

1. INTRODUCTION

Urban Agriculture and Planning for Food Systems Change

How do the national urban agriculture movement and the efforts toward regional and local food systems change support Kingston’s potential for urban agriculture? In this section, we provide an overview of the substantial resources available to Kingston’s leaders to enable urban agriculture.

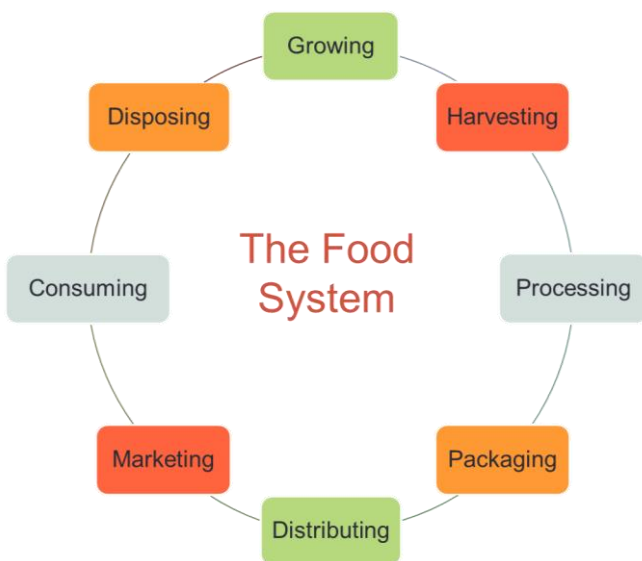
Box 1.1. What is urban agriculture?

Urban agriculture (UA) can be simply defined as the **growing of food within cities**. The Resource Centres on Urban Agriculture and Food Security (RUAFA) Foundation provides a more comprehensive definition:

*The most striking feature of urban agriculture, which distinguishes it from rural agriculture, is that it is integrated into the urban economic and ecological system: urban agriculture is embedded in -and interacting with- the urban ecosystem. Such linkages include the use of urban residents as labourers, use of typical urban resources (like organic waste as compost and urban wastewater for irrigation), direct links with urban consumers, direct impacts on urban ecology (positive and negative), being part of the urban food system, competing for land with other urban functions, being influenced by urban policies and plans, etc. Urban agriculture is not a relic of the past that will fade away (urban agriculture increases when the city grows) nor brought to the city by rural immigrants that will lose their rural habits over time. **It is an integral part of the urban system** (www.RUAFA.org).*

Growing food in urban areas has long been a means of feeding populations in many places around the world. Approximately 15 to 20 percent of food is raised in urban settings around the world, according to the United Nations Development Programme (UNDP). This isn’t all good news, as the migration of the rural poor to urban areas is part of a worldwide trend associated with poverty. In the last decade, the UA movement has taken off in the US, which has arisen for a number of environmental, social and economic reasons, and is championed as a way to address food insecurity, unemployment, urban decay, and environmental degradation.

The scale of urban agriculture ranges from urban food production – commercial or non-commercial – in small yards and rooftops to agriculture fields of several acres. The range of urban agriculture activities incorporates all aspects of the “food system” from seed to production to table. Participants in this system include farmers, immigrants, home owners, children, the elderly, businesses, restaurants, community centers, government entities, schools, nonprofit organizations and many more.



What is a food system?

Food shapes cities and cities shape the surrounding countryside. Historically, urbanism and agriculture rose at approximately the same time.¹ All aspects of food production and consumption – growing, harvesting or slaughtering, processing, packaging, distribution, marketing, consumption, and disposal – are parts of a food system (see Figure 1.1, left)

In the last decade, there has been increasing debate over the global industrial food system and the benefits of local (or regional) food systems. Questions include whether “food miles” (number of miles a food item travels from farm to consumer) are a reliable indicator of sustainability in the food system. The distance food

Figure 1.1: A Food system and its components. Source: Mary K. Henderson and Mark Porth. *Best Practices and Possibilities. University of Missouri, Urban Agriculture.*

¹ Billen 2011, Charudas, Keene.

travels turns out to be less damaging to the environment (in terms of greenhouse gas (GHG) emissions) than other aspects of food production. The concern, therefore, is less with the transport of food than with the overall sustainability of the methods of food production in the industrial food system.²

The growing body of food systems research suggests that patterns of consumption drive the environmental impacts as much as the production methods. Of course, these go hand-in-hand. Changes to consumption would include addressing obesity, reducing meat and dairy intake, reducing processed and packaged food intake, consuming more seasonal, local, and robust vegetables and fruit (vs. fragile, high energy, production and transport costing food), reducing trips to the grocery store, reducing inefficient cooking and meal planning, and reducing food waste are ways.

