

Cultivating Vibrant Gardens in Urban Communities: Success Factors of Community Gardens in Beijing and Shanghai

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ABSTRACT

Community gardens have emerged as community development initiatives with proven environmental, social, and public health benefits. While many studies evaluate the benefits of community gardens, fewer studies evaluate the success and failure of gardens, especially in China. This research uses four case studies of state-sponsored community gardens in Beijing and Shanghai to analyze social and organizational factors that help and hinder the success of community gardens. Factors impacting success are multi-faceted and interactive, and relations between residents and local government staff determine success throughout different development stages. In the design stage, the involvement of residents and their vision are important to success. In the maintenance stage, the leadership of key actors, including Residents' Committee staff and volunteers, residents' preparedness for self-governance, and external recognition are the most significant factors. The findings corroborate literature on factors of community gardens' success while contributing new insights about the organization and governance of community gardens in the context of a top-down political system.

Keywords: Community gardens; China; urban sustainable development; community governance; neighborhoods

where different actors can cooperate and autonomous local community groups can be formed to manage the gardens in the long term.

Community Gardens: Definition, Purposes, and Benefits

A community garden is an “organized initiative (s) whereby sections of land are used to produce food or flowers in an urban environment for the personal or collective benefit of their members who, by virtue of their participation, share certain resources such as space, tools and water” (Glover, Parry, and Shinew 2005, 79). Since this definition is very broad, community garden literature includes a variety of initiatives, such as urban agriculture systems, allotment gardens, and other ground-up gardening initiatives that involve the leadership and participation of the area’s residents (Tidball and Krasny 2007).

The purposes of community gardens depend on the demographics and social context of the communities. In the US, healthy food access can be the main drive for low-income or ethnic minority gardeners, while leisure, aesthetics, and environmental sustainability can be the prioritized concerns for better-off or highly educated gardeners (Armstrong 2000; Aptekar 2015; Block et al. 2012; Butterfield 2020; Davis et al. 2011). McVey, Nash, and Stansbie’s (2018) research in Edinburgh suggests that for migrants to the UK, food production and community engagement are the primary motivations to participate in community gardens, while environmental or political activism is the main drive for other gardeners. Kettle (2014) noticed an emerging trend of community garden involvement driven by urban residents’ wish to reconnect with the land, traditional food practices, and a sense of community lost in modern urban life.

Research studies agree that community gardens bring multi-faceted benefits and enhance socio-ecological sustainability (Draper and Freeman 2010). There are lots of case studies on the positive effects of community gardens in underprivileged neighborhoods, including health benefits (Davis et al. 2011), food security (Block et al. 2012), stress-relief and empowerment (White 2011), and

Community gardens exist in various forms around the world as green spaces where citizens participate in gardening together. Most studies of community gardens have been done in Europe and America, but community gardens are rapidly emerging in metropolitan China, where the different socio-political context generates different forms of community gardens. While much research has been done on the benefits and organization models of community gardens, sociological studies that evaluate gardens based on the voices of residents—the actual users and caretakers of the gardens—are lacking. Based on participant observation at gardens in Beijing and Shanghai and semi-structured interviews of different actors involved in garden development and management, this paper analyzes why some gardens are more successful than others. Because community gardens aim to provide residents with common green spaces for gardening, recreation, and community-building (Liu and Kou 2019), their success can be measured by a high level of residents’ engagement and satisfaction. I analyze four case studies, taking one case perceived to be more successful and one less successful in each city, and explore the factors that contribute to their success (or lack of it).

I first review the literature, focusing on factors enabling and inhibiting community gardens’ success and the background of community gardens in China. Since the concept of community gardens varies, I introduce the type of state-sponsored community gardens that I analyze. Then, I give an overview of my case study sites and my research methods. The analysis evaluates the success of the cases and identifies the five most significant factors that impact the gardens’ success. I conclude with a discussion of establishing community gardens

community organizing (Aptekar 2015; Ghose and Pettygrove 2014b; Nettle 2014; Shur-Ofry and Malcai 2019; Block et al. 2012). The enhancement of social cohesion and cultural preservation are among the most common benefits of community gardening in past research (Guitart, Pickering, and Byrne 2012). For instance, Latino community gardens in New York not only enable people to grow vegetables from their own heritage, but also serve as venues for cultural and community events (Saldivar-tanaka and Krasny 2004). Liu et al. (2017) prove that community gardens increase connections between neighbors and contribute to building vibrant communities in metropolitan China. Community gardening also facilitates interactions and the exchange of knowledge between people across differences of age, race, ethnicity, and class, thus bridging social and cultural capital (Armstrong 2000; Aptekar 2015; Firth, Maye, and Pearson 2011; McVey, Nash, and Stansbie 2018; Nettle 2014).

