

Marin County Community Garden Needs Assessment



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Executive Summary

The aim of the community garden needs assessment is to gather information about the current state of community gardens in Marin County. This includes identifying existing community gardens, gardens being planned, and documenting obstacles and successes for both. Another goal is to understand how residents participating in “green space” or community garden programs were affected in terms of environmental literacy, access to fresh, affordable food, nutrition awareness, economic opportunity, and overall satisfaction. This report presents the assessment findings and considerations that can help improve existing and future community gardens for Marin residents.

The data informing the report were derived from both quantitative and qualitative tools, primarily through surveys, interviews, and a focus group. Prominent findings include:

- 86 community gardens currently exist in Marin.
- 60 of these gardens are located on school grounds.
- 220 residents are on waiting lists for 6 neighborhood gardens.
- The majority of residents have increased environmental, nutritional, and horticultural literacy since working in community gardens.
- 80 percent or more of community garden respondents report eating more fruits and vegetables, and being more physically active.
- 60 to 80 percent of community gardeners report their gardens supplement their food source, while reducing trips to the grocery store.
- Primary needs of gardens are: secure funding, long-term management, education and skills training, and expanding garden availability to meet cultivation needs and reduce waiting lists.

Specific actions that will help support successful community gardens in Marin include:

- Expanding school garden access to local community members, primarily during the summer months when gardens are in greatest need of upkeep and care.
- Encouraging garden coordinators to form relations with community based organizations to network, learn grant writing, and share resources.
- Reducing costs by sharing resources and exchanging knowledge with other community gardeners.
- Rotating garden leadership among gardeners to reduce burnout.
- Collaboration between garden stakeholders and local policy makers to revise existing ordinances that inhibit community garden development.
- Organizing community garden activities under existing organization of an umbrella community based organization dedicated to Marin’s community gardens.

This report serves as a resource for all gardeners, organizations, and local government involved in community garden development and management. Next steps in sharing these findings and implementing recommendations include: distribution of the report to the community garden network identified in the assessment, the development of a community garden resource guide for Marin residents, and a Marin Community Garden Conference to share strategies for success including options for long-term management of community gardens.

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Introduction

This needs assessment offers a snapshot in time about the current state of Marin's community gardens. In particular, we examined how residents are currently accessing community gardening space, listened to the success stories, and identified barriers to continued viability.

For the purpose of this analysis, we broadly define community gardens as any piece of land gardened by a group of people, utilizing either individual or shared plots on private or public land. The land may produce fruit, vegetables, and/or ornamentals. Community gardens may be found in neighborhoods, schools, connected to institutions such as hospitals, and on residential housing grounds.

Data were obtained by a variety of methods.¹ This report presents our findings as well as considerations that will be useful for community garden stakeholders and policymakers in Marin.

Why Community Gardens Matter

In the U.S., community gardening has supported communities in a number of ways. Community gardens are a place where residents can congregate to interact with each other. They are also places where families, classmates, and neighbors educate and learn from one another. Gardens also serve as a space to grow food, recreate, and relax. Gardens have traditionally supplemented community food supply and household incomes during times of need, such as the Potato Patch Movement in the late 19th Century or Relief Gardens during the Depression.² Most commonly known are the liberty and victory gardens that sprouted up during the World Wars; those gardens helped rally for food conservation efforts in the U.S. to support troops abroad. Typically, community gardening offers its participants a source of recreation, education, nutrition, and respite from the busyness of daily life, as well as an alternative source of income and sustenance.³

Community gardens also produce subtle benefits that may be overlooked. In a time when the childhood obesity epidemic is in the forefront of nutrition and health conversations, community gardens offer additional solutions.⁴ For example, people actively growing food in community gardens tend to eat more fresh fruits and vegetables than those not participating in community gardens.⁵

¹ See Appendix A for full discussion of methodology

² <http://www.gardenmosaics.cornell.edu/>

³ Lawson (2005)

⁴ Nestle (2002); Roblin (2007)

⁵ Alaimo et al. (2008)



San Anselmo Community Garden

Photo by Mark Bauermeister

Other benefits include increased environmental awareness and neighborhood beautification. People working in community gardens often report they have a better understanding of the importance of a cleaner, healthier environment.⁶ Community gardens in urban spaces, for example, will decrease “urban eye sores” such as vacant lots, and abandoned industrial zones. Research has shown greening urban areas helps increase both environmental health and residents’ quality of life, while concomitantly increasing property values in neighborhoods.⁷

In sum, community gardens contribute to community health and aesthetics on a number of levels. Economically speaking, community gardens have a multiplier effect in relation to improved social, environmental, cultural, nutritional, and financial components of neighborhoods and their residents.

⁶ Schukoske (2000)

⁷ Waliczekz, Matteson, and Zajicek (1996); Been and Voicu (2008)

Marin County’s Community Gardens

Currently, there are 86 community gardens in Marin County (Table 1). These gardens serve community members in a variety of ways ranging from “neighborhood gardens” where gardeners produce food for personal consumption and/or donation, to gardens for growing ornamentals, to gardens simply for relaxation. Other gardens are an extension of classroom work and education, such as “school gardens” and “demonstration gardens.” Residents sharing living space, such as in apartment and assisted living communities, use their “residential gardens” to catch up with neighbors, get outdoors for exercise, and continue practicing a longtime hobby. The assessment also observed “institutional gardens”—gardens providing physical and mental rehabilitation for gardeners. All of these community gardens have a purposeful role in the everyday life of Marin residents.

Table 1: Types of Community Gardens Identified

Type	Number
Neighborhood	11
School	60
Residential	7
Institutional	3
Demonstration	<u>5</u>
Total	86

Neighborhood Gardens

Many participants identified community gardens as being neighborhood gardens, where a group of people come together to grow vegetables or flowers. Typically, neighborhood gardens are identifiable as a parcel of private or public land where individual plots are rented by gardeners at a nominal annual fee⁸. Marin County has eight gardens fitting this description (Figure 1; See Appendix B for a list of current gardens). Currently, these eight gardens are designed either with one communal plot, such as Marshall’s community garden, or multiple plots leased to gardeners. In some cases, gardens have as many as 68 plots, like Terra Linda’s community garden. Approximately 265 residents utilize neighborhood gardens.⁹ Of the eight neighborhood gardens, six have waiting lists totaling an estimated 220 individuals and a wait time ranging from one to five years.¹⁰

⁸ Plot rates and annual fees differ for each garden. Fees ranged between \$25 and \$60 annually, while others would charge as funds were needed.

⁹ Some neighborhood gardens have two or more gardeners per plot; friends and family share in cultivation and maintenance of garden.

¹⁰ Only the Marshall and Point Reyes Station garden coordinators reported having available space.

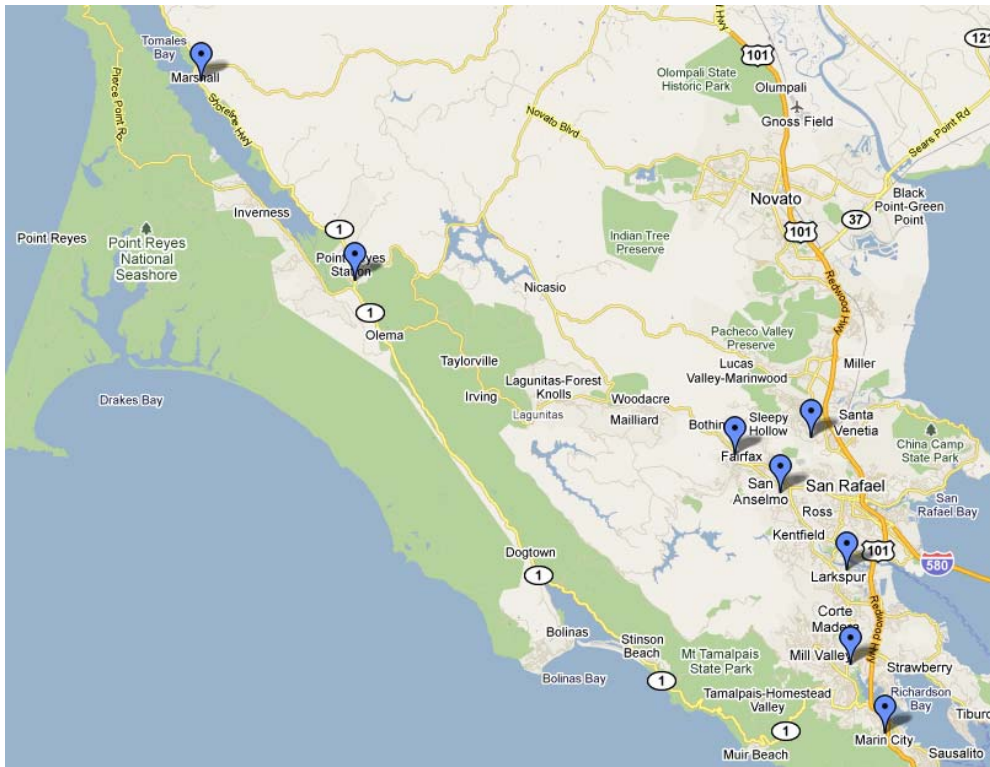


Figure 1: Marin's Neighborhood Gardens

Not all of Marin's community gardens are typical, however. Elders Garden in San Anselmo, for example, is a garden built for community members by volunteers from the neighborhood. Community members do not come to the garden to plant vegetables, but rather they will sit on one of the many benches to read a book, visit with a neighbor, or toss a game of horseshoes. When the garden needs cleaning or the native plants need pruning, neighborhood volunteers are called upon to gather for a workday.

School Gardens

Marin County has an abundance of school gardens. Sixty schools were identified with active gardens planted in crops for food cultivation, including fruits, vegetables, and herbs, while other gardens grew flowers and ornamentals. Most gardens (70 percent) were found in elementary schools (n=42), with middle schools having the second most (n=13); high schools (n=9); and pre-schools or Montessori schools (n=3).¹¹ Students help in garden design, planning, plant propagation, planting, soil assessment, weeding, watering, composting, and harvesting.

School gardens are usually managed by a teacher who has taken an interest in expanding their curriculum base to include some outdoor, hands-on experiences. Other

¹¹ Although the total number of schools assessed as having gardens is N=60, many of the schools overlap in grade level exposure to gardens, i.e., some schools will serve kindergarten through grade 12, while others will serve grades 7-12. (see Appendix B for a list of schools and grade overlap)

school garden programs benefited from hiring coordinators funded by grants, and some volunteered their time to encourage youth participation in gardening education. Twenty-four schools use such paid or volunteer non-faculty coordinators and consultants.¹² The remaining 36 school gardens are managed by school faculty and/or staff.

Residential Gardens

Seven residential gardens were identified with participating gardeners. Residential gardens are typically shared among residents in apartment communities, assisted living, and affordable housing units. Four of the seven residential gardens are in the Canal district where high density housing is common. Many of the residents living in apartments utilize very limited space to install raised beds in the buildings' courtyards. Garden design and layout of resident gardens parallel that of neighborhood and school gardens. Resources such as tools and water are often shared among residents.

Institutional Gardens

Institutional gardens are defined as gardens attached to either public or private organizations. These gardens offer a number of beneficial services for residents, ranging from mental or physical rehabilitation and therapy to teaching a set of skills for job placement. We identified three institutional gardens in Marin County.

The Marin Brain Injury Network serves Marin residents who have suffered temporary or long term brain injury. The gardens are a mixture of food bearing and native plants intended for therapeutic healing in support of patient recovery.



Marin Brain Injury Network Garden

Photo by Mark Bauermeister

¹² Consultants are mainly Marin Master Gardeners, and Conservation Corp North Bay staff.

Another institutional garden may be found at Homeward Bound, which helps homeless individuals and families gain practical job training and skills development in landscape design and culinary arts.

The Insight Garden Program at San Quentin State Prison offers a similar opportunity for selected inmates. The 1,200 square-foot flower garden offers hands-on experience in landscape design and cultivation, and is coupled with classroom work focusing on gardening practices and design.

Demonstration Gardens

Demonstration gardens are regularly used to educate the public about a number of gardening topics. Five Marin gardens fit the definition of a demonstration garden. The Falkirk Gardens in San Rafael, for example, highlight a variety of different native plants found in the world's many Mediterranean climate zones. Classes are offered on site, and are often taught by University of California's Marin Master Gardeners who are well versed in specific topics, such as succulents, greenhouses, California natives, landscaping, and Mediterranean gardens.



Falkirk Succulent Garden

Photo by Mark Bauermeister

Admittedly, demonstration gardening is naturally part of every garden where two or more people garden together. Community gardeners bring with them talents to share with others; vegetable gardening, beekeeping, irrigation design, and carpentry are just a few of the many skills observed during the assessment.

Results

Surveys

The following results represent data from each section of the survey and its corresponding themes: garden activity, experience, nutrition, and interest. The complete survey, with response frequencies for the random and convenient responses, is included in Appendices C and D. Data from the convenient and on-line sample were combined for analysis, and provide the bulk of quantitative data for the assessment. The on-line survey resulted in a response rate of 5 percent or 50 responses. Another 109 responses were gathered through the convenient sample.

Section A: Garden Activity

Respondents were asked whether or not they are involved currently in a community garden. Figure 2 shows that 31 percent reported being involved in community gardens, while 57 percent were not. Those not working in a community garden were asked to skip to *Section D*, which asks a series of questions relating to the possible reasons they may not be involved. (See discussion on pg. 36.).

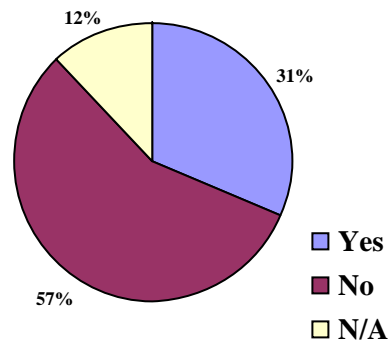


Figure 2: Community Garden Involvement (n=159)

For those who answered “Yes” to whether they were involved in a community garden, more than a quarter (27 percent) of respondents described their garden as a *multiple plot neighborhood garden* (Figure 3).