What is happening in Ulster County’s “food system”?

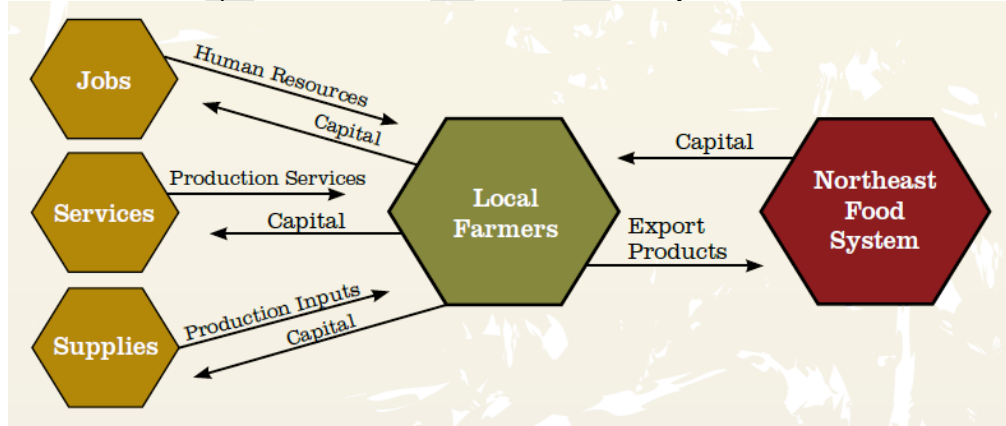
A number of recent studies have examined the current state of our food system. In the broadest terms, there is food insecurity in Ulster County. A report published by the Center for Research, Regional Education and Outreach (CRREO) at SUNY New Paltz (2012) found that three of every twenty residents and one in five children at times cannot meet their basic nutritional needs. Not surprisingly, those most affected tend to be children, the elderly, and low income groups found mostly in the urban and economically disenfranchised areas of the county.

“Low income, lack of transportation, and insufficient awareness of the help that is available all combine to make access to healthy food a significant problem for many people and families in Ulster County, New York.”³

The Food Hubs Initiative Report (2013) of the Local Economies Project examined food hubs (entities that “market and distribute local food that is differentiated from the conventional, commodity supply chain) as a means of building the capacity and infrastructure of a resilient food system for the benefit of Hudson Valley farmers and communities:

“One particular weakness in the localized value chain is the lack of packing, storage, and processing infrastructure and services to facilitate access to wholesale channels, such as institutions and retailers.”⁴

The Hudson Valley Agribusiness Development Corporation has worked with government, non-profits and farmers in the region to address such problems in the food value chain. Its publication, “Understanding Food Systems: Identifying Business Opportunities for Hudson Valley Farmers and Food Entrepreneurs” is a useful primer on the local food system structure and explains how direct and intermediated marketing tools can support farmers for improving their own business models. The figure below provides a summary of the flow of products and capital through the food system. It is very important to note, as this and the Food Hubs Initiative Report explain, that the global food system is based on farm and food production consolidation on a massive scale that cannot be address only at the local and regional scales. For local food production to be successful, it must learn to compete on the basis of direct and relatively direct intermediation of food sales.



² Tara Garnett, [Where are the best opportunities for reducing greenhouse gas emissions in the food system \(including the food chain\)?](#) Food Policy 36 (2011) S23–S32.

³ Sue Books (2012). Food Insecurity in Ulster County (CRREO Discussion Brief 9, Winter 2012). New Paltz, NY: State University of New York at New Paltz Center for Regional Research, Education and Outreach.

