

Agriculture and Local Food in Cleveland- An Urban Renaissance or a Return to the Past?

By Brad Masi

“By beautifying vacant lots and yards in nearly every section of the city, it has greatly increased realty values beside adding to the beauty of the city. But what is more important, it has made the health of the city better. It has got the people out of doors to cultivate flower and vegetable gardens who before never ventured into a garden. They feel and live better.”

-Gardens in the Heart of the City, Cleveland Plain Dealer, March 24, 1907

The quote above appeared in a Cleveland Plain Dealer article in the early 1900's to describe a widespread and growing effort to beautify Cleveland by promoting gardening on yards, schools, and vacant lots throughout the city. The same could very well have been written today as Cleveland experiences a renaissance in urban agriculture as a way to utilize a growing inventory of vacant lots and to improve access to fresh, healthy, and locally grown foods in the city.

Agriculture is not new to Cleveland. Like many early settlements, Cleveland's early economic history involved agricultural production. In fact, throughout much of the 1800's, Cuyahoga County had some of the most productive farmland in the state of Ohio, specializing in grapes, cheese-making, dairy products, and vegetable production. Many innovations spurred the efficiency of agricultural production, from major development of greenhouses in the early 1900's, the growth of market gardening by newly arrived immigrants, improvements in rail and truck transport, and food manufacturing. Over time, urbanization, industrialization, and global food distribution pushed much commercial agricultural activity out of Cuyahoga County. Food production in the city never disappeared, however, as urban agriculture continued in different forms throughout Cleveland's history.

The history of agriculture points to one of the most fundamental aspects of a sustainable culture. One of the most basic human activities, a stable culture and economy requires a strong agricultural system. Yet today, direct connections to farmers and the land on which they work evades most people. A strong agricultural system sits at the intersection between a healthy natural environment, strong communities, and a vibrant local economy. To understand where Cleveland is going, we need to look at Cleveland has been.

We will begin by taking a large leap back into geological time to understand how the force of glaciers shaped the soil, water, and land resources of Cleveland and Northeast Ohio. We will then look at early native American history in the region and the different ways that early cultures interacted with the land to provide their sustenance. Then, we will look at the history of agriculture and food in Cleveland, from early settlement to modern day efforts to bring agriculture back into the city

while fostering stronger economic and social linkages with rural communities in Northeast Ohio.

Agriculture provides the most direct connection between us and the land and ecosystems that sustain life. In the pages that follow, we will explore changes over time in the ways that communities in Cleveland and Northeast Ohio have connected with the land to provide for basic food needs and the challenges confronting the long-term economic and ecological sustainability of the region. But to understand the present, we will begin by looking at the past and the geological history of the most fundamental agricultural resource- the soil.

The Geological Origins of Northeast Ohio Agriculture:

From energy to materials for building, all economic activities rely upon the natural environment in one way or another. But no economic activity is more connected to the natural environment than agriculture. Farms rely upon a rich and fertile base of soil, reliable water resources, climate, energy, plants, animals, and ecosystem services (such as sunlight or soil micro-organisms). Understanding Northeast Ohio's agricultural history requires a deeper understanding of natural history. What geological and natural forces shaped the current environment where we live and work in Northeast Ohio?

A fertile base of productive soil graces much of the farmland in Northeast Ohio. The soil did not just appear one day, but formed over a 2 million year period of time referred to as the Pleistocene Era when a thick sheet of ice covered 2/3's of Ohio. Known popularly as "the Ice Age", the free flowing streams, the blue expanse of Lake Erie, and the lush summer landscapes that we know today were nowhere to be seen. Instead, glaciers, as much as a mile thick, covered the landscape. Just to give a sense of proportion, at 950 feet in height, Key Tower in downtown Cleveland is the tallest skyscraper in Ohio and the 18th tallest skyscraper in the United States. The ice that covered Cleveland and all of Northeast Ohio spanned the height of five and a half Key Towers.

The glaciers covering northeast Ohio during this time period expanded and contracted as the climate warmed and cooled. At the very southern edge of this frozen expanse, the ebb and flow of these glacial episodes significantly affected Ohio's landscape. The surface deposits that make up the soils of Northeast Ohio today resulted from the most recent glacial retreat which began about 25,000 years ago. As the glaciers expanded and contracted, they scraped the bedrock into fine mineral deposits. Glaciers consist of mostly frozen water, but also include these small deposits. As the glaciers melted, they left behind a layer of "till" materials, mostly clays about 50-80 feet thick in most of Northeast Ohio. These "till plains" make-up the mostly flat terrain to the south of Lake Erie. As you move to some of the more southern counties of Northeast Ohio, such as Medina, Summit, and Portage Counties, you start to find more varied and hilly terrain. These hills are referred to as "end morain". Imagine the glaciers as giant bulldozers pushing boulders and

other materials out along its edges. These materials piled up and formed the more hilly terrain encountered in much of Northeast Ohio.

Lake Erie presents a more recent geological force shaping the landscape of Cuyahoga County and many of the counties that share borders with the Lake. Lake Erie formed with the final retreat of the glaciers. The shores of Lake Erie fluctuated over the past 15,000 years when Lake Erie, at a depth 200 feet above today's level, completely covered the land where Cleveland presently sits. About 10,000 years ago, Lake Erie dropped about 80 feet after a large plug of ice that sealed Niagara Falls melted. The depth of Lake Erie fluctuated with heating and cooling cycles over the past 8,000 years. As a result of this action, more than 50% of Cuyahoga County includes a mix of heavy clay soils (referred to as Lake Plain soils) and sandy soils from the ancestral beaches of Lake Erie. These mixed soils support a diverse array of farms. For example, many of the county's early success with fruit orchards took place on the more sandy and well-drained beach ridges left behind from thousands of years ago when Lake Erie covered much more land.

The relatively stable climate conditions of the last 12,000 years allowed for the development of rich and diverse forest and wetland communities, owing to much of the rich plant and animal life in the region today. Throughout much of its history, much of Northeast Ohio was a wet environment. This saturation led to a complex of wetlands and swamps, including the Great Black Swamp which spanned from Lorain County all the way west to Detroit. With higher elevations and more varied terrain, the glacial end moraine landscapes in the southern part of Northeast Ohio tended to be drier due to higher elevations and more hilly land. These geological events over the past 2 million years eventually yielded the conditions that supported human settlement. In this wide span of geological time, Cleveland is a very recent development. Even before Cleveland, humans have been traveling to, living, and surviving in the Northeast Ohio region for about 10,000 years.

Pre-Settlement Agriculture in Northeast Ohio:

The first traces of human activity in Northeast Ohio followed the retreat of the glaciers. About 10,000 years ago, small, nomadic bands of Paleo-Indians followed the large game, such as mastodons, mammoth, caribou, and elk that would migrate to northern Ohio during the warmer parts of the year. They also gathered wild berries and roots to supplement their diets.