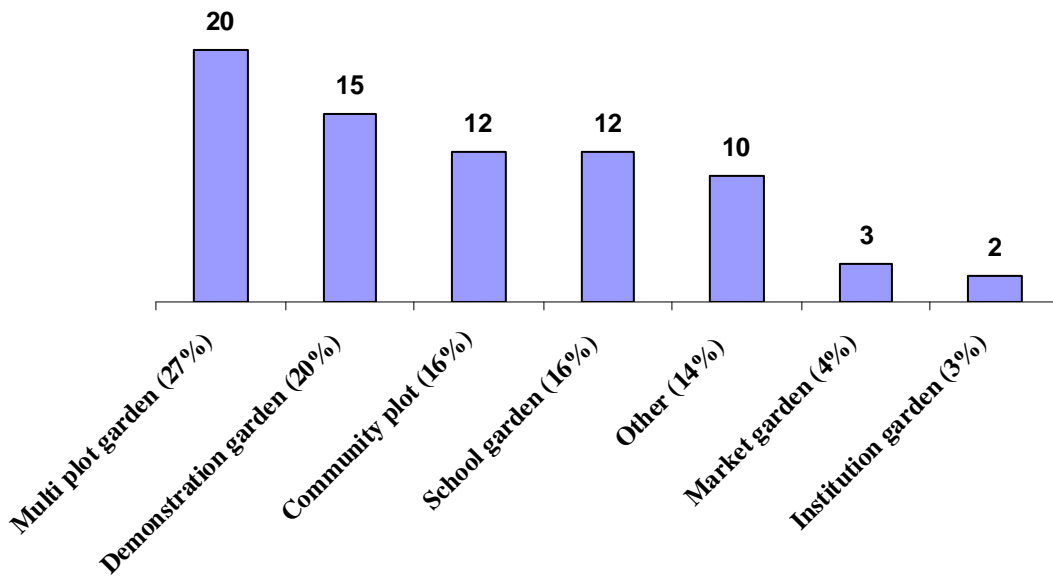


Figure 3: Types of Community Gardens (n=74)

Question 5 measured the *time spent* in their community garden, asking, “How long have you been involved at your community garden?” More than a third reported they have been involved in community gardening between 1 and 5 years (Figure 4), while almost a quarter (22 percent) have been involved for 6 or more years.

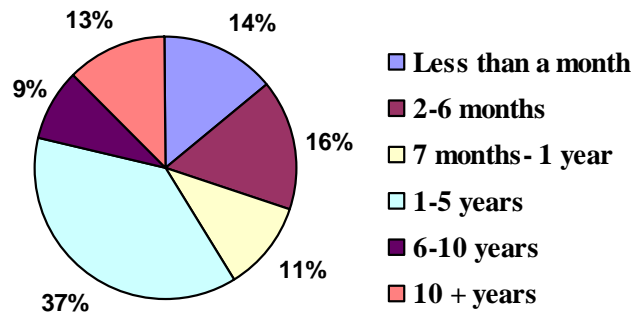


Figure 4: Time Involved in Community Garden (n=56)

The frequency of gardening was explored with the question: “How often do you garden at your community garden?” Fourteen respondents (25 percent) said they make it to the garden only once per month, while 11 respondents (19 percent) are able to make it to the garden 2-3 times per week.

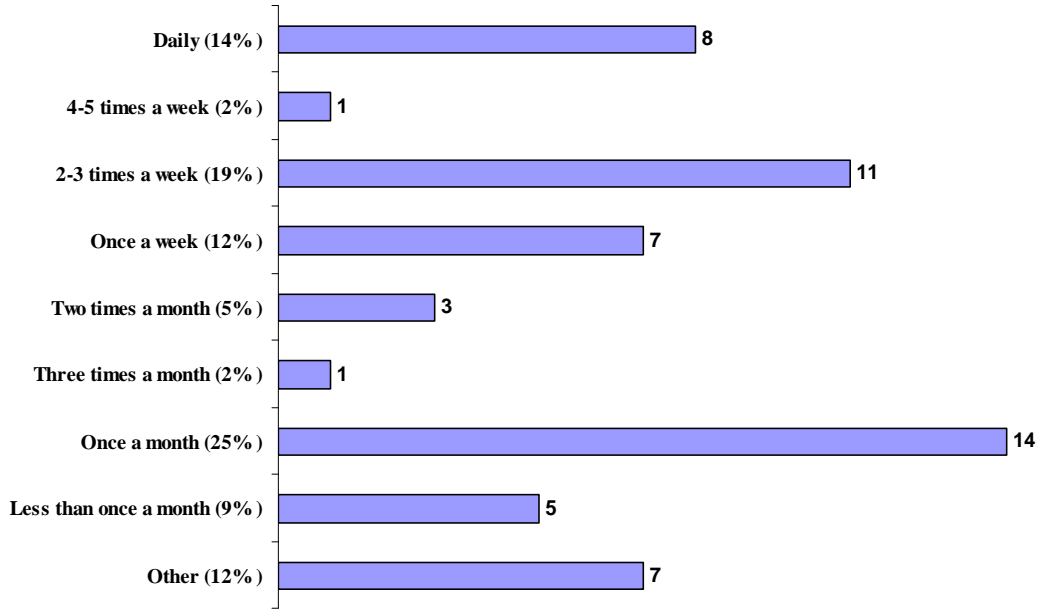


Figure 5: Frequency of Gardening (n=57)

When respondents were asked to identify the multiple reasons they participate in their community garden, the top five reasons were 1) Enjoy gardening, 2) Connect with the community, 3) Exercise, 4) Add beauty to the neighborhood, and 5) Grow food (Figure 6).

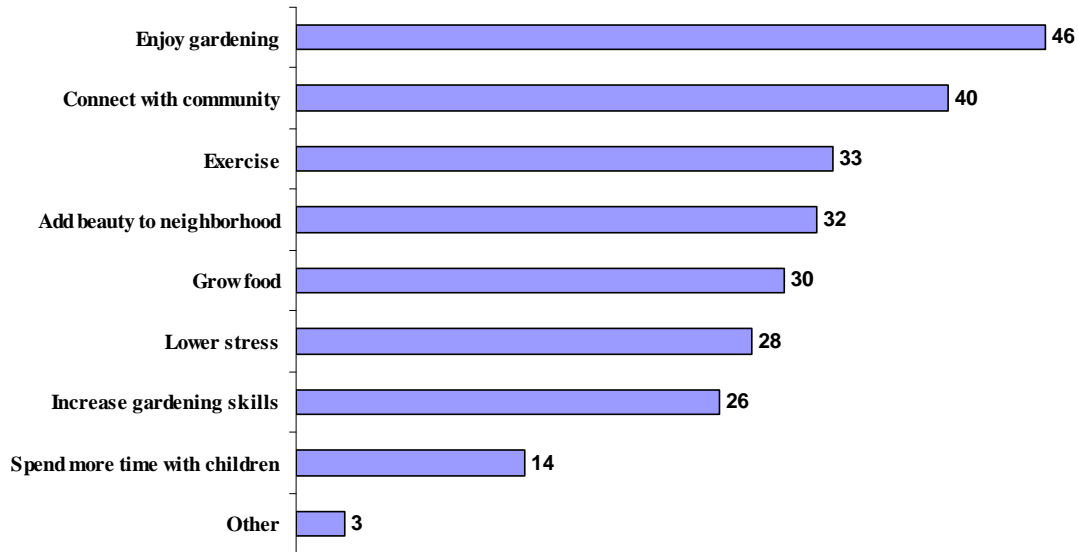


Figure 6: Reasons for Gardening

Section B: Garden Experience

Section B of the survey focused on understanding the overall garden experience. Respondents were asked: “How do you normally travel to and from the garden?” Figure 7 demonstrates that more than half the participants (54 percent) usually walk to their gardens, whereas a little more than a third (39 percent) drive to their gardens.

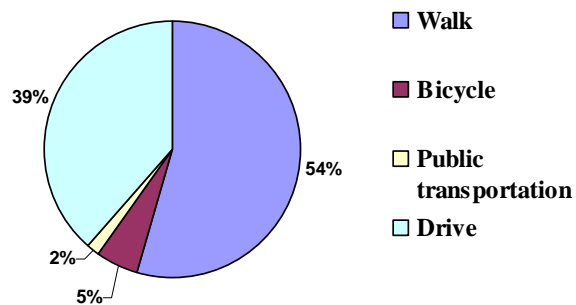


Figure 7: Getting to the Garden (n=57)

The next question asked gardeners to use a rating system to measure a number of factors that can contribute to or detract from gardening experiences (Figure 8).

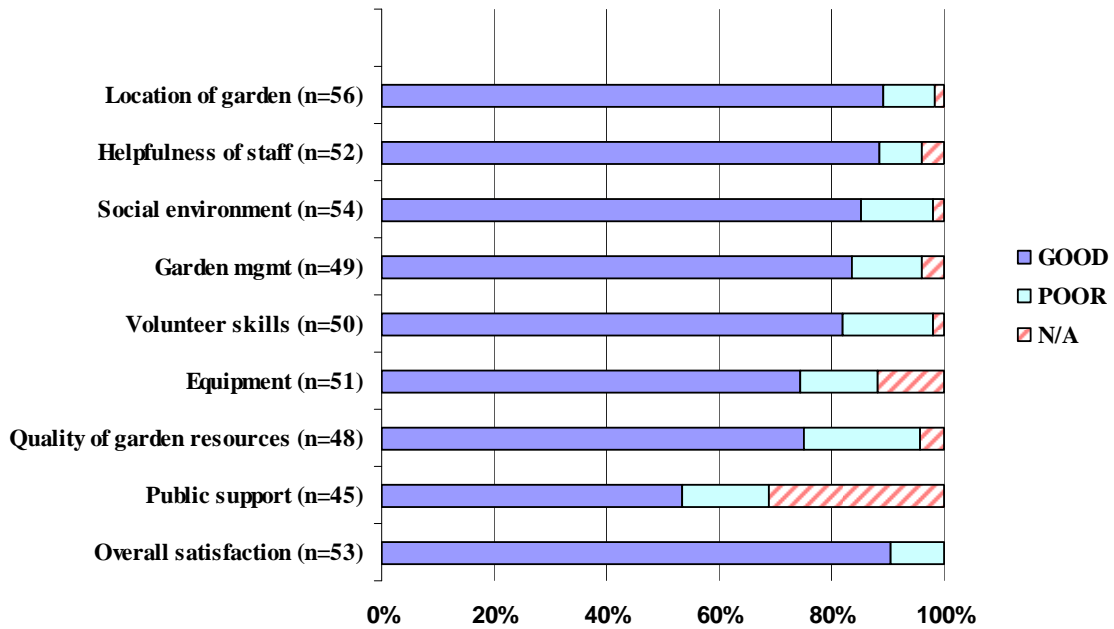


Figure 8: Gardening Aspects Rated

Only one gardening aspect rating stands out as a potential concern: *Public Support*. Overall satisfaction with community gardens among respondents is good to excellent, while less than 20 percent reported poor satisfaction overall.

Respondents were asked to what level they agree or disagree with the following statement: “Because I’m involved in the community garden...” (Figure 9).

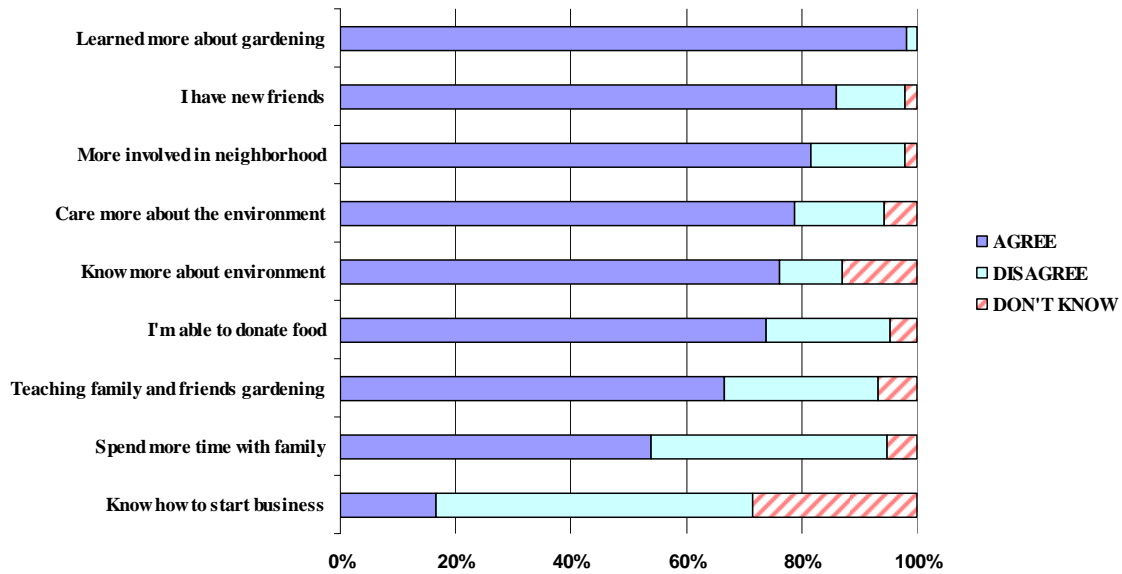


Figure 9: Effects of Garden Interaction

Almost all respondents reported having increased their knowledge of gardening, while just over 80 percent agree their garden involvement has both allowed them to make new friends and involved them more in their neighborhoods. Roughly three quarters of respondents said they know and care more about the environment as a result of their involvement in community gardening. Furthermore, the majority of respondents report being able to spend more time with family, teach them about gardening, and donate food they grow in the garden. Fewer than 20 percent believe their involvement has increased their knowledge of how to start a small business.

