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Master of Public Health

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## Descriptive Census Survey of Community Gardens Supported by The Big Garden

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**Descriptive Census Survey of Community Gardens Supported by The Big Garden**

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## **Abstract**

The goal of this capstone and service learning project is to provide The Big Garden, an Omaha, NE based nonprofit organization, with survey data on the growth of their sites and programming over the past five years along with information on current garden needs and capacity. A census survey of a subsample of gardens supported by The Big Garden will provide leadership with information needed as they plan next steps for the organization and specific programming planning. Surveys were distributed to all gardens within their network to collect data on garden characteristics (e.g., size, length of time in operation), production practices, support needed (e.g., financial, volunteer, garden operations), community involvement, programming, barriers, facilitators, impact of the garden on the community, and capacity. Surveys were analyzed using descriptive statistics (e.g., frequency of response). The data collected will provide leadership at The Big Garden with information on the role and impact of the gardens in the community, as well as the gardens' success, challenges and future support needed.

## **Introduction**

The Big Garden is a nonprofit organization located in Omaha, NE. Founded in 2005 under United Methodist Ministries, they developed a mission to “cultivate food security by developing community gardens, creating opportunities to serve, and providing education on issues related to hunger” (The Big Garden, 2018). After receiving USDA Community Food Project funding, The Big Garden worked with schools, churches, and other community groups to develop twelve community gardens by 2008. As of 2018, The Big Garden has supported over 150 gardens in Nebraska, Kansas, and Southwest Iowa.

In addition to developing community gardens, The Big Garden has programming to support its gardens and activities at each garden. These include Growing Gardeners Workshops, Grow-Your-Own, New Roots Internships, Garden to Table, and Farm to School. Education programs provide students at participating schools, church members, and communities with knowledge on how to grow and cook their own foods. School children are able to experience new foods through after school programming (The Big Garden, 2018). The Big Garden's programs work to ensure community gardens are utilized and gardeners have the education needed for sustainability and success.

Community gardens are often created with the goal to fill a gap in the local food system by providing local, fresh produce to their neighbors and surrounding communities. There is a lack of data of the effectiveness and efficiency of community gardens supported by The Big Garden. After gardens are established, The Big Garden often does not have follow-up contact to know about the success and sustainability of the gardens. As a small, nonprofit organization, The Big Garden has limited capacity to continue communications with each garden. A census survey conducted for the current Capstone provides clear data on growth of The Big Garden's impact along with information on current needs. By having more clearly defined needs of current gardens, The Big Garden staff will be able to develop programming and educational resources that match the needs of their gardens.

Community gardens have become a staple of neighborhoods in recent history. Community gardens promote the development of positive social and emotional environments as well as providing increased nutritional opportunities and ultimately health benefits. The main health benefits often include increased fruit and vegetable consumption, increased physical activity, positive social connections and increase food access and security (Barnidge, et al., 2013). The Big Garden supports local community gardens by working with schools, faith organizations,

nonprofits and other community organizations to build gardens at their locations (The Big Garden, 2018). Through the Community Gardens program, sites receive seeds, seedlings, technical support and access to volunteers and education.

In 2013, The Big Garden completed a census survey to determine how their gardens were operating. The data helped them understand what gardens were doing well and where gaps may exist. The organization has grown extensively over the last five years, and leadership is interested in learning from current data on their impact and growth. In addition, data describing the current needs and capacity for all garden sites are lacking. Leadership has requested survey collection include additional information on current practices on all gardens supported through The Big Garden.

## **Objectives**

The census survey was conducted to help The Big Garden understand the needs of the community gardens which they support. There is a current lack of data in how garden sites perform and what challenges they face.

Data collected from The Big Garden's census survey will allow leadership at The Big Garden to develop programs for their community gardens' specific needs. While there are plenty of resources and literature around community gardens, The Big Garden is unique by the fact they help start community gardens that are then maintained by other organizations. By going directly to their garden directors to assess needs and challenges, The Big Garden will be able to develop programming to fit their clients' needs and capacity. The census survey will also add to public health knowledge by giving greater definition to the needs and challenges of small community gardens as well as the potential impact these gardens have on community well-being.

## Literature Review

One in seven Americans experiences the effects of food insecurity in their daily lives. According to Feeding America, this equates to 46.5 million individuals, including 12 million children and 7 million seniors (Feeding America, 2018). Food insecurity intersects with all aspects of a family's life, especially their overall health and wellbeing. Food insecurity experienced by young children has shown to predict poor performance in school, delayed cognitive development, and weight and BMI gains (Jyoti, Frongillo, Jones, 2005). Food insecurity is defined as the "lack of consistent, dependable access to enough food for active, healthy living" (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2017).

Food security has remained steady for families in the United States, and there remains 15.6 million households, or 12.3% of total households, that face food insecurity (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2017). While hunger is an immediate challenge of needing food, food insecurity is part of a cycle of problems. Many times, food is limited by lack of money or other resources to purchase food. Food insecurity is also impacted by limited access to healthy foods which comes from living in areas without access to full service grocery stores, otherwise known as "food deserts" (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2017). This issue also varies by state, with Mississippi reporting the lowest levels of food security with 18.7% of their population define as food insecure while Hawaii reports the highest levels of food security with 8.7% of their population facing insecurity (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2017). Rates of food insecurity in Nebraska are within the median of national trends, yet there are over 227,350 Nebraskans, or 11.9% of the population that face food insecurity. In Douglas County, the states most populous county, the rate increases to 13.5% (Feeding America, 2018).

Many other health problems are associated with lack of proper and regular nutrition. Feeding America found that 58% of the households they serve have at least one member with high blood pressure and 33% of households served have a member with diabetes. Many families (79%) reported purchasing the cheapest food available even when they have the knowledge it was not the healthiest choice (Feeding America, 2018).

Just as there are many factors that contribute to food insecurity, there are many ways to address this important public health issue. Twenty-three percent of households Feeding America sampled have grown food in their own gardens to help supplement their nutritional needs (Feeding America, 2018). Community gardens became popular during both world wars as ways to help increase food supplies and increase self-sufficiency (Armstrong, 2000). Studies show gardeners have increased consumption of fruits and vegetables and physical activity rates when compared with non-gardeners (Armstrong, 2000). Fruit and vegetable consumption and physical activity are both widely known to be beneficial to overall health and obesity prevention.