Descended from the Paleo-Indians, the Archaic Indians arrived on the southern shores of Lake Erie around 6500 BC. In addition to being adept hunters and gatherers of wild nuts, roots, and berries, this group is believed to have domesticated squash. Like their ancestors, the Archaic Indians relied upon flint tools, stone weapons to hunt game and bone hooks with lines of plant fiber for fishing on a small scale. They lived in small groups and traveled from one campsite to another in a seasonal cycle of movement between river valleys, the Lake Erie

shoreline, and interior forests and wetlands. As winter weather set in, they migrated south, searching for more plentiful food sources.

Around 1,000BC, the commencement of the Early Woodland period, the hunting and gathering lifestyle transformed when the Adena Indians began to develop agricultural techniques which enabled populations to settle. Their agricultural techniques included saving seeds and cultivating native plants, including raspberry, strawberry, grape, goosefoot, hazelnuts, acorns, and butternuts.

Around 100BC, a new group of people, the Hopewell Indians, arrived in northern Ohio. Magnificent artisans, the Hopewell created a number of ornaments and pottery that have been uncovered through archeological explorations. More commonly known as the Mound Builders, impressive Earthworks constructed by the Hopewell can be found in parts of central and southern Ohio. The Hopewell introduced cultivated maize or corn to Ohio. They also developed a variety of food preservation techniques to maintain a strong food supply through the winter. This included smoking of venison, bison, elk, or other meats. They also dehydrated vegetables and fruits over fire and processed corn into cornmeal and stored it in bark barrels. The ability to grow and then preserve food provided a safeguard against the harsh Ohio winters. It also enabled communities to become more settled, forming small villages instead of migrating to pursue food sources throughout the seasons. In addition to corn, the Hopewell hunted, gathered, and fished in small villages up and down river bottoms. The Hopewell disappeared with little explanation around 500AD. Purported causes of their demise include unknown conquerors, epidemics, or a cooling of the climate that affected their food supply.

Likely descendants of the Hopewell, the Late Woodland people mostly subsisted through hunting and gathering. They did not produce the food surpluses necessary to settle in more permanent settlements, although they did have several small villages. Ohio's climate continued to change and it is believed that climatic conditions during this period may not have been conducive to crop production. The Whittlesey Indians were the first of the Late Woodland people to construct villages and rely more heavily upon agriculture. They also were among the earliest Indians to use the bow and arrow for hunting. Between 1400-1600AD, the Whittlesey people constructed fortified villages containing long houses similar to those used in later years by the Iroquois.

After the Whittlesey, it is believed that the shores along Lake Erie remained largely uninhabited, other than occasional groups that used the area for hunting and fishing. The isolation and flooded topography of the area delayed its settlement by early explorers whose accounts from 1650-1740 referred to northern Ohio as a no man's land.

Northern Ohio's early history involved several waves of human activity and use of the land. Earlier waves consisted mostly of small and nomadic groups that mostly utilized Lake Erie and some of the inland rivers during warmer seasons for fishing,

hunting, and gathering of wild berries and nuts. The first agricultural practices in the region began about 3,000 years ago and led to the presence of more permanent villages and settlements. The success of agriculture was likely affected by changes in the climate and the disappearances of several waves of inhabitants possibly corresponded with a cooling of the climate which made agricultural production more challenging. The wet conditions of much of the northern part of Northeast Ohio made agriculture all but impossible, with the exception of bluffs along rivers or the at the higher elevations of the remnant beach ridges of Erie's ancestral lakes.

History of Agriculture in Cleveland

The formation of bedrock materials, the retreat of the glaciers, the deposition of glacial till, and the more recent formation of Lake plains and beach ridges all preceded the arrival of humans in the Northeast Ohio region. These geological events created the varied land conditions that supported a wide range of agricultural uses over the past 200 years. The rolling hills in the southern part of Northeast Ohio and the more level till and lake plains support livestock and grain production. The well-drained sandy beach ridges supported grape and orchard fruit production and even provided the first roadways. Euclid, Lorain, and Detroit Avenues were all built along these old beach ridges.

With the arrival of European settlers, humans have become a significant geological influence in the region. Beginning in the late 1800's, many of the swamps and wetlands between the sandy ridges were drained by settlers. The clay and organic-rich layers remaining after drainage contained high levels of nutrients, conducive to producing vegetable crops. Through the drainage of swamps and wetlands for agriculture, industry, and settlement, humans have altered water courses and soil conditions throughout the region. This has had a great impact on the native ecology of the region (northeast Ohio has lost about 90% of its original wetlands). However, these alterations have also made the landscape suitable for agricultural production, the precursor to supporting the large and settled urban populations of Northeast Ohio. Recently, efforts to restore some of these native habitats on our farms and in greenspaces in the city will create a better balance between human needs and healthy, functioning ecosystems.

Like many communities in the early 1800's, the first settlers engaged in agriculture, both to secure their own food supply and to support themselves economically. Most of the early farms in Cleveland engaged in mixed agriculture, relying on wheat, wool, and cattle- Old World forms of agriculture familiar to recent immigrants from Europe.

As the population and economy of Cleveland grew, agriculture became more specialized. Farmers grew large amounts of a small variety of crops geared toward specialty markets (where a buyer seeks a large volume of one product, such as milk for cheese-making). The increased ability of farmers to access markets in Cleveland and the east coast drove specialization. Specialization in agriculture during the half-

century after the Civil War continued in agriculture, mostly driven by increasing population growth and urban demand in the city. As detailed in the *Encyclopedia of Cleveland History*, most of this specialization focused on dairy, fruit, and vegetable production.

Dairy

The raising of cattle for commercial dairy markets began in the 1830's. Most dairy production supported butter manufacturing and cheese-making enterprises. In 1859, Cuyahoga County produced 1.2 million pounds of butter and 1.4 million pounds of cheese. At the time, too, many farmers delivered milk directly to urban residents, some at local markets and others sold directly through delivery routes.

Spurred by manufacturing innovations, about 16 cheese-making factories were in operation by 1875. East of the Cuyahoga River, cooperatives of dairy farmers operated the factories while west of the river, sole proprietors nick-named "cheese kings" ran most of the factories.

In addition to manufacturing, the growth of Cleveland provided a strong residential market for milk. "Milk trains" began transporting milk into Cleveland from Willoughby in Lake County. The advent of train transport reduced the cost of distributing milk and enabled farmers further out of the city (where land was cheaper) to prosper. In fact, given that railroads carried milk at a flat rate, milk suppliers operating within the city were at a disadvantage to farmers further out.