⁴ Food Hubs Initiative Report

At the regional level, the “Mid-Hudson Regional Sustainability Plan”⁵ a plan funded by the New York State Energy Research and Development Authority’s (NYSERDA) Cleaner Greener Cities program for the seven counties of the Mid-Hudson Valley, directly calls for the expansion of urban agriculture as “a way to connect consumers with the source of their food and educate them about the value of agriculture in the Region.” It goes on to note that while urban agriculture may not provide a substantial proportion of the region’s food, it can raise awareness, provide seasonal employment, increase fresh food access, and help blighted urban areas. It is important to note that this plan’s explicit support of urban agriculture can allow Kingston to apply for future rounds of New York State grants associated with this program, which is expected to provide ongoing funding through the Regional Greenhouse Gas Initiative.⁶

These and several other recent initiatives take aim at the structural problems associated with the lack of access to healthy food and the challenges of improving local distribution of our sizeable agricultural productivity.⁷ While the structural reform in the agricultural industry in the region is too big a topic for this report, there are regional organizations and opportunities that may provide needed support for the urban agriculture initiatives in Kingston:

- **Direct Sales:** The increase in the interest in local food and the direct sales of local produce has encouraged the proliferation of farmers’ markets (particularly the Kingston Farmers’ Market) and Community Supported Agriculture (CSA) ventures. These outlets are notable opportunities for urban agriculture in Kingston.
- **Institutional Support:** The long-standing existence of Cornell Cooperative Extension of Ulster County as a research institution, community resource and partner for farmers through its Master Gardener program, 4-H club clubs, and recent program and policy initiatives such as Healthy Kingston for Kids and Creating Healthy Places.
- **Business Support:** The presence of the Hudson Valley Agri-Business Development Corporation, founded in 2007 to provide business assistance to farms in the region can be a source of technical assistance and access to credit for Kingston farmers.
- **Rural Partners:** The formation and increasing professional capacity of the Rondout Valley Growers, an association of farmers in one of Ulster County’s abundant farming areas, has the potential to provide support, expertise, and other forms of exchange with Kingston’s urban agriculture initiatives.
- **Incubators:** The recent creation of a farming incubator at by the Open Space Institute and Glynwood Center at the Brook Farm in New Paltz and the New World Foundation’s “Farm Hub” project the Gill Farm in Hurley should be seen as opportunities for partnership with larger, non-profit organizations that could support urban agricultural efforts.
- **Policy Support:** The formation of a “Food Systems Advisory Council” for Ulster County spearheaded by Cornell Cooperative Extension’s Creating Healthy Places (CHP) initiative of Cornell Cooperative Extension is an opportunity for Kingston’s leaders to participate in the larger policy discussions affecting local food systems.

What is the Promise of Urban Agriculture in Kingston?

As we detail in the next section, the food and agriculture movement in Kingston is growing stronger daily as community organizations and individuals recognize its potential. For this study, we considered the economic development, environmental and public health development potential for urban agriculture in Kingston. Our land use inventory found that the City of Kingston owns at least 35 acres of vacant land (and more than 800 acres of land classified as “vacant” in the city). Based on figures provided by successful practices in other cities, our research shows that placing 35 acres of Kingston’s urban land in agricultural production would:

- Create between two and five direct, on-farm jobs per acre, or approximately 150 jobs;
- Create additional jobs in the agricultural services sector (equipment sales, composting and soil inputs, and food processing);
- Sequester about 77 tons of CO₂ in well-maintained soil per year;
- Support the development of compost markets that would yield an additional 3,330 tons of avoided CO₂ emissions annually while helping Kingston reduce the overall waste generated in the city of Kingston by 20%; and

⁵ http://www.orangecountygov.com/filestorage/124/1362/MHRSP_Book_opt.pdf

⁶ http://www.rggi.org/rggi_benefits/program_investments/new_york

⁷ Structural reform of the agricultural industry is too big a topic for this report.

- Generate over 1 million pounds of fresh produce for sale into local markets, providing local communities with a nearby source of healthy food.⁸
- Provide over 4 million servings of fresh produce to Kingstonites annually. For a population of 24,000 people, this is about 175 servings per person in the City each year.⁹

These benefits are summarized in the figure below. While based on a 35-acre scenario, these results are scalable.



What is Need for Planning and Implementing Urban Agriculture in Kingston?