Factors that Help or Hinder Community Gardens' Success

Current literature documents three broad categories of factors that help and hinder community gardens' success: biophysical and technical, sociocultural and economic, and political and administrative (Wesener et al. 2020). The first category, biophysical and technical, includes factors like climate, land access, and material resources. After reviewing 103 papers, Wesener et al. (2020) find that desirable garden location is the most frequently mentioned facilitator of a successful community garden, while frequent theft and vandalism are the most commonly mentioned barriers. Diaz et al. (2018) agree that garden site selection and land access are among the most important factors within this category. In addition, soil conditions, supply of water and electricity, and access to gardening equipment are other biophysical and technical factors discussed, especially in the context of urban agriculture (Surls et al. 2015).

The second category of sociocultural and economic factors dominates the literature. In this category, Wesener et al. (2020) summarize that individual motivation, leadership or

governance, a sense of community, sufficient participants in the form of volunteers, and sharing knowledge are among the most significant enablers. Lacking a shared vision of the garden, conflict with neighbors, low involvement of residential communities, and poor funding are the most frequently mentioned barriers. Diaz et al. (2018) found that the three barriers most agreed upon by different community garden stakeholders are insufficient time dedicated to garden engagement, lack of committed volunteers, and inadequate community support.

The third category, political-administrative factors, refers to policies, regulations, and relations with local governments and administrators. Policies that discourage long-term land tenure present a salient challenge to garden development and sustainability (Drake and Lawson 2015). Wesener et al. (2020) also find that different national planning traditions and institutional settings significantly influence the barriers and enablers of gardens. For example, political-administrative factors are very significant in Germany because community gardens are situated in the city planning systems, while gardeners' internal group dynamics are more critical in New Zealand. Fox-Kämper et al. (2018) propose a continuum of top-down, bottom-up, and mixed structures for garden governance structures. They reiterate that a garden's success factors are dependent on the kind of governance structure the garden has. Given different national institutional settings' impact on gardens' governance structure, success factors of community gardens in China will be specific to China's unique urban political and administrative context.

Despite differences, there are some political-administrative factors that are common to studies across different countries. Actors' relations, which Wesener et al. (2020) define as "support and good relationships of gardening projects to local governments, administrations, and authorities," is the most frequently mentioned enabler within the political-administrative category. Attitudes of local governments and long-term land tenure rank second as factors of success. Peng, Zhou, and Zhou (2020) discuss the significance of actors'

relations based on a case study in China. They employ social network analysis in four stages of a school garden development and map out the relations between government, school, corporation, and students in each stage. They found that certain actors in the network are critical to the garden's development, especially positions that connect different groups of actors (referred to as nodes in social network analysis), like subject teachers and school principals. Their paper offers a new perspective on factors of success that focuses on important nodes in the actor network tied to a community garden.

The stages of garden development also impact which factors from the three categories are more significant to a garden's success and the challenges it may face. Fox-Kämper et al. (2018) find that for community gardens in both Germany and New Zealand, insecure land tenure is the most prominent barrier while community interest and shared vision are the most important enablers in the planning and design stage. In the management stage, the involvement of paid professionals is key because volunteers might not be committed long term. Availability of funding is crucial as both an enabler and a barrier throughout the garden development process. Strategies to overcome these barriers are relatively rare in community garden literature; some suggestions include building social networks that mobilize actors to support the garden cause (Glover, Parry, and Shiner 2005; Ghose and Pettygrove 2014a), supporting learning across communities (Twiss et al. 2011), and supporting key social processes like a leadership council (Teig et al. 2009; Diaz et al. 2018).

Community Gardens in China

Multiple forms of urban gardening activities exist in China that fit Glover, Parry, and Shiner's (2005) broad definition of community gardens, but I will focus on community gardens in urban residential communities because they best align with the concept of "community garden" (*shequ huayuan*) in Chinese. In China, community (*shequ*) refers to both an urban residential unit with geographical boundaries and an administrative subdivision in the municipal governance hierarchy (Bray 2006).

Each community falls under a Residents' Committee (*shequ juweihui*), a community-level governance organization that bridges government and residents, delivering social services and maintaining public order (Mok 1988). Residents' Committee staff are not necessarily community residents because they are hired by the Street Office (*jiedao banshichu*), the lowest level of municipal government in China. This conceptualization of community means that a community garden should be in an urban residential unit and the local Residents' Committee is necessarily involved in garden development and management. Additionally, community implies a communal character of the garden, emphasizing communal participation and benefits. Instead of gardening for private gain, community gardens in China are mostly aimed at space regeneration, recreation, social cohesion, and residents' participation in community governance (Liu et al. 2017; Liu et al. 2019; Liu and Kou 2019; Liao, Liu, and Feng 2020; Ding et al. 2020). Therefore, gardens collectively shared by residents in an urban residential unit, "*shequ*," best capture community gardens in the Chinese context.