Section C: Nutrition

Section C highlights gardeners’ opinions about the connections between nutrition and their participation in gardening. They were asked to offer their level of agreement based on the completing the following sentence, “Since participating in the community garden...” (Figure 10).

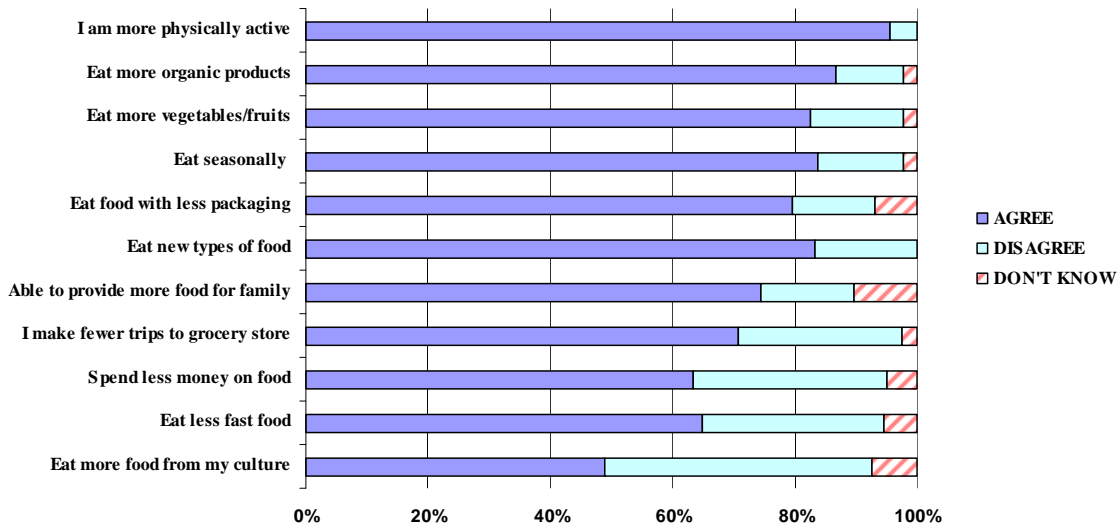


Figure 10: Nutrition Awareness

Eighty percent or more of the respondents believe they are more physically active and that their eating habits have been altered since participating in a community garden. Between 60 and 80 percent of respondents report they are providing more food for their family, while spending less money on food and trips to the grocery store. Respondents also reported consuming less fast food since participating in community gardens. Finally, just a little over 40 percent agree they are eating more foods from their cultural heritage as a result of their involvement in gardening.

The section on nutrition awareness was also developed to determine the level of food insecure households participating in Marin’s community gardens. A household is food insecure when the family cannot access food on a regular basis, and must therefore depend upon outside sources for help, such as food banks or federal food assistance programs.¹³ To determine the level of food insecurity, respondents were offered three statements relating to their food access over the past month (Figure 11). They were asked to complete the sentence, “During the last month (I/we)...” and rate their experience. Roughly a third or more of the respondents answering this question qualify as living in a food insecure home.

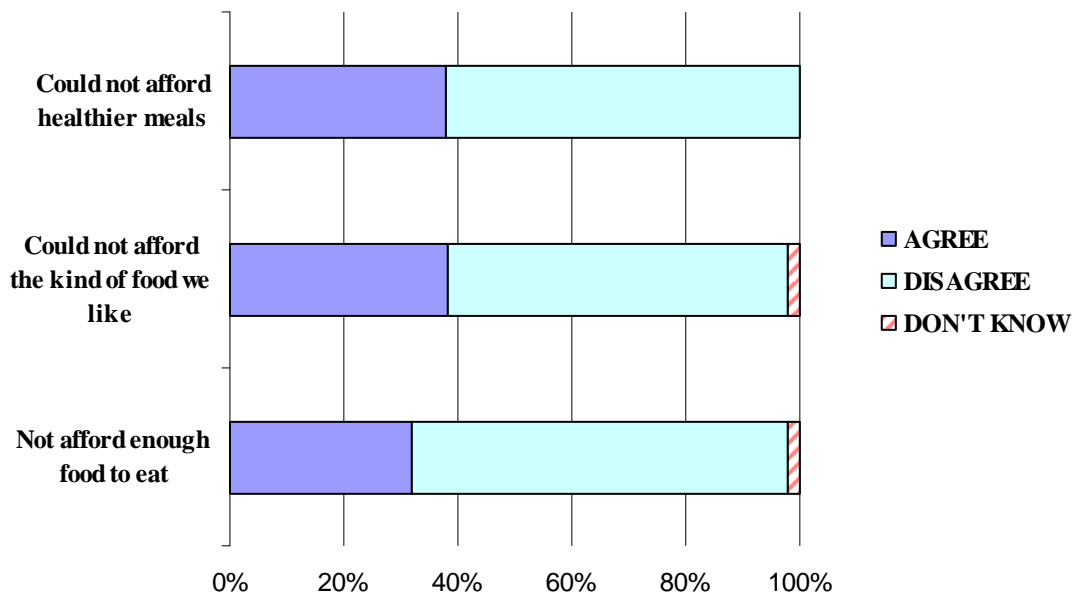


Figure 11: Food Insecure Households

Section D: Gardening Interest

Section D of the survey is linked to the first question in Section A, which asked respondents about their current involvement in a community garden. Those who chose “no” in Section A were redirected to questions in Section D, inquiring why they may not be involved. To find out some of the reasons people were not involved in community gardens, respondents were asked to rate their agreement upon completing the following sentence, “I am not involved in community gardening because...”. The bar graph (Figure 12) depicts their responses.

¹³ Vozoris and Tarasuk (1999); Also see the USDA’s “Community Food Security Assessment Toolkit” (<http://www.ers.usda.gov/publications/efan02013/efan02013.pdf>)

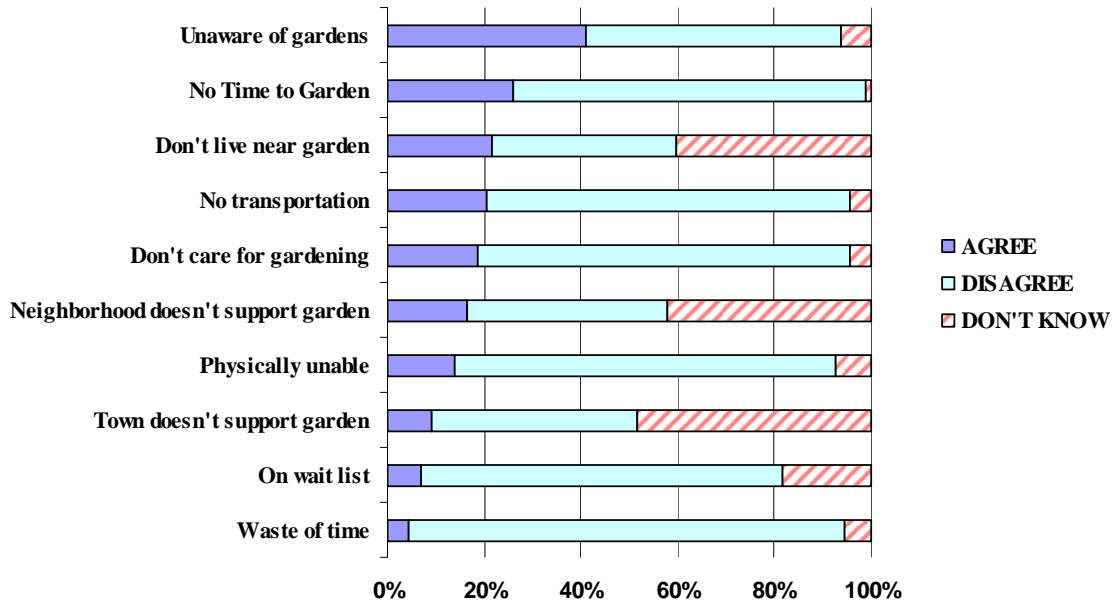


Figure 12: Reasons for Not Being Involved

Approximately 40 percent of respondents in this section were unaware of gardens in their neighborhood. Roughly a quarter verified they do not live near a garden, and lacked time to garden. Roughly 20 percent cite either a lack transportation or a lack of local support as barriers to their participation.

Youth Surveys

A youth survey was designed to capture school garden experiences. To help understand youth engagement in school gardens, students were asked: “How often do you participate in the school garden?” (Figure 13)

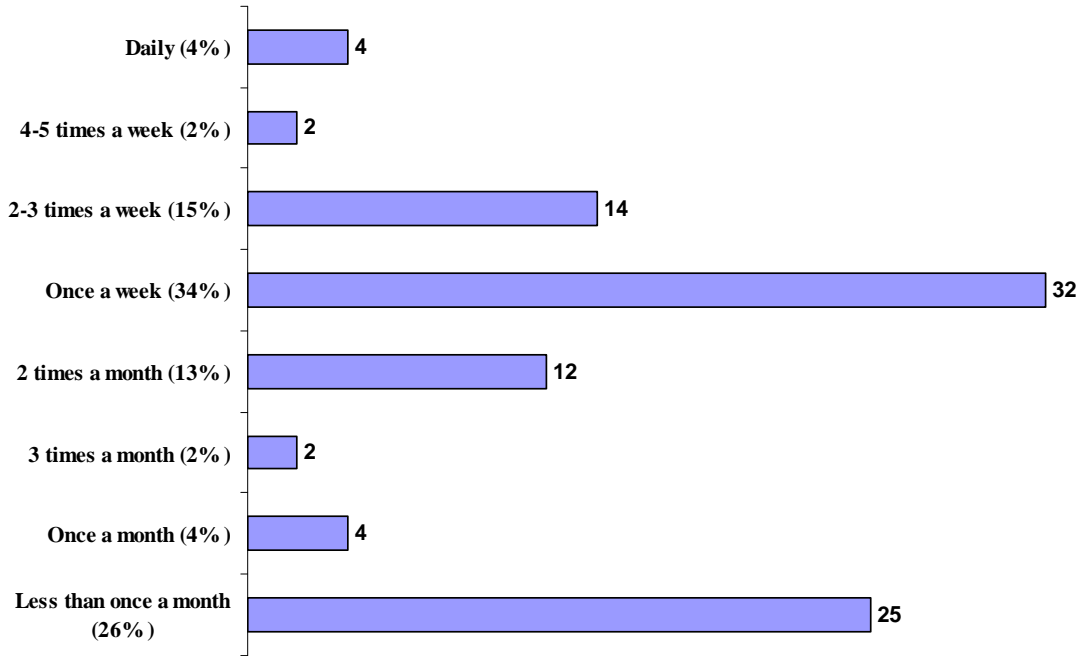


Figure 13: Frequency of Student Activity (n=95)

A little over a third (34 percent) reported they participate in the school garden at least once per week. About one quarter (26 percent) are exposed to the garden less than once per month. Less than a quarter (21 percent) is active in the garden multiple times per week.

Students were also asked to rate a series of statements relating to the time they spend in the garden: “Please check the box below that comes closest to your opinion about the garden” (Figure 14).

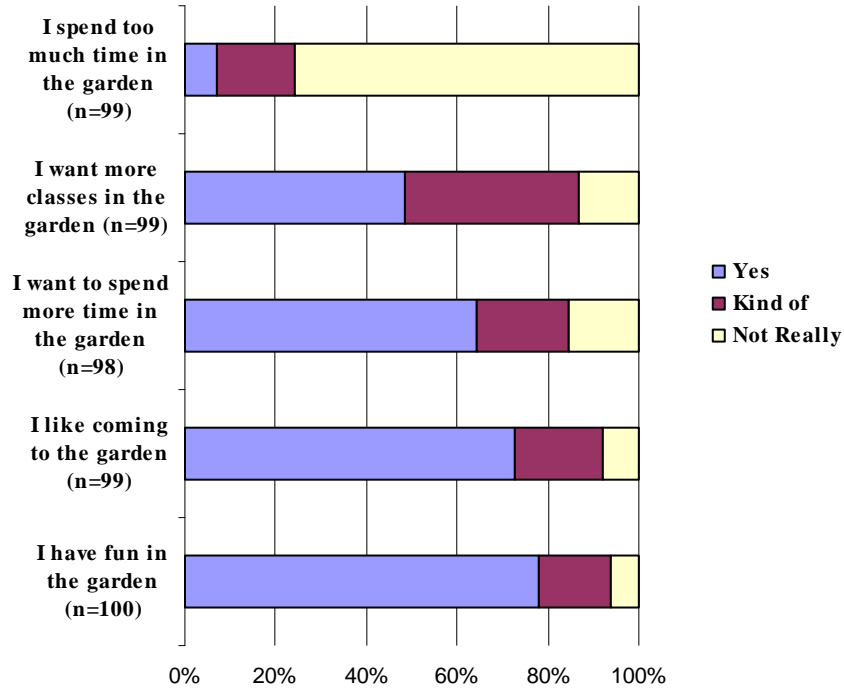


Figure 14: Opinion of Garden Activity

Roughly half of the respondents (48 percent) would like to have more classes in the garden. In general, the majority of students surveyed enjoy the garden and would like to spend more time there.

The assessment inquired about the students’ personal and educational development related to the garden. They were asked to complete the sentence, “Because I work in this school garden...” and indicate how much they agree or disagree with the final statement (Figure 15).