Not only do gardens provide opportunities to improve health outcomes for the individuals involved, but they also provide increases in positive neighborhood perceptions. Community gardens have been shown to promote revitalization through additional green spaces, increasing the local food supply and community food security (Kaiser, William, Basta, Hand, & Huber, 2015). Gardens provide community members with places to congregate and meet, helping to build a sense of community.

As stated in the Hunger in America survey, many families want to eat healthy, but do not have the resources to do so (Feeding America, 2018). Research also demonstrates that community gardens can have a positive impact on access to healthy food as well as consumption of fruits and vegetables (Garcia, Ribeiro, Camargo Gonçalves Germani, & Bógus, 2017). When individuals are involved in a community garden, they have increased access to healthy foods and

therefore an increased ability to make healthy food choices. Gardens also provide opportunities for learning about the food systems, food security, and social justice issues (Garcia, Ribeiro, Camargo Gonçalves Germani, & Bógus, 2017).

Community gardens have shown to effectively increase fruit and vegetable consumption and food security for families. The majority of American families do not eat enough fruits and vegetables, which can increase risks for chronic disease (Barnidge, et al., 2013). Community gardens have been shown to increase fruit and vegetable consumption for participants as well as the surrounding communities (Barnidge, et al., 2013). In a study of Hispanic farmworker families, vegetable intake categorized as ‘several times a day’ increased from 18.2% to 84.8% for adults and from 24% to 64% for youth after community garden participation (Carney, et al., 2012). Not only did community garden participation improve the family’s vegetable intake, their food security also improved. After two years of garden support, families that worried about their food running out decreased from 31% to 3.1% (Carney, et al., 2012). This helps to emphasize the importance community gardens can have on nutrition and economic needs.

School gardening programs have demonstrated effectiveness for youth’s healthy food consumption as well as their personal confidence and social skills. When schools have gardens on site, students are able to learn about the entire food system from start to finish. In an Australian primary school program, students showed active engagement in garden and cooking classes (Block, et al., 2012). This program allowed students to experience a ‘seed to table’ approach to their food and gain a new appreciation for a variety of seasonal produce. Students often felt empowered when seeds they planted became edible produce they were then able to cook in the school’s kitchen (Block, et al., 2012). School and community gardens play an important role in youth’s experience of the food systems and increased access to fruit and vegetable consumption.



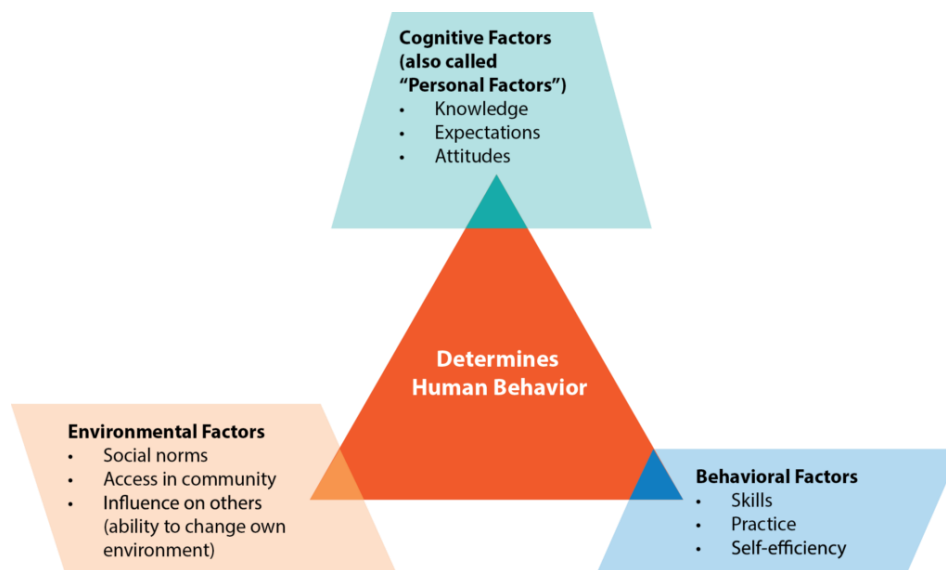
## Methods

### Defined research question

Are community gardens supported by The Big Garden showing growth in their capacity to serve their communities? Is The Big Garden meeting the needs of their community gardens?

### Application of theories/theoretical models

Social Cognitive Theory (SCT) posits that learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment, and behavior. The unique feature of SCT is the emphasis on social influence and its emphasis on external and internal social reinforcement. SCT can be applied to community garden settings with the behavior of gardening and eating fruits and vegetables being influenced in reciprocal ways by the environment, learning of new skills and behaviors, and cognitive factors such as attitudes towards healthy eating (Bandura, 2012).



### Study Design

The study consisted of a census survey sent to all gardens with available contact information within The Big Garden network. The original list of community gardens supported by The Big Garden contained 151 community gardens, of which contact information was obtained for 95 gardens. The census survey was developed using a previously conducted survey from The Big Garden (2013) in order to include historical data while also improving questions and adding items to insure greater accuracy and current data needs. Questions asked were about garden demographics, produce grown, produce donations, barriers to success, support needed, community impact, and garden successes and challenges. In total, there were 45 questions included in the survey with a mix of multiple choice, Likert scale, and open-ended answers. A copy of the completed survey is available in Appendix A.

### Study Population

The study population included all gardens served by The Big Garden with available contact information which totaled to 95 community gardens. Surveys were completed by garden directors or other key staff involved with the organization's community garden. One survey was completed per garden site. A complete list of garden responses can be found in Appendix B.

### Sample size

The sample size included all gardens in The Big Garden network. This totaled to 151 gardens, 95 of which had accurate contact information and were contacted to complete the survey.

### Data sources

The research data was collected through surveys completed by garden directors or other key staff members. Data included questions about garden function, practices, and needs. Additional

supplemental data of peer-reviewed research was included for garden needs comparison and literature review.