The development of silos in the late 1800's (structures built on farms to store grains and hay), enabled farmers to milk cows throughout the winter, leading to year-round production. A "Silo Convention" was organized in Cuyahoga County in 1889 and silo construction took off. By the mid-1890's, Cuyahoga County is reported to have more silos than any other county in Ohio. Just as corn meal stored in barrels provided a way for the Hopewell people to provide a year-round food supply, silos provided an ability to store feed to extend the local food supply and provide year-round economic opportunities for farmers. This is especially important given the six month growing season in Northeast Ohio.

With year-round production, established urban markets, and train access, farmers shifted from selling directly to consumers. Instead, they sold to middlemen in the city who established warehouse depots for buying and shipping milk. This aggregation of milk along rails led eventually to the creation of creameries where cream was separated from milk. The efficiency of the creameries out-competed the cheese factories which dropped off significantly by 1900.

Fruit

Another form of specialization involved fruit production, including cherries and peaches. Fruit production rose in conjunction with railroads and the Erie Canal which provided access to eastern and western markets. Grape cultivation also became more widespread in the 1850's and by 1855 there were about 200 acres of

vineyards around Euclid. Soil and climate conditions favored the production of sweeter grapes, like the concord, and not wine grapes. Most of the grapes were sent by rail to eastern and mid-western cities and sold as table grapes or used to make preserves or jellies.

After the Civil War, many orchard crops were impacted by insect and fungus problems, leading to a greater interest in viticulture, or the raising of grapes. By 1890, Cuyahoga County had 5,000 acres of vineyards, mostly concentrated to the east of the city toward Lake County. Grape production peaked in 1899 at about 11,500 tons and then declined to about 3,800 tons by 1919 as demand for urban land reduced the viability of these operations.

Market Gardens

A third specialization involved market gardening where farmers raised a mix of vegetables, strawberries, and other small fruits on small-acre farmsteads. European immigrants and their families operated some of the earliest market gardens. Many immigrants came from rural areas in their home countries and were already skilled farmers. Accustomed to farming in similar climates and looking to establish themselves economically, farming became a lucrative option for many new immigrants.

Vegetable production in Cuyahoga County expanded after the Civil War, with potatoes being a primary form of production. During the late 1800's, Cuyahoga County was the leading potato growing county in Ohio, producing 1.1 million bushels. In 1909, specialization in potatoes declined and farmers began to grow a greater variety of crops and animals, mostly geared toward local markets. By 1919 potato production declined significantly due to the spread of fungus diseases and soil depletion.

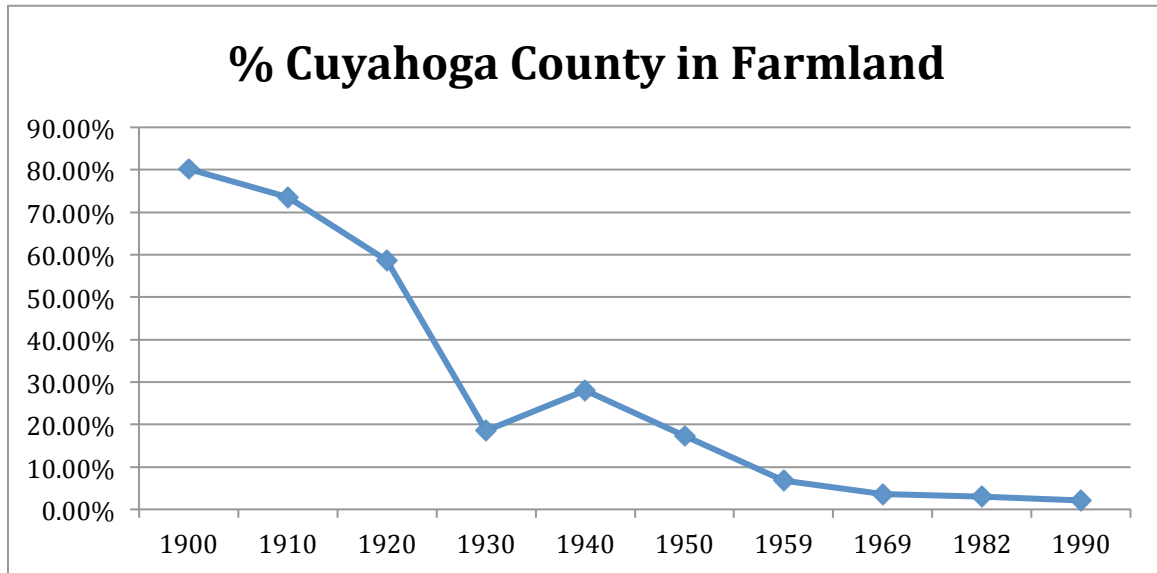
With increasingly availability of small trucks, market gardening became commonly referred to as "truck farming" because farmers filled up small trucks with a day's harvest and drove to neighborhoods to sell the crops directly to urban residents. Market gardens remained competitive because they could produce high yields on limited acreage and the growing population of Cleveland provided a strong market. Greenhouse production further boosted market gardening, enabling farmers to grow vegetables under glass to extend the seasonal availability of produce. In 1900, truck farmers had about 21 acres in "hot beds" (small glass-covered frames that cover a row of crops) and about 4 acres in greenhouses.

According to the Ohio Historical Society, by 1937, greater Cleveland was home to the largest concentration of farming acreage under glass (about 225 acres) in the United States. Concentrated along Schaaf Road in the Old Brooklyn and Olmstead Falls, the proliferation of greenhouses in Old Brooklyn can in part be attributed to Martin Ruetenik. Inducted into the Ohio Agricultural Hall of Fame for introducing the concept of greenhouse growing, Ruetenik constructed a 550-square foot greenhouse for his farm. Building on his example, almost every farmer along Schaaf