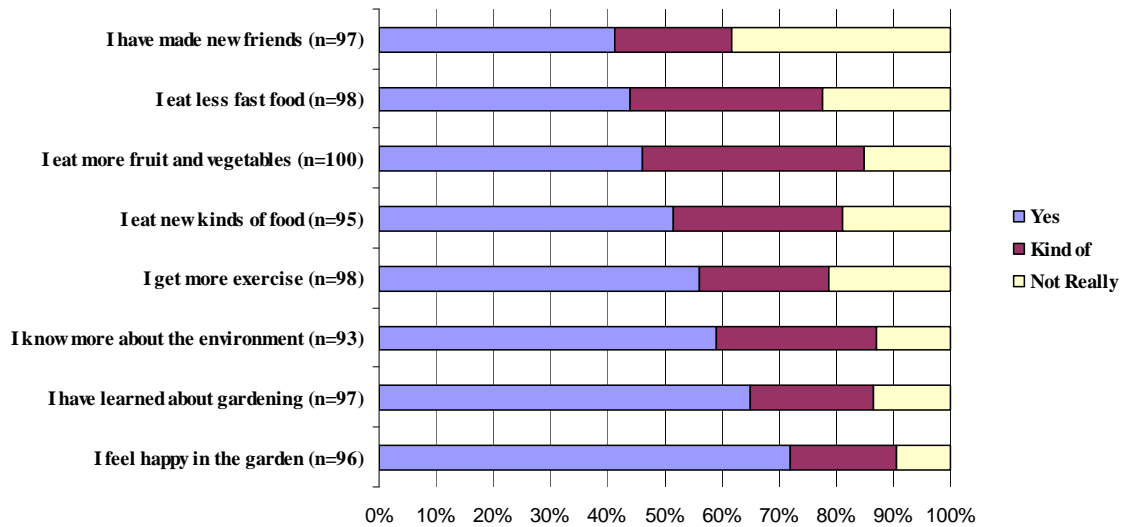


Figure 15: Student Development

More than 40 percent of the students claim they eat less fast food and more fruits and vegetables because they work in the school garden. Over half report eating new types of food and getting more exercise, while close to two thirds believe they know more about the environment and have learned about gardening. Overall, nearly three quarters of the students reported feeling happy in the garden.

Finally, we wanted to know the students’ opinion regarding their experience in their school garden. They were asked, “How would you rate your overall experience working in the school garden?” (Figure 16)

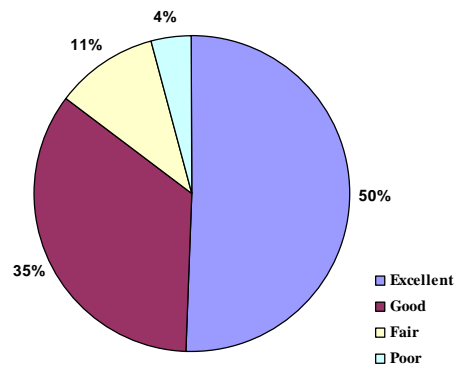


Figure 16: Overall Experience of Garden (n=95)

Eighty-five percent rated their overall experience as good or excellent, with the remaining fifteen percent reporting fair to poor.

Interview and Focus Group Results

The qualitative portion of the assessment consisted of 16 interviews with city/county staff, directors from community-based organizations, and garden coordinators. Responses were also gathered from a focus group of school garden coordinators and teachers (Appendices E and F). Data from this section helps identify a number of themes that parallel the survey data. Emergent themes relate to garden access, policy, communication, funding, education, and leadership.

Access

Access to community gardens is an overriding need for almost a third (31 percent) of the random and convenient sample survey respondents. Currently, there are an estimated 86 community gardens in the county. Eight of these gardens are neighborhood gardens. Of these eight gardens only two gardens have available plots, while the rest have a waiting list.

The following are comments of community garden coordinators from around the county regarding the demand and access of their gardens.

“Based on the number of calls I get, we do need more gardens. We have 78 plots, and we have over 60 [people] on the waiting list.”

“One of our limits is that we only have a certain amount of space in the garden for people. We have a waiting list.”

“We have a waiting list of 27 and could be up to two years before someone can get in [a plot].”

“We have a waiting list and we have seen that go up and down, and now we are popular again...we usually have 7-10 new gardeners a year.”

Providing space for people on their waiting lists comes down to managing their current gardeners to make sure they are keeping up on their garden responsibilities; tending to their plots, participating in the maintenance of communal areas, paying their dues, and following the garden’s bylaws all contribute to a healthy garden relations. This relationship also determines their ability to continue in the garden.

“Right now the demand for our garden plots is very high. The gardeners are self-policing to ensure that the rules and bylaws are being followed by the gardeners... The demand is so very high so if someone is not working and their plot is too weedy, then gardeners want something done; they want those gardeners to rectify their plots’ problems or they will be asked to leave the garden.”

Expanding a garden, or starting a new garden, is a logical step to increase access for community members and make plots available to those on waiting lists. If and how

garden expansion occurs is largely determined by the relationship the garden members have with the land owner. During difficult financial times, cities and counties may be reluctant or unable to take on extra costs.

The following quote is a continuation from the previous one, in which a Parks and Recreation employee expressed the reality of expanding gardens on public lands:

“Our office doesn’t have the capacity to manage additional gardens at this point, and the city doesn’t have the funds to manage and maintain gardens.”

In spite of the current economic environment, the city and county officials we spoke with see the value in community gardens.

“Because of the economic downturn, we’re in that need for more community gardens so folks aren’t so dependent or fearful of the future, [thinking to themselves] ‘We won’t be able to feed ourselves.’ I think it is a bit liberating to produce your own food and feed your own children.”

Expanding gardens on private land is risky as land owner development projects may change over time. Land owners may not fully understand what a community garden entails, and they may discourage garden development and expansion. A director for a community-based organization managing a community garden that was later developed attributed the demise of the garden to neighbors’ complaints:

“The garden was next to some neighbors who did not like the garden. I think they may have donated money to develop the site just to get rid of the garden; I don’t think they liked the people so close to their house.”

A director of a nonprofit that helps educate the public about the value of nutrition and healthy lifestyles has also encountered issues regarding non-gardening neighbors:

“There is a problem with people’s perceptions about community gardens. They think the garden is going to have low income people in there. I’m low income. I make less than 90K, and for Marin County, that’s low income, especially if you have a family. That was the same attitude with affordable housing [when it was first introduced in Marin]. People need to understand community gardens are a chance to know who our neighbor is, building community, not about being leery about who is out in the garden.”

“Educate and talk to your neighbors because all it takes to gum it up is one person with a checkbook to put you back to square one.”

Education

Increasing education capacity is another important need expressed. A quarter of the students surveyed spend less than one day a month in the available school gardens, while roughly a third (32 percent) get into the garden once per week.



San Pedro Elementary School Garden

Photo by M. Bauermeister

Education relates directly to access; without access to gardens there is little opportunity to educate students. School gardens currently lack the resources needed to provide the level of access that many youth desire—over 60 percent of the youth surveyed want to spend more time in the garden (Figure 14). However, time constraints, lack of gardening skills, and relevant curriculum prevent teachers from incorporating classroom time into the garden. The following statements from the focus group support this finding:

“Each class needs to have some sort of attachment to the garden. This is fairly simple. However, teachers don’t have the time or knowledge to do this; they are overwhelmed with current work loads and expectation. They need someone else to create these lesson plans for them, and perhaps teach them how to use the garden in the lesson plan.”

“There is a general lack of knowledge among faculty about how they can ‘own’ the garden. They don’t realize they can go out there at anytime and introduce a subject or just have class out there. One time, I saw a teacher discussing temperature with the class in the parking lot, showing them how to read a thermometer. Why couldn’t that have been done in the

garden? This would have been a great way to introduce the importance of temperature, how it affects plant life in the garden, etc.”

The need for increasing the educational capacity is not only reserved for school gardens. Garden coordinators and gardeners from around the county have expressed interest in increasing their own education and skills, as well as the viability of the garden in general:

“One of the things that would be fun is to have a relationship with a Master Gardener. I would like to see education increase [among gardeners]...for example, one year our tomatoes didn’t grow well, and so I’d like to ask them about certain crops. It could be fun to have a gardener come out and teach us.”

“It’s a continuing educational process. I want [the gardeners] to learn how organic gardening is different than non-organic; why we don’t use insecticides, herbicides, etc. The whole thing is the soil, building up the soil and enriching the soil. So the soil is the main part, not the plant...It is educational for why organic gardening is important.”

“I didn’t garden for years because I didn’t think I could do it myself, and having two or more families together has helped, and plus getting to know my neighbors has helped.”

“[We need] Education about how to develop a garden on limited funds; how to look for resources outside the community to help develop the garden.”

Funding

Funding was a top concern of most community gardeners and their coordinators. Funding for personnel to manage the garden, such as school garden coordinators, is dependent upon grants. Infrastructure such as fencing is a costly initial investment. Without sufficient funding and proper infrastructure, a community garden effort can be severely hampered. The following are expressed concerns regarding funding:

“The maximum number of students is also a problem. It is hard to direct more than say, 5 students for one teacher; the student teacher ratio needs to be more realistic, 1:5 at the most. Of course this would require hiring from outside, getting funding. This is a problem because who is going to get the funding? Many of the teachers don’t know how to apply for funding, nor where to look.”

“Money [is a barrier]. Not to be able to put up the proper fencing for deer proofing. Money to purchase healthy trees, because we received ‘reject trees’ and we should be thankful for what we got, but we would like

something that isn't on its last leg. You understand. But trying to make it deer proof with no money, they ate up what was [growing].

Funding is also a main concern for garden coordinators who have yet to develop a garden. Estimated costs to develop a new garden can reach \$100,000 or more, depending on the site. For one coordinator, there were a number of barriers that required a great deal of money to overcome:

“We did a \$4,000 deposit to begin with; we did another \$2,500 for design review.”

Depending on the infrastructure already in place, the cost for developing a community garden can be prohibitive. The proposed development cost for one garden was estimated at \$400,000. Without available grants, community support and donations, and the help of the local government, many community garden efforts fail before ground is broken.

Most funding goes toward liability insurance, water, infrastructure, and general maintenance of the garden grounds. One garden coordinator, whose garden is partially supported by its host town, believes a garden can *only* thrive if there is an agreement with the city and the gardeners:

“You need the support of the city to be successful. I know in Novato they [community garden proponents] are going through a process, but I think the city needs to come to them as well [with the desire to put in a garden]. I think the city has to come more than halfway to help them with their infrastructure.”

Another participant echoed this need:

“Parks and Rec is the missing link. The community garden is pretty darn close to parks. And due to ongoing cutbacks, they are not enthusiastic about community gardens. I would hope that there would be a change in funding so they can have more support for gardens, and also for a different view of water and insurance. That would be a game changer, especially at the county-wide level.”

Policy

Many of the participants had differing views on whether policy was a factor in the development and sustainability of community gardens. The director of a Marin organization supporting a number of community gardening efforts describes some of the cities' policies as outdated:

“The problem is that [many cities’] rules and regulations were put into place years ago for reasons that they thought were valid, but they need to update them. They say they support community gardens, but the policies in place prohibit community garden development, such as in parks. Many of these are safety issues that need to be mitigated with more current policy issues.”

“Every city has a different policy and I think that could be a barrier. The financial situation will play a major role how the city responds to community engagement to gardens.”

Other community participants felt policy was not the issue, but rather the organization and logistics of community efforts:

“[Policy is not a barrier] to my knowledge. The restrictions are finding the right land that has water, and can be paid for. Getting the community set up, and the initial cost of setting up the garden, but I don’t think the county has many barriers [to halt development]. It’s more of a logistical thing within the community and finding the right space.”

Another participant believed zoning may be a potential barrier:

“Some zoning designations may not allow for it. We may want to look at residential areas that may be prone to helping gardens thrive.”

One community garden coordinator verified that there are different zoning ordinances and a need for updating them:

“Zoning laws are here for a reason, and city staff has been trained in protecting those zones. People don’t understand how the government process works. I’m working as a mediator role, translating the vision of the garden in a way the regulators can see how it fits into their books. There is a broad law that says community gardens in residential areas have to have a conditional use permit. So does any operation that creates excessive noise. It is the perception, that there may be more traffic. The laws are in place, and there are needs to change it. Zoning for example, [if neighborhoods were zoned for gardens] then people [would] only be walking to the garden.”

Communication

Most of the participants described the importance of ongoing communication among gardeners, neighbors, and land owners. Most community gardens begin when community members talk about how the garden will improve their neighborhood and their community's well-being. Communication among residents, neighbors, and land owners is a vital part of securing garden space and collaborating on a development strategy that works for everyone. City and county staff had the following comments about communicating with key stakeholders in garden development:

“I think you need to see if your local public agency or land owner is willing to partner up with you. You have to get serious about raising some money, [and] you definitely want it designed correctly...I would start out coming to the city and ask if there is any property available...you have to think about how the money is going to be used, you have to make sure there is maintenance, and you have to make sure bills are paid.”

“[The residents can best develop community gardens] through neighborhood organizations first, then contacting the board of supervisors. It's really the responsibility of the people to find the space and then getting an allowable space with water, access to people, and [to make sure] there aren't certain restrictions. Unless there is someone that can donate the property and secure it for a time, then there really isn't a good cause for starting one if it will be taken away for development in the future.”

The above comments make it clear there needs to be open and transparent communication between community garden stakeholders interested in pursuing a garden project and land holders who may help secure garden space. Likewise, school garden coordinators and teachers expressed similar precautions when planning the development of school garden programs. The collective agreement among participants in the focus group was that the school administration has to “be on board” with the idea.

“There needs to be more support from the administration. If the administration is on board and understands the benefits, then there is a better opportunity for success, accessing funding, etc.”

According to another school garden coordinator and advocate, it's critical to communicate the benefits early on:

“Breaking into the garden scene can be difficult because the administration may not be familiar with this type of education, and they may label the project as being a part of ‘your agenda’ and you need to reinforce that the ‘agenda’ if there is one, is to increase the health standards of the children. If anything, it is a ‘health agenda’, not ‘my agenda.’”

When asked how to gain administrative support, the general reply was to organize community support, namely parents of students:

“It is key to point out to the parents that healthy food = healthy kids.”

Once gardens are established, communication is necessary to maintain garden participation, education, as well as gather dues to pay for water bills, insurance, or general repairs and upgrades. The following comments by garden coordinators from around the county express their garden successes and struggles in this area:

“Have a clear agreement for garden members; have a clear “who’s in charge” [person], or center point for communication to [schedule] regular work days. [During work days] We have a potluck meeting at lunch time and you see each other face-to-face from time to time, so there is some democratic response...my personal experience, opinion, is to have clear communication and for people to cooperate with one another. That is true for any org <sic> [with] two or more people.”

