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## Urban Farming in Buffalo: Economic Development and Climate Change Strategy

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## Urban Farming in Buffalo: Economic Development and Climate Change Strategy

### Abstract

Our food system is heavily industrialized, which means it consumes an incredible amount of resources, including energy derived from burning fossil fuels. By one estimate, the food system takes 10 calories of energy to produce one calorie of food. The phrase “eating oil” refers to our use of oil to power the machines that plant seeds, spray pesticides, herbicides, and fungicides, spread fertilizer, operate irrigation pumps, till the soil, harvest and process crops, and transport the food. All of these activities produce greenhouse gases. In short, our food system is a major contributor to climate change. The development of urban farms is a necessary strategy to “de-carbon” the food system for several reasons. Urban farms typically use human power in place of machines powered by oil. Urban farms are smaller than industrial scale farms; thus they can be worked and managed with fewer machines. And despite a low tech approach, home gardens and small urban farms can be much more productive per unit of land and energy used than large scale farms.

### Keywords

Buffalo, Environment, Land Use, Parks/Gardens/Green Spaces, Food, Fact Sheet, PPG, PDF

## Urban Farming in Buffalo: Economic Development and Climate Change Strategy

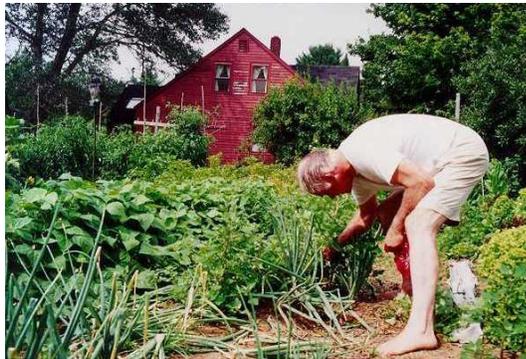
Michael Raleigh

October 27, 2010

### How are urban farms related to climate change?

Our food system is heavily industrialized, which means it consumes an incredible amount of resources, including energy derived from burning fossil fuels. By one estimate, the food system takes 10 calories of energy to produce one calorie of food. The phrase “eating oil” refers to our use of oil to power the machines that plant seeds, spray pesticides, herbicides, and fungicides, spread fertilizer, operate irrigation pumps, till the soil, harvest and process crops, and transport the food. All of these activities produce green house gases. In short, our food system is a major contributor to climate change.

The development of urban farms is a necessary strategy to “de-carbon” the food system for several reasons. Urban farms typically use human power



in place of machines powered by oil. Urban farms are smaller than industrial scale farms; thus they can be worked and managed with fewer machines. And despite a low tech approach, home gardens and small urban farms can be much more productive per unit of land and energy used than large scale farms.<sup>1</sup>

Urban farms develop soil fertility by using cleaner, greener methods than industrial scale farms. Instead of applying nitrogen fertilizer produced with natural gas, small scale farms and gardens use cover crops, compost, and heavy mulching. These practices do not require fossil fuel inputs and yield other benefits such as reducing the amount of organic material sent to landfills and increasing the carbon content of soil.

Finally, urban farms re-localize food production. Food grows near its final destination, which reduces the need for packaging, processing, and shipping or trucking.

### **How does urban farming relate to economic development?**

Urban farming contributes to economic development both directly and indirectly. The direct effects are the creation of jobs, the use of neglected resources (urban land, water, organic waste), and the production of food. The indirect economic effects of urban farming are harder to quantify but nonetheless important. Urban farming is a purposeful use of vacant land. Vacant land and vacant housing have negative effects on community cohesion and morale. The reuse of vacant lots for farms changes the way community residents view the land. Residents see the farm space in a positive light.

Urban farming is not entirely new to Buffalo, but over the past couple of years there has been an explosion in farming activity. These are some of the farms and organizations making it happen.

### **Massachusetts Avenue Project (MAP)**

MAP is an example of a well-rounded urban farming organization because it produces not only nutritious food, but also educational, economic, and social opportunities. MAP's half acre farm on the West Side of Buffalo features fruit and vegetable gardening, a 1,000 gallon rainwater catchment system that provides all of the farm's water, chickens, and the city's first aquaponics system, which produces Tilapia fish. MAP runs the youth program Growing Green. The Growing Green program trains young people in organic agriculture, business, and community development. MAP has also developed the Buffalo Grown Mobile Marketplace, a means of improving access to quality locally grown produce. The Mobile Marketplace is a converted bus that sells fresh fruit and vegetables in neighborhoods where fresh produce is scarce.

MAP excels in aquaponics, defined as the symbiotic cultivation of plants and animals in a re-circulating environment.<sup>1</sup> MAP's system makes up a small part of the farm area but produces as much food as the entire rest of the farm. MAP's system, designed by staff member Jesse Meeder, is housed in a straw bale, passive solar heated greenhouse. The system is made of the central fish tank and a



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<sup>1</sup> *Aquaponics*. Wikipedia.com

number of peripheral tanks in which fish and human food are grown. Water is continuously cycled through the system's connected tanks so that the fish waste fertilizes plant growth and plants clean the water of fish waste. MAP does not need to buy fish feed because enough is grown in the greenhouse to feed all of the fish and yield tomatoes, peppers, watercress and other human foods. Worm composting is another element of the aquaponic system. The only inputs required to the system are the electrical energy to run the pump that cycles water and new fish purchased from a hatchery. MAP is constructing a much larger aquaponic system on-site to be able to provide a consistent supply of fish to restaurants and the public and to generate more money. MAP also demonstrates aquaponics and encourages experimentation and home-scale systems in the community.

