

Bloomington City Food System: A First Look



Prepared by the BFPC Assessment Working Group

Assessment Working Group Members:

Jennifer Studebaker, Chair

Angela Babb

Kelly Fraser

John Galuska

Stephen Hale

Whitney Mayfield

David Parkhurst

Ashley Schoolman

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Introduction

The Bloomington Food Policy Council (BFPC) Assessment Working Group was created to document and evaluate the food system of Bloomington, Indiana and its surrounding areas. The Assessment Working Group is composed of community volunteers that donate their time and expertise to this ongoing project. Completing an assessment of our community food system will provide a baseline from which mark growth and improvement over time and to better inform policy-making on food issues in our community. This report contains our current findings, including the results of our recent Growers Survey, and outlines future research goals.

This report focuses on food production and security in Bloomington. Future research areas include food distribution networks and waste streams. As noted in the BFPC Food Charter, “Food security is a basic human right which contributes directly to the health and wellbeing of residents,” and, “the sustainable production, abundance, and ready availability of local food will tend to increase food security while decreasing negative impacts on the environment,” (BFPC, 2014: 1). With this in mind, our first steps in assessing the food system were focused on the accessibility of producing food for personal use and commercial sale in our city.

City Regulations on Food Production

Here we have provided a summary of the city zoning codes as they pertain to food production. This is to describe the options that residents of Bloomington have in gardening and raising livestock for subsistence. Future reports will include comparisons of accessibility with other communities and a summary of codes at the Monroe County level.

The City of Bloomington Municipal Code recognizes “Urban Agriculture” as the general term for the growing of food crops (2014: 20.11.020). Personal gardening is an unregulated activity under this term, while “Community Garden” is distinguished from “Crops and Pasturage” mainly by the commercial intent of the produce. Community Garden is a group growing venture whose produce is not permitted for sale, while yield from Crops and Pasturage is intended for the production of income.

Current City of Bloomington Municipal Code lists five Zoning Districts that include Urban Agriculture within their Permitted Uses:

- Residential high-density multifamily (RH) (1.07 sq mi, 4.08%)
- Residential multifamily (RM) (0.92 sq mi, 3.53%)
- Residential core (RC) (1.39 sq mi, 5.28%)
- Residential Single family (RS) (6.19 sq mi, 23.56% of city)
- Residential Estate (RE) 0.19 sq mi, 0.72% of city)

(2014: 20.02.180, 20.02.140, 20.02.100, 20.02.060, 20.02.020)

All told, these zones cover 9.76 square miles, or 37.17% of the City of Bloomington (including Areas Intended For Annexation where the city exercises planning jurisdiction). Residential high-density multifamily, Residential multifamily, and Residential core zones, when combined, cover only 3.38 square miles (12.89% of city property). These zones represent Bloomington's oldest neighborhoods and residents live in diverse dwellings, from luxury apartments to 100 year old “gable-L” houses and bungalows. Urban Agriculture is permitted and enhanced by the inclusion of Community Gardens. The presence of Community Gardens is especially beneficial to individuals residing in apartment buildings, rentals, or homes with small lots, who would otherwise not have access to gardening activities.

Residential single-family zoning, which is concentrated in the southeast quadrant of Bloomington, is the largest of the residential zoning districts to permit forms of Urban Agriculture. In addition to permitted uses including Community Gardens, residents of RS zones are permitted to hold accessory chicken flocks of up to 5 hens after obtaining a city permit. The chicken coop and run must meet standards defined by the Standards for Maintaining Chicken Flocks (7.21.057).

Residential Estate is found in small slivers on the outskirts of town, with the largest swath being in the area off North Dunn, between the Bypass and Lake Griffy. RE is the smallest zone permitting Urban Agriculture and is the only residential zone permitting Crops and Pasturage. By definition of crops and pasturage, this is currently the only area within city limits that would allow production of food for intent to sell,

and/or animal husbandry. In addition, two Zoning Districts permit Orchards: Residential Estate and Quarries.

The single residential-type zone that does not include Urban Agriculture as a permitted use is the Manufactured/Mobile Home Park (BMC, 2014: 20.02.220). As Urban Agriculture includes any form of individual vegetable, herb, or container garden, this zoning, if strictly enforced, could put a barrier between some of the lowest-resource individuals in the community and healthy, affordable, home-grown foods for personal consumption.

Growers Survey Results

Adapted from an earlier survey in 2012, the Assessment Working Group administered the Growers Survey to document the range of residential growing practices in our community as well as identify any barriers. This survey was created using Qualtrics Research Suite Survey Software. The survey was tested at the October 2013 Quarterly Meeting and posted on October 23, 2013 to the BFPC website. It remained open until May 31, 2014. The survey was shared electronically and advertised with flyers at events.

Survey participants were organized into three categories: food growers, flower/ornamental growers, and non-growers. Participants self-identified at the start of the survey which category best represents them, and they were directed to the appropriate set of survey questions. Food growers include any individual that grows plants or raises animals for consumption. Flower/ornamental growers cultivate plants for

reasons other than consumption, though their gardens may have positive impacts on food producers, i.e. providing pollinators for bees. Non-growers do not participate in any plant growing or livestock raising, though they may be interested in it. We had a total of 88 unique participants. Participants were allowed to skip questions, so sample sizes have been provided per question.

The following question was asked of all participants to test awareness of current urban agriculture regulations.

Table 1. Did you know that the City of Bloomington already permits forms of urban agriculture in residential zones?

Type	Yes (%)	No (%)
Food (n=49)	82	18
Flower (n=7)	57	43
Non (n=20)	75	15
Total (n=76)	78	22

There appears to be a strong awareness, especially among food growers, that forms of urban agriculture are already permitted within the City of Bloomington.

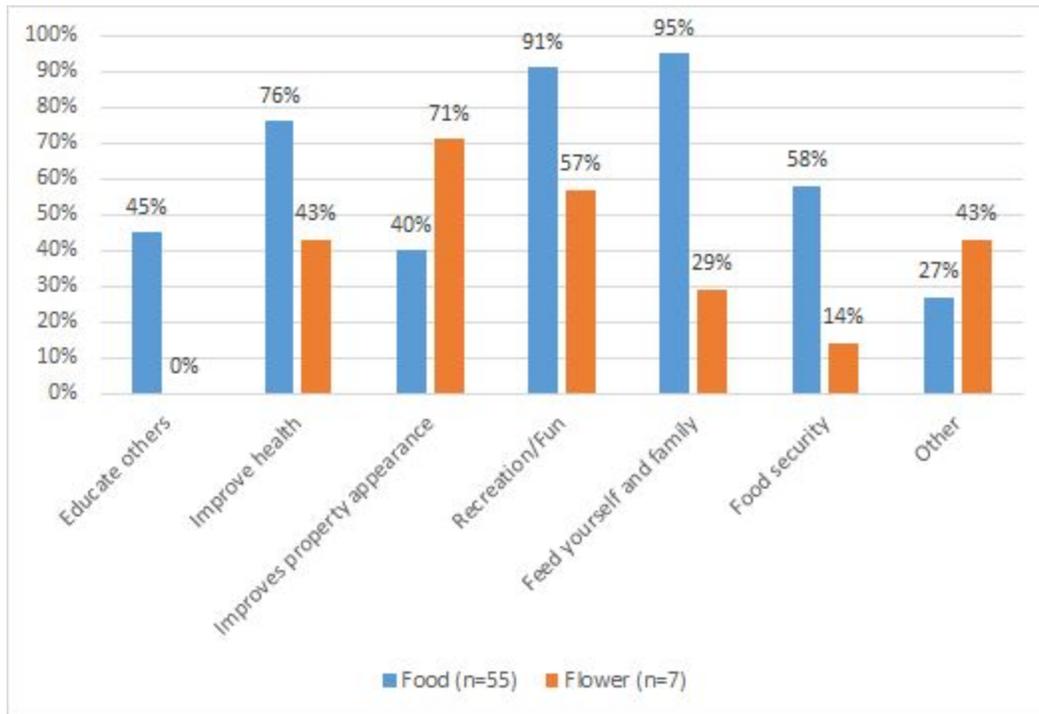
The majority of the Non-Growers Survey’s questions were unique, so we will summarize these responses independently. There were 23 non-grower participants. When asked about their interest in gardening in the future, 70% said yes, they are