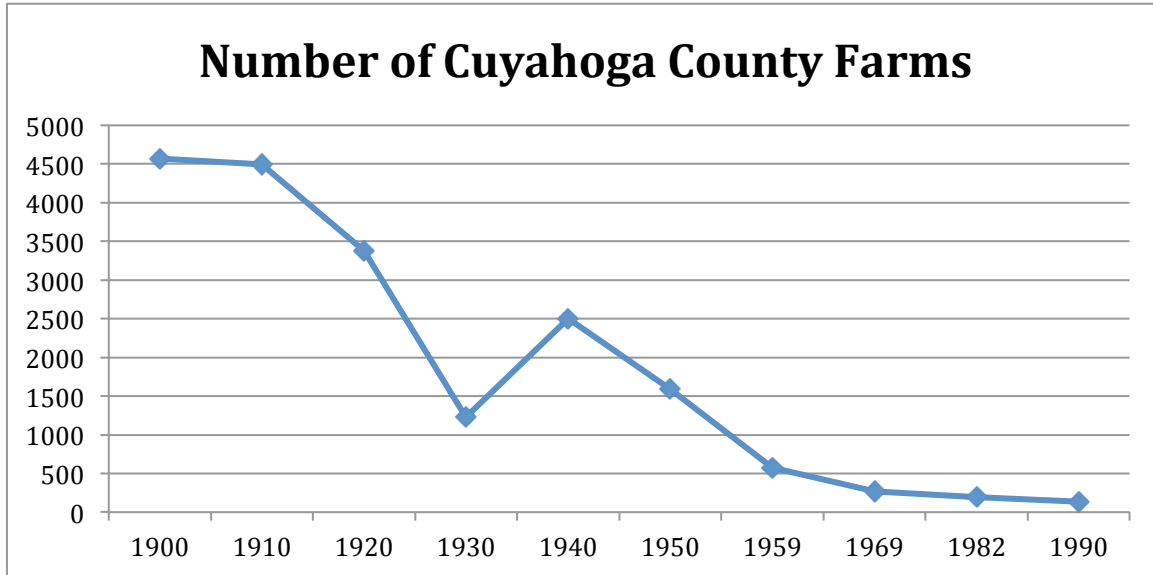
Road constructed greenhouses, leading eventually to about 4 million square feet (100 acres) to be under glass in the area. Ruetenik brought the notion of “truck farming” to another level as well, operating a fleet of Model T Ford trucks that supported a distribution system that spanned the entire northeast Ohio region as well as markets in Pennsylvania and Indiana.

Year	% Cuyahoga County acreage in farmland	# of Farms
1900	80.2%	4571
1910	73.5%	4493
1920	58.6%	3375
1930	18.6%	1229
1940	28%	2500
1950	17.4%	1589
1959	6.8%	576
1969	3.6%	272
1982	3%	193
1990	2.1%	133

Source: *Encyclopedia of Cleveland History*



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Source: *Encyclopedia of Cleveland History*

While agriculture in Cuyahoga County had moments where it prospered, over time the continued growth of Cleveland’s industrial economy and its related population growth reduced the number of farms and the acreage of land devoted to farm production. This trend halted briefly between 1930-1940 when the Great Depression led to an increase in the acreage of farmland and the number of farms.

During the Depression, Cleveland supported the development of “work relief gardens”. These gardens provided support to families who were hungry due to extended unemployment. The work relief gardens increased food self-reliance and reduced strained public relief programs. The work relief gardens came on-line quickly, beginning with the formation of a committee in February of 1933 and establishment of garden plots from the city for cultivation by relief clients in April. The gardens started in May and then were being used to grow vegetables by unemployed workers by June. The city even sent police to guard the community gardens and protect the harvest from marauders. The gardens continued throughout much of the depression, as confirmed by the temporary increase in the number of farms in Cuyahoga County during the 1930’s.

Overall, the Depression led to the collapse of real estate markets and increased the amount of land leased to farmers to cover land costs. Echoes of this history can be seen in initiatives in Cleveland today. The population of Cleveland has dwindled from a peak of almost a million residents to less than 400,000 today. Declining industry, the loss of manufacturing, and the resulting economic losses have led to a steady loss of population and rising inventory of vacant lands and buildings in the city. Cleveland’s historic interest in urban agriculture transcends these periods of economic decline and loss. In fact, urban gardening has been a central aspect of Cleveland’s culture since the 1900’s and has stayed a part of that culture through good times and bad.

History of Urban Gardening in Cleveland

While much of Cleveland's history with agriculture focused on producing for commercial markets, a rich history of urban gardening also defined the city's legacy of urban agriculture. In Cleveland, urban gardening typically involved people growing food for themselves or their families and neighbors on home plots, vacant lots, or school yards.

As noted in a 1907 article in the *Cleveland Plain Dealer*, the gardens promoted health, civic pride, beautification, and stronger neighborhoods. This history goes back to the early 1900's when the Home Gardening Association formed to promote gardening as a way of "clearing the streets and alleyways of ugly and unwholesome rubbish and planting shrubs and plants in otherwise unsightly places, brightening and beautifying the yards surrounding residences, especially in the crowded districts."

While focused initially on private residences, the Home Gardening Association realized the value of leveraging school yards as a place to teach young people and adults alike how to be effective gardeners. The *Plain Dealer* article goes on to note, "when the Home Gardening association was first organized, it simply attempted to beautify vacant lots and unattractive yards which surrounded houses. It was so successful in awakening interest in the culture of flowers... the idea of extending the work and reaching many additional neighborhoods through the public schools" took hold. The Home Gardening Association volunteers handled collection and distribution of seeds for school gardens, keeping the burdens of operating the gardens on school systems to a minimum. Over time, the schools began to develop curricula, mostly linked to the sciences, which used the gardens to supplement classroom teaching.

One educational garden established in a downtown district served to demonstrate effective methods of arranging and establishing crops in difficult downtown districts. The Association also supported development of a neighborhood garden on Lake Ave as a place for children infected with tuberculosis. The garden expanded to include small vegetable plots cultivated by children and a flower garden held in common and maintained by all of the young gardeners. The garden helped to provide a support system for children suffering from health problems while teaching and spreading gardening to other areas.

As reported in the *Images of America Series Book Cleveland School Gardening* by Joel Mader, Cleveland emerged as a major national innovator in school gardening, with cities around the nation and from as far abroad as Venezuela and Japan purported to replicate similar programs based on Cleveland's example. Gardening activities and curriculum were taught from kindergarten to 12th grade, with each school in the system having an area set-aside for garden activities. Gardens ranged in size from small plots in corners of the school yard to multi-acre farming areas with

greenhouses and outdoor classrooms. These larger plots became known as “tract” gardens.

In the way that front porches served as an interface between a private residence and its neighborhood, school gardens provided a unique interface between the school classrooms and the surrounding community. The gardens worked their way into the school curriculum, providing a hands-on, living laboratory for science classes. They also extended out into the community, providing educational opportunities to parents and adults who then beautified their own yards and vacant lots near their homes.

School garden activities began in the early 1900’s and spanned a 75 year history in Cleveland, reaching most of the youth and adult populations of the city. The tract gardens provided an opportunity for a large number of school children to become engaged in gardening. For a small fee, children got access to a 6’ x 10’ growing plot at the elementary school level or a 10’ by 30’ plot in high school. They took care of their plots and participated in summer classes twice per week.

Home gardening became an extension of the Cleveland school garden initiative. When school plots were too small or students lived too far away from tract gardens to participate regularly, home gardens were encouraged. The home gardens were treated like school garden plots, with the same process of evaluation and same rules for regular care. The schools distributed seed packets to support the home gardens, creating strong linkages between teachers and families in the community.