“We need a new bulletin board so we can communicate with the rest of the gardeners. We have a picnic table where we do potlucks during work days, [and] we just started doing email.”

“When I became the coordinator a year later, I wanted to engage the gardeners so they could garden as a community and feel as a group; they garden together, they grow together. So that means during our fall/spring work gathering we have a work meeting and a community project to instill the sense of pride, sense of community and so we do weeding around the edges and we have a potluck afterwards...”

Establishing written guidelines for how gardens operate will help ensure their productivity into the future.

“I personally gather with the new gardeners and I give them their first orientation, and I show them all the aspects of the garden, and who is in charge of what. . . We show them how to compost, how to clip the fruit trees, how to do the weeding. So I bring them through the rubrics of the garden.”

“People have a tough time with rodents and how to control them. There are a lot of differences in how to control them and what our personal views [are]; we’re dealing with an environmental community.”

“The interpretation of the rules is different by some of the gardeners; I’m hoping we can better define the expectations of the gardeners, so the gardeners don’t turn on each other.”

Leadership

Successful gardens were identified as those with an active leader or group of leaders who are integral to garden development and continuity. Some of the coordinators we spoke to struggled with finding adequate leadership for the gardens.

“I would like to see someone take on that overseer [role] and keep track of, for instance, we want to get [something to resurface] the garden and put the word out for that. One person would do that...there really has to be really one or two who are going to take on that overseeing role.”

“Now we have three coordinators, and in the beginning before that it was chaotic. We all have different jobs, I manage plots, [he] collects money, and [she] helps with compost. Our community garden has become more organized...”

While maintaining current gardens is difficult by some measures, perhaps more problematic is the initial planning and resource acquisition necessary for garden establishment. The need for a county-wide umbrella coordinating entity was expressed repeatedly during the interviews.

“First of all, it takes organization of a group of people that are committed, and then they need to get more people interested. Then they take it to people who own the land. It would be great to have a community garden czar who is the go-to person, and then that would help people go about [developing community gardens] more easily.”

“In Marin County there is not a uniform body of folks that has convened a meeting about community gardens. I have mentioned that there is a need to put together a meeting, [but] other folks and organizations have different visions and ways of moving forward. In the Canal, for example, there are different visions among the nonprofits, but there could be someone that could bring them all under one roof and strategize how community gardens can be best managed; especially the financial, management, and insurance [aspects].”

“[Marin County] has a ton of resources, but it isn't always easy for the individuals in the community to access them. I do think there needs to be a formal organization so people don't have to make a dozen phone calls to find out what the possibilities are[to establish a community garden].”

“Every garden has its own structure and they're leaning on non-profits [for fiscal sponsorship and accessing liability insurance]. They may have a lack of consistency, so there is a non-profit that may be able to take on a few gardens, but in the near future [the non-profit] will have to pull out. That takes away the funding and resource flow for the garden. If there

were a county wide buy in and the parks and rec., for example, working more closely [with gardens], then there could be more consistency and aid for the sustainability of the garden.”

Another leadership concern relating to school gardens was the lack of access to gardens over breaks. Most gardens produce large amounts of food during the summer months when students and teachers are on vacation. The gardens often go unattended if there is not a garden coordinator willing to step forward and designate a summer crew to care for the garden.

Discussion

Funding and Access

Research surrounding community gardens has identified funding as a critical component in the development and continued viability of gardens.¹⁴ Infrastructure costs may be the largest barrier for gardens here in Marin, both in the initial set up and long term management. Currently, there are waiting lists for the majority of neighborhood gardens. However, expanding existing gardens can be costly. One coordinator tried meeting community demand and attempted to expand an existing garden without installing a fence. The intent was to have a community orchard and to make additional plots available. To their dismay, deer decimated the new saplings and vegetable plantings, and now the coordinator is looking for funding to install a fence.

Establishing a new garden often requires obtaining development permits and liability insurance, installing water meters, and establishing wells. Further costs are realized in soil amendments, planter boxes, tools, plants, and even security lights. These costs require both funding up front, and funding for the duration of the garden. Neighborhood gardens charge plot holders a yearly fee that is applied to many of the regular costs and general maintenance, but for other gardens, such as school and demonstration gardens, the lack of steady funding can greatly hamper the ability to educate gardeners and the public over the long term.

With respect to access and why residents stated they are not involved in gardening (Figure 12), it is notable that 40 percent agreed or strongly agreed they were not involved because they were unaware of a garden in their neighborhood. More than a quarter (26 percent) of the respondents completing *Section D* of the survey agreed or strongly agreed they did not have enough time to participate in community gardening. This may be directly related to the income level of the respondents as the majority of them (63 percent) reported a household income less than \$50,000 (Figure 17).

¹⁴ Wakefield et al. (2007)

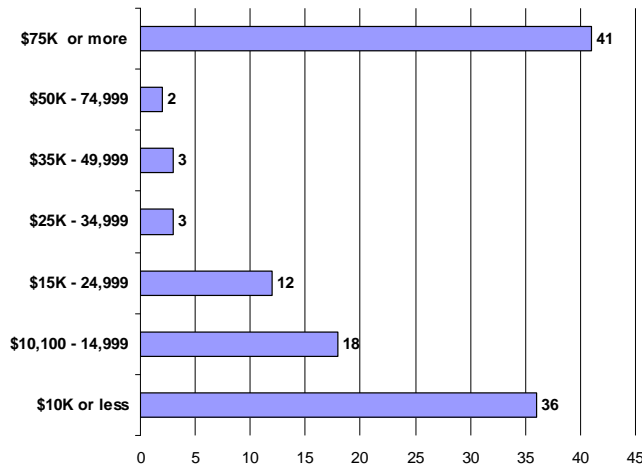


Figure 17: Household Income (n=115)

Marin County’s estimated median household income in 2008 was \$89,909. According to the self-sufficiency standard calculations published by Insight¹⁵, a single parent household with one child living in Marin during 2008 needed to earn at least \$57,357 annually to sustain basic needs and enable them to save for the future. Many of the respondents surveyed are parents with children, living in high density housing where a dual income is necessary to make ends meet. With little time outside of work, there is less opportunity to participate in community gardening and events.

Knowing this, community members and organizations are responding by combining resources to develop gardens in proximate spaces to ensure easier access for residents. Currently, the Canal Alliance and the Canal Youth Concilio have been helping implement plans for residential gardens in apartment buildings in the Canal district of San Rafael. They have also been collaborating with the Trust for Public Land on establishing a community garden that will serve more than 100 residents in the same community. The City of San Rafael has offered the vacant lot for the creation of the garden, but they have expressed their inability to manage the site due to tightened budgets. In addition, community gardens are in the planning phases for Corte Madera, Mill Valley, Novato, and Sausalito. If implemented, these projects could greatly reduce the estimated 220 person waiting list in Marin County, while increasing access for additional residents.

Some underlying needs arose during the assessment. School garden coordinators expressed the need to increase public access to their gardens during times when school is out and students and administrators are on vacation. We identified 60 school gardens in Marin, many of which are underutilized during summer months when plants are producing fruits and vegetables that could be made available to the public.

¹⁵ Insight is a community economic development organization based in Oakland, CA. For more information about their organization and calculating livable incomes, visit their website: <http://www.insightccd.org/>

Policy

There are current efforts in many areas of Marin to expand garden availability to residents. The most successful gardens in Marin were strongly supported by their city's parks and recreation departments. However, city and county personnel stated in their interviews that the current economic environment is not conducive for creating additional costs for the cities. In the same vein, zoning policies were reported as needing updates that would allow community members to develop garden spaces closer to their homes.

Education

One of the main goals of the assessment was to find out whether or not community gardens were educating and enriching the lives of gardeners and their communities. The quantitative data shows that participants are actively learning about nutrition, eating new types of food, increasing their environmental literacy, and learning how to garden in general (Figures 9, 10, 15). Much of this learning comes from interacting with other gardeners. For example, during interviews, coordinators confirmed that gardening skills are transferred among gardeners through interaction with one another. The educational efforts of school garden coordinators and teachers are also responsible for introducing youth to a new understanding of the benefits of gardening.

The primary needs we found surrounding education are directly related to funding and subsequent access. An overarching sentiment among coordinators is that increased educational outreach is not possible without funding. For example, funding is required to enhance curriculum development, as well as train teachers to work with the new curriculum, and write grants in order to combine classroom and garden learning environments.

Another educational need is training community members in small business development (Figure 9). Institutional gardens, such as Homeward Bound, train their clientele through a garden program enabling them to find work. During difficult economic times, an opportunity to learn a trade such as landscape design, direct marketing, or setting up a compost business can greatly benefit a community and one's personal development. The Indian Valley Organic Farm at the College of Marin is another example of hands-on learning.

Leadership

Ideally, gardens would have a group of coordinators dividing the labor of garden communication and leadership, but this is not always the case. The coordinators described their desire to improve communication with gardeners about a number of subjects ranging from weeding and composting to paying dues and caring for tools properly.

On a larger scale, there was interest among gardeners, coordinators, directors, and city/county personnel to have a coordinating organization that could provide needed leadership for community garden projects and oversee and provide assistance to the development and maintenance of Marin community gardening efforts.

Communication

Open communication with potential and current gardeners, as well as with neighbors and non-gardeners, is essential. Lack of community garden support from the public is reflected in survey data (Figure 12). Discussions with garden stakeholders verify this sense of disconnect and showed the need for communicating openly with non-gardening neighbors. If there is strife within the neighborhood about the community garden, the viability of the garden is at risk. One garden site partnership in Novato dissolved as a result of the property owner's lack of support for the garden. According to the garden coordinator and planner, the land owner was concerned the garden would attract low income residents who might partake in practices incongruent to the organizations' image and mission.

Neighbors' misconceptions of community gardens are real barriers to garden development and ongoing success. To help secure garden viability and avoid lost opportunity, coordinators and stakeholders are actively discussing the purpose of their gardens with community members. The Canal Alliance and the Trust for Public Land have been holding community meetings about the new garden proposed for the Canal district. The meetings are open to the public; both potential gardeners and non-gardeners can attend to voice their opinions about design, security, and hours of access, among other topics. Open communication such as this promotes greater transparency about the benefits and goals of the garden, as well as an open invitation to interact with community.

Recommendations

Increase Access to Garden Space

Access to neighborhood gardens is limited in Marin. It can be increased by improving access to school gardens around the county, which could be facilitated by connecting with organizations such as Marin Open Garden Project. This organization helped place a community gardener in the Neil Cummins Elementary School in Corte Madera. Likewise, schools can mimic the Davidson Middle School garden. Dubbed the “Summer Garden Patrol,” garden care is led by the active garden coordinator with the help of the Conservation Corps North Bay and a small group of community volunteers. These opportunities increased access to fresh food for individuals without regular access to gardening plots, and helped prepare the garden for returning students. This enables teachers and students to spend their energy in a variety of educational aspects of the garden rather than weeding, maintenance, and repairs, which may discourage student involvement and interest in the gardens.¹⁶

These programs offer the chance to increase community access. There’s greater benefit when more families are involved with the school garden. Increasing access to community members without their own plots will offer them a chance to try foods they may not have eaten before, interact with community, get exercise, and supplement their diets, among other benefits. In addition, community members have a chance to engage in gardening and learn at a manageable pace, especially if they believe they are too busy to garden. Caring for a school plot over the summer is much less work than managing a plot year round.

Form Network Relationships

Community gardens need funding, education, and leadership. Lack of funding in most cases is the principle obstacle to improved garden viability. Garden coordinators can partner with organizations and institutions that are able to help with education, grant writing, garden design, curriculum development, and management. Educational partnerships with organizations may be the key to decreasing some of the common barriers to sustaining community gardens.¹⁷

One example of this strategy is the Marin Master Gardeners’ school garden committee, which serves as a resource for school gardens regarding education and outreach on a variety of subjects, and offers suggestions and resources for curriculum based garden activities and design. The Marin Master Gardeners, sponsored by the University of California Cooperative Extension, are currently expanding their community garden outreach by developing a similar committee titled, “Shared Gardens of Marin,”

¹⁶ See Appendix D, Youth Survey Frequencies. Many student comments reveal they do not like the day-to-day labor of gardening, such as weeding. Further education about the necessary aspects of gardening, such as weeding, watering, soil amending, and beneficial insects may greatly reduce student frustrations.

¹⁷ Mitchell and Goodall (2010)

that will provide support for community gardens in the county, mimicking the efforts of the school garden committee.

Other organizations in Marin, such as the Conservation Corps North Bay, have been helping with garden design, maintenance, and educating gardeners about best garden practices. Utilizing community resources such as these, helps simplify the management aspects of community gardening.

However, there will be a limit to organizations' capacity for outreach. Thus, it is necessary for community garden coordinators to seek out the cooperation from a number of organizations as well as local colleges. College students are able to gain credit, expand their portfolios, and obtain valuable experience assisting community projects. A new program at the College of Marin's Indian Valley Campus is training a number of students in sustainable agriculture. Community garden coordinators may want to consider inquiring about potential consultation services and internship opportunities.

Community gardeners can also combine resources and glean ideas from other gardeners and gardens around the county. One coordinator suggested networking with other gardens, forming networks of "sister gardens," where gardeners can visit and learn new techniques about planting vegetables, managing compost, and pest control among other opportunities. Partnering with existing gardens, sharing knowledge, and resources may greatly reduce funding needs, and may reduce trial and error learning that may discourage gardeners.

Rotate Garden Leadership

Community gardens need a strong leadership foundation from the inception of the garden and ongoing into the future. Ideally, a number of coordinators will divide labor and establish agreed-upon bylaws and expectations among gardeners. To ensure the ongoing success of gardens, leadership should be interchanged among gardeners to mitigate burnout among coordinators. The combination of coordinating with other organizations and gardens learning from one another will greatly reduce issues of burnout in garden coordinators, and therefore increase the likelihood the garden can be maintained for the long term.