interested. The most common barriers to gardening were available space (61%) and time (61%), followed by lack of equipment (48%), knowledge (43%), and finances (39%). With access to educational resources, tool, or volunteers, 65% agreed that gardening would be more feasible for them, with access to gardening tools being the most desired (67%). Interest in learning about beekeeping or raising urban livestock was lower at 39% interested. Among these, beekeeping was of greatest interest (39%), with chickens at 26% and goats at 22% interested. Other animals also included rabbits (13%), fish (13%), ducks (9%), and pigs/guinea hogs (4%). One write in response suggested frogs.

There was also the option to write in comments. Water was highlighted as an area of concern for one respondent, “As we saw recently, the weather can be very dry; it will become increasingly unpredictable as climate change proceeds...There should be (and perhaps are?) plans for wiser use of water, from recycling, to construction of recharge basins, to using minimally-treated gray water for gardening, to separating storm sewers from sanitary sewers, to de-channelizing streams and re-creating their flood plains, etc.” Another queried about the prevalence of fish farming in our area, noting the environmental and economical success they had observed in central Wisconsin.

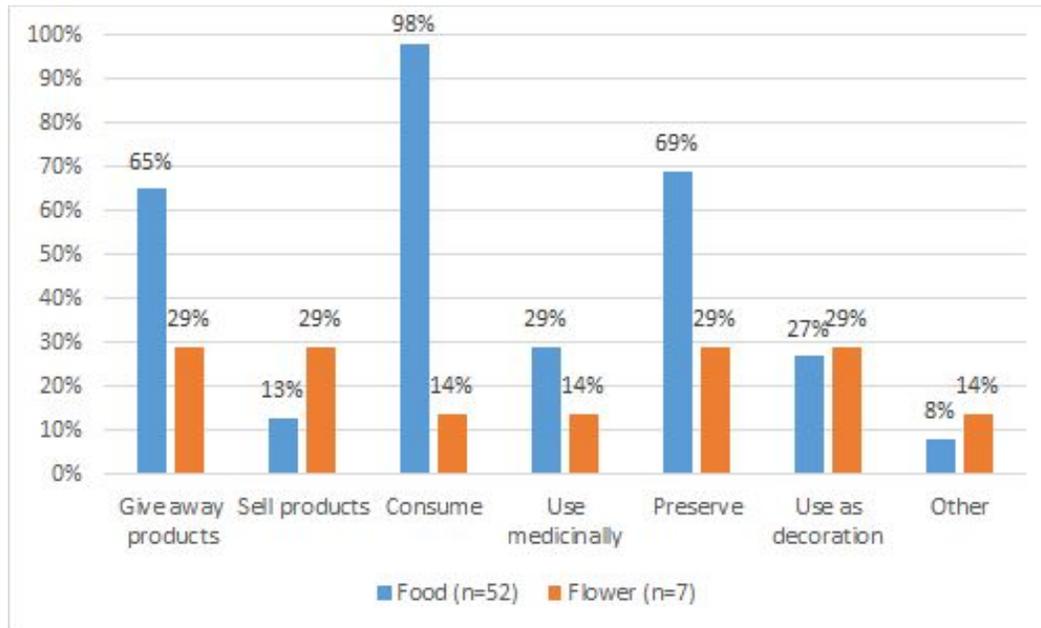
Food and Flower/Ornamental Growers shared several questions, with a few exceptions specific to the Food Growers. Each type’s results are presented separately. The top number of respondents was 58 people for the food growers and 7 for flower/ornamental.

Figure 1. As a gardener, what motivates you to grow? (select all that apply)



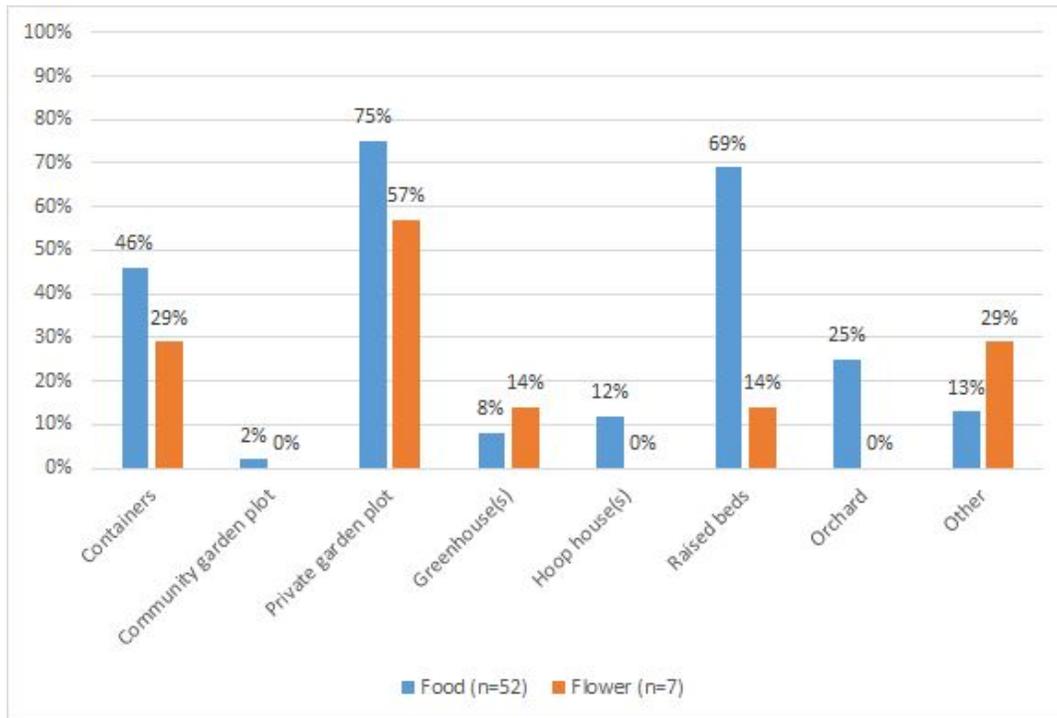
Motivations for gardening varied between the two types of growers. For food growers, feeding their family was the top concern (95%), while improving property appearance took precedence for flower growers (71%). However, recreation/fun was high motivator for both types, and gardening was seen by many as an activity that improves health.

