to retrofit the greenhouse with LED lighting to increase efficiency. When the greenhouse was constructed in 2012, says Ciulla, LED technology was not sophisticated or affordable enough to install. Four years later, she expects the retrofit will cut GCG's electricity costs in half. It is looking at alternatives to loans to raise the one million dollars the retrofit would cost.

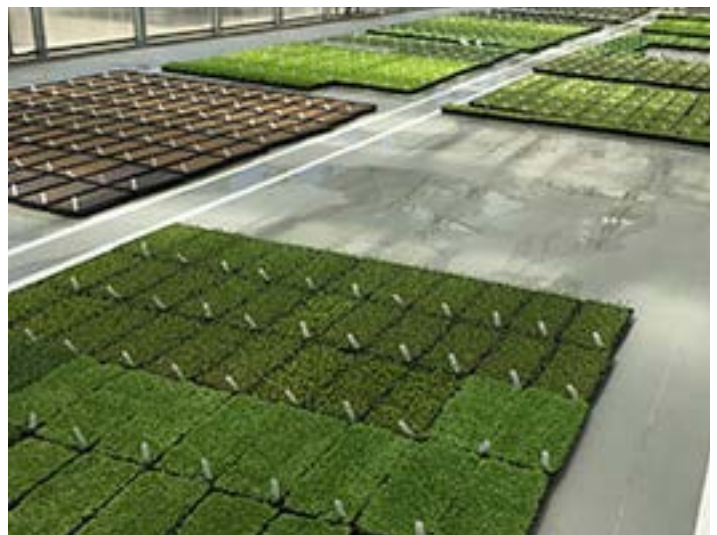
"Most of Green City Growers' debt is real debt," says Ciulla. Though she suspects GCG could not have launched without New Market Tax Credits, she would have preferred to see ECC sell equity rather than saddle the young cooperative with so much debt.

Ciulla also says a lack of working capital for its first several years kept GCG from being agile enough to adapt to market realities. "You can't think, 'if you build it, they will come,'" she says, noting that anchor institutions are still slow to purchase GCG greens. Though GCG's customers pay quickly and it carries almost no inventory from day to day, it still lacked sufficient working capital to get over its early sales hump.

"Retailers and restaurants have [procurement] relationships in place already. You have to break through the relationships. That takes time," she says.

Some of the core aspects upon which GCG was built continue to be assets. Water, states McMicken, is the company's biggest operational asset. Using rainwater and snowmelt runoff from its roof, he says, is a positive environmental impact that keeps costs low. And because hydroponically-grown lettuce uses less water per head than field-grown lettuce, he says, it is a more efficient and predictable production method.

However, it is its commitment to its member-employees—and their commitment in return—that sets GCG apart from other hydroponic operations. "Without overlaying Evergreen's member-employee model and the associated



Green City Growers' incubation room is also an area to experiment with microgreens.

social mission, we would just be a small lettuce farm!” he says. Ciulla agrees, saying that GCG’s dedicated staff who believe in its promise of wealth creation and business ownership are one of its strongest assets.

Promise of Urban Agriculture

Green City Growers promised living-wage jobs, profit-sharing, individual and community wealth-building, neighborhood revitalization, local economic development, and a local supply of high-quality, nutritious, fresh produce year-round. After its first three unprofitable years, Evergreen leadership is optimistic about its future, but leery of building similar businesses without serious market investigation and guaranteed sales.

“You have to have a purchase contract [from a customer] in hand before you start,” says Ciulla, who saw GCG struggle to secure purchasing agreements.

But, customers, particularly distributors serving retailers and restaurants, have caught on, and sales are growing. “We have now proven that the market will pay more for product grown within a model like ours,” says McMicken.

McMicken has confidence in GCG’s hydroponics, anticipating that volatile weather and drought will threaten traditional agriculture in the western U.S. from where most field lettuce originates “For consumers east of the Mississippi River, we will need to farm more food closer to where it is consumed,” he says.

Though a grim forecast for the climate, McMicken’s predicts Green City Growers’ path to profit and promise-fulfillment is based on its increasing competitiveness in the fresh greens market. It is a lot to deliver, but Green City Growers’ stakeholders and member-employees are counting on it.

Ohio City Farm & West Side Market

Across Cleveland on the west bank of the Cuyahoga River, the formerly low-resource Ohio City neighborhood has become the city’s premier food destination. Since 2010, Ohio City Inc., a community development corporation, has spearheaded initiatives to decrease vacancy on its retail strip, add affordable housing, and increase alternative transportation and accessibility for neighborhood residents.

One place it saw room for improvement was a vacant 6-acre lot owned by the Cuyahoga Metropolitan Housing Authority. Near the riverbank and too unstable to build on, Ohio City Inc. approached the housing authority with the idea of installing a farm featuring one-acre plots to be farmed by qualified growers. Today, Ohio City Inc. pays CMHA one dollar per year for its five year lease, and leases land to a nonprofit refugee education and training program, a work-program for adults with developmental disabilities, and the CMHA Green Team made up of residents from a senior housing complex adjacent to the farm.

Ohio City Farm’s farmers sell their produce at a farm stand on Saturdays, taking advantage of the draw from the West Side Market just half a block away. Over 10,000 people visit Ohio City every Saturday to shop at the city-owned market with permanent stalls in the main building and local produce vendors in a separate building, including Green City Growers. Ohio City Inc. has been instrumental in pushing for changes and renovations to the market, which has become the centerpiece of its redevelopment strategy.

Tom McNair, Ohio City Inc.’s Executive Director, says Ohio City Farm is also crucial to the area’s redevelopment. Rather than gentrification, the urban farm draws together long-term residents, new residents, new Americans, and visitors to the entire neighborhood’s benefit.

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