According to our review of practices across the country, the strength of the **local institutional climate** was the primary factor for the success of local urban agriculture efforts.¹⁰ This study focuses on identifying the approaches in the rapidly growing literature of urban agriculture that can be applied to Kingston, considering the current conditions in this city.

In urban planning, UA presents an opportunity to deal with some of the damage of 20th century development patterns on the urban landscape. An entire field of research is dedicated to urban decline in the United States and its remedies. Many cities, in their efforts to revitalize, have bulldozed, restored, and changed the way they use their land. Detroit, Michigan represents the extreme example of a city that suffered from the effects of urban segregation, crime, population decline, economic disinvestment, and suburban sprawl, but it is not alone. Across the country, the same dynamics played out as a result of the way we live and how we value urban space. In the last generation, the trends have reversed. In the last decade, for the first time since World War II, the majority of Americans say they want to live in "walkable communities."

Land use laws and policies played a central role in urban decline and are a key to this reversal. Conventional zoning, based on concepts established in the early 20th century of the separation of uses. Based on the vision

⁸ Estimates of crop yields from urban farming average about 0.5 pounds per square foot based on an acre of production (for further details, see Appendix F). If all vacant City-owned lots in Kingston (a total of 36.87 acres, or 1.6 million square feet) were cultivated, they would yield 802,944 pounds of food per year.

⁹ The World Health Organization's recommends 1.1 pounds of vegetables and fruit in a daily diet.

¹⁰ REF CIT.

of a city – often articulated in a comprehensive (or master) plan – zoning is the process a municipality uses to codify its land use plans. It divides the community into districts – or zones – where various uses are permitted and establishes density, dimensions, placement and other development factors.

The bulk of this report examines how the community’s vision for Kingston, by way of its Comprehensive Plan, can be incorporated in its zoning ordinance and related policies to help urban agriculture take hold in the city.

The comprehensive plan is the place where communities set their goals and priorities. The City of Kingston is in the process of creating a new comprehensive plan after over 50 years of revising zoning and making changes to its vision for the city based on the 1961 Comprehensive Development Plan (<http://ci.kingston.ny.us/content/4463/default.aspx>). This is therefore the where Kingston must begin its commitment to encouraging urban agriculture, which is then translated into law through the zoning ordinance.¹¹

Kingston zoning and related ordinances do not have adequate, clear allowances for urban agriculture and gardening. The first step should be to discuss with the Planning Department or Community Development Department as well as the elected officials the need to update these procedures. Working with city officials, a public education and input process should be undertaken to determine what uses are best where and under what circumstances. This process would be most sensible as part of the current could be part of the Kingston 2025 Comprehensive Plan and zoning overhaul.

Laying the Policy Groundwork for Local Food System Development

The City of Kingston has an opportunity to support urban agriculture by removing policy barriers and initiating projects to facilitate local food production. When developing policy recommendations for urban agriculture in Kingston, the Urban Agriculture Committee’s research process has included semi-structured interviews of community stakeholders directly involved in urban agricultural initiatives. More in-depth stakeholder outreach will take place in Phase 2 of this study, including city officials, organizational representatives, food industry and farming practitioners in and around Kingston, the school district, and other community members.

Growing the City’s capacity to support a vibrant urban agriculture sector will require a coordinated effort that supports a growing community of practitioners and organizations through encouraging collaboration, engaging in proactive policy development that removes barriers, and very strategic high leverage investment. Rather than build a hierarchy, we recommend connecting existing resources through a networked approach.

Research for this study began with a literature review of best practices on urban agriculture policies and practices in other cities, an assessment of current policies, an analysis of land uses using GIS and parcel information, consultation with local stakeholders, including semi-structured interviews, as well as the attendance and information-gathering at relevant public and professional forums. For implementation of the recommendations in this study, it would be preferable to engage a wider array of stakeholders. This is discussed in greater detail in the report.

In Phase 1, we considered the implications for integrating language and recommendations into the Comprehensive Plan and zoning ordinance. The recommendations aim to utilize the existing regulatory frameworks and organizational relationships.