#### Data collection methods

Surveys were disseminated through Qualtrics online survey system through email. Garden sites were originally contact via Qualtrics distribution lists. Follow up emails were sent from personal email accounts. If needed, garden sites were called and reminded about survey, then emailed the survey directly. Five additional surveys were distributed on paper surveys based on respondent preference.

#### Statistical methods

The survey analysis included descriptive statistics of responses to each question. Comparative descriptive statistics was also used to compare each type of organization (e.g. church, school, nonprofit) and key outcomes (e.g., impact, barriers faced). Data was then reported out on frequency of responses along with any key differences found from 2013 survey results.

#### Expected policy analysis, interventions and program development recommendations

Data collected from the census survey will provide leadership at The Big Garden with more detailed information on the successes and challenges of their community gardens. This information will help drive policy and program development over the next few years. Leadership will be able to develop targeted programming to better meet the current needs of their community gardens with the data collected for the current Capstone. Data will be segmented by type of organization (i.e. church, school, or nonprofit) to better help The Big Garden plan programs and services.

## Results

Census surveys were sent to 95 community gardens with available contact information out of the 151 community gardens supported by The Big Garden. Forty-two community gardens responded of which forty were included in data analysis. Two were omitted due to lack of complete responses. This led to a final response rate of 44% of gardens contacted and 27% of all community gardens supported by The Big Garden.

The demographics of respondents were collected. Respondents were the individual at the organization most involved with the garden and do not necessarily reflect demographics of garden participants. Respondents were 67.5 percent white, 5.0 percent black, and 7.5 percent two or more races. 67.5 percent of respondents were female. Respondents age ranges included 26-35 years (25%), 36-45 years (12.5%), 46-55 years (7.5%), 56-66 years (25%) and over 65 years (15%).

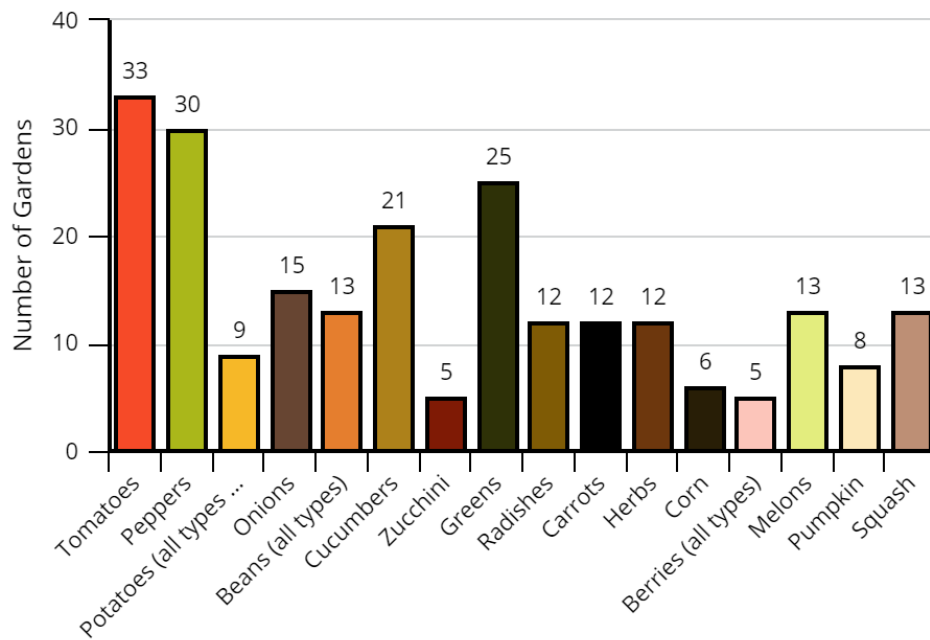
Data was collected about gardens demographics. Twenty-three zip codes were represented in three states (Nebraska, Kansas, and Iowa). Respondents represented churches (n=14), nonprofits (n=14) and schools (n=9). Gardens were opened between 2006 and 2017, with the majority being opened in 2014 or after (45%). Gardens varied in length of seasons from 6-15 weeks (30%), 16-25 weeks (25%) and more than 25 weeks (40%). The majority of gardens (42.5%) grew 100-500 pounds of produce each season. 17.5 percent of gardens grew 501-1,000 pounds and 20% of gardens estimate production to be 1,001-2,000 pounds.

In addition to general garden demographics, garden directors were asked about operations of their community garden. The Big Garden provides seeds and seedlings to their garden network. Of survey respondents, 67.5 percent said they had received seeds and seedlings from The Big Garden. The most commonly grown items were tomatoes (82.5%) followed closely by peppers (75%) and greens (62.5%). Graph 1 shows produce reported being grown at garden sites.

A main goal of The Big Garden is to help increase food security, 67.5 percent of gardens reported donation of at least some of their produce to other community organizations and/or individuals. In addition to growing food, many gardens reported attempts at being more sustainable through operational practices. 42.5 percent of gardens responded that they compost some of their organic materials. Gardens that were not currently composting reported barriers of labor (12.5%), space (10%), and knowledge (5%) to composting at their gardens.

**Graph 1**

## Types of Produce Grown at Community Gardens



Garden sites reported barriers their garden have experienced on a Likert scale (1=Never – 5=always). There was strong agreement among respondents that volunteers were their biggest barrier to success (M=3.16, SD=1.25). After volunteers, labor (M=3.08, SD=1.09) was reported as another barrier to success for garden sites. The barrier to success for gardens that respondents

agreed least with was land ( $M=1.29$ ,  $SD=0.87$ ). Other barriers reported included financial ( $M=2.21$ ,  $SD=1.09$ ) and organizational interest ( $M=2.54$ ,  $SD=1.17$ ).

Garden sites were asked how they believe their community garden has impacted their community on a Likert scale (1=strongly disagree – 5=strongly agree). The majority of respondents agreed that the garden created a nicer environment for their organization ( $M=4.29$ ,  $SD=0.62$ ). The next most agreed upon impact was that the garden taught people new skills ( $M=4.24$ ,  $SD=0.72$ ). Additional community impacts were helping families save money and bringing people together ( $M=3.84$ ,  $SD=.78$ ;  $M=3.81$ ,  $SD=1.10$ , respectively). Positive impacts with lower levels of agreement included creating space for gathering and raising money for the organization ( $M=2.0$ ,  $SD=1.05$ , for both statements).