Figure 2. What do you do with the products of your garden? (select all that apply)



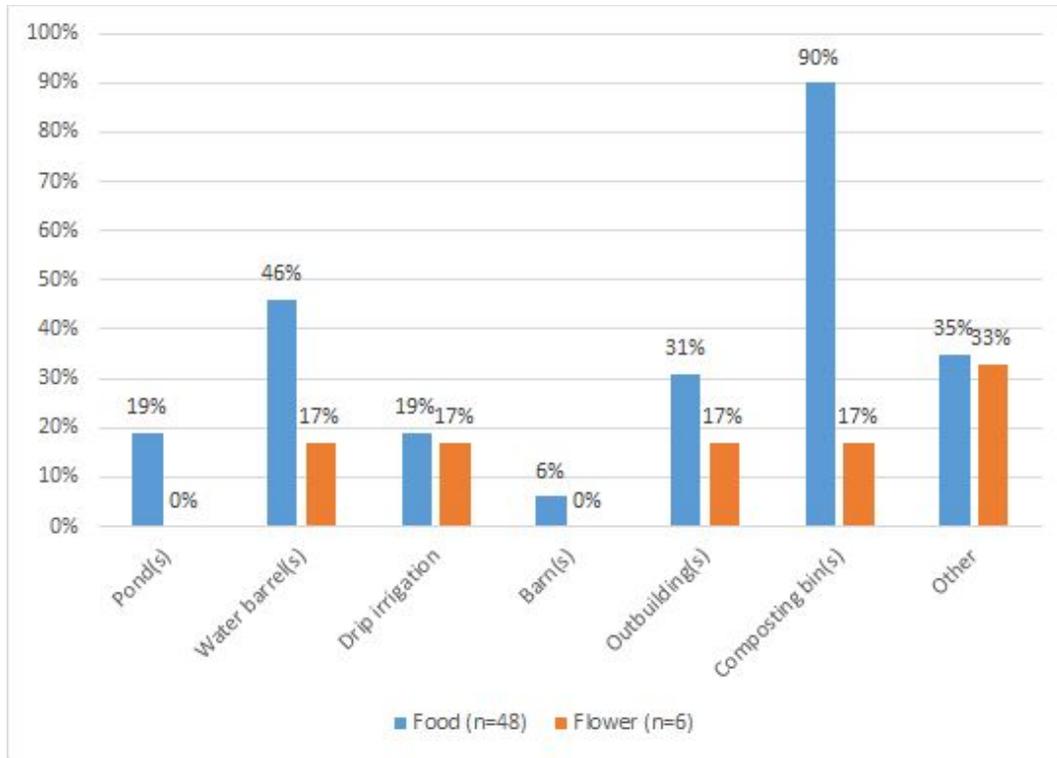
Consumption (98%) was the main use of food growers' produce, followed by preservation (69%). Giving away products was a common practice for both food (65%) and flower (29%) growers. For those sharing their produce, friends, family, and neighbors were the most listed recipients (n=25), with organizational donations going to Mother Hubbard's Cupboard (n=7).

Figure 3. What is the form of your garden? (select all that apply)



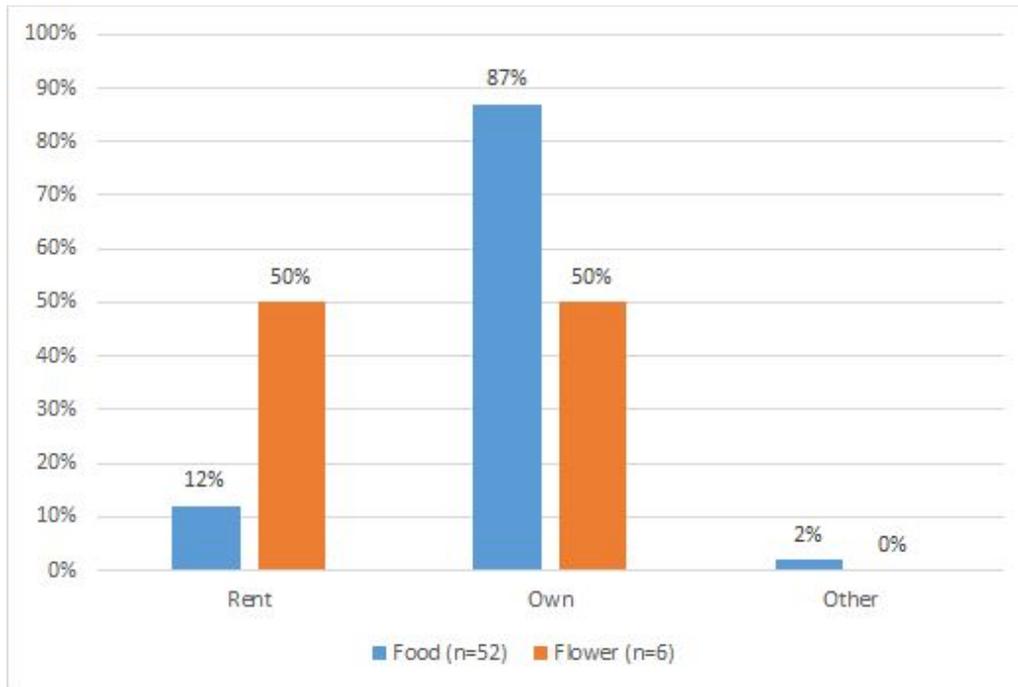
Private garden plots were the leading form of garden for both types. Containers and raised beds were also popular. Community garden plots appear to be under-utilized in the sampled population. Other forms listed included indoor containers, aquaponics, aeroponics, and edible landscaping. The majority of gardens were listed as under 250 sq ft (n=26), though over 2,000 sq ft was the second most common size (n=16).

Figure 4. What are the features or infrastructure of your garden? (select all that apply)



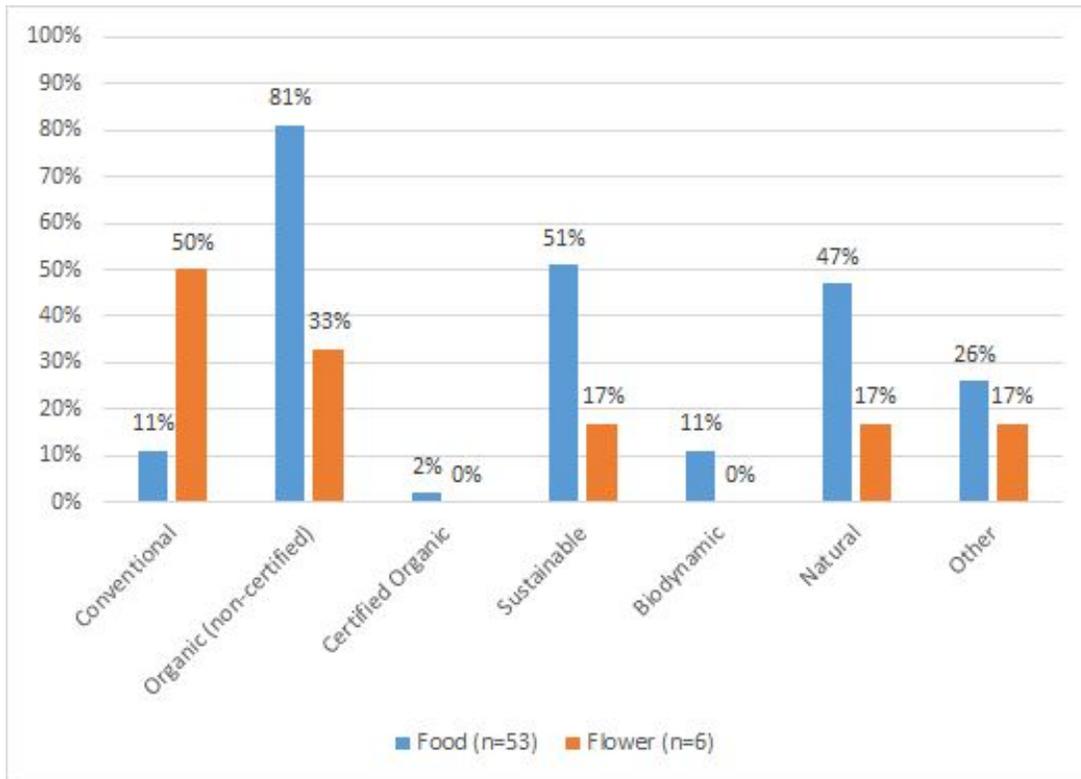
Composting bins (90%) and water barrels (46%) were the most popular garden features for food growers, while features for flower gardens were less reported overall. Several written responses included coops for various livestock and fencing, especially to keep out deer.