These school and home gardens contributed to improved physical and mental health through exercise and quality time outdoors and improved nutrition. About 92,820 students participated in the garden activities matched by an additional 21,000 plots held by home gardens. Although not sold on the open market, the total value of crops produced approximated about \$2.9 million (in 2008 dollars) per year in 1975, the last year that records were kept for the effort.

After a 75 year history, the Cleveland school garden program began to dissipate in 1977 when growing budget deficits for the school system forced the closure of the program. Many of the remnants of old school gardens have continued as community gardens supported outside of the schools, including the 5.5 acre gardens behind the Benjamin Franklin Elementary school in the Old Brooklyn. With 180 active plots, it is the largest community garden in Cleveland.

At the same time as the closure of the Cleveland school garden programs in 1977, Ohio State University Extension worked with the City of Cleveland to initiate the Summer Sprout program, which focused on promoting gardening as a way of increasing the nutrition of low-income families. Participating gardeners received support from extension, including seeds, starter plants, soil testing, humus, and materials for raised beds. Additionally, extension staff provided research-based education and training and organized a Master Gardener training initiative to train

Master Gardeners in the community who volunteer to provide support and technical advice for community gardeners. Today, about 80% of the 185 Summer Sprout community gardens occupy low-income neighborhoods and their participants capture the ethnic diversity of Cleveland.

Recent Trends in Urban Agriculture

Agriculture changed form and purpose, but always occupied a place throughout Cleveland's history. Over time agriculture supported four primary functions for the city. Urban beautification and community quality of life became one of the major areas of focus in the early 1900's for Cleveland, as the Home Gardening Association sought to support gardening as a way to improve the appearance of yards and vacant lots in the city. Learning and education encompassed a second common theme for many of the garden projects, especially as the Home Gardening Association developed gardens at schools as a way to teach both youth and adults. Urban farming also provided economic relief and nutrition during difficult economic times, including the Work Relief Gardens developed in the 1930's during the Great Depression. Finally, agriculture in Cleveland focused on commercial production, including Cuyahoga County's state prominence in agricultural production in the late 1800's and the introduction of greenhouse production between the 1930's to the 1970's.

Today, urban agriculture has once again emerged as a significant activity in Cleveland, with many parallels to efforts in the earlier parts of the city's history: economic development and job creation, economic relief, learning and education, health, and beautification. More contemporary pressures have contributed to the resurgence of urban farming. Public health concerns related to increasing childhood obesity and the rise in incidences of diabetes and other diet-related ailments motivates the use of gardens to improve local food supply and teach proper nutrition. Urban gardens also encourage entrepreneurship and increase the availability of fresh fruits and vegetables in the city. The 3,300+ acres of vacant land resulting from home and commercial foreclosures coupled with a declining population provide fertile ground for urban agriculture as a productive re-use of land. Poor access to fruits and vegetables for low-income neighborhoods can be remedied in part by urban agriculture. Rising consumer concern about the high reliance of our food system on fossil-based energy and climate change impacts have also stimulated interest in supporting sustainable local food systems.

With the exception of a handful of remaining commercial farms and greenhouses in Cuyahoga County, most of the urban agriculture activity taking place in Cleveland for the past 30 years has focused on community gardening. The Summer Sprout program, which distributes seeds and provides community garden sites, required that food could not be sold for commercial gain and could only be donated, shared, or consumed by the gardeners themselves. While not able to generate direct revenue, community gardening still provides significant economic value to city residents. According to Ohio State University Cooperative Extension, 56 combined

acres of community gardens occupy about 2% of the vacant land area in Cuyahoga County and generate an estimated value of \$2.6-3 million worth of food, approximately the same value produced at the peak of the school gardening initiatives in the 1970's. These gardens enable low-income families to stretch their budgets and increase resources needed to pay rent or other necessities.

In around 2005, urban gardening underwent a second growth phase as market gardening introduced a way to utilize vacant land that, unlike community gardens, enabled gardeners to grow and sell food to local markets. The New Agrarian Center and OSU Extension collaborated with the City of Cleveland Health Department and other partners to form City Fresh in 2004, a social enterprise aimed at improving healthy local food access in urban neighborhoods. OSU Extension adapted its already extensive curriculum and resources for community gardening and added a business planning and marketing component. Because the city did not allow vacant land to be used to generate revenue, this new crop of urban market gardeners sought their own land. They leased from private owners, obtained access to under-used school properties, or cultivated their own properties. These urban gardeners tended to be business minded entrepreneurs, including a mix of individual growers and non-profit or social service agencies.

The names of their urban farms reflect the local ecological and cultural heritage of Cleveland: Blue Pike Farm, EcoVillage Produce, Cleveland Crops, Garden Boyz of Central, Gather Round Farm, Wonder City Farm, and Vels Purple Oasis. Many urban farmers worked together early on to expand markets for their crops. The Tremont Farmers Market initially began through the organizing efforts of urban farmers. Gardens were also initiated by small businesses or to fulfill some of the social missions of non-profit organizations. For example, Lucky's Café in Tremont captured the attention of the New York Times when they hired a team of neighborhood youth to install a garden next to the café. The garden provides food used directly by the café and provides a relaxing backdrop for their popular weekend brunches. Social service agencies also created market gardens on their properties to teach entrepreneurship and life-skills for clients working through mental health challenges or drug and alcohol recovery.

While the entrepreneurial initiatives of small organizations or creative individuals drove earlier market gardening efforts, a third shift in urban agriculture appeared around 2009. Beginning this year, a variety of initiatives featured more elaborate community partnerships aimed at leveraging urban agriculture to address a wide range of local food activities, from larger urban farms to food processing and even construction. Many of these efforts also bridged urban farming with the broader economic goals of job and enterprise creation and productive re-use of vacant property.

In an effort to address the chronic unemployment of adults with developmental disabilities, the Cuyahoga County Board of Developmental Disabilities (CCBDD) established its first urban farm at the site of the former Stanard School, located

around E. 55th and St Clair. In 2010, this 1 acre farm employed about 10 adults who farmed and participated in produce sales. Named Cleveland Crops, the CCBDD plans to eventually develop 10 urban farms throughout Cuyahoga County and develop opportunities in local food processing in the off-season, with the goal of eventually employing 100 adults. Green City Growers, an initiative of the Evergreen Cooperative enterprise in University Circle, is in the process of developing 4.6 acres of hydroponic greenhouses in the Central neighborhood that will provide year-round jobs to an estimated 35 to 40 local residents. As a cooperative, these workers can eventually hold part-equity in the cooperative and also participate in decision-making.