Gardens were also asked to describe ways they see the garden has impacted the community's attitudes and behaviors towards fresh produce. Open-ended answers were coded for themes. Thirty percent of gardens saw greater education on fresh produce as a positive community impact. Additional impacts were access to fresh produce (27.5%), eating more fruits and vegetables (15%) and trying new foods (15%).

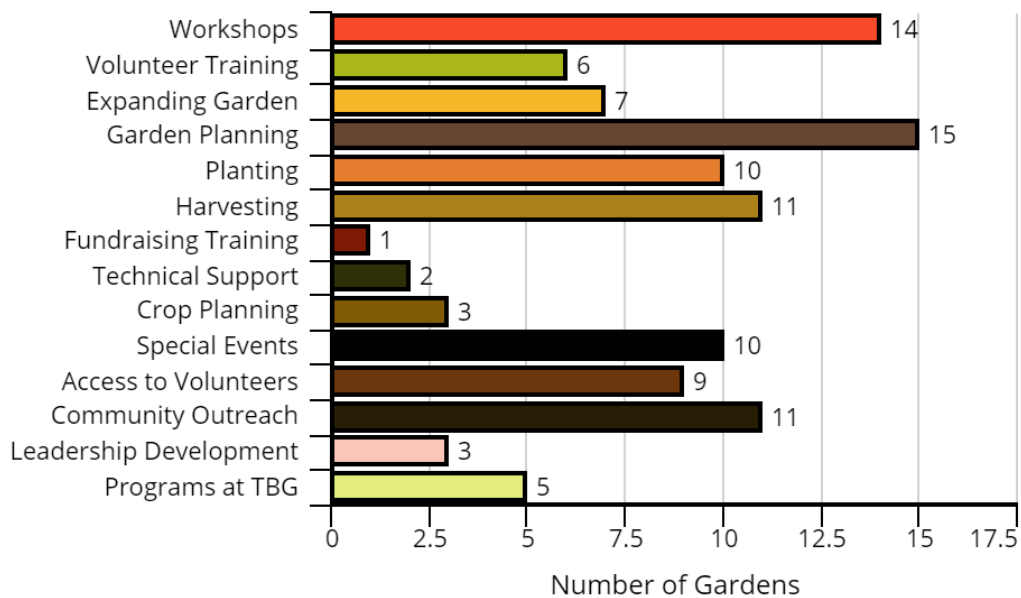
Garden sites reported their interactions with neighbors of the garden. 22.5 percent of gardens reported that neighbors had interacted by using the garden for their own gardening purposes. 47.5 percent of garden sites stated that neighbors have received produce from the garden. Neighbors visiting the garden and interacting with people gardening was also reported by 47.5 percent of sites.

Community gardens were asked to identify types of support The Big Garden could provide to facilitate success of community gardens. The most requested support type was for assistance with planning the garden (37%). Next, at 35 percent, gardens requested training and workshops. After that, 27.5 percent of gardens request help with harvesting and community

outreach. The items of support that were requested the least included fundraising (2.5%), technical support (5%), leadership development (7.5%) and crop planning (7.5%). Other support items noted included planting (25%), special events (25%), access to volunteers (22.5%), expanding the garden (17.5%), volunteer training (15%) and programs at The Big Garden (12.5%). Graph 2 shows the support and partnership garden sites saw as a need from The Big Garden.

**Graph 2**

## Partnership & Support Requested from The Big Garden



Community gardens were also able to respond with open-ended suggestions for how The Big Garden could help to support them. Themes from these open-ended responses included education (12.5%), seeds and seedlings (10%), increased involvement from organization (7.5%), and garden growth (7.5%).

Gardens were asked to discuss their biggest success of their community garden to date. Themes which emerged from this open-ended question included increased food access (42.5%), increased education on gardening (30%), community building (27.5%) and increased fruit and vegetable consumption (15%).

Garden sites were asked open-ended question of what they saw as the biggest challenge of their gardens along with resources to help them improve. The main themes discussed around challenges faced by gardens included difficulty with garden upkeep (47.5%), labor available from organization (42.5%), and volunteer help (37.5%). When asked about additional resources that could help sites improve, the main themes discussed were increased supplies (25%), increased involvement from organization and neighbors (22.5%) and increased or dedicated volunteers (20%).

#### Responses by Organization Type

In addition to reviewing overall frequencies of responses, garden responses were reviewed by type of organization. Again, of the forty total responses included for analysis, fourteen identified as churches (35%), fourteen as nonprofits (35%) and nine as schools (22.5%). The remaining did not respond with organization type. By looking at data responses by type of organization, The Big Garden can better plan targeted programming to their community gardens based on the specific needs and type of organization.

When asked what barriers to success the garden sites were experiencing, different types of organizations reported different barriers they faced. Sites that identified as churches cited volunteers ( $M=3.2$ ,  $SD=1.1$ ) as their biggest barrier on a Likert scale (1=never – 5=always). Nonprofit organizations found labor to be their biggest barrier ( $M=3.1$ ,  $SD = 1.14$ ). For schools, like churches, their biggest barrier was volunteers ( $M=3.6$ ,  $SD=1.3$ ).



In addition to being asked about barriers to success, garden sites were asked about the benefits the community garden provided to the organization. All sites stated the garden created a nicer environment as one of their main benefits. On a Likert scale (1=Strongly Disagree – 5=Strongly Agree), creating a nicer environment was rated towards the top for churches (M=4.08, SD=.49), nonprofits (M=4.38, SD=.76), and schools (M=4.55, SD=.52). Other benefits reported by churches were helping families save money (M=4.0, SD=.70) and teaching people new skills (M=3.7, SD=.59). Nonprofit organizations reported additional benefits of bringing people together who may not otherwise interact (M=4.2, SD=.75) and increased sense of community ownership (M=3.8, SD = 1.2). Additional benefits reported by schools included teaching people a new skill (M=4.8, SD=.33) and bringing people together who may not otherwise interact (M=4.4, SD=.72).