Figure 5. Do you rent or own your current residence?



The majority of food growers owned their own homes (87%), while flower growers were split between renting and owning.

Figure 6. What are your farming or gardening practices? (select all that apply)

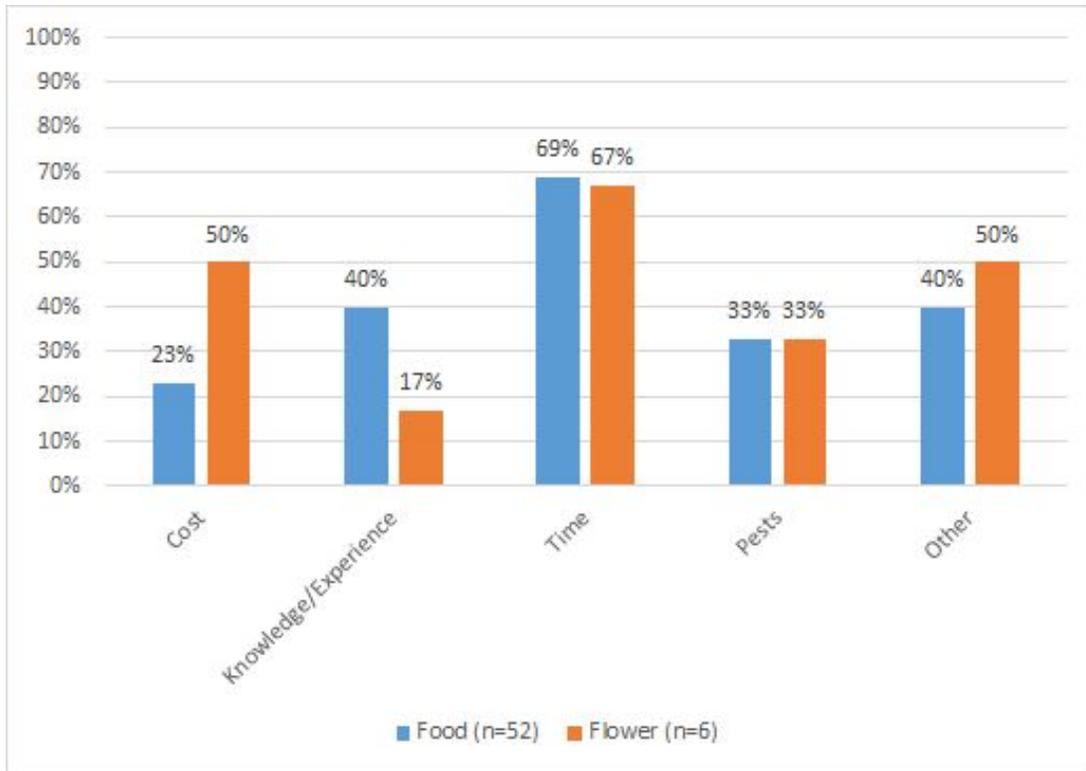


Conventional methods were most widely used among flower growers (50%).

Non-certified organic was the main growing practice for food growers (81%).

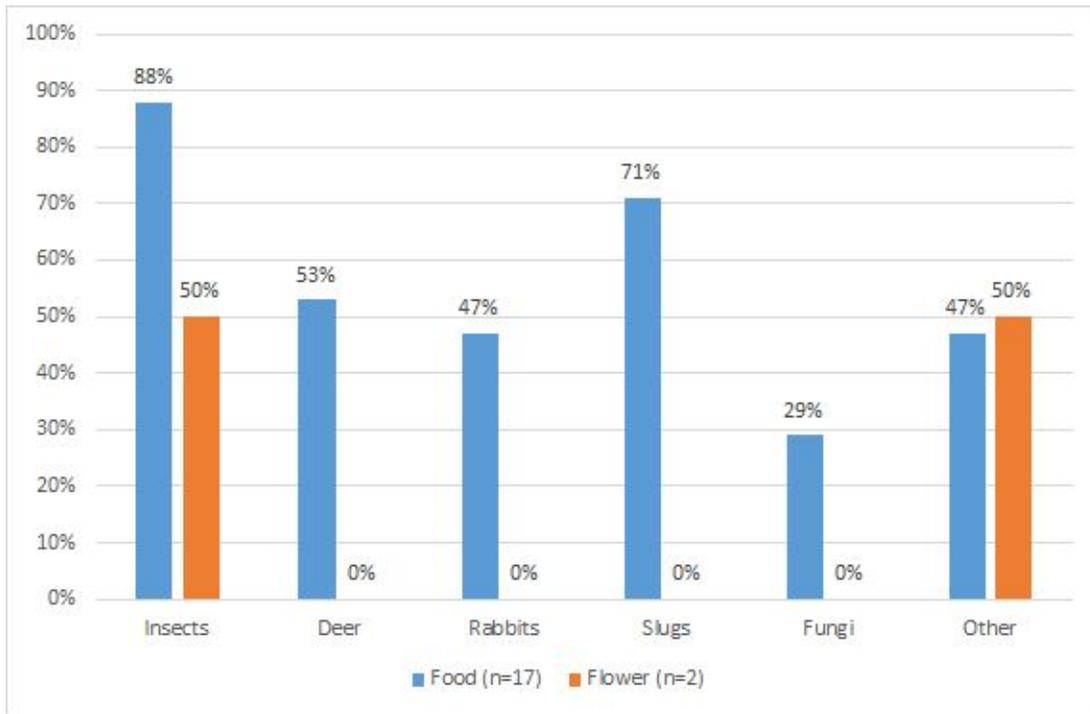
Permaculture was the most frequent written response.