Collaborate with Local Government and Neighbors

Developing and expanding gardens is more easily facilitated with the help of city parks and recreation departments; their financial and labor assistance is invaluable in meeting ongoing costs and maintenance. However, these departments' services are likely to be unavailable for new garden projects, mainly due to tightening budgets. Future gardens need to be well thought out, highlighting potential benefits the garden will bring to the community. Development costs, management, long term goals, and neighborhood support must be clearly outlined. These measures will help clarify any questions land holders and government officials may have concerning all aspects of the garden project.

Garden coordinators and stakeholders must communicate openly with both gardeners and non-gardeners to ensure the success of the garden development and acceptance in the neighborhood. It is recommended for all potential garden sites, as well

as current sites, to connect with non-garden neighbors and communicate with them exactly what they can expect from the presence of the garden.¹⁸

Update Policies

Communities and their governments also need to review and update policies and zoning regulations to help create gardens more efficiently. One example of a community benefiting from rezoning that encourages community gardens and other green space programs is the town of Petaluma. In this case, officials and community members are reclaiming lands for the benefit of its residents and beautification of neighborhoods and the environment.¹⁹

Coordinate Together

A coordinating group of community based organizations, gardeners, and community and governmental stakeholders networking together to form an umbrella organization is a potential end goal to facilitate community gardens in Marin. It is important to ensure the gardens are managed and organized by community gardeners according to their needs and goals, and not managed by the organization, thus keeping it very much a community effort. Each garden is unique and ideally those opinions and personnel will have a voice in the network organization.

Perhaps the closest example of this style of organization is found in Mendocino County's Garden's Project.²⁰ This is a network of partners helping Mendocino's community gardens thrive, as well as providing constructive information to communities building their own gardens. This project, along with others in Humboldt, Sonoma, San Francisco, and Los Angeles Counties, will shape Marin County's community garden guide, which will be available to residents by Spring 2011 at Marin County's inaugural community garden conference.

Conclusion

In closing, a number of community gardening needs, if addressed, will contribute to realizing the benefits community gardens can provide to Marin residents. We hope this report has not only verified some of these needs, but encouraged ideas for how to meet these needs in the future. Community garden stakeholders and partners working together to implement these suggestions will improve the viability of current and future gardens in Marin County.

¹⁸ Ogawa (2009)

¹⁹ See www.petalumabounty.org

²⁰ For more information about the Garden's Project, see <http://www.gardensproject.org/index.php>

References

- Alaimo, Katherine, Elizabeth Packnett, Richard A. Miles, and Daniel J. Kruger. 2008. "Fruit and Vegetable Intake among Urban Community Gardeners." *Journal of Nutrition Education and Behavior* 40 (2): 94-101.
- Been, Vicki and Ioan Voicu. 2008. "The Effect of Community Gardens on Neighboring Property Values" *Real Estate Economics* 36 (2):241-283.
- Dillman, Don, Jolene D. Smyth, and Leah Melani Christian. 2009. *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method*, 3d Ed. Hoboken, New Jersey: John Wiley & Sons, Inc.
- Lawson, Laura. 2005. *City Bountiful: A Century of Community Gardening in America*. Berkeley, CA: University of California Press.
- Mitchell, Gaynor and Anne Goodall. 2010. "Growing Education: Community Gardens Building Effective Partnerships with Education Providers." Accessed on August 13, 2010 (<http://communitygardenswa.org.au/media/articles/Resources---Resources-To-Download/Growing-Education.pdf>).
- Nestle, Marion. 2002. *Food Politics: How the Food Industry Influences Nutrition and Health*. Berkeley, CA: University of California Press.
- Ogawa, Tomoko. 2009. "What Grows in a Community Garden?: Limitations and Possibilities of Community Gardens." Master's Thesis, Department of Sociology, Iowa State University, Ames, IA.
- Roblin, Lynn. 2007. "Childhood Obesity: Food, Nutrient, and Eating-habit Trends and Influences." *Applied Physiology, Nutrition, and Metabolism* 32 (4):635-645.
- Schukoske, Jane E. 2000. "Community Development Through Gardening: State and Local Policies Transforming Urban Open Space. Accessed on July 13, 2010 (<http://actrees.org/files/Research/schukoske.pdf>).
- Vozoris, Nicholas T. and Valerie S. Tarasuk. 1999. "Household Insufficiency is Associated with Poorer Health." *The Journal of Nutrition* 133 (1):120-126.
- Wakefield, Sarah, Fiona Yeudall, Carolin Taron, Jennifer Reynolds, and Ana Skinner. 2007. "Growing Urban Health: Community Gardening in South-East Toronto." *Health Promotion International* 22 (2):92-101.
- Waliczekz, Tina M., Richard H. Mattson, and Jayne M. Zajicek. 1996. "Benefits of Community Gardening on Quality-of-Life Issues." *Journal of Environmental Horticulture* 14(4):204-209.

Appendix A: Methods

Data was collected between February and June 2010. The methods used included an internet based resident survey, phone interviews, and a focus group. A convenient sample survey administered to residents and youth participating in community gardens rounded out the data. All data collection was conducted in accordance to human subject protocols.

Web-based random sample

The random sample survey was administered via an on-line survey tool. One thousand sixty residents were chosen from a database purchased through InfoUSA. The selection criteria for the random sample included residents in Marin with a collective household income less than \$100,000 and a tendency to purchase online. The on-line survey was utilized for its potential to reach the maximum number of people while reducing cost and the environmental impact of printing and shipping.

The survey process mimicked the four-phase mailing method normally used for a paper-based mailing survey.²¹ A press-release was published in the Marin Independent Journal, and in the Point Reyes Light to familiarize residents with the purpose of the needs assessment. Residents chosen from the database were sent a post card requesting their participation in the survey. The week following the postcard mailing, an introductory letter was mailed to each recipient explaining why they were chosen, the purpose of the survey, and the URL address for them to access the on-line survey. A thank you/reminder postcard was sent out a week later asking recipients to fill out the survey, and thanking them if they had already done so.

Convenient sample

The convenient sample survey was developed for reaching residents in neighborhoods that already have community gardens, have had gardens in the past, or are in the process of establishing gardens. The paper-based survey is identical to the on-line survey; however the paper version was also translated into Spanish to reach a wider audience.

Feedback from residents was obtained at community garden workday gatherings, community centers, schools, and organizations offering outreach regarding nutrition education, senior services, housing and family support services. A total of 159 on-line and convenient sample surveys were obtained.

Youth surveys

A youth survey was designed to capture the school garden experiences among 101 children between the grades 4-11, from four school districts. The youth survey is a condensed version of the resident survey, and was aimed at understanding their opinions about school gardens. Participants were selected through a database of schools where Marin Master Gardeners

²¹ Dillman, Smyth, and Christian (2009); The four-phase mailing includes (1) a introductory postcard notifying recipient they have been chosen to participate in a survey. (2) An introductory letter and survey then follows up. (3) A reminder postcard, and (4) a supplemental survey is mailed to recipients.

currently participate as volunteer garden advisors. Other schools were selected based on their geographic location ensuring schools across the county were included.

Phone interviews

Phone interviews were conducted with county and city administrators working within the parks and recreation, planning departments, and employees within non-profit organizations. Individuals were chosen primarily for their experience working with the public on community gardening projects. Their names were acquired through a “snowball” method, where each interviewee was a referral from a current contact in communities that have worked with the individual in the past, or are working with them presently.

The majority of the sixteen interviews took place over the phone at the UC Cooperative Extension offices, while only two were conducted in person. The duration of the interview was on average 30-40 minutes.

Focus group

Invitations to participate in a focus group were extended to directors from community based organizations, school garden coordinators, neighborhood gardeners and their coordinators, as well as city and county personnel. One focus group was held with school garden coordinators to discuss the primary needs of Marin’s community gardens (in this case school gardens).²²

The focus group engaged individuals to discuss the primary needs of Marin’s community gardens (in this case school gardens). The focus group session had a duration time of 1.5 hours, and was held at the UCCE conference room.

²² School garden coordinators were the only individuals able to participate in a focus group session; difficulty coordinating a time and place for convening with the other groups was the primary reason for not holding additional focus group sessions. There was also expressed reluctance among a few potential respondents to participate in focus groups; they were not comfortable voicing their opinions in the presence of their peers.

Appendix B: Marin's Community Gardens

Neighborhood Gardens

Belvedere-Tiburon (Landmark Garden)
Fairfax Community Garden
Inverness (Plant Park)
Larkspur Community Garden
Marin City Community Garden
Marshall Community Garden
Mill Valley Community Garden
Point Reyes Station Community Garden
San Anselmo (Robson House Community Garden & Elders Garden)
Terra Linda Community Garden
Woodacre Oval Park

School Gardens

Corte Madera:

Marin Montessori
Neil Cummins Elementary

Fairfax:

Cascade Canyon (Elementary)
Manor Elementary
White Hill Middle School

Inverness:

Inverness Elementary

Kentfield:

Anthony G. Bacich Elementary

Larkspur:

Hall Middle School
San Andreas High (Continuation)

Marin City:

Martin Luther King, Jr. Academy (Middle School)

Mill Valley:

Edna Maguire Elementary
Greenwood Elementary
Park Elementary
Strawberry Point Elementary

Tamalpais High
Tamalpais Valley Elementary

Nicasio:

Nicasio Elementary

Novato:

Hamilton Park Elementary
Hill Middle School
Loma Verde Elementary
Lu Sutton Elementary
Marin Oaks High
North Bay Children's Center
Novato Charter School (K-8)
Novato High
Olive Elementary
Pleasant Valley Elementary
Rancho Elementary
San Jose Middle School
San Ramon Elementary

Pt. Reyes Station:

West Marin Elementary

Ross:

Ross Elementary

San Anselmo:

Brookside Lower Elementary
Wade Thomas Elementary

San Geronimo:

Lagunitas Elementary
Lagunitas Montessori
San Geronimo Valley Elementary

San Rafael:

Bahia Vista Elementary
Brandeis Hillel Day School (K-8)
Coleman Elementary
Dixie Elementary
James B. Davidson Middle School
Laurel Dell Elementary
Marin Academy High
Marin County Community School (K-12)
Mary E. Silveira Elementary

St. Mark's School (K-8)
San Pedro Elementary
San Rafael High
Star Academy (7-12)
Sun Valley Elementary
Terra Linda High
Vallecito Elementary

Sausalito:

Bayside School (Elementary)
Willow Creek Academy (K-8)

Tiburon:

Bel Aire Elementary
Del Mar Intermediate School (Middle School)
Reed Elementary

Tomales:

Bodega Bay Elementary
Tomales Elementary

Demonstration Gardens

Falkirk Greenhouse and Demonstration Gardens (San Rafael)
Marin Arts and Garden Center (Ross)
Blackies Pasture (Belvedere-Tiburon)
Sustainable Backyard (Fairfax)
Tomales Bay Foods Natural Habitat Garden (Pt. Reyes Station)

Institutional Gardens

Homeward Bound (Novato)
Marin Brain Injury Network (Larkspur)
San Quentin Prison State Penitentiary (San Quentin Village)

Residential Gardens

The Bennett House (Fairfax)
The Redwoods (Mill Valley)
Hamilton Community Garden (Novato)
78 Novato St. (San Rafael)
211 Canal St. (San Rafael)
355 Canal St. (San Rafael)
129 Canal St. (San Rafael)²³

²³ The Canal Alliance and the Canal Youth Concilio were in the planning and developing stages for this garden during the assessment. They officially broke ground on October 23, 2010.

Appendix C: Frequencies for random/convenient sample surveys

Section A: Garden Activity

N= 159

1. Are you currently involved in a community garden?

- a. No (n=90) \longrightarrow **If NO, please skip to Section D**
b. Yes (n=50)

2. In which community garden are you involved?

Bennet House (n=7)
Bolinas
Brookside Lower
Davidson Middle School
Family Garden Housing
Kruger Pines
Mill Valley Community Garden (n=4)
Mine <sic> own
Woodacre (Oval Park) (n=9)
Pt. Reyes Community Garden
USF
Walnut Place Senior Garden (n=6)
355 Canal (n=4)
Canal apartments
En donde vivo
En los apartamento que emos echo <sic> (n=2)
Escuela
Escuela (San Pedro) (n=3)
School
Canal Community Garden (N/A)
Corte Madera Community Garden (N/A)
Fairfax
Larkspur Community Garden
Master Gardener School Gardens
Robson-Harrington (San Anselmo)

3. Where is it located (Please provide address if known)

NOTE: Answers were omitted due to a high level of personal addresses being submitted

4. How would you best describe your community garden? (Circle all that apply)

- a. Neighborhood Community Garden (one communal plot) (n=12)
- b. Neighborhood Community Garden (multiple individual plots) (n=20)
- c. School Garden (n=12)
- d. Demonstration Garden (n=15)
- e. Institution Garden (n=2)
- f. Garden where products raised are sold for profit (n=3)
- g. Other (n=10)

Do not know where a garden is located in Terra Linda or how to join

Gardens in process; residential gardens

B.H. sold

Community Park developed by the Woodacre Garden with benches and open area for play or gatherings.