When gardens were asked what support The Big Garden could provide them, church organizations identified garden planning (14.3%) as their biggest need. Nonprofit organizations identified workshops for community participants (64.3%), garden planning (50%), harvestings (42.9%) and community outreach and engagement (42.9%) as their needed support. Schools were interested in the most areas of support from The Big Garden including: workshops for community participants (44.4%), garden planning (66.7%), planting (44.4%), harvesting (55.6%), access to volunteers (44.4%), and community outreach and engagement (44.4%).

In addition to reporting barriers, benefits and support, community garden sites were asked about operational practices. Churches gardens reported composting at a rate of 57.1 percent. Nonprofit organizations reported composting in the garden at a rate of 21.4 percent. Lastly, school gardens reported composting at a rate of 55.6 percent. Churches (14.3%) and nonprofits (14.3%) reported labor as their barrier to composting. Schools (22.2%) reported knowledge as their barrier to composting.

### Responses Compared to 2013 Survey

Survey data was also compared to data collected in a similar census survey in 2013. In the question asked about partnering with and support from The Big Garden to community garden sites, answers varied in responses in 2013 and 2018. In 2013, only 19.05% of gardens were interested in workshops for community partnerships, while in 2018 that increased to 35% of gardens. Another increase in request for support was in garden planning, which increased from 26.57% in 2014 to 37.50% in 2018. The final increase requested item was help with special events, which went from 9.52% in 2013 to 25% in 2018. Some request went down including fundraising training (16.67% to 2.5%), technical support (26.19% to 5%), crop planning (14.29% to 7.5%), and community outreach and engagement (45.24% to 27.5%).

Amount of garden produce was also compared from 2013 to 2018 survey data. Gardens producing 100-500 pounds stayed almost the same at 42.86% and 42.50%, respectively from 2013 to 2018. Gardens producing 501-1,000 pounds went down from 26.19% to 17.50%. Gardens producing 1,001-2,000 pounds went up from 4.76% to 20%.

### **Discussion/Recommendations**

The Big Garden can use the results of this survey to develop programming to better meet the needs of their community gardens. Response rates were fairly even across types of organizations with fourteen identifying as churches (35%), fourteen as nonprofits (35%) and nine as schools (22.5%). While response rates were even across types of organization, higher overall response rates would have provided a better overall conclusion of what garden sites were needed. The fact the 45 percent of responding gardens were opened within the last four years may show that as gardens age, they either close or become less involved with The Big Garden. Leadership at The Big Garden can use this information to develop engagement strategies with their

community gardens. One suggested strategy would be to do annual census of garden contacts. Collecting garden contact's name, phone, email, and address on an annual basis would help garden sites to stay engaged and make additional assessments, such as this one, easier to complete.

One of The Big Garden's main goals is to increase food access, and 67.5 percent of respondents reported donating at least some portion of the produce grown. This is likely a slight underreporting since respondents may not have understood the full definition of 'donation' since it was not explained in the question. If students are taking food home to their families or garden neighbors are growing food and taking it home, food access is increasing with garden participants. Many respondents likely only considered outside food donation when answering this question.

Less than half (42.5%) of gardens reported composting some to all of their garden waste. This is a great opportunity for The Big Garden to increase support in composting efforts. The main reasons why gardens were not composting was because of labor (12.5%), space (10%) and knowledge (5%).

The Big Garden can use the data segmented by organizations to develop future programming. Churches and schools cited their biggest barrier to success as volunteers, while nonprofit organizations cited labor. Since all three organization types have barriers to success around people helping with the garden, The Big Garden can develop more programming and support around volunteer recruitment and management. They can also provide training on caring for the garden in the most effective and efficient ways so current staff at garden sites can spend less time caring for their community gardens.

Using data around requested support, The Big Garden can plan ways to enhance current offerings to better meet their gardens' needs. All organization types noted that garden planning

was an area they needed support in. This could be an area of focus for The Big Garden to improve support in. Schools selected the most items of support from The Big Garden. This possibly show that programming may need to be stronger at schools as they already have many other programs going on and lack staff time for the garden.

While it is difficult to compare responses from the current survey to the survey completed in 2013, due to the fact that 45% of current respondents opened in or after 2014, comparing data gives The Big Garden and idea of garden growth over the last five years. Today, gardens have a greater interest in workshops, gardening planning, and special events. They are less interested in fundraising training, technical support, and community outreach. Using this information, The Big Garden can assess their current programming and see if anything can change to better meet the needs of their community gardens.

The 2013 data compare with 2018 data, does show a slight increase in food production at garden sites. Again, with a large variation in the specific organizations that completed each survey, it is difficult to completely compare the two results. Garden sites growing 1,000-2,000 pounds increased from 4.76% to 20%. This may show the gardens may have more capacity to grow food in 2018 than they did in 2013.

### Limitations

The survey and data collection included limitations which affected results. The response rates from garden sites did not include all gardens, but a subsample of 44% of the gardens with contact information. Although results should be interpreted with some caution, as generalizability may be limited to those gardens that responded, this response rate is comparable or higher to other community-based surveys.

Another limitation of the survey was the lack of contact information for many garden sites. Records stored with The Big Garden were often out of date due to staff turnover at both

The Big Garden and the organizations supporting community gardens. This caused challenges in making sure all sites received the census survey to complete.

A third limitation was the survey design and distribution. The survey was kept similar to the 2013 census survey in order to compare historical data. This forced some questions to be written in ways that were difficult for participants to understand and therefore effect data outcomes. Surveys were distributed mostly online. The population working with the community gardens may have responded better to mailed paper surveys as they are often staff working in the gardens and may not be near a computer to complete an online assessment as often as other organization staff members.

### Recommendations

Recommendation for The Big Garden staff include developing an annual garden contact census and a bi-annual need and operational assessment. The annual garden contact census would be a short check in to make sure each garden had an update contact including name, email, phone number, and address. By doing this yearly, The Big Garden staff would ensure they have the correct contact information and information is not lost to turnover at garden sites. This would also provide an opportunity to check in with gardens, remind them of the programs and services offered by The Big Garden, and see if they have any immediate needs.