The land ownership and municipal governance structures in China are crucial to understanding the development of this type of community garden and their state-sponsored character. According to the Property Law of the People's Republic of China, residents collectively own public green space in residential communities, so it is illegitimate for individuals to start gardens without permission and coordination from property management companies or the Residents' Committee. Where property management companies are absent or weak, Residents' Committees are the main actor giving permission and coordinating, meaning that gardens are state-sponsored. In a state-sponsored garden, the Residents' Committee is responsible for organizing residents' participation and coordinating various actors involved in gardens' development, including social enterprises that do participatory sustainable design, NGOs, and other external organizations like university project groups (Figure 1). Friends of Nature-Gaiascope Studio (Gaiascope Studio), a social enterprise specializing in participatory design and

sustainable design, is a leading organization of community garden projects in Beijing. Clover Nature School, an environmental NGO, is the vanguard of community gardens in Shanghai.

Some research has analyzed the development and management model of community gardens in residential communities. Liu, Fan, et al. (2017) provide an overview of the origin, layout, and operation model of Train garden, Herb garden, and Knowledge and Innovation Community Garden (KICG) in Shanghai. Liu, Yin, et al. (2017) dive deeper into an analysis of the roles and needs of different actors in KICG. Government, property management companies, NGOs, and citizens cooperate in KICG. The challenges are the coordination between different actors in sharing responsibility as well as realizing the community's self-governance of the garden. As

the authors of the two studies above are from Clover Nature School, the NGO that leads community garden initiatives in Shanghai, the papers' perspectives are from organization leaders. Other literature takes macro-perspectives with focuses on urban green space management and urban landscape design. Wang and Yan (2014) suggest incorporating community gardens into the urban green space management system as they do not have a place in the current urban green space classification system. This awkward situation with the green space management system hinders community gardens' development. Li and Wen (2018) recommend community gardening as a new form of urban public space and discuss its feasibility. The narratives of citizens and community-level organization staff