Policy Barriers to Urban Agriculture in Kingston

The policy barriers to urban agriculture are a result of laws that were intended to create a built environment in a post-World War II pattern designed to support the “rational” separation of uses based on zones that separated residential, commercial, industrial, agricultural and open space areas. In addition to the barriers in our current zoning system, other barriers to urban agriculture arise from current laws, governance decisions, or implementation conventions that restrict urban agriculture activities.

¹¹Studies by the University of Missouri and Emory University Law School found that most cities with urban agriculture zoning have also incorporated it into their comprehensive plans. Goldstein, M., et al. (2011). Urban agriculture: a sixteen city survey of urban agriculture practices across the country, p.4, <http://www.georgiaorganics.org/Advocacy/urbanagreport.pdf>.

Barriers we explore in Phase 1 of this report include:

- Lack of a comprehensive planning and zoning framework that supports urban agriculture;
- Restrictive zoning rules for structures, including setbacks and lot coverage
- Lack of policies specific to urban agriculture activities
- Lack of clarity on existing urban agriculture policies
- Lack of agricultural expertise at city level
- Lack of coordination between organizations and city

In Phase 2 of our work to promote positive policies and local food systems change, we will explore additional barriers, including:

- Onerous permit process for structures and selling produce
- Prohibitive farm stand regulations
- Prohibitive home occupation regulations
- Lack of practitioner knowledge on best practices
- Lack of access to land
- Soil contamination
- Language barriers
- Neighbor conflicts
- Economic viability of projects

The findings and recommendations are organized in two sections: Phase 1 and Phase 2

Phase 1: Removing Barriers to Urban Agriculture

As the first step in this process, the Urban Agriculture Committee has been working with individuals from the Kingston Land Trust, the Kingston YMCA Farm Project¹², the South Pine Street City Farm¹³, the chair of the city's Conservation Advisory Commission, Pace Law School's Land Use Law Center, and the former Deputy Director of the Ulster County Planning Board, to participate generate this report and pursue its implementation. The primary goal of this report is to update to the Comprehensive Plan, which is currently underway, and recommend changes to the zoning ordinance and related city ordinances that would remove the current barriers to urban agriculture.

Phase 2: Positive Policies for Local Food Systems Change

After working to incorporate local food production into the Comprehensive Plan, zoning and related city policies in this "Phase 1" report, the Urban Agriculture Committee will then begin the pursue support for urban agricultural activities on both municipally-owned and private property by encouraging partnerships, capacity-building, communication, outreach and education among the many individuals, community organizations, government agencies and private enterprises currently involved in some aspect of food production in our area. "Phase 2" will also involve further research into government and institutional policy changes and successful program approaches. The Urban Agriculture Committee will pursue grants to support the study, as well as initiatives outlined in this report in education, land access, joint use agreements, farm incubation, procurement rule changes, and contract farming, among others.

Using Best Practices and Creating Tools

The body of literature on policies and practices in other communities is extremely useful, but it must be tailored to the specific circumstances of Kingston. Research for this study began with a literature review of best practices in other cities, an assessment of current policies in Kingston, an analysis of land uses using GIS and parcel information, consultation with local stakeholders, including semi-structured interviews, as well as the attendance and information-gathering at relevant public and professional forums. For implementation of the recommendations in this study, it would be preferable to engage a wider array of stakeholders. This is discussed in greater detail in recommendations for Phase 2.

¹² www.facebook.com/KingstonYMCAFarmProject

¹³ <http://southpinestreetcityfarm.org/>

Specific recommendations in this report are intended to strengthen the local institutional climate for urban agriculture. This report aims to build such a “toolkit” – one that will require maintenance by the stewards of a coordinated effort to implement urban agriculture. They include:

- Collection and review of best practices for learning and reference;
- Review of programs and policies supporting UA;
- Catalog of UA initiatives and stakeholders;
- Survey of properties with GIS to identify zoning issues and city-owned sites with potential for UA
- Analysis of zoning and related ordinances and recommended changes to the language that include home, school, rooftop, and community gardens, urban livestock and poultry, beekeeping, commercial farming, and the use of agricultural structures such as of greenhouses and hoopouses.
- Recommended language to be incorporated into the comprehensive plan that establishes goals, objectives, metrics and strategies for the City to increase local food production;
- Findings for a “Phase 2” study to support policies and food systems change for urban agriculture to flourish in Kingston.