Residential garden (n=6)

We are using mostly native plants

5. How long have you been involved at your community garden?

- Less than a month (n=8)
- 2-6 months (n=9)
- 7 mo. – year (n=6)
- 1-5 yrs (n=21)
- 6-10 years (n=5)
- 10 + yrs (n=7)

6. How often do you garden at your community garden?

- Daily (n= 8)
- 4-5 times a week (n=1)
- 2-3 times a week (n=11)
- Once a week (n=7)
- Two times a month (n=3)
- Three times a month (n=1)
- Once a month (n=14)
- Less than once a mo. (n=5)
- Other (n=7)

Garden only in my own backyard

Project coordination and resource gathering

School gardens visits, advice, occasional involvement

Seasonal: 2-7 times a week spring-fall; 2 times a month winter

7. Please tell us why you are involved in the community garden (Circle all that apply)

- a. The enjoyment of gardening (n=46)
- b. Growing own food (n=30)
- c. Exercise (n=33)
- d. Lower stress (n=28)
- e. Spend time with your children (n=14)
- f. Connect with community members (n=40)
- g. A chance to add beauty to neighborhood (n=32)
- h. Increase gardening skills (n=26)
- i. Other (n=3)

I do not have my own place to garden at home

I do not have enough sunlight for my home garden

Educating

8. What do you like MOST about this garden?

Colaboration of many agencies and people

The challenge of growing a lot of vegetables in a small space

We have the room to plant a variety of food plants. We also have the ability to donate food to various community services

Nice coordinators and gardeners. Lovely setting on bay with view of Mt. Tam, while being only 1 mile from my house. It also has an orchard.

It's beautiful! It's very peaceful being there and I really enjoy growing my own food—it's very satisfying on many levels.

Open exposure—plenty of sun. Seemingly good soil.

The joy children receive from their gardening experiences.

Watching it getting more beautiful year by year.

Convivir con otros personas y maestros

Cultivar

El cultivo, la belleza la frescura de las flores

Estoy aprendiendo <sic> mas sobre las plantas

Jardin

La convivencia <sic> con los Becinos <sic>

Las flores y hierbas

Las plantas de vegetales

Me gusta todas las plantas

Me gusta todo

Me gusta todo como con vivimos <sic> todos

Me gustaria participar <sic> con la comunidad

Que participamos con la comunidad

Que podemos convivir <sic> con mas padres

Sembrar en conjunto

Sembrar flores para el Jardin sea bonito ologue <sic> se ocupe en ayuda a la comunidad.

The dirt and the beauty of the plants.

Todo, compartir tiempo con mas personas conocer, aprender, y ayudar a poner mas bello el jardin

Ver como se desarrollan las verduras

Verlo florecer <sic> y crecer las verduras

Beautiful view, food, nature, community

Beautify property

Community effort

Community effort and support

Everyone teaches one another, very mutually supported

Gopher proofed and raised beds make it easy for seniors to garden

Growing food

Having the opportunity to contribute to the whole; great food; speaks my language

In the center of town-everyone sees it and enjoys it

It looks better than the weeds (overgrown) that used to be there

It's a joint effort

It's access for residents
Learning about environmental issues
Raised beds
Teaching kids about it
That I can garden
The beauty it provides our community with places to sit and enjoy being in the garden
Watching plants grow

9. What do you like LEAST about this garden?

Slow process
The challenge of getting all members involved in garden workdays and maintaining community areas of the garden.
Plot neighbors who disregard planting tall plants at the north end of their plot, but instead plant towards the south end and thus block our sun
Seeing the 80/20 rule apply here, as it does almost anywhere else. A minority of gardeners do their part for their gardens and the community; others don't and I find it frustrating/aggravating.
Honestly, it's not close enough
Our direct neighbor is a bit of a freak, smoker and incessant chatterbox☺ oh well.
Parking not too near. I'm worried about recent reports of vandalism and theft of produce.
Not every school has a garden or teachers who buy into the benefits of learning in the garden.
Lot's of work and a ways away
Animals ponsonoso
Cuando la gente no participa (n=2)
Jardin
Lo que no me gusta es cuando ay lidra por que soy alerjico y todo me gusta del jardin l
Los insectos o lombrizes
No se
Nothing
Pisotearlo
Que las Algunos padres no vienen
Que los productos kimicos <sic> para cuidado sean mayor para matar insectos en plantas y verduras
Que no copesa la vente
que no esta limpio
que no puedes ir
tener muchas piedras
[lack of greenhouse] we need a simple one to grow more plants from seeds. It's very windy in this garden-hard to start seeds
Can't think of anything
Difficulty getting some plants to grow
Everything!
Find sold
Handy all the water
Harsh climate-hot sun in summer, freezes in winter, open to deer
It's work!

Lack of agreement among gardeners (i.e. petty disputes)
 Lifting, digging hard soil
 n/a (n=2)
 No on site water available. Really bad soil (old railroad bed)
 None
 Poor soil
 Seeing plants die
 Snails and gophers
 The political aspect of in-fighting
 The weeds! There is no water meter and therefore no water faucets or drinking fountain at this garden.
 Too far away
 We could use a few more plots to avoid under sizing and allow more people in
 Weeding
 Weeds

Section B: Garden Experience

10. How do you normally travel to and from the garden?

- a. Drive (n=22)
- b. Public Transportation, e.g. bus (n=1)
- c. Bicycle (n=3)
- d. Walk (n=31)
- e. Other (n=0)

11. Please rate each of the following aspects of working at this garden.

	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>N/A</i>
a. The location of the garden(s) (n=56)	37	13	3	2	1
b. The public transportation near the garden site (n=55)	11	13	3	14	14
c. The equipment provided to do the work (n=51)	20	18	6	1	6
d. The quality of the garden resources (n=48)	21	15	5	5	2
e. The organization/management of the garden (n=49)	20	21	5	1	2
f. The helpfulness of staff/volunteers (n=52)	33	13	2	2	2
g. The knowledge/skills of staff/volunteers (n=50)	26	15	6	2	1
h. The social atmosphere at the garden (n=54)	28	18	7	0	1
i. Overall satisfaction with your garden experience (n=53)	32	16	5	0	0

12. Please tell us how much you agree or disagree with following statements.

Because I'm involved in the community garden...

	<i>Strongly agree</i>	<i>Agree</i>	<i>Disagree</i>	<i>Strongly disagree</i>	<i>Don't know</i>
a. I have learned about gardening (n=55)	27	27	1	0	0
b. I know how to start a sm. bus. (n=42)	2.	5	20	3	12
c. I know more about the enviro. (n=46)	13	22	5	0	6
d. I care more about the enviro. (n=52)	18	23	6	2	3
e. I am involved in the n.hood. (n=49)	18	22	8	0	1
f. I spend more time with my fam. (n=39)	8	13	15	1	2

g. I am teaching my family and/or friends to garden (n=45)	10	20	10	2	3
h. I donate extra food to people (n=42)	19	12	4	5	2
i. I have new friends (n=50)	22	21	6	0	1

13. How would you rate your overall experience while involved in this garden? (n=56)

Excellent (n=34) Good (n=19) Fair (n=2) Poor (n=1) Don't Know or N/A (n=0)

14. In what ways do you think your life is different (better or worse) because of this garden?

An activity I was never able to enjoy before

Better being outside/sun/nature

Better through satisfaction of local volunteering and new wonderful friends and acquaintances who all love Woodacre and gardening. Plus a chance to share my knowledge of gardening and the environment and expand my knowledge.

Better: I feel more connected with my community and it has raised my awareness of environment issues

Don't know

Eating my own produces

Enhanced neighborhood caring for the common areas. Pride in my neighborhood, enhance property values

Enjoying outdoors and learning to grow vegetables

Garden is a pleasure

Gardening in Marin County is an experience I would be sorry to have missed

Gathering with people, sharing knowledge

Go with the seasons. Garden is most time consuming in fall and spring, most enjoyable in summer

I am a gardener, I need to have a garden, I have had one most of 80 years

I eat better, spend less money, especially July/Aug.

I enjoy the sense of community, a good way to meet others

It is good to do things for your community, but I don't think the garden changed my life

It's good to know the sustaining ways of nature

Laughs with neighbors, pleasure from beautiful spaces

More concentrated; yes the place where I live

More connectedness to community

More involved with community, feel more connected to area

My life has been enriched by the people I work with at the garden. I have learned about mulching and gardening with native plants for my own garden; the benefits of both

My life is better because I get to relate to people

Sense of peace and creation. Every trip here is a holiday

Vitamins, Oxygen, Better health overall

Apreniendo <sic> como cuidar el ambiente

Es major, me encanto esta dia y conocer plantas que no conocia y conversa con otras personas

I learned more of nature and how to grow plants

La vida es diferente porque se aprende y se convive y disrupts much exelente

Major <sic>

Major <sic>mas practica mas con fianza

Mejor porque e <sic> aprendido a convivir mucho mas
 Major y Buena
 Mis ija <sic> cuando partisipo <sic> en el jardin son felises <sic>
 Mucho major participe con la comunidad
 Participo con la comunidad hacerla un major lugar
 Por que la verdura es mas saludable
 Se destresa uno de estar siempre en la misma rutina

Section C: Nutrition

15. Please tell us how much you agree or disagree with following statements.

Since participating in the community garden...

	<u>Strongly agree</u>	<u>Agree</u>	<u>Disagree</u>	<u>Strongly disagree</u>	<u>Don't know</u>
a. I eat more fruits and vegetables (n=46)	19	19	7	0	1
b. I eat more organic food (n=45)	19	20	5	0	1
c. I eat less packaged food (n=44)	15	20	5	1	3
d. I eat less fast food (n=37)	13	11	10	1	2
e. I eat more foods that are traditional for my culture/family background (n=41)	12	8	16	2	3
f. I eat new kinds of food (n=42)	12	23	7	0	0
g. I spend less money on food (n=41)	10	16	12	1	2
h. It's easier to provide food for my family and/or myself (n=39)	14	15	6	0	4
i. I make fewer trips to groc. store (n=41)	12	17	11	0	1
j. I am more physically active (n=44)	23	19	1	1	0
k. I eat more seasonally (n=43)	17	19	6	0	1

16. The following are statements people have made about the food in their household. Please tell us how much you agree or disagree with following statements

During the last month....

	<u>Strongly agree</u>	<u>Agree</u>	<u>Disagree</u>	<u>Strongly disagree</u>	<u>Don't know</u>
a. We could not afford enough food to eat (n=51)	9	7	14	19	1
b. We could not afford the kinds of food we wanted to eat (n=47)	12	6	12	16	1
c. We could not afford to eat healthier Meals (n=50)	10	9	13	18	0

17. Has participating in the community garden helped you start a small business or earn money from gardening? (n=45)

No (n=32) Yes (n=13)

18. Do you have any additional comments regarding this community garden or about community gardens in general?

I think community gardens are a wonderful thing. I've enjoyed ours immensely, but not from a social standpoint, rather from a nourishing viewpoint. Feeding my family, spending time in nature is grounding and healthy in so many ways--it enriches my life.

Wish there was one closer by. I would love to be involved.

a place of respite for both body and spirit

A small grant of seed money (\$1,000 to \$2,500) goes a long way to building a garden, using leverage of volunteers, gray water, and donated materials. Also- a website and on-line newsletter to let all the Marin community gardens are doing - sharing information - would be great! as sometimes or always disabilities can affect individuals for short or long terms, leading to occasional need for heavier labor helps disposal of heavier loads of weeds, extra soils, operation of our composter.

City officials should be aware of the benefit to a community that a community garden can provide and do what is needed for them to develop

Community gardens are a fantastic way to encourage people to volunteer to get to know each other, and to take pride in their community and their won work. They make people happy!

Community gardens are wonderful

Get outside more often, can enjoy the sun, fresh air and flowers growing wild and some planting
Good project

Good way of connecting with other community gardens in the area. Excellent for learning about native plants

Great! More people need to get involved.

I always look forward to learning more politically; people have to learn to support one another free of the system

I have severe brain injury to brain contusion, fractured skull (I was struck by an automobile) neuropsychological tests says I'm labile, unintentional, <sic>, unfocused, etc.

I like that they need very little supervision, and also there is a camaraderie amongst gardeners sharing of info and experience and even seeds or starts when there is excess it is shared with the residents at walnut place

It is the sense of community which is a main attraction; second growing anything one wants; thirdly learning new tricks from time to time

most people I know are involved with a garden use at home or they're own
no (n=3)

Our community garden was intended to "beautify" area in Woodacre that were overgrown with weeds. These areas one would see when driving into town or waiting at the bus stops.

ours has raised beds, so it's easier for seniors to garden. We're fortunate. The mix of lovely flowers, fruit trees and vegetables is a delight. I like giving food to friends and family they work when they meet the needs of the people who have them

Think they are extremely important; that they be organic; that small individual gardens also be created for tenants who have mobility; perhaps a way to beautify space

Was involved in a community garden with a neighbor [name omitted for anonymity] who lived in 5 Golden Hinde and had 2 plots at Terra Linda Community Garden. He would take me with him and I let him use my truck for supplies. I very much want to have a plot but cannot do it alone why not have a couple of plants for our own building where old and disabled can share caring and growing things for all people in the buildings can have the benefits of the garden; we need more gardens in more places, please get in touch with me to help with this project in any way.

we have a great gardener to help us
 ayudaria a ser feliz, y sano al trabajar en un jardin; son decesarios <sic> porque en nuestra
 paises asi se vive se planta y se come se comen muchos verduras y frutas yo creci en El
 Salvador y se necesitan mi jardines para evitar la obesidad.
 el programa es bueno ayuda a la economia de la familia y aprendamos a cosechar nuestros
 propios alimentos
 Es de invitar a mas personas a colaborar con los jardines para manenerlas mejor y cultivar mas
 para ayudarnos todos y vivir mas saludables.
 es muy bueno para la comunidad
 Lo unico es que entre mas jardines se agan <sic> en mi comunidad seria mejor tanto para los
 adultos como para nuestro hijos
 me gustaria que hubiera jardines para la comunidad
 Muchas gracias <sic> por enseñarnos a sembrar verduras estoy muy feliz con mis hijos de poder
 ver crecer <sic> verduras en nuestro edificio ya que es muy importante para el medio ambiente
 N/A
 Que es un placer trabajar con gente nueva y hacer nuevos amigos.
 Que es un placer trabajar con la comunidad
 que si todos los papas colaboraran el jardin estuviese mejor.
 Si
 Son muy buenas los jardines para la salud
 They bring people together by helping each other and improving the community environment.
 Una buena idea para que los ninos se enbolucen <sic> en comer saludable
 Yo pienso que se cultivo aqui se le debe dar a los ninos o a las familias para que le den a los
 ninos y me encanto este dia y compartir con nuevas personas y me relaje <sic> mucho.