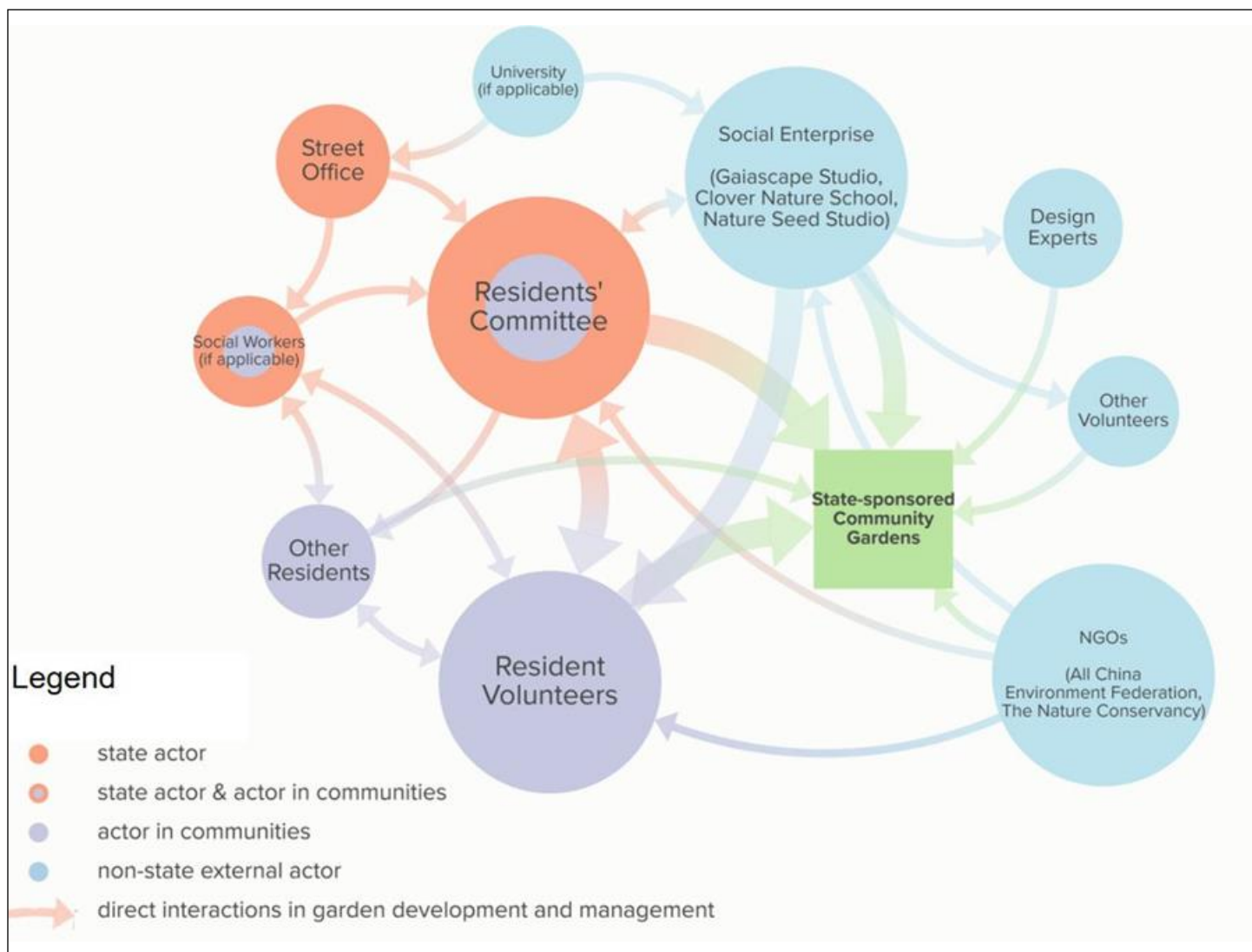


Figure 1. Map of Actors in State-Sponsored Community Gardens. Relative size of circles represents actors' importance. Thick arrows represent important relations that will be analyzed in factors of success.

who use and manage the gardens long term are rarely heard and analyzed.

This literature review highlights that community gardens generate various socio-ecological benefits, but there are many challenges in developing and maintaining gardens that serve as obstacles to realizing the promises they have for communities. While studies of community gardens are burgeoning in China, there is little analysis of success factors based on narratives of those who use the gardens. Moreover, given the profound influence of different national planning cultures and administrative systems on garden governance structures, it is important to understand the success factors of community gardens in China.

Methodology

Based on my online research and information from staff in Gaiascope Studio and Clover Nature School, two leading organizations that create community gardens in Beijing and Shanghai, I visited five state-sponsored community gardens in Beijing and six in Shanghai. As case studies, I chose four gardens that share characteristics and have the most prominent success and failure, where success is measured through residents' satisfaction and engagement with the gardens. These four gardens were all built around 2018 and 2019, are located inside fenced residential communities that did not have much green space initially, and have a mix of flowers and vegetables. These characteristics exclude gardens that are built too recently to observe their impacts, gardens located in open space outside of residential communities, and gardens built mostly for vegetable planting.

From mid-May to mid-July 2020, I conducted participant observation and interviews at gardens in Beijing and from mid-August to mid-September at gardens in Shanghai. In Beijing, I visited each garden about once or twice a week except for three weeks in June when quarantining during the COVID-19 pandemic restricted mobility. I completed my fieldwork in Shanghai over one month, and I visited the gardens once every two or three days. I visited around 8:00-11:00 or 15:00-18:00 when residents were most often present, observing

who came to the gardens and how they interacted with the gardens. I asked the residents' consent to participate in interviews at the gardens and if they would also direct me to other key informants. The semi-structured interviews covered their engagement with the garden, personal history of gardening if applicable, and how they assessed the garden in terms of benefits and challenges, both the physical and social/political aspects. In addition, I interviewed non-resident actors involved in the gardens' development, including staff from Residents' Committees, NGOs, and social enterprises. The interviews were all conducted in Chinese and not recorded.



Figure 2: Cuifu Garden. Source: Author.

I conducted thematic coding of my observation and interview data. For measurement of success, I coded by two large themes: residents' engagement and residents' satisfaction. I measured level of engagement by the frequency of usage I observed at the gardens and interviewees' descriptions of gardening activities. The level of satisfaction is based on residents' narratives of the benefits and challenges of using or maintaining the gardens. I generated codes based on codes that Wesener et al. (2020) used in their research as well as new themes that emerged from my interviews.

The Case Study Gardens

Cuifu Garden, Beijing

Cuifu Garden is located in a resettlement housing residential community in southeast Beijing (Figure 2). The 180-square-meter garden

is built on a public green space between a residential high-rise and the Residents' Committee building. The garden is funded by an NGO called All-China Environment Federation, who invited Gaiascope Studio to



Figure 3. Happiness Garden in Jiaqichang Community, Beijing. Source: Seed Nature Studio.

design and lead garden construction. The construction started in June 2019 and was completed through three stages of workshops that residents participated in. The garden has planting boxes consisting of 90% perennial flowers and herbs and 10% vegetables. It also has a play area for children, compost bins, a rainwater collection system, and a pond. A Residents' Committee staff member organizes resident volunteers to clean up the garden, compost, and water from time to time.