Figure 7. What are your most limiting issues or challenges with farming or gardening? (select all that apply)



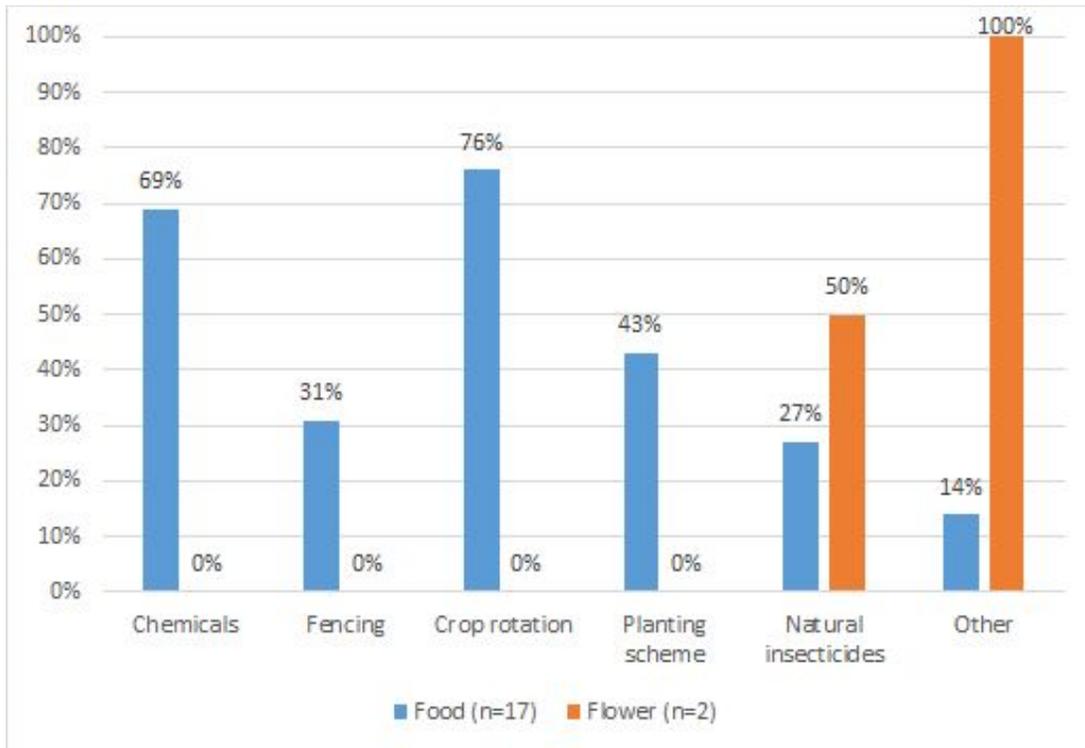
Time was the leading barrier for both types of growers. Space was another concern shared by many in the written responses. Deer and groundhogs were the pests listed. The need for physical labor assistance was also mentioned.

Figure 8. Which of the following pests have presented challenges to you?



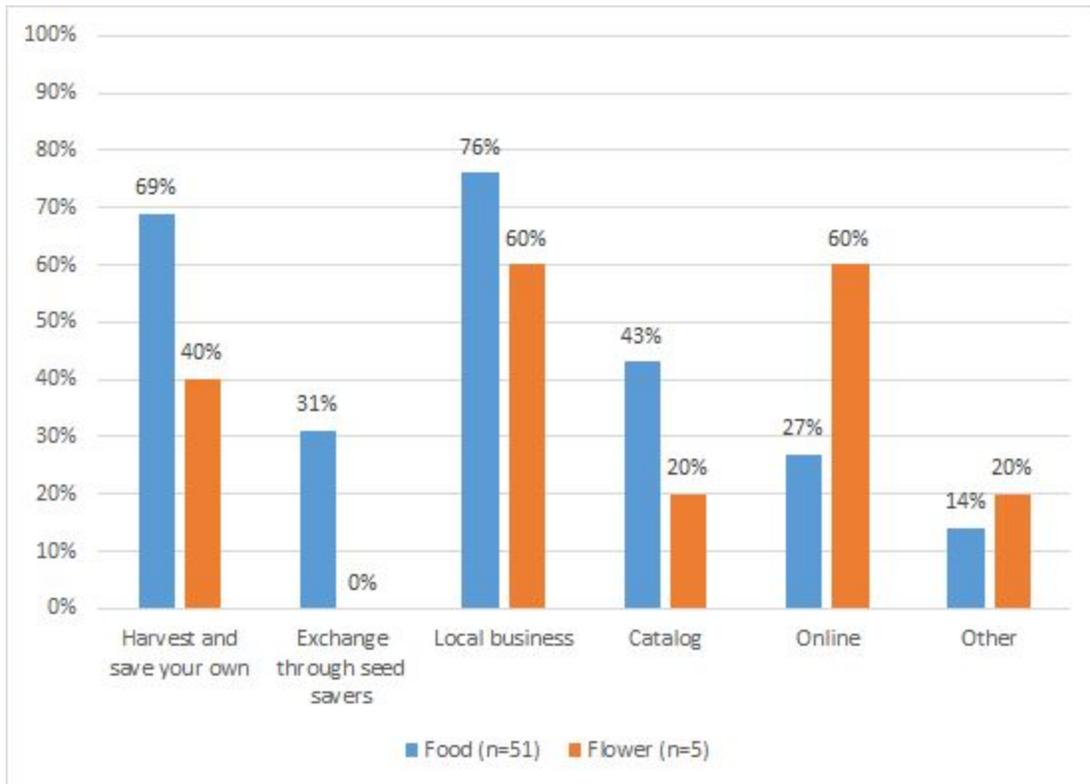
Insects were the most bothersome pest for all types of growers. Written responses specifically name squash beetles (n=10), cabbage worms (n=7), mexican bean beetles (n=3), japanese beetles (n=3), harlequin beetles (n=2), and aphids (n=2). Other animal pests included groundhogs, chipmunks, skunks, squirrels, birds, and moles. Below are the various methods used to tackle these pests.

Figure 9. How do you ward against these pests/interferences?



Crop rotation and insecticides were popular with food growers, while the other options used by flower growers include vole traps and beneficial insect additions.

Figure 10. Where do you get your seeds? (select all that apply)



Bloomingfoods was the most commonly listed local business for seed sourcing (n=26). Others mentioned more than once include the Farmers' Market (n=9), Wylie House (n=4), May's Greenhouse (n=5), Nature's Crossroads (n=3), and White River Co-op (n=2).

Questions unique to the Food Growers focused on the type of produce grown. The following table shows the responses from 52 food growers regarding the prominence of vegetables in their gardens.

Table 2. If you grow vegetables, what portion of your garden consists of vegetables?

Proportion of garden vegetables	%
< 25%	15
25-50%	27
51-75%	27
76-100%	29
Do not grow vegetables	2

Vegetables were the leading type of produce grown in gardens listed (n=46), and Table 2 supports this. Other common food produce were fruit (n=31) and herbs grown for culinary purposes (n=24). Including the flower growers, flowers were the next most common (n=20), followed by native plants (n=11) and medicinal herbs (n=11). Four respondents listed poultry among their produce, and two raised bees.

Discussion of Survey Results

The 2014 Growers Survey results indicate a healthy interest in gardening and other forms of food production, even among those not currently growing (non-growers results). Available time and space appear to be leading barriers (non-growers & Fig. 7), and education was listed as a limiting factor for around 40%. Unlike time, education is a barrier that we can address as a community by ensuring the accessibility and support of gardening outreach and educational programs in our community. Space limitations may vary in cause, but given the frequency of private garden plots and homeownership in active growers, the incentivizing of landlords to permit urban agriculture or the inclusion of community garden plots may be a way to encourage more growers (Fig. 3 & 5).