The Benefits of Urban Agriculture

Urban agriculture is being used as a strategy to reduce urban poverty and food insecurity, improve health and reduce obesity, improve access to fresh food, replace imports and increase economic security, increase jobs (directly in the sector) contributes to local economic development, poverty alleviation and social inclusion of the urban poor and women in particular, as well as to the greening of the city and the productive reuse of urban wastes.

Here are some of the many benefits of urban agriculture cited in the literature:

Health:

- Nutrition: access to a more diverse and abundant supply and fresh produce with readily available vitamins
- Exercise
- Recreation

Social:

- Public awareness: awareness about sustainable production methods such as organic agriculture, agro-ecology, and permaculture.
- Community development
- Social empowerment and social justice
- Community gardens build reliance and accountability in neighborhoods
- Relationships between producer and consumer

Environment:

- Urban beautification
- Ecological restoration: ecological habitat restoration; improved storm water runoff; supporting local biodiversity; mitigation of urban heat island effect; wind reduction; humidity regulation; shade provision
- Reduced energy usage: reduction of “food miles”; recycling of organic waste; use of ecological production methods; offset some amount of food that would otherwise be produced through conventional means.

Economic:

- Risk management: food security
- Local food-systems change: Locally directed buying and selling of food and food system materials; closer connections between producers and consumers, greater return for farmers, positive effects on property values, better neighborhood conditions and increased tax revenues over time; possible decrease in cost of maintaining public land, increase local employment opportunities, and take advantage of underutilized resources; opportunities for food microenterprises.

Common challenges and risks

Although urban food production can be as straightforward as the right combination of soil, water, seeds, and sun, many social and physical characteristics of urbanized areas can pose barriers to agriculture in cities. Common challenges for urban agriculture relate to the inherent difficulties of growing food in an urban environment, including soil contamination, land access, and water access. The Phase 2 report will address these questions. The goal of this Phase 1 report is to address the immediate concern of removing the barriers in policy (i.e., the comprehensive plan and zoning) to enable urban agriculture to take root.

Care must also be taken to avoid inadvertent negative outcomes resulting from urban food production. Health and environmental risks can include exposure to contaminated soil and unsafe practices in the use of pesticides. Social risks can include the lack of inclusion or inequity if access to urban agriculture isn't carefully considered.

A Vision for Kingston's Future

The City of Kingston could benefit by adding urban agriculture to the number of sustainable development areas it is pursuing. Becoming part of the quickly developing regional efforts to strengthen the local food system can support economic development, foster a stronger and more sustainable community, improve the health of those who live and work in Kingston, and put in place a system that regenerates and protect natural resources and the environment. The Kingston 2025 Comprehensive Plan now underway is an opportunity for Kingston to make a commitment to encouraging urban agriculture, which is then translated into law through the zoning ordinance.¹⁴

Box 1.2: Articulating a Vision for Urban Agriculture

During this study, we asked members of the Kingston Conservation Advisory Council and followers of the Kingston Urban Agriculture Committee's website (www.grow-kingston.org) and the "Urban Agriculture in Kingston" Facebook page to participate in a discussion of a vision for urban agriculture in Kingston.

We envision a city where everyone who wants to grow or raise their own food has the space, information, and support to do so safely, responsibly, and in solidarity with their neighbors and the greater community. We envision an urban agriculture system that integrates with local and regional systems for a food system that is place based, sustainable, resilient, socially just, and secure."

Planning and zoning for urban agriculture in Kingston can be a framework for systemic land use change that

- allows for greater more community, public and private gardens to grow,
- increases community engagement and involvement, is socially inclusive,
- helps improve public health, food access and security,
- is educational and supports place-based learning
- integrates approaches to ecosystem management in the city, such as native species, pollination, storm water management, energy savings and resource protection, and
- improves relationships between natural places, the built environment, and connections to the land

¹⁴ Studies by the University of Missouri and Emory University Law School found that most cities with urban agriculture zoning have also incorporated it into their comprehensive plans. Goldstein, M., et al. (2011). Urban agriculture: a sixteen city survey of urban agriculture practices across the country. Page 4. Retrieved from <http://www.georgiaorganics.org/Advocacy/urbanagreport.pdf>.