Figure 4. Hongxu Habitat Garden in Hongxu Community, Shanghai. Source: Clover Nature School.

Happiness Garden, Beijing

Happiness Garden, built in June 2019 over two weekends of participatory workshops, is located in Jiaqichang residential community in northwest Beijing (Figure 3). Residents gave the garden a Chinese name "*xingfu*," which translates to happiness. Jiaqichang community used to be home only to the staff working in the Gas Filling Plant (a state-owned enterprise), and it did not open up to outside buyers/renters until recently. The garden sits on a 270-square-meter public green space between two residential high-rise buildings. Its design is based on permaculture principles, featuring

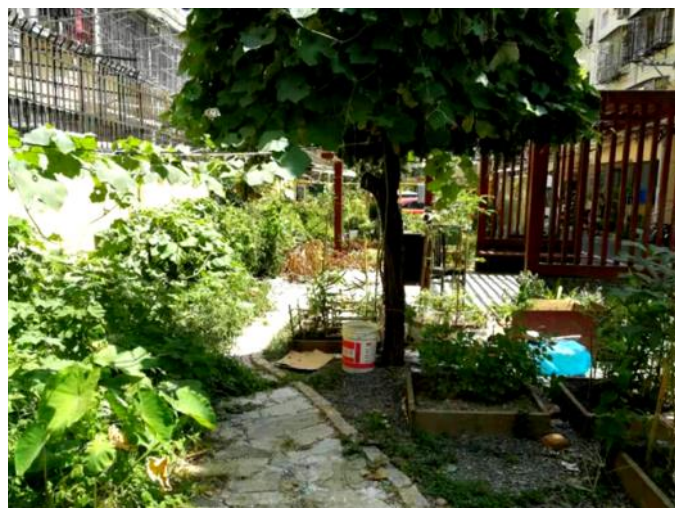


Figure 5. Xin Garden in Zhengli Road 580 Lane community, Shanghai. Source: Author.

diverse perennial flowers, herbs, and trees. The garden is funded by Tsinghua University's Tsinghe Experiment Project, which aims to innovate community governance approaches in partnership with Tsinghe Street Office. The university cooperated with Jiaqichang's Residents' Committee, a sustainable design social enterprise called Seed Nature Studio, and social workers from the Haidian Community Promotion and Social Work Development Center.

Hongxu Habitat Garden, Shanghai

Hongxu Habitat Garden is built on a vacant 450-square-meter lot in a corner of Hongxu residential community in west Shanghai (Figure 4). The community was built in the 1990s and has multiple problems, including a lack of public space and green space and littering. In 2017, The Nature Conservancy (NGO) initiated this

	Engagement (use of gardens)	Engagement (taking care of gardens)	Satisfaction
Hongxu Habitat Garden, Shanghai	Very High	Very High	High
Cuifu Garden, Beijing	Very High	High	Medium
Xin Garden, Shanghai	Low	Medium	Low
Happiness Garden, Beijing	Low	Medium	Low

Table 1: Evaluation of Success of the Four Cases

habitat garden project to promote urban biodiversity and invited the Residents' Committee, Clover Nature School, and the Shanghai Academy of Fine Arts to cooperate. The Nature Conservancy funded the project and paid a construction team to build the garden in December 2019. The garden has different zones for recreation, flower and vegetable planting, and wildlife habitat. Teams of resident volunteers take care of different parts of the garden every day, and children and grandparents claim boxes of plants to take care of as well.

Xin Garden, Shanghai

Xin Garden is about 150-square-meters and located between two residential buildings in Zhengli Road 580 Lane community, Shanghai (Figure 5). This residential community was built in the 1990s with limited green space. The garden is part of the Knowledge and Innovation community micro-renewal project that started in 2018 (Liao, Liu, and Feng 2020). Funded by the government, Clover Nature School and Guodingyi Residents' Committee cooperated on the micro-renewal project. Xin Garden was built in December 2018, and residents participated in building workshops. Four residents mainly take care of the garden and spontaneously plant vegetables and flowers.

Results and Analysis

Evaluation of Gardens Based on Residents' Engagement and Satisfaction

Among the four cases, Cuifu Garden and Hongxu Habitat Garden were more successful given a higher level of residents' engagement and satisfaction with the gardens (see table 1 for a summary). Xin Garden and Happiness Garden were less successful since residents had more complaints and less engagement. However, my evaluation of success and failure is not absolute, as residents also expressed complaints about the successful gardens and the less successful cases had successful aspects.