Residential growers appear to be well-connected to the community. Many share the produce of their gardens with their friends, family, and neighbors, as well as donating to those in need via Mother Hubbard's Cupboard (Fig. 2). They also support local businesses as indicated by the popularity of Bloomingfoods and other local businesses over national chains for seed sourcing. Environmental awareness is also very strong in growers, especially food growers, as non-certified organic is the preferred gardening practice (Fig. 6), and features like composting bins and water barrels are popular (Fig. 4)

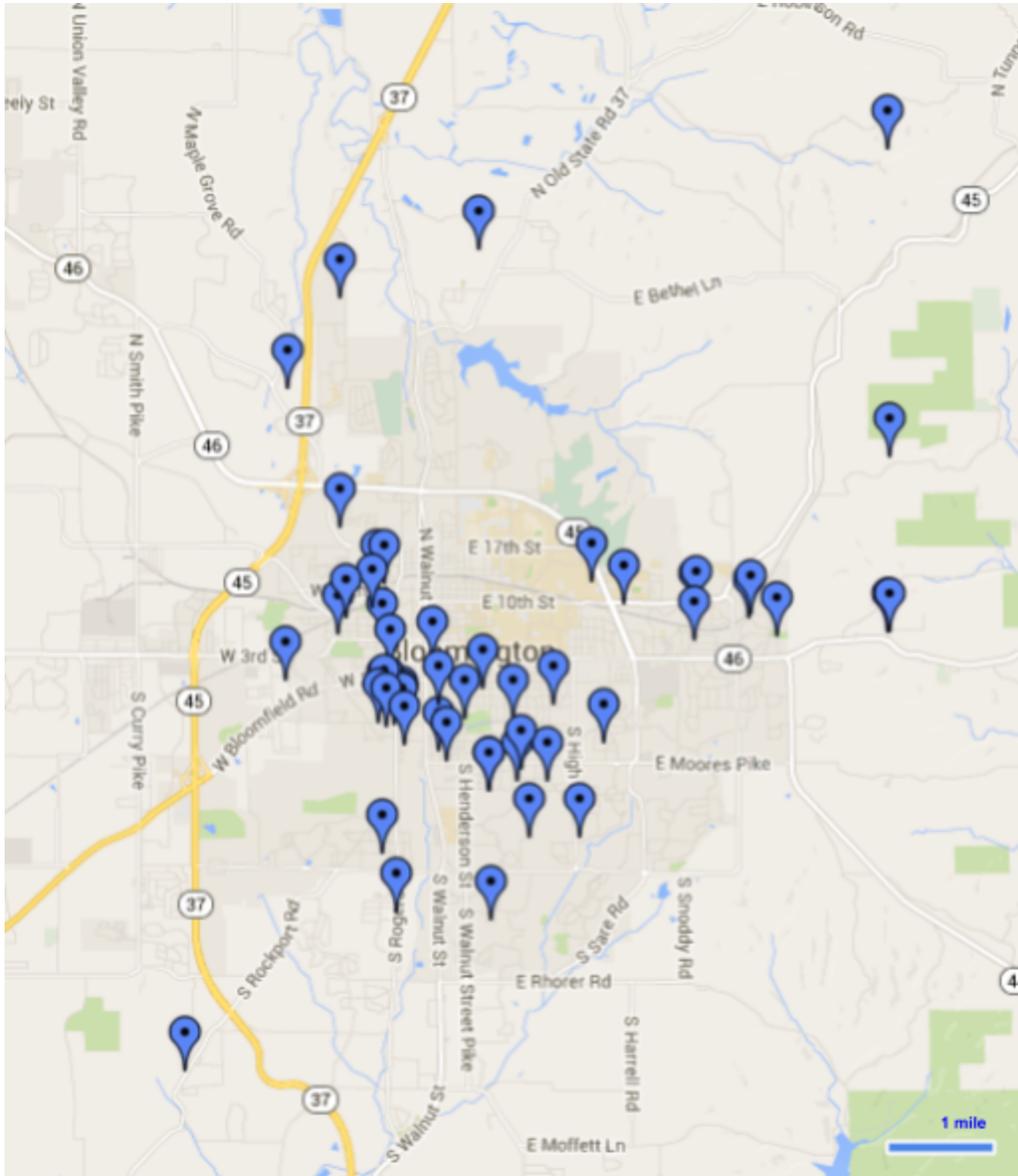
Growers Map

Below is the Urban Agriculture in Bloomington, IN Google Map. This map is to track the locations of food production in our area. Started with the results of our 2012 Growers Survey, this map has been recently updated with information gathered via tabling events and our 2014 survey.

Community members providing information were informed that their address and any additional details provided, ie. type of production, were to be shared via an online map. Food production here includes gardening, animal husbandry, orchards, and beekeeping. We have also included several community garden projects.

Figure 11. Urban Agriculture in Bloomington, IN Google Map

Source: https://www.google.com/maps/d/edit?mid=zKNGZYx0ibys.k_AcZTnekp1M



The majority of the mapped food production is concentrated towards the center of Bloomington with a smaller cluster between Highways 45 and 46. There are few reported residential gardens in the south or west of 37. This may be representative of decreased food production and limited accessibility. However, there may also be a

sampling bias, since the majority of the respondents were recruited at events close to downtown Bloomington, ie. Farmer's Market and BFPC Quarterly Meetings.

Food Security

Household Food Security

Food security as defined by the USDA states that all members of the household have access to enough food for active and healthy living at all times (2013). Our regional and state rates of food insecurity are close to the national average: 13.3 percent of households in the Midwest and 14.1 percent of households in Indiana qualify as food insecure (USDA, 2013). The Midwest also has an obesity rate of 28.7 percent and the state of Indiana has placed high with a rate of 29.6 percent (CDC, 2013).

In a 2014 report, Feeding America, an umbrella organization of food banks including the Hoosier Hills Food Bank, found that one in six, or roughly 1.1 million, Hoosiers reported having used a food bank to feed their families in the past year. Many of these respondents reported health issues or having to choose between paying for food and other bills during the past year. This included 85 percent who reported buying "inexpensive, unhealthy food because they could not afford healthier options." In both the cases of choosing between paying for medical care or paying utility bills and buying food, 77 percent of households reported making those choices in the past year, according to the Feeding America Report. At the county level, in 2013, 11,465 people in Monroe County received Food Stamps, ranking the county 18th highest in the state,

and 5,069 school children participated in the Free and Reduced Free Lunch Program (23rd in the state).

Bloomington, Indiana is home to an extensive food assistance support system. Residents in need can acquire food through the Hoosier Hills Food Bank, Mother Hubbard's Cupboard (MHC), and a variety of community kitchens and pantries. Hoosier Hills Food Bank, which supplies the majority of the local pantries, distributed 1,743,474 total pounds of food in Monroe County in 2013, a 10 percent increase from the year prior. Last year, Hoosier Hills also got approval to begin the USDA's Commodity Supplemental Food Program for low-income seniors. The program currently distributes a monthly 40-pound box of staple food items to about 100 seniors in and around Bloomington.