Section D: Gardening Interest

19. Are you aware of a community garden in your neighborhood? (n=129)

- a. No (n=65)
- b. Yes (n=64)

20. Are you interested in learning more about community garden projects in your area? (n=116)

- a. No (n=59)
- b. Yes (n=57)

21. Please indicate how much you agree with the following statements.

I am not involved in community gardening because...

	<u>Strongly agree</u>	<u>Agree</u>	<u>Disagree</u>	<u>Strongly disagree</u>	<u>Don't know</u>
a. I'm not aware of comm. gdns (n=115)	22	25	15	46	7
b. I don't care for gardening (n=91)	10	7	19	51	4
c. I don't live near a comm. gdn (n=92)	9	11	16	19	37
d. My town doesn't support gdns (n=87)	2	6	16	21	42
e. My neighborhood doesn't support community gardens (n=90)	6	9	15	22	38
f. I don't have transport to garden (n=88)	8	10	21	45	4

g. I'm on the waiting list with no other option (n=87)	5	1	25	40	16
h. Comm. gdns are a waste of time (n=89)	2	2	14	66	5
i. Don't have time to garden (n=88)	7	16	30	34	1
j. I am physically unable to gdn (n=94)	9	4	26	48	7

Section E: Demographics

These last questions are about you. The information will be used to help categorize your answers by these demographic descriptors. Your personal information will not be shared or connected to your identity in any way.

22. Are you... (n=145)

- Male (n=45)
- Female (n=100)
- Other _____ (n=0)

23. What is your age? (n=146)

- Under 18 (n=3) 18-24 (n=1)
- 25-34 (n=13) 35-44 (n=9)
- 45-54 (n=27) 55-64 (n=37)
- 65 or older (n=56)

24. What is the highest level of formal education you have completed? (n=135)

- Less than 12 years (n=13)
- High school graduate/GED (n=24)
- Some college (n=34)
- College graduate (n=40)
- Advanced degree (n=24)

25. What best describes your race/ethnicity? (n=50)

- American Indian, Eskimo or Aleut (n=2)
- Black or African American (n=4)
- Hispanic or Latino (n=31)
- Asian or Pacific Islander (n=2)
- White or Caucasian (n=9)
- Bi-racial/Multi-racial (n=2)
- Other (n=0)

26. What is the total annual income for your household, before taxes? (n=115)

- Less than \$10,000 (n=36)
- \$10,001 - \$14,999 (n=18)
- \$15,000 - \$24,999 (n=12)
- \$25,000 - \$34,999 (n=3)
- \$35,000 - \$49,999 (n=3)
- \$50,000 - \$74,999 (n=2)
- \$75,000 or more (n=41)

Appendix D: Youth Survey Frequencies

Marin County Community Garden Assessment: School Gardens

This survey is to get your opinion about school gardens. We thank you for answering each question the best you can.

N=101

1. How often do you participate in the school garden? (n=95)

- | | | |
|--|---|--|
| <input type="checkbox"/> Daily (n=4) | <input type="checkbox"/> Once a week (n=32) | <input type="checkbox"/> Once a month (n=4) |
| <input type="checkbox"/> 4-5 x wk (n=2) | <input type="checkbox"/> Two x mo. (n=12) | <input type="checkbox"/> Less than once a month (n=25) |
| <input type="checkbox"/> 2-3 x wk (n=14) | <input type="checkbox"/> Three x mo. (n=2) | |

2. What do you like BEST about being in the garden?

Flowers (n=4)

the best being in the garden is the creek

eating the strawberries

the sounds and music of nature

nothing really dude

the fresh air

the growth

nothing (n=2)

not having to sit in a classroom

the way its decorated, the benches, etc.

the plants

I like stepping on the mud

The fresh air and wildlife

the beautiful flowers

all the things

I like about it because we go outside

Getting outside and working

working hard for the environment

we don't get to read our science text books, and I like learning more stuff in the garden

having fun with friends

I like hanging out with friends and working

not being in the classroom

I like working with all my friends and helping each other

working with my friends

hands on, and learning about the outside

That we're outside and that we can get dirty

being out of the class room

working and having fun outdoors

I like planting

Hands on, cutting, planting, everything!
Every
working hard and having fun
working with other people
hanging out with friends
doing work
working with my friends
blazin <sic> trees
[teacher's name omitted for anonymity]
It's a nice environment and is the best class ever
learning new things about plants and gardening/farming
eating tomatoes, watering, planting
its calm and fun
leadership qualities
the outside experience
the fresh air
working with the food
planting plants
you get to see the flowers
I like nature
the plants
the best thing about the garden is the lovely flowers and birds
I think it is great
planting plants
that we get to plant things and then eat them.
I like planting
growing vegetables
you get to plant food and then eat the veg. or fruit
we plant lots of plants
the nature and flowers around me
outside and fresh air (see animals!)
the nature around me
you have fun and also you help the earth
I like the plants
Working
seeing the growing plants
planting veges <sic>
that I could breath fresh air and that I could taste organic foods
that you know how your vegetables look and how you can plant them
lizards
planting stuff
seeing nature and flowers and birds
you get to learn about nature
eating the fava beans and peas when they are ready to eat
catching lizards
I like best that I get out of school

Carrots
planting seeds with the teacher
I like the flowers and the vegetables
planting things
I like the plants
I like to help water the plants (n=2)
I like being outside
planting things
I like the plants
I get out of class (n=4)
eating organical berrys <sic>
I like that I get to skip school
growing plants to make healthy lunches
being able to plant planteas <sic>
finding snails
eating fresh food

3. What do you like LEAST about being in the garden?

the water is dirty and muddy
the least about the garden is the mud
not doing nothing
the bees, are a bit disturbing
Bees (n=2)
the small space
nothing, I like it all
I don't like the fact that there is tan bark on the ground
Everything
There are lots of bees
being in enclosed area
none
things
I get very hot in garden
Nothing (n=5)
some of the kids in the garden
Nothing! I love the garden
pulling weeds out
the only thing would probably be the crowding sometimes
weeding (n=3)
heat (n=3)
when its very hot in the garden
I don't like weeding
the time period
heat and we can't go when raining
not enough room in tool shed
when you get grass in your face from weed whacker
allergies (n=4)

people who don't do anything/disrespectful
it gets boring sometimes depending on what you're doing
allergies and mulching
doing digging
I don't like the flowers that gives allergy <sic>
all the bugs
the least thing I like is nothing, I like everything.
you get insects all over your body
seeing insects they give me the chills
that we only go a little bit
reading storys <sic>
the spiders
the surveys
when we go outside its cold
the SCAT (n=3)
get dirty
when I get dirt in my feet
caching lesardes <sic>
the bugs
going every day
bugs and mud getting in my shoes
that sometimes you can step on stuff and kill it
I like least to plant
I like everything in the garden
getting dirty (n=3)
sometimes there are bugs that scare me
talking in the campfire
I don't like when I get dirty
Weeds
that I get dirty
when you have to pick out weeds
mudiness <sic>
the bees and insects
I don't like getting dirty (n=2)
I don't like that you get wet
when people don't participate
the grass is wet and its cold
the classes are to few and to short <sic>
waiting for the seeds to grow after we plant them
the grass is wet
I don't like when we talk
the mud
I get really messy
I ruin my clothes
I get my clothes dirty and ruined

4. Please check the box below that comes closest to your opinion about the garden

	<i>Yes</i>	<i>Kind of</i>	<i>Not really</i>
a. I have fun in the garden (n=100)	.. 78	16	6
b. I like coming to the garden (n=99)	..... 72	19	8
c. I want to spend more time in the garden (n=98)	..... 63	20	15
d. I want more classes in the garden (n=99)	..... 48	38	13
e. I spend too much time in the garden (n=99)	..... 7	17	75

5. Please indicate how much you agree or disagree with following statements.

Because I work in this school garden...

	<i>Yes</i>	<i>Kind of</i>	<i>Not really</i>
a. I eat more fruits and vegetables (n=100)	46	39	15
b. I eat less fast food (n=98)	..... 43	33	22
c. I eat new kinds of food (n=95)	..... 49	28	18
d. I get more exercise (n=98)	..... 55	22	21
e. I feel happy when I'm in the garden (n=96)	..... 69	18	9
f. I have learned more about gardening (n=97)	..... 63	21	13
g. I know more about the environment (n=93)	..... 55	26	12
h. I have made new friends (n=97)	..... 40	20	37

6. How would you rate your overall experiences working in the garden?

Excellent (n=48) Good (n=33) Fair (n=10) Poor (n=4)

7. What grade are you in? (n=100)

5th grade (n=34)

6th grade (n=45)

7th grade (n=6)

8th grade (n=5)

10th grade (n=5)

11th grade (n=5)

8. Do you want to say anything else about the garden?

every school should have a garden and a [name of teacher omitted for anonymity]
everything is great and it's a good experience for people because it gets kids minds out of
school and shows you how to maintain a skill in life

I don't like the garden or gardening

I have nothing say about garden

I just love being in the garden

I just love the garden and I have fun ...eat

I like helping our school by growing fresh food for lunches
I like the garden and I wish we had more fruit in the garden. I like strawberries
I like the garden just that when I see bugs or insects which are inside of the same thing I
get the chills I get scared.
I like the plants especially eating fava beans and peas.
I like the wide variety of plants in the garden
I like to find snails in the garden
I like to help the environment
I like to look for worms and eat kind of fruit
I like when we learn how vegetables and fruits are good for your body and how it can
help you
I love it all
I love the garden!
I love the organic feel of the outdoors
I never get picked to go
I really like about garden it vary vary fan <sic>. And that its fun to play with friends
I really like catching lizards
I think the classes should be longer and happen more often
I think we should have a normal non-gardening class in the garden.
I want there to be more classes in the garden because I really enjoy learning in the
outdoors. It helps me concentrate.
I would like to go to garden to get out of class and garden is fun.
it is fun
It is fun and cool; it is fun; I like it a lot
it is really fun and I wish I could go there everyday
It is very cool; best subject, I like it a lot
it the best place ever!!
It's fun
Its great to work in the and be in the garden. I know we'll make it beautiful.
it's so much better than class
[name of teacher omitted for anonymity] is the coolest teacher and I have learned more in
his class than any other class
make the water clear
more fruit
Naw <sic>
No (n=21)
no but I like it
no not really
no thank you (n=2)
no, I [don't] have anything else to say
nope
Nothing!
one thing I want to say is that the garden is full of lovely things like flowers fruits and
vegetables and birds
our garden started out like a dump before we started, and now it looks amazing
Take it out, take it out

that the garden is more fun than in a classroom
That's its really fun. <sic>
the garden helped learn so much about animals and food <sic>
the garden is a great experience to learn more about native animals and flowers also fruits
and vegetables. That's why I like the garden.
The garden is a place where you can experience more peace and quiet. The garden is a
fun place to be when you are depressed.
The garden is awesome
the garden is cool
The garden is so much fun. This is my favorite period thanks to the garden. Now because
of the garden I know much more about the environment and gardening. Now I get to do
what I learn.
The gardens awesome! Jim does an amazing job on it and there should be more than just
one period for it. The gardening class should never be cut.
they should cut all of the wet grass off.
we have only been once, but that's ok with me
we need to eat more fruit during garden
well, just I want to see I also like it because after the fruits are ready [garden coordinator
name omitted for anonymity] gives it to us.
yes because planting fruits and vegetables <sic> is fun for everyone.
yes gardens should always be full of healthy food for animals and people gardens are
very important to us and u 2
yes just one thing...It's Awesome!

Appendix E: Focus group and garden coordinator questions

- 1.** Please discuss the immediate benefits the garden has contributed to your school and/or community. (Prompts: please feel free to discuss any environmental, educational examples, as well as personal experiences)
- 2.** What are some of the benefits that you would like to see in your gardeners that may or may not be occurring at the moment. (Prompts: how are gardeners progressing in regards to the goals of the curriculum, or encouraging them to be better developed gardeners in general? For community gardeners, this may be how well they share responsibilities)
- 3.** How would some of these ideas be best accomplished? (Prompts: what are the necessary actions that need to be taken?)
- 4.** What contributing factors have helped in the development of your school/community garden? (Prompt: these “factors” may be people, policies, geographical location, organizations, etc.)
- 5.** If you were to begin a garden project tomorrow, what would your garden look like? In other words, what would be some of the main focal points? (Prompt: what don’t the current gardens have that you would like to see implemented?)
- 6.** If you were to start-up a school/community garden, what are the most crucial points to remember in order the gardens will be successful?
- 7.** What were the immediate barriers that may have slowed the development of your school/community garden? (Prompts: please feel free to discuss any environmental, political, cultural, or other factors)
- 8.** Are there still barriers currently in place, either linked to policy or culturally engrained, that deter increased success or opportunity for your gardens?
- 9.** What are some of the long-term concerns you can think of that may reduce the success of your community garden?
- 10.** What pieces of information, policy, or support would be most helpful for you to create the optimal school/community garden environment? (Prompts: Some examples may include support for curriculum, support with training, etc.)

Appendix F: Questions for directors of community based organizations, and city/county staff

1. Please tell me a little about yourself and your job.
2. How familiar are you with community gardens?
3. Please tell me about any projects you have participated in surrounding community gardens.
4. How did these projects come about?
5. Do you feel there is a need for more community gardens in Marin? If so, why? If not, why not?
6. In what ways is or isn't your office addressing these needs?
7. Do you have any success stories about how your office has helped a community garden develop and thrive?
8. Have you come across any barriers that have inhibited the development of community gardens?
9. In your knowledge, are current city or county policies acting as barriers to community garden development?
10. In your opinion, how might residents best go about developing community gardens?