My observations show that residents use Cuifu Garden and Hongxu Garden much more frequently than Happiness Garden and Xin Garden. Out of the six times that I visited Cuifu Garden from late May to early July, residents were using the garden five times. Parents or grandparents took children there to play, some people walked their dogs, and others sat on the benches. There were residents in Hongxu Garden during all five times that I visited. Children played in the garden, and residents of all ages came for a walk or exercise. Even on a cloudy day, six residents came into the garden within a time span of 15 minutes. In comparison, during the six times that I visited Happiness Garden, there were two times that a couple was gardening—the only residents who took care of it. Most residents were out in areas

near the garden but they rarely went into it, and residents who lived further away did not come over at all. During the six times that I visited Xin Garden, I ran into residents only once. Besides the four volunteers who took care of Xin Garden, residents seldom came to or even know of this garden.

I also found a stark difference in the number of residents who take care of the gardens. Cuifu Garden has a volunteer group with around 40 residents, and usually five to six residents maintain the garden around twice a month. Hongxu Garden has around twenty volunteers who come in groups of two or three every day to sweep the floor, water, and compost. They also share vegetables from the garden with elders living alone in Hongxu community. In contrast, there are only two residents who take care of Happiness Garden and four at Xin Garden. Their attitudes toward working in the gardens are rather passive, saying that they take care of the gardens because no one else does.

Nevertheless, all resident volunteers affirm the benefits of gardening. They are predominantly retired residents older than 50 and usually horticulture lovers or active members in community events. They report that gardening contributes to physical health, happiness, a sense of achievement, and social cohesion with other volunteers. Gardening is a good way to spend time during retirement, beautify their neighborhood, and get to know others. In this sense, all gardens succeed in providing a chance for some residents to enjoy gardening and a community of peer volunteers.

In terms of satisfaction with the garden, the positive feedback from residents in Cuifu and Hongxu surpass their grievances. Residents not involved in gardening recognize that the gardens improve the community environment, provide public spaces for recreation, and increase chances for environmental education. All resident interviewees agree that Cuifu Garden provides a space for kids to play and is popular, although three of them complain about a slippery floor or the garden's design. In Hongxu Garden, all residents except one affirm the garden's recreational and ecological functions. For the other two gardens, residents acknowledge that gardens do bring some

improvements, yet grievances predominate. In Happiness Garden, high satisfaction after the construction in 2019 gradually turned into discontent. Common complaints include the overgrowth of plants and mosquitoes, slippery trails, and lack of maintenance overall. When I visited Happiness Garden in July 2020, litter was spread over the garden's trails, plants blocked the trails, and mosquitoes made it impossible to stay. A social worker in the community reported that the residents continue to be dissatisfied and no one is managing the garden. A staff member from Clover Nature School says that Xin Garden is pretty desolate as well. A resident gardener said the organization of the garden team at Xin Garden was good in the beginning but declined after the previous team disbanded: "I am not satisfied with the garden now. It's desolate and no one manages it" (Xin resident 2).

Factors that Help and Hinder Success

This section explores the five factors that emerged as the most significant for influencing success: actors' relations, commitment of key actors, residents' preparedness for self-governance, residents' acceptance of the garden design, and external recognition. These five factors impact different stages of garden development, and some factors are more significant than others. Actors' relations, particularly the relationship between residents and the Residents' Committee, determine success and failure throughout different stages. In the design stage, a lack of shared vision and a low degree of resident participation can lead to poor acceptance of the garden's design. In the maintenance stage, which is the most critical stage for success, commitment of key actors—Residents' Committee staff and core volunteers—as well as residents' preparedness for self-governance are crucial to a garden's long-term success. External recognition in the form of media reports and compliments from the government also increases satisfaction and engagement.

Actors' relations: intergroup relations

The existing relationship between the Residents' Committee and residents is critical to residents' engagement and satisfaction with the garden. Since the Residents' Committee coordinates all garden activities and directly

communicates with residents, residents view the community garden as a Residents' Committee-led initiative. If residents are satisfied with the Residents' Committee's work in the community and there is good rapport between the two groups, residents tend to affirm and participate in the community gardens. In all four cases, there are residents with strong potential to become committed volunteers, but the relationship between the Residents' Committee and residents determines whether these residents can be mobilized. This is particularly important in the maintenance stage because mobilizing residents to form a committed team is key to the long-term success of community gardens.

In both cases of success, residents who actively participate in gardening activities appreciate the Residents' Committee's work. A retired male resident in Cuifu Garden says that he does not like gardening at all, but the Residents' Committee leaders are very nice so he attends almost all of the activities they organize. A resident in Hongxu Garden shows up whenever the Residents' Committee needs help because he is grateful for their support of his gardening hobby: "I am happy that, instead of moving away my flowers in front of the building, Residents' Committee agreed that I can plant and use them for the community center" (Hongxu resident 4).