Several religious organizations offer food on Sundays, although a few have stopped because of lack of funding. Programs helping children in particular include free school breakfasts, the MHC bus delivering food in low-income neighborhoods during the summer, and Backpack Buddies, which sends meals home with school children on the weekends. Lara Hamburger (2010) found the food pantries to be serving anywhere from 85 people per month (2nd Baptist Church) to 1,900 people per week (Mother Hubbard's Cupboard). In addition to pantries, community kitchens are serving anywhere from 120 meals per week (1st Christian Church) to 1,550 meals per week (Shalom Community Center). In late 2012, Mother Hubbard's Cupboard opened a second, much larger location to try and fulfill the growing need.

Food Deserts

During the summer of 2012, Angela Babb identified several areas around Bloomington that have the characteristics of 'food deserts', or areas with low access to healthful foods. 'Food desert', a term first used in Scotland in the early 1990s (Cummins & Macintyre, 2002), has been defined differently over the last two decades by various researchers (Walker et al. 2010), but is generally understood as pertaining to geographic regions where people experience one or more barriers to accessing healthful food (Shaw, 2006; Walker et al. 2010). Shaw (2006) categorizes these barriers as either 'asset', 'ability' or 'attitude'. 'Asset' barriers, typically financial challenges, are most commonly experienced, as many food-insecure people live within the federal poverty threshold. 'Ability' barriers are the physical challenges caused by either personal disabilities or various geographic factors such as uneven distribution of food outlets, inadequate road networks and insufficient public transportation. 'Attitude' barriers, or cultural/informational barriers, consist of attitudes, education and social networks that discourage individuals from accessing healthful food. "Food deserts" are typically characterized by low median household incomes, relatively low access to personal vehicles and/or public transit, and relatively larger populations of Black and Hispanic households and single-parent households (Walker et al 2010). Within Bloomington, several neighborhoods in the South and Northwest were found to demonstrate all of these characteristics.

Food Access in Bloomington, Indiana

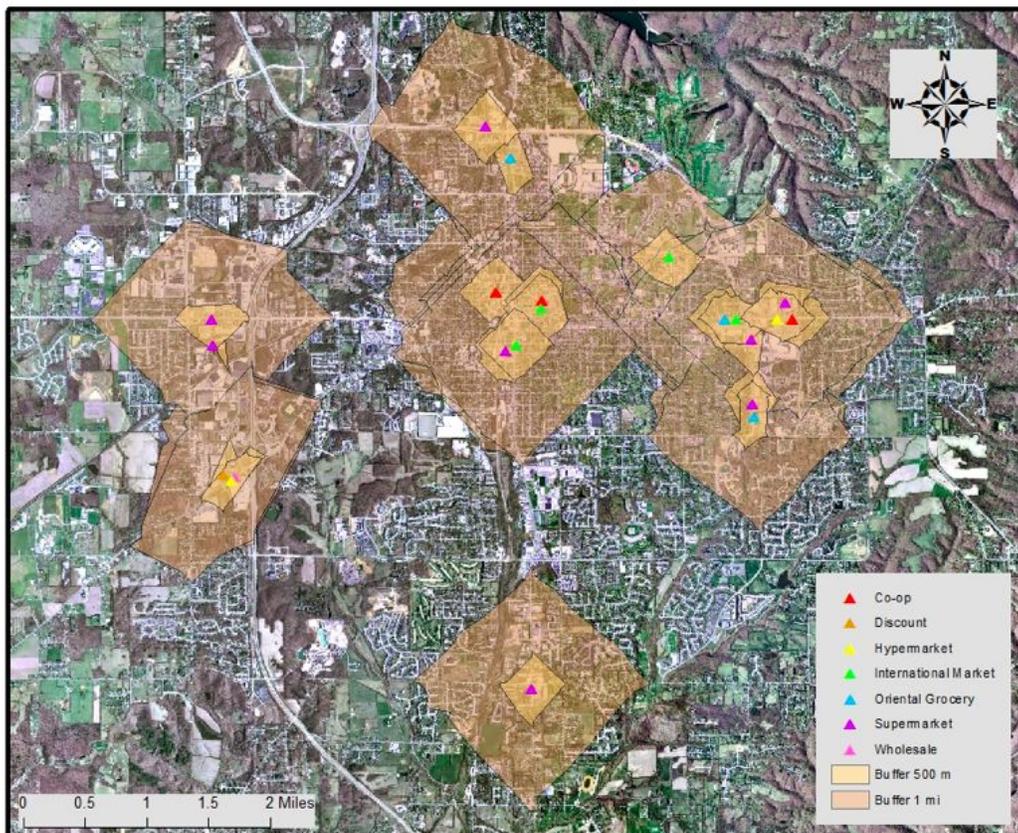


Figure 12: Map of easy access (500 meter) and moderate access (1 mile) to year-round food outlets

A total of ninety households were surveyed within the Crestmont, Reverend Butler, Walnut Woods, Maple Heights, and Broadview neighborhoods. Survey respondents answered questions regarding food budgeting, available food outlets, and challenges to accessing food. Participants were also asked about their interest in “alternative” food outlets (i.e. farmers markets, community-supported agriculture programs, and community gardening). When asked the question “Do you ever feel that the food in your household is of inadequate quality or quantity?”, 48.9% (n=44) respond

“No”, 16.7% (n=15) respond “yes” to quality, and 34.4% (n=31) respond “yes” to quantity or both quantity and quality. Answers to other questions on the survey, and comments made during conversation suggest that more individuals are actually experiencing food insecurity than those willing to claim so. In total, 76.7% (n=69) either claim to experience food insecurity, to not have enough money to buy the food they want or feel they need, or to use food stamps and/or other food assistance programs. More individuals were suspected of experiencing food insecurity, yet did not volunteer information in this regard.

Figure 13: Food Security as Claimed by Survey Respondents

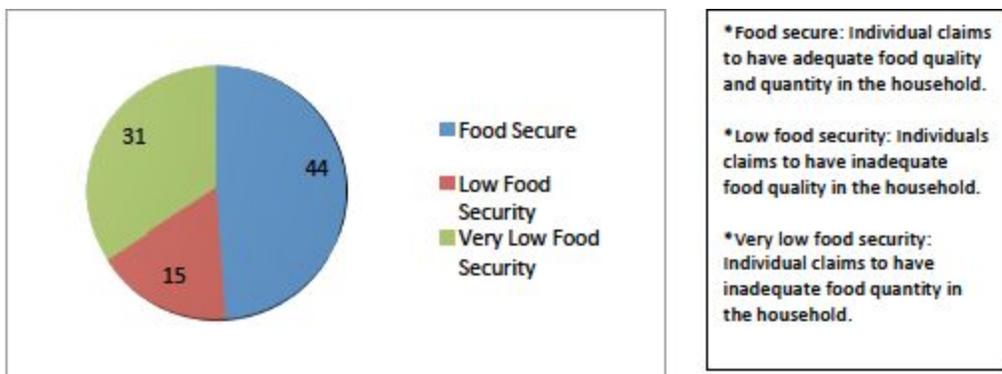
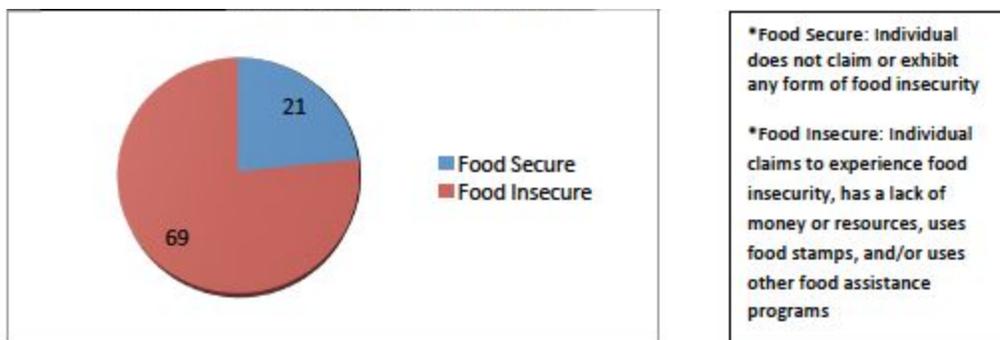