Once all garden site contact information is up-to-date and kept organized and accessible, the next step would be to do a bi-annual need and operational assessment, similar to this capstone project. Questions should be narrowed down to the most important information for The Big Garden to know. Staff and leadership can assess the 2013 and 2018 assessments to see what information they are using and edit future surveys down to only include the most needed data. By doing this assessment more regularly, The Big Garden will likely get better responses, as

garden sites know it is coming. They will also be able to assess trends over time when done on a regular basis.

## **Conclusions**

The Big Garden is working hard to build and meet the needs of community gardens in Nebraska, Kansas, and Southwest Iowa. The completed Capstone survey shows many gardens are working against the same challenges and finding similar successes. Gardens reported volunteers and labor to be the biggest barriers to success. They requested partnering with and support from The Big Garden around garden planning and upkeep. Gardens also saw many successes of their community gardens. 42% of garden site reported increased food access for their community or organization. They indicated the garden provided a nicer environment for their organization and was helping to teach people new skills. Leadership at The Big Garden can use data collected from the survey to enhance current program and develop additional offerings to better meet the needs of their community garden sites.

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### **Service Learning/Capstone Experience Reflection**

The Big Garden is a nonprofit organization in Omaha, NE dedicated to “growing health food, healthy, and healthy communities” (The Big Garden, 2018). For my capstone and applied practice experience, I worked with the team at The Big Garden to assess the needs of their current community gardens and help with their education programs. I learned a lot about how nonprofit organizations function and the importance of doing meaningful work. The Big Garden team runs many different effective programs, all with limited capacity and resources. Each staff member I worked with was dedicated to urban gardening, food access, and food security. Their passions shown through in their work.

For my capstone research project, I updated a 2013 census survey The Big Garden had sent to their community gardens. The survey had not been completed sense. By updated the content of the survey, I hoped to allow The Big Garden to collect data they needed to improve programs and services, while keeping enough similar to gain historical data. The survey was then distributed to all community gardens supported by The Big Garden. Forty-two sites started the survey, with forty completed surveys. Surveys data was then analyzed to help The Big Garden understand the needs of their community gardens and how targets program development may help gardens improve.

In addition to my work for the capstone research, I was involved in many different aspects for the Applied Practice Experience (APEX/Service Learning) part of my project. The majority of my hours were spent working with the Garden to Table and Farm to School programs. These programs go into Middle and Elementary schools, respectively, to help students learn about urban gardening. Classes consisted of garden work, education about gardening and food systems, and cooking items found in local gardens. Other APEX activities included working

in the gardens on The Big Garden's campus, research policies and application for expense tracking, and organizing the list of community gardens supported by The Big Garden.

There were many different resources required to effectively complete the capstone and service learning project. In order to schedule time to assist with education programming, regular communication was required with the education staff at The Big Garden. Communication was also needed with volunteer coordinators to schedule time to assist on campus with garden and office needs. Extensive online research was used to find example internal policies along with garden site contact information. Lastly, many garden sites were called by phone to confirm contact information.

While the majority of the project went as planned, there were parts that changed throughout the process. Some of the original ideas for service learning were abandoned when a greater need arose for me to help with education classes. Since The Big Garden is a small nonprofit with limited capacity, I was happy with change plans and work more with education classes than operational research since that became more of an existing need. Another unexpected challenge was the lack of organization of current contacts for garden sites. The original list I was given to work off had many old contacts and was not updated with some of the newest gardens. This became a much bigger task than originally planned. Before sending out surveys, I had to organize the garden list and collect updated contact information. This then also became a service learning product since it would help The Big Garden in many ways to have an updated list of community gardens.

The two main products developed for my service learning component of the project were a report recommending expense tracking platforms and an updated list of community garden sites and contacts. The Big Garden staff often buy multiple small purchases for the garden classes. Keeping track of all the expenses is a challenge for leadership. I research applications

and platforms that other nonprofit organizations used to keep track of expenses. I also researched additional resources to make budgeting and financial needs of the organization run smoother.

Recommendations were then collected into an easy to read report for leadership to decide what systems would work best for their team.

The second product of my service learning component was an updated, organized excel list of all community garden sites. This turned into a larger aspect of the project than originally planned when we realized many of the sites had very outdated contact information. In order to increase survey responses and reach the most sites as possible, the contact information would need to be up to date. This would also allow The Big Garden staff to have better access to organized list of contacts for future program needs.

I think the greatest contributions of my service learning activities were my support to the education staff. On average, I attended three afterschool classes each week at Omaha Public School middle schools. I worked with staff from The Big Garden to develop and provide programming to middle school students about gardening and foods from the gardens. Often these classes had many students, so having an extra adult in the room to work on-one-on with students was extremely helpful. In addition to helping in the classroom, I believe my knowledge of nonprofit operations from my work at Nonprofit Association of the Midlands brought helpful knowledge to The Big Garden staff when reviewing their operations and suggestions resources to meet needs.

The two greatest challenges of my Capstone Experience/Service Learning project were limited time availability and low of survey response rates. As someone who works outside of the UNMC master's program, it was sometimes difficult to find time that worked for both The Big Garden and myself to complete projects. Luckily, we were able to work through initial communication challenges and develop a schedule that worked well for both myself and meet the

needs of The Big Garden staff. The second challenge was collecting enough survey responses to provide adequate data about garden operations and needs. This partially, was caused by lacking contact information to many garden sites. To overcome this challenge, I worked with my committee and staff at The Big Garden to increase communication with community garden sites. I also called many sites asking for updated contact information and reminding them about the importance of completing the survey.

Overall, I really enjoyed my capstone and service learning experiences. I was able to work with a variety of different stakeholders for The Big Garden and learn a lot about their operations and programming. This experienced reinforced the ideas that public health is everywhere and can be used in many different settings. The Big Garden has many different programming offerings around urban gardening and provides public health education about gardens to a wide range of individuals.