On the contrary, existing conflicts between Residents' Committees and residents inhibit residents' support of community gardens. In Xin Garden, discontent with the community's overall environment and the government's neglect of the community is so strong that it hinders how residents view the garden. In Happiness Garden, a retired female resident stated that "there is no one to pick up the trash. The Tsing He Street Office does a poor job in general—they never visit the elders or give insufficient pension. They should solve these issues before implementing the garden" (Happiness resident 5). Other residents echo problems, including poor physical environment, lack of waste management, and parking space conflict, which are so enduring that a garden cannot help solve them. Distrust toward the Residents' Committee also prevents residents from participating in gardening. A

retired male resident complained that "no one is here to manage the garden. I don't think the investment worth it. The Residents' Committee vice-director needs to debrief us... It's all formalism. He doesn't manage anything with our community" (Happiness resident 7). This resident actually has his own garden right beside Happiness Garden and several other residents do as well, revealing that the failure to form a garden team is not due to a lack of passionate residents but their antagonism toward the "Residents' Committee's garden."

Actors' relations: intragroup relations

After the community gardens are built, conflicts within the community can inhibit some residents' involvement in the gardens, and the conflicts can even intensify with gardening. In Happiness Garden, a group of local residents are exclusive toward residents who are non-locals, which causes non-local residents to disengage with the garden. A social worker stated that "it looks like a public garden, but it is actually just the garden of these few people... most people did not participate." In addition, conflicts over private vegetable planting in the garden repel some residents. One retired female resident who used to be the leader of the garden team said that "I participated in the garden building workshops and was very active in the beginning. But I got very angry when some residents privately planted vegetables in the garden and no one responsible for the garden project intervened." Without the garden usage conflict with other residents, she would have continued as an active participant.

Residents' engagement with the garden is enabled by relatively simple and harmonious relations among residents. In Hongxu Garden, the captain of the garden team describes that "we [the garden team members] all know each other. We garden together, chat together, and hang out together." The project coordinator from Clover Nature School also iterates that this coherence among residents is important: "a key factor of success is that the volunteer team members are friends with each other and the social relationships in the community are pretty simple. There are no conflicts, which makes a stable team and the coherence is strong." This factor of positive relationships among residents is most prominent in the maintenance stage.

The garden construction workshops are short and coordinated by external actors, so conflicts among residents are not conspicuous. However, upon completion, residents become the main body who use and manage the garden in the long term, so internal conflicts or harmony are crucial to the garden's decline or success.

Commitment and leadership of key actors in the community: Residents' Committee staff

Residents' Committees play a critical role in developing and supporting community gardens as they grant permission to use land, coordinate different actors, and organize garden activities in the long term. Similar to Peng, Zhou, and Zhou's (2020) finding of the importance of administrative and subject teachers in school gardens, Residents' Committees are the connecting node in the network of different actors involved in a community garden. In both cases of success, there is a Residents' Committee staff member who follows through each step of the garden project and supports it wholeheartedly. The designer and project coordinator from Gaiascope Studio reflects that "the key to Cuifu Garden's success is a committed and passionate leader in the community. The most ideal is for a staff member to participate in the whole process, be responsible, mobilize and work alongside the residents." Hongxu Garden's project coordinator from Clover Nature School affirms that a capable and trusted Residents' Committee is critical: "the Residents' Committee director, secretary, and social workers are all hardworking and practical. They give rewards to residents and provide lots of resources for residents."

Alternatively, incompetency and inaction of Residents' Committees lead to failure. Multiple actors in Happiness Garden point out that the absence of the Residents' Committee causes the community to be disorganized and lack leadership in maintaining the garden. The former resident leader of the garden's volunteer team states that "it is most appropriate for Residents' Committee to intervene [with private vegetable planting] as it is not effective for us to confront...The director doesn't do the job." A social worker argues that

the Residents' Committee "is the main body for mediating garden issues. I hope that the Residents' Committee and the property management company can participate in the follow-up, but the Residents' Committee is always absent." These narratives triangulate the information that Residents' Committees' involvement and leadership are necessary for gardens' success.

Another reason that makes Residents' Committees' commitment critical is that residents are not able to be fully independent in managing the gardens yet, which I will discuss more in the self-governance section. The management of most state-sponsored community gardens combines top-down and grassroots approaches, so relying on residents alone to maintain the garden would lead to failure. In the two success cases, residents and Residents' Committee staff both recognized this reality: "the garden must have a community leader responsible for its organization and relying on resident volunteers alone are not feasible" (Cuifu resident 4). "Cultivating residents' autonomy is a very long process and we have to take it slow. We have to walk alongside the resident volunteer team and gradually see it grow" (Hongxu Residents' Committee staff).