Another set of initiatives aims to create more mixed-use local food initiatives that combine urban agriculture with food processing and value-added production. In early 2010, the Ohio City Fresh Food Collaborative converted six acres of land next to the West Side Market into an urban farm. The parcel includes a 2 acre community garden where residents of the adjacent Cleveland Metropolitan Housing Authority provide nutritious foods for themselves. The site also provides acreage for market gardeners and a refugee training program that markets food to a number of local restaurants in proximity to the farm. The initiative is also working to develop a community incubator kitchen, a composting effort, and a presence at the West Side Market as it seeks to create more opportunities for local farmers. On the east side of Cleveland, the Cleveland Greenhouse Partners recently acquired a 3 acre site that includes a former Catholic Church, a rectory, and a large amount of vacant land. The group plans to provide year-round food through greenhouse production of vegetables and greens, aquaculture (fish farming), and composting. They also plan to use the church to provide food warehousing and retail sales in a neighborhood that has little access to fresh and local food.

Several non-profit organizations collaborate with area residents to provide training and land access to support urban agriculture production. Neighborhood Progress Inc. and the Kent State University Urban Design Collaborative, initiated the ReImagining Cleveland project to provide start-up grants to local residents to utilize green space for urban agriculture or other environmental uses. In 2010, ReImagining Cleveland provided support to 30 existing and new initiatives, including community gardens, market gardens, orchards, and vineyards. In the Kinsman neighborhood, a partnership formed in 2010 between the US Department of Agriculture, the Ohio Department of Agriculture, the City of Cleveland, and Burten, Bell, and Carr Development to develop a \$1.6 million Cleveland Urban Agriculture Incubator Project. This effort will begin with cultivation of six acres of land-bank properties in the Central/Kinsman neighborhood. The program includes a Beginning Entrepreneurs in Agricultural Networks (BEAN) program which will parcel out 20 market garden sites to up to 35 beginning urban farmers. A ½ acre demonstration and research garden will be included in the site. An additional 16 acres of parcels have been identified for future expansion of the incubator.

As the number of urban farming initiatives grows, so too do opportunities for

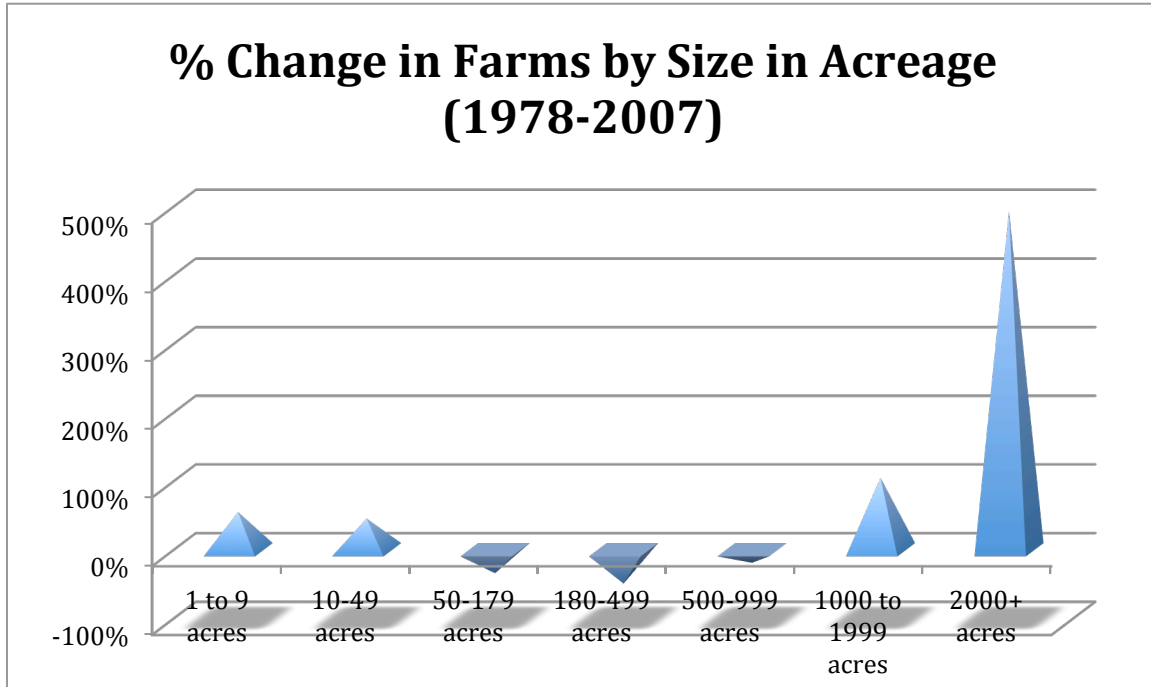
supporting businesses that provide services to urban farms. One such venture, Tunnel Vision Hoops, is a for-profit partnership between three urban growers in Cleveland. The group has developed a design for a “high-tunnel”, essentially an unheated greenhouse, that includes better wind-resistance, rainwater collection, and a more efficient use of interior space. These greenhouse kits enable growers to greatly expand the growing season, adding up to 3-4 months to the normal 6 month production window. The kits also feature metal hoops fabricated locally in Cleveland.

The past five years in Cleveland have seen a rise in interest in leveraging urban agriculture to improve quality of life in the city, whether as a mechanism to improve health and nutrition, create jobs, or better utilize the significant and still growing inventory of vacant land. While addressing contemporary challenges, many of these activities cycle back to earlier points in Cleveland’s history when urban agriculture addressed beautification, poverty relief, economic development, and education. While Cleveland has shown a long history of supporting various forms of agriculture within its urban boundaries, the city had also helped to catalyze new opportunities for the diverse collection of farms in the rural communities of Northeast Ohio.

Cleveland and Agriculture in Northeast Ohio

While urban agriculture provides an important point of leverage to address many chronic environmental, economic, and social urban challenges, an urban population can expect only a portion of its overall food needs to be met within city boundaries. Ultimately, the demand for locally grown food can help to forge stronger economic and social linkages with surrounding rural communities.

Over the past 10 years, there has been a rise in the number of small and medium-scale rural farms connecting directly with urban populations. Evidenced by the growth of farmers markets (where groups of farmers sell their food directly to customers), restaurants or institutions featuring locally grown food, or Community-Supported Agriculture (CSA) programs (where a group of consumers purchase “shares” in a local farm in exchange for weekly food deliveries throughout the growing season). The emergence of CSA’s and Farmers’ Markets parallels earlier “truck farming” enterprises that connected farmers directly with urban neighborhoods. Truck farming began to drop off in the 1950’s as government subsidy programs and economic conditions led more farmers to either grow very big or get out of production entirely, but we are now seeing growth of some of these smaller farm enterprises that market directly to consumers and businesses.