Figure 14. Food Security of Survey Respondents



This study reveals the prevalence of food insecurity in various regions within Bloomington, Indiana. In the low-access neighborhoods surveyed (i.e. Crestmont, Reverend Butler, Walnut Woods, Maple Heights, and Broadview), approximately 3 of every 4 households experience difficulty accessing sufficient, healthful food. Aside from assessing the experience of food insecurity in Bloomington, Babb's study focused on the use of "alternative"/ "sustainable" food outlets (i.e. farmers' markets, community-supported agriculture [CSA], and community gardens) by the food-insecure population. There are several findings that should be considered in future development of the Bloomington food system toward one that promotes food security for all citizens.

Farmers' Markets, Community-Supported Agriculture and Community Gardens

The Saturday farmers' market is utilized far more than CSA and community gardens by the surveyed population, and this has increased substantially with the implementation of the Double Market Bucks program. At the time of this survey, 40% claimed to shop at the Saturday farmers' market at least occasionally, and the most common reason to shop there is quality (i.e. freshness, variety, etc.) of the food available. The major reasons households are not attending the farmers' market are financial, informational, and inconvenience. The farmers' market is too expensive given the average food budget of these low-income households. There is also a lack of information disseminated in these communities, such that residents often do not know: the hours of the market, the foods that will be available on a given Saturday, and the

prices of these items. Lastly, the location is not necessarily convenient, the hours of operation often conflict with personal schedules, and there are many products not offered at the market, mandating several trips to acquire all necessary foods.

Considering these access barriers, some potential forms of mitigation include:

1. Continue the Double Market Bucks program
2. Distribute weekly informational newsletters on farmers' market products and prices
3. Establish satellite farm stands in low-income neighborhoods

The Bloomington Community Farmers' Market, started in 1975, began the Double Market Bucks (DMB) Program in 2013 with support from the Bloomington Parks Foundation. The goal of DMB is to increase accessibility of the farmers' market products for low-income residents of Bloomington. Anyone receiving benefits from the federal Supplemental Nutrition Assistance Program (SNAP; formerly "food stamps") can double the value of up to \$18 worth of SNAP benefits for use at the market. So by trading in benefits, SNAP recipients can get up to \$36 in Market Bucks. Between 2012 (no DMB) and 2013 (1st year of DMB), the use of SNAP benefits at the farmers' market increased five-fold. 92% of customers reported an increased consumption of fresh fruits and vegetables and 76% of vendors reported increased sales because of DMB. The full report can be accessed here:

https://bloomington.in.gov/documents/viewDocument.php?document_id=6114.

Community-supported agriculture (CSA) is an innovative economic model of agriculture and food distribution that began in the 1960s. Farms that run a CSA program receive membership dues from their community in the early spring and then distribute a share of the farm's harvest to members throughout the summer. This model largely supports financial security for farmers, yet is still inaccessible for low-income community members. None of the individuals surveyed participate in a community-supported agriculture operation, but many are interested. This is again largely a result of financial constraints and bounded informational networks. Typically, becoming a CSA member requires upfront costs of \$300 or more. With monthly SNAP allotments averaging \$133, SNAP recipients do not have the means to accumulate a sum large enough to afford the CSA membership costs. It's also unclear whether CSAs have the means to redeem SNAP payments for cash. Additionally, most CSA operations require members to travel to the farm or some distribution point, and low-income households do not have the means to travel as needed. Some CSAs offer work-trade options, but the households that may utilize this option often do not have adequate means of transportation. As of now, the main connection between CSAs and food-insecure households is the produce that is donated to the food bank by CSA members. Some potential forms of mitigation include:

1. Implement payment plans for income-eligible households
2. Subsidize CSA membership fees for income-eligible households
3. Distribute bi-annual informational newsletters on CSA farms
4. Establish transportation options for households to travel to CSA farms

Lastly, only a couple of the households surveyed used a community garden or personal garden to supplement their food budget. The City of Bloomington's Parks and Recreation Department runs several individual-plot and communal-plot gardens around town, including the Crestmont Community Garden in the Crestmont neighborhood. The City offers a remission program for income-eligible citizens to reduce their community gardening fees by 85%, yet in 2012, only 8 out of 360 community gardeners utilized this program. According to the survey, food-insecure households are overwhelmingly not using the community gardens because of lack of awareness about individual-plot gardens and lack of interest in using communal-plot gardens. While a majority expressed interest in gardening at home, this majority also resides in Bloomington Housing Authority (BHA) neighborhoods where personal gardening on individual property is restricted to a few potted plants. Many of the survey respondents gardened before this restriction was imposed in 2007, and are interested only in another personal garden. Some potential forms of mitigation include:

1. Allow residents of BHA neighborhoods to garden on their personal plots
2. Distribute more information about individual-plot gardens and the remission program
3. Convert part of the Crestmont Community Garden back to an individual-plot type
4. Provide resources for individuals/households to start home gardens (see gardening survey for resources needed)

Regional Food Security

Another area of food security that we would like investigate in the future is our emergency preparedness and regional food security. The following are questions we will be seeking answers to:

1. In the event of a national/regional disaster, how much local food would we have?
2. How long would we survive as a community without outside food sources?
3. Do we have an emergency food action plan?
4. What are the crops grown locally and how are they projected to perform in changing weather/climate conditions?
5. How many farms are irrigated? What's the typical size? How much water do we need, and would we have enough in the case of some disaster?

Conclusion

Bloomington residents do practice urban agriculture, and the majority of non-growers would like to participate in future. Bloomington should continue to support urban agriculture. Methods for addressing this would be the funding of gardening education programs, expansion of permissions to include BHA housing and mobile home parks, and increased promotion of community garden plots and resources.

Food security is a serious and growing need within our community. The maintenance and supported growth of community organizations like Mother Hubbard's Cupboard and Community Kitchen are essential to meeting this need. However, not all

struggling with food security may be using these resources. Continuation of the Double Market Bucks program, subsidizing of CSA subscriptions, distributing newsletters about market and CSA products, and increasing the accessibility of individual gardening plots are some additional recommendations.

The Assessment Working Group will continue to track the accessibility of urban agriculture as well as food security in our community. We will be increasing our collaborations with local scholars and organizations to address the following topics as they relate to the food system: wastestreams, water usage, food distribution, public health, and emergency preparedness. Examination of food wastestreams, water usage, and composting opportunities may reveal avenues to reduce waste and cost for residents, the city, and the overall community. Future research of food distribution networks will hopefully answer our questions about the regional food security of Bloomington and the surrounding areas. We welcome new members to the working group, and final reports will be made available to the public.

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