### **Curbside Croft**

The Curbside Croft farm was established in 2009 on the West Side. The farm rents the lot from a private landowner. Its immediate mission is to provide more low cost, naturally grown, healthy produce to the immediate area. More broadly, the founders of the Curbside Croft seek to initiate a movement towards local food sovereignty, which they define as community member control over the means of food production.<sup>2</sup>

Farmers at the Croft employ common urban farming techniques of composting, worm composting, and rainwater harvesting. Unique among urban farms in Buffalo, the Curbside Croft features mandala style, keyhole garden beds. Instead of long rows of garden beds, keyhole beds are designed with a footpath to the center for access to the crops. This pattern of garden bed uses space and labor more efficiently.



### **Wilson Street Farm**

The Wilson Street Farm exists on two acres of vacant land on Buffalo's East Side and is operated by Mark and Janice Stevens. The Stevens lease the land from the city for one dollar per year and have a five year contract. The Stevens are allowed to sell the food they produce, but they are subject to restrictions and city oversight because they do not own the land. The City of Buffalo was unwilling to sell the vacant property because it may be needed for future housing development. Neighborhood residents and others question whether the land should ever be used for new housing, given the state of the neighborhood and Buffalo's continuing population decline. Nevertheless, the Stevens and the City reached a lease agreement as a compromise, and the City now supports the Wilson Street Farm enthusiastically.

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<sup>2</sup> *Welcome to Curbside Croft's Website.* [Curbsidecroft.com](http://Curbsidecroft.com)

The Wilson Street Farm is important because it is serving as a pilot project for farming on city property. The city owns thousands of vacant residential parcels. For farming to really take off, the city must be on board. To date, the farm features raised garden beds and a “hoop house” or semi-enclosed greenhouse which extends the growing season. So far only a fraction of the land is being used to grow food.

### **Curtiss Urban Farm Foundation<sup>ii</sup>**

The Curtiss Urban Farm Foundation (CUFF) began thanks in part to the devastating October snow storm of 2006. Buffalo residents living near the Central Terminal decided to take some of the thousands of trees fallen from the storm, chip them up and make compost for an urban farm.

CUFF farms a couple of city owned acres of vacant residential lots through Grassroots Gardens. Grassroots Gardens serves as a liaison organization between the City of Buffalo and community organizations looking to establish community gardens. Grassroots Gardens provides support and liability insurance for gardens designated community gardens. In Buffalo, there is an important legal distinction between a community garden and an urban farm. Community gardeners cannot sell their produce, while urban farmers, like the Stevens', can. Unfortunately, CUFF will not be able to sell any of the food it grows except through fundraising events where there is a suggested donation in exchange for food. Another important legal note about urban farms and community gardens on city owned land is that farm animals are usually not allowed. There is a law regarding chickens, but it allows a maximum of five chickens.

CUFF grows a number of staple garden crops such as tomatoes, peppers, and pumpkins as well as a variety of berries. CUFF's berry strategy is intended to produce food with less labor and constant maintenance than a typical large vegetable garden plot. CUFF's director of fundraising and planning told me that because CUFF is an entirely volunteer driven organization, it is important for them to grow less time intensive crops. This year CUFF planted blueberry bushes and grape vines, which once established will yield fruit for potentially ten to twenty years with little upkeep. Another benefit to growing these crops is that there is no chance of contamination from the soil, which is an important concern. The fruit grown on vines does not take up lead or other contaminants from the soil. Urban farms and community gardens on city land are required to have most vegetable crops grown in raised beds because of the potential soil hazard. There is a tradeoff to berry bushes and other perennials; they require a willingness to wait a number of years before food is produced.



The bushes planted this year may take three or more years to provide blueberries.

## Conclusion

Urban farming and gardening is emerging in Buffalo as part of the larger trend of local people participating in food production across the country. Over the last one hundred years, the United States has shifted from a mostly agrarian nation to a suburban and urban nation disconnected from nature and real food. We are finally coming to grips with the consequences of this disconnection. We have an epidemic of diseases related to diet, including diabetes, cancers, and heart disease. Buffalo has many worn down, shrinking neighborhoods in need of a new economic paradigm. And we must address the climate crisis caused by our carbon emissions. Urban farming and gardening is an excellent means of working on multiple social and environmental problems at the same time.



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<sup>i</sup> "As food prices rise, policymakers ignore potential of home and community gardens." By Bill Duesing, from Grist.org. <http://www.grist.org/article/the-solution-beneath-our-feet>.

<sup>ii</sup> Information for this section comes from an interview with Erwin Rakoczy, CUFF board member.

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