The above chart shows the growth of farms based on acreage in Northeast Ohio over the past 30 years. The significant growth of large acreage farms reveals consolidation of farms into larger parcels. Large acreage farms focus mostly on commodity production, mostly corn, soybeans, and wheat. Due to chronically low food prices over the past four decades, farmers had to expand acreage and equipment investments to farm these parcels. However, the chart also reveals a second area of growth in smaller acreage (less than 50 acres) during the same time period. Many of these farms reflect one of the fastest growing sectors in our national food economy: small-scale farms that generate significantly more income per acre through a mix of crops and livestock, much of which is marketed directly to consumers or businesses in the city.

Northeast Ohio contains a diverse eco-system of farm operators. Small and mid-size farm operators range significantly from types of agricultural production, acreage in cultivation, years in operation, and the locations of their farm (urban, suburban, or rural). But a few commonalities distinguish farmers serving local markets:

- a) rural and urban farmers use organic, sustainable, or environmentally friendly production and livestock management practices;
- b) they produce for stratified and diversified markets: direct sales, farmers market, restaurants, niche wholesale, and secondary markets; and
- c) they incorporate diversified production practices, innovative technologies, and promote their operations within a values-based food supply chain that favors health and environmental stewardship.

Larger-scale farms producing mostly commodity grains provide a different agricultural picture. Products from these farms are not directly marketed to

consumers, but are typically sold as inputs to industrial food manufacturing processes. These farms tend to be heavily subsidized by tax-payer dollars and they impose significant environmental costs due to soil erosion and non-point source water pollution (pollution that comes from a variety of sources that cannot be traced back to one polluter). Agricultural run-off is the primary culprit for the 8,000 square mile dead zone in the Gulf of Mexico. Pollution runs off from farms along the Mississippi basin and then accumulates in the Gulf of Mexico, damaging aquatic habitat and the livelihoods of small businesses that rely on fishing or recreation. Lake Erie has a similar dead zone, also affected by agricultural run-off and fertilizer run-off from lawns and urban lots.

Overall, the land dedicated to industrial agriculture is not in any way connected to the urban centers of Northeast Ohio. There are few economic or social linkages. It is unclear how the recent rise in commodity prices will affect this form of large-scale, industrial agriculture. Despite historic rises in prices for basic commodities, there are no indicators that subsidies will similarly be drawn down. Operating with no taxpayer subsidies, the current trend toward local food systems has created new partnerships and connections between cities in Northeast Ohio and rural communities as farmers find more opportunity when they connect directly with consumers and receive the full price of what they sell.

In 2010, a study investigated the opportunities for food localization in Northeast Ohio. The report concluded that a 25% shift in consumer spending toward local farms and locally owned food-related businesses would generate upwards of 27,000 new jobs and \$4.5 billion of output for the region. With about \$15 billion presently spent on food each year by the residents and businesses of Northeast Ohio, this represents a significant growth opportunity. At present about 73 cents of every dollar spent goes into non-farming activities, including trucking, processing, marketing, and warehousing. With the average food molecule traveling 1500-2500 miles to reach us, most of the food dollars that we spend leave the northeast Ohio economy. By connecting farms more directly with the city, farmers realize a higher price for their product while reducing the percentage that gets tied up in distribution, processing, or other activities outside of the region. The report goes on to recommend a number of policies, investments, and programs needed to make local agriculture competitive in the region. A major part of the strategy focuses on new economic linkages between dense urban centers and farms in the region.

How Cities Can Stimulate Local Food Systems

For many farmers, it makes economic sense to create stronger relations with cities. Cities possess a number of assets critical to the development of a sustainable and mixed rural agricultural landscape. Cities have high population densities and a diversity of ethnic groups- factors that make for strong markets. Cities also have a high density of restaurants, institutions, and businesses, many of which favor foods grown locally. More consumers seek locally grown foods and businesses recognize both higher quality and a marketing advantage to consumers. One chef at a

Cleveland restaurant recently noted that locally grown food is more cost-effective. Purchased shortly after harvest, the produce tastes better and keeps longer than foods shipped in from a long distance that often arrive more than a week off the vine. This trend toward local food, whether urban grown or originating from a family farm in the country, has re-defined the culinary landscape.

Cleveland

A group of about 25 independently-owned restaurants in Cleveland have driven significant localization of the food supply. One of Cleveland's early pioneers was Parker Bosley, owner of the former Parker's Bistro (now Light Bistro) in Ohio City. Bosley established the bistro in the mid-1980's and his menu shifted with the seasons, reflecting his direct relationships with area farmers. Today, sourcing locally grown food is a central feature of many area restaurant. Fire Food and Drink in Shaker Heights, opened in 2001, Chef-Owner Doug Katz obtains local food for his menu directly from the farm stands at the weekly farmers' market just outside his doors. The Greenhouse Tavern, founded in 2009, features a number of locally-grown and produced foods and an interior décor furnished by local artisans utilizing repurposed building materials and salvaged objects. Crop Bistro, located on Cleveland's west side, offers a number of locally-inspired menu options and chef-owner, Steve Schimoler initiated Local Crop as an affiliated business that distributes local food to restaurants in Cleveland.

Located in Ohio City, the Great Lakes Brewing Company (GLBC), founded in 1988, provides an impressive number of innovations in its connection to local agriculture. The GLBC hires a sustainability coordinator who, among other tasks, "forages" locally grown foods from area farmers for use in their restaurant. The GLBC also invests directly in local farms that grow for the restaurant, including Pint Size Farm in the Cuyahoga Valley Park and the Ohio City Fresh Food Collaborative, just a block away from the brewery. Even the spent grains from the brewery provide an important soil conditioner, livestock feed, and fertility source for an extensive network of community gardens, urban farms, and rural farms.

In addition to restaurants, Cleveland has seen growth of a variety of farmers markets which provide a critical connecting point between northeast Ohio farmers and urban consumers. The North Union Farmers Market association operates six farmers markets in Cuyahoga County. They estimate that their markets will generate upwards of \$2 million in revenues for their vendors. Several independently operated farmers markets organized a collaboration with GrowHio, to leverage farmers markets in Cleveland to improve access to healthy foods and to increase consumer support of farmers markets.

Connections with local agriculture have also intertwined with public health initiatives in Cleveland. Home to four distinguished health care institutions (Cleveland Clinic, Metro Hospital, St Vincent Charity Hospital, and University Hospitals), all feature efforts to combine preventative health with the consumption of locally-grown fruits and vegetables. A number of Cleveland neighborhoods,

particularly those in low-income neighborhoods, suffer from a dearth of food outlets. Many of these so-named “food deserts” have recently lost full-service grocers and residents rely on a limited selection of fast-food or convenient-mart establishments. Due to poor food options, diet-related diseases like diabetes and heart disease, particularly effect low-income neighborhoods. To remedy this, the Health Departments of Cleveland and Cuyahoga County, in conjunction with local health-care institutions, have sponsored a number of efforts to increase healthy local food access. These efforts include urban gardens installed on hospital grounds, health screenings, distribution of local food shares through a program called City Fresh, and promotion of urban farmers markets.