## **Acknowledgements**

Thank you to Dr. Courtney Parks, Dr. Jennie Hill, and Nathan Morgan for serving on the capstone committee for this project.

Thank you to staff and leadership at The Big Garden for providing assistance with service learning projects and working with garden sites to collect survey responses.

**Appendix A**

1. Garden or Site Name
  
2. Garden Address (physical location of the garden)
  
3. Mailing Address (if different from garden address)
  
4. If your garden has a weblink, please provide.
  
5. What date was this garden established?
  
6. Is the garden still in operation? (i.e., the garden grows fruits or vegetables at least some part of the year)
  - a. Yes
  - b. No

***\*\*If yes, skip number 8\*\****

7. Please describe the degree to which you agree with the following statements.

Barriers to keeping our garden operational include:

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>Lack of financial resources</b>					
<b>Lack of staff to care for garden</b>					
<b>Lack of volunteers to care for garden</b>					
<b>Lack of interest by organization in garden</b>					
<b>Other:</b>					

**\*\*If answering this question, garden is closed. Please skip to demographic questions, number 40. \*\***

8. How many weeks per year is the garden in operation? (including planning, prepping, planting, harvest, winterizing and special events)
- 5 weeks or less
  - 6-15 weeks (e.g. Summer months)
  - 16-25 weeks
  - More than 25 weeks

9. Do you have at least one paid staff member designated to garden oversight and/or maintenance?

If so, how many hours do they spend on the garden?

Average number of hours per paid staff per week  
(Please choose a number between 0 and 80)

\_\_\_\_\_

10. Do you track the number of volunteers and volunteer hours for your garden?
- Yes
  - No

**\*\*If No, skip to number 13\*\***

11. How many people have volunteered in the garden in the last year to help with tasks such as tilling, planting, weeding, harvesting, promoting, organizing, etc.? (Select one answer.)
- 1-5
  - 6-10
  - 11-20
  - 21-30
  - 31-40
  - 41-50
  - Greater than 50

12. On average, how many hours did each volunteer work (per week) in support of, and in, the garden? (Please select one answer.)
- 1-5
  - 6-10
  - 11-20
  - 21-30
  - 31-40
  - 40+ hours

13. Which of the following best describes how your garden functions?
- a. Garden is used by the organization only (e.g. church members or school students)
  - b. Individuals/groups sign up for a raised bed (no fee)
  - c. Individuals/groups rent a raised bed (fee)

14. What type of organization supports this garden?
- a. Community or neighborhood association
  - b. Church
  - c. Nonprofit
  - d. School
  - e. Other \_\_\_\_\_

15. On average, how much produce was grown per year in the garden? (please select one)  
*(Tips: A raised bed garden can yield 1.2 pounds per square foot and in-ground gardens yield 6/10 of a pound per square foot. One acre = 43,500 square feet)*

- a. 100-500 pounds
- b. 501-1,000 pounds
- c. 1,000-2,000 pounds
- d. 2,001-3,000 pounds
- e. 3,001-4,000 pounds
- f. 4,001-5,000 pounds
- g. 5,001-10,000 pounds
- h. 10,000-15,000 pounds
- i. 15,001-25,000 pounds
- j. 25,000-50,000 pounds
- k. 50,000+pounds

16. Do you receive seedlings from The Big Garden?
- a. Yes
  - b. No
  - c. Not Sure

17. Please list the crops grown in your garden this year.

18. Is all or any portion of the produce grown in the garden donated?
- a. Yes
  - b. No

**\*\*If no, skip to question 20\*\***



19. If the produce from the garden is donated, please indicate the degree to which it was donated to the following resources

	Never	Rarely	Sometimes	Very Often	Always
<b>Individual/Family that grew it</b>					
<b>Food pantry</b>					
<b>Church</b>					
<b>Shared with friends and neighbors</b>					
<b>Sold</b>					
<b>Other:</b>					

20. Below is a list of potential barriers for gardens. Please indicate the degree to which your garden experiences each of these barriers:

	Never	Rarely	Sometimes	Very Often	Always
<b>Financial support</b>					
<b>Volunteer support</b>					
<b>Labor</b>					
<b>Land</b>					
<b>Organizational interest</b>					
<b>Other _____</b>					

21. Please indicate the degree to which community members or other organizations have contributed to the garden

	Never	Rarely	Sometimes	Very Often	Always
<b>Volunteer time</b>					
<b>Operating equipment (tilling, mowing, etc.)</b>					
<b>Money/Funding</b>					
<b>Lectures/workshops/training</b>					
<b>Special events</b>					
<b>Printing materials</b>					
<b>Donations of tools/seeds/supplies</b>					
<b>Advertising</b>					
<b>Grants</b>					

22. Which organizations such as civic groups, clubs, or other nonprofits, have contributed to the garden? Please check all that apply.

- a. Local businesses
- b. Cub scouts/boy scouts/girl scouts
- c. Lions club
- d. Fraternity/sorority
- e. Church
- f. School
- g. Other \_\_\_\_\_

23. Below is a list of statements about how the garden has impacted the community. Please indicate your level of agreement with the following statements about how the garden has impacted the community:

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>Created space for gathering</b>					
<b>Increased consumption of fresh, healthy food</b>					
<b>Taught people new skills</b>					
<b>Brought people together that normally wouldn't interact</b>					
<b>Created a nice environment</b>					
<b>Health families save money</b>					
<b>Helped raise money for church/organization/school</b>					
<b>Helped build community pride</b>					
<b>Restored cultural connections to food production</b>					
<b>Increased a sense of community ownership and stewardship</b>					
<b>Fostered the development of community identity and spirit</b>					
<b>Helped build community leaders</b>					
<b>Create a focal point for community organizations and led to community-based efforts to deal with social concerns</b>					

<b>Fostered new relationships</b>					
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24. How often do neighbors who are near the garden interact with the garden
- Never
  - Rarely
  - Sometimes
  - Very often
  - Always

***\*\*If Never, Skip to question 26\*\****

25. In what ways do those nearby neighbors interact with the garden? Please check all that apply.
- Gardening
  - Receiving produce from the garden
  - Visiting and talking with people who are gardening
  - Helping promote garden security
  - Donating supplies/equipment to the garden

26. Please list the ways in which the garden has impacted the community's attitude and behavior towards fresh produce?

27. Do you partner with The Big Garden for on-site programming and education?
- Yes
  - No
  - Not Sure

***\*\*If no or not sure, skip to question 29\*\****

28. We have gardens in The Big Garden Network that receive programming from our staff (mostly those in the Omaha metro area) and gardens that receive other forms of support from us. It is important to use that we are meeting the needs of all our gardens.