From restaurants to farmers markets to urban gardens, its active local food scene played a part in Cleveland’s increasing recognition as a national leader and innovator of local food systems. The growth in local farmers markets and 250 urban gardens landed Cleveland the distinction of the #2 city in the United States for sustainable local food systems according to SustainLane’s National Urban Sustainability Index.

Youngstown

Cleveland is not alone in efforts to connect local farms with the city. East of Cleveland and near the Pennsylvania border sits Youngstown. Similar to Cleveland, Youngstown struggled with the decline of steel manufacturing and related industries. A mid-sized city, the population of Youngstown peaked at 162,000 and has since shrunk to about 72,000 residents. Its economic decline followed a rapid loss of steel and related manufacturing in the 1980’s. Like many rust-belt cities, the lack of economic diversification reduced its ability to bounce back. Through a mixture of grassroots initiative and the visionary leadership of current Mayor Jay Williams, the city is pursuing a diversified community economic development strategy. Local foods form one of the core aspects of creating a more diversified and resilient local economy. The Youngstown Neighborhood Development Corporation initiated a “Lots of Green” initiative which trains residents to utilize vacant lots for urban market gardening. Grow Youngstown supports urban farming initiatives and also operates several food share programs which connect farmers outside of Youngstown with urban neighborhoods. Common Wealth, a cooperative development organization, operates two downtown farmers markets and recently began to convert an empty restaurant and bar facility into a kitchen processing space for local food enterprise creation. Goodness Grows, a faith-based local foods organization in neighboring North Lima, promotes sustainable agriculture education and offers a vocational training and GED program at its 22 acre farm for young adults coming out of incarceration.

Wooster

The catalyzing role of cities in local food systems is not limited to larger, industrial cities like Cleveland and Youngstown. South of Cleveland, the 25,000 residents of Wooster comprise 25% of the population of Wayne County, the Northeast Ohio county with the greatest farmland acreage and highest number of farmers. With a

diverse mix of Amish, small and medium scale organic, and commodity farms, local food initiatives can be seen throughout the county. In 2010, a group of farmers, teachers, bankers, artists, and local residents established Local Roots, a retail cooperative that includes both farmers and consumers as its members. The coop occupies a formerly empty downtown store-front and provides a wide range of locally grown and produced products, including meat, cheese, milk, fruits and vegetables, dried herbs, and locally processed foods. The coop also provides several locally produced non-food items, including yarn, clothing, skin-care products, and arts and crafts. Just south of Wooster, the Greenfield Cooperative includes 90 Amish Farm families that follow certified organic production for produce, cheese, and eggs. Greenfield has increased market access to cities throughout Northeast Ohio and Pennsylvania, significantly expanding opportunities for its farmer-members.

Oberlin

Even small towns in Ohio can leverage their residents, businesses, and institutions to impact the local food system. Based in a rural part of Lorain County, Oberlin is one of the pioneers of local food systems in Northeast Ohio, with its earliest efforts dating back to 1988. Today, the combined purchasing of its college and student-cooperative dining halls puts more than \$1 million annually into the local economy. The college dedicated a 70 acre farmstead to the New Agrarian Center (NAC) which supports a community farm and education center and has grown to have a regional impact on local food systems. The college also produces an annual crop of graduates, many of whom remain in Oberlin and have created a variety of small businesses including restaurants, a whole food market, a downtown farmers market, a vegetable-oil and bio-fuel filling station, and a downtown, mixed-use development that supports a number of new, locally-owned food businesses. A unique partnership between Oberlin College, the City of Oberlin, and the local school districts called the Oberlin Project is working to link a sustainable re-development of a 14 acre urban site with the establishment of a 20,000 acre greenbelt. This greenbelt will be developed in conjunction with its already extensive network of local farmers to provide local food, energy, and building materials. The Oberlin Project also plans to serve as a model for transitioning a community away from dependency on fossil-fuel energy.

Looking Forward

While economic reasons motivate support for local agriculture, whether it takes place within or outside of city limits, several downstream trends will increasingly face our food system. As the oil spill in the Gulf of Mexico made dramatically clear, there is a rising risk and price associated with finding ever more remote and difficult to access petroleum reserves. This will lead to a long-term increase in energy prices. The competitiveness of food grown 1,500 to 2,500 miles away is greater if energy prices are cheap. As energy prices rise, so too does the cost of processing, packaging, and transporting food over these long distances. Even if fossil energy reserves were not limited, the release of carbon in the atmosphere poses an

increasing threat of creating adverse weather conditions. A more unstable climate will present a number of challenges to agriculture, from increasing periods of drought or heavy flooding; increased spread of pests and diseases; reduced water supplies; and more extreme weather events. Climatic instability will dramatically affect the stability of agriculture and the ability to feed a growing world population. We have already seen this happen in Russia in 2010 when severe drought led to a loss of more than 30% of their grain production while leading to increased food prices world-wide.

The other factor that will continue to impact food systems is public health. As diets veer toward highly processed foods and an over-consumption of meat, rising trends in childhood and adult obesity and diet-related diseases such as diabetes and heart disease are alarmingly high. The ability of residents to access healthy foods in cities such as Cleveland have been further challenged by the continuous loss of grocery stores in urban neighborhoods. According to the Cuyahoga County Planning Commission, residents in Cleveland have to travel 4.5 times further distance to reach a full-service grocery store than a fast food establishment. This has led to an alarming rise in obesity and health issues stemming from diet. These conditions raise overall costs for health care and contribute to reduced productivity and quality of life. Even the Pentagon has identified the lack of healthy food as a significant national security issue. The baseline health of individuals entering basic military training has declined significantly over the past decade.

These trends point to a need to better understand the long-term viability of our food supply and how it effects the health of our bodies, our communities, the environment, and our local economy.

The recent rise of interest in local food systems, evidenced both by Cleveland's interest in urban farming as well as its efforts to connect more directly with rural farmers in the region, points to one proactive way to address some of these current challenges. The resurgence of urban agriculture and local food systems in Cleveland echoes its past. But what ultimately will drive long-term development of sustainable local food systems will be the future. How can we begin with local food systems to understand how to create and support more sustainable and healthy cities and rural communities with an eye toward the future? Answering this question will have to be a region-wide undertaking. Successfully addressing this question will go a long distance in leveraging a better future for our communities in Northeast Ohio.

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