Based on the needs of your garden, how would you like to partner with us moving forward: Please check all that apply.

- a. Workshops for community participants
- b. Training for volunteers
- c. Expanding the garden
- d. Garden planning
- e. Planting
- f. Harvesting
- g. Fundraising training
- h. Technical support
- i. Crop planning
- j. Special events
- k. Access to volunteers
- l. Community outreach and engagement
- m. Leadership development
- n. Programs at our garden (for those in the metro area)

29. Have there been any special events involving, or related to, the garden?

- a. Yes
- b. No

***\*\*If no, skip to question 31\*\****

30. Please describe the special event and provide an approximate number of attendees.

31. Has the garden been featured in any media stories?

- a. Yes
- b. No

***\*\*If no, skip to question 33\*\****

32. Please provide a link to media stories

33. Does your garden compost?
- a. Yes
  - b. No
  - c. If no, do you have plans to compost (or describe the barriers to composting for your garden)
    - i. \_\_\_\_\_

***\*\*If no, skip to question 35\*\****

34. What do you do with your garden compost?

35. Are there additional ways you feel The Big Garden could support your work?

36. What do you see as your greatest success of the garden?

37. What do you see as the biggest challenge of the garden?

38. What resources could help you improve?

39. Any additional comments?

Our final set of questions are about you as the director of the garden or respondent to this survey. Please answer the following:

40. Respondent Race

- a. American Indian or Alaska Native
- b. Asian
- c. Black or African American
- d. Native Hawaiian or Other Pacific Islander
- e. White
- f. Two or More Races
- g. Prefer not to answer

41. Respondent Gender

- a. Male
- b. Female
- c. Non-Binary/Third Gender
- d. Prefer to self-describe
  - i. \_\_\_\_\_
- e. Prefer not to answer

42. Respondent Age

- a. 25 and Under
- b. 26-35
- c. 36-45
- d. 46-55
- e. 56-65
- f. 65+
- g. Prefer not to answer

43. Your Name:

44. Contact Phone Number:

45. Contact Email Address:



**Appendix B**

Alliance for a Better Omaha	208 S 24th Street	Omaha	NE	68108
Ashland Park - Robbins	5050 S 51st Street	Omaha	NE	68117
Augustana Community Garden	3647 Lafayette Avenue	Omaha	NE	68131
Blackburn Garden	2606 Hamilton Street	Omaha	NE	68131
Broadway United Methodist Church	Benton Street	Council Bluffs	IA	51503
Calvin Crest	2870 County Road 13	Fremont	NE	68025
Candlewood KinderCare	1735 N 121st Street	Omaha	NE	68154
Catholic Charities Saint Martin de Porres	2111 Emmet Street	Omaha	NE	68110
Clair Memorial United Methodist Church	5544 Ames Avenue	Omaha	NE	68104
Completely KIDS	Cabrini Parish Center 1248 S 10th Street	Omaha	NE	68108
Educare Indian Hill	3110 W. Street	Omaha	NE	68107
Elkhorn Hills United Methodist Church	20227 Veterans Drive	Elkhorn	NE	68022
First United Methodist Church	7020 Cass Street	Omaha	NE	68132
Fontenelle Elementary School	3905 N. 52nd Street	Omaha	NE	68104
Girls Inc of Omaha	5407 S 30th St (Also 2811 N 45th Street)	Omaha	NE	68107
Gomez Heritage Elementary	5101 S 17th Street	Omaha	NE	68107
Grace Community Garden	1832 West 9th Street	Hastings	NE	68901
Grant Community Garden	207 U Avenue	Grant	IA	50847
Hands to Harvest	1113 S. 31st Street	Omaha	NE	68105
Hanscom Park United Methodist Church	4444 Frances Street	Omaha	NE	68105
Heartland Family Service Community Garden	4820 Fort Street	Omaha	NE	68104
Heartland Hope Mission	2021 U Street	Omaha	NE	68107
Heritage United Methodist Church Community Garden	12850 Quivera Road	Overland Park	KS	66213
Hope Center for Kids	2200 N 20th Street	Omaha	NE	68110
Intercultural Senior Center	3010 R Street	Omaha	NE	68107

Lawrence KS First United Methodist	Intersection of US Highway 40 and Kansas Highway 10	Lawrence	KS	66049
Learning Community of South Omaha	2302 M Street	Omaha	NE	68107
Liberty Elementary	2021 St Mary's	Omaha	NE	68102
Lord's Acre / Auburn Community Gardens	63800 730 Road	Auburn	NE	68305
Lothrop Magnet Center	3300 N. 22nd Street	Omaha	NE	68110
Madonna School	6402 N 71st Plaza	Omaha	NE	68104
Marrs Middle School	5619 S 19th Street	Omaha	NE	68107
Montessori Learning home	1021 North 47th Ave.	Omaha	NE	68132
Nebraska Children's Home Society	3549 Fontenelle Blvd	Omaha	NE	68104
Nelson Mandela Elementary	6316 North 30th Street	Omaha	NE	68111
New Life Baptist Church	801 Kayleen Drive	Bellevue	NE	68005
Plattsmouth Community Garden	700 S 18th Street	Plattsmouth	NE	68048
Santa Monica	401 S 39th Street	Omaha	NE	68131
Schuyler Community Garden	1922 Colfax Street	Schuyler	NE	68661
Seeds of Hope Community Garden	317 N. 7th Street	Beatrice	NE	68310
St. Andrew's United Methodist Church	15050 W Maple Rd	Omaha	NE	68116
St. Matthew Pantry Garden	1725 S 60th Street	Omaha	NE	68106