If non-resident actors assume residents' self-governance before the residents are ready, their absence generates complaints among residents. A retired male resident in Xin Garden argues that "they [Clover Nature School and the Residents' Committee] invested a lot but no one managed the garden or followed-up. There lacks an organizer. If they step in I would never bother intervening!" Similarly, a female resident states that "there lacks one person specifically in charge for this and the power of residents alone is after all limited. We need to have people who are paid or whose job is related." This corroborates Fox-Kämper et al.'s (2018) finding that the involvement of paid professionals in the maintenance stage is key because volunteers might not be committed long term. To a certain extent, Residents' Committee staff are the most appropriate paid professionals because their job is to organize residents and improve community public welfare.

Commitment and leadership of key actors in the community: residents

In addition to Residents' Committees, the long-term commitment of core resident volunteers makes the garden's success possible. It is relatively easy for residents to participate in the design and building stages, but what matters most to a garden's long-term success is the commitment of residents in the maintenance stage. In Happiness Garden, lots of residents were involved in the beginning but quit as time passed because the garden failed to live up to their expectations and there were conflicts among residents. For Xin Garden, a core garden volunteer's leave impacted the whole team's functionality. There needs to be several residents who have a faithful presence at gardening activities. The Hongxu Garden volunteer team is led by a resident "captain" and consists of other steady members. In Cuifu Garden, even if some residents are dissatisfied with the garden design, the several individuals who faithfully show up and help out Residents' Committee staff with garden management enable the garden's success. There is a committed resident at Cuifu Garden who volunteers at almost all community events. He says that "I am a retired old Party member and I attend events as long as the Residents' Committee asks" (Cuifu resident 1). A non-gardener resident also recognizes that "the garden design is not what I want and I don't have time to get involved, but there are a group of active members... that's enough number of people" (Cuifu resident 8). It is not necessary to have a large group of active residents, but the faithful commitment of several core residents is indispensable to the long-term success of community gardens.

Preparedness of residents for self-governance

The long-term maintenance of community gardens relies on residents' self-governance, but the degree of preparedness for self-governance varies within communities. Self-governance (*ju min zi zhi*) refers to residents' agency in community governance. It aims to promote residents' participation in community affairs and decision-making. The concept is increasingly advocated for in China's urban governance. Preparedness for self-governance

is also related to the leadership of key non-resident actors responsible for cultivating residents' awareness and practice of self-governance. In the two cases of success, the Residents' Committee or NGO has put effort into cultivating the residents' awareness of and participation in public affairs through organizing activities that encourage residents' involvement. This facilitates residents' participation in gardening when the community garden project comes: "we built another garden before that buried the seed of residents' self-governance. We held meetings to discuss plans, and residents could propose ideas. Gradually they discovered that their voice was heard, so they began to speak up more. If they find that they have a right of speech in community affairs and see real changes, they will participate more" (Hongxu Residents' Committee staff).

In Cuifu Garden, residents are prepared through a series of events that All China Environment Federation (NGO) holds before the garden happens. These events help the community accumulate social capital for the garden volunteer team: "We have cooperated with Cuifu community for three years. We invited residents to environmental education lectures and led sustainable lifestyle workshops in the community before the garden project...We are very intentional in growing resident volunteer team and every time after workshops more residents join the WeChat group" (NGO project manager).

In comparison, the foundation for residents' participation in community affairs is weak in less successful gardens. The Residents' Committees intended to realize self-governance, but there is a discrepancy between reality and the ideal. In Happiness Garden, the Residents' Committee vice director claims that "we fully trust the residents. We as the government build the platform and residents take care of the rest," but all the resident interviewees complained that there is no one in charge and they cannot handle the garden alone. As the social worker comments, "residents need a person in charge and they can follow... There is no way for residents to be fully autonomous at this stage...only a few residents participate in community events." In

Xin Garden, the Residents' Committee and other community leaders did not prepare residents to be self-governing either, as residents expect a staff member to be in charge. A resident who unwillingly takes care of the garden complained that "no one was in charge for follow-up. Those that they planted almost died and I watered. If they come, I will not intervene." Because residents are used to the top-down governance approach in China's institutional tradition, the default mindset is that community gardens should be taken care of by someone appointed. Extra effort is needed to communicate and cultivate self-governance among residents or else the inertia to rely on the state will continue.

Another aspect of residents' preparedness for self-governance is whether residents have the skills and knowledge to take care of the garden on their own. One resident in Happiness Garden expressed that no one teaches them how to take care of the garden: "we only know how to water and weed, but other than that we have limited planting experience. No one ever teaches us. Permaculture is really professional knowledge and we have never heard of it" (Happiness resident 2). On the contrary, in Cuifu Garden, the Residents' Committee staff gives instructions on how to manage the compost bin and puts up signs by the bin. Some residents have the human capital to engage in gardening and construction work. "There are lots of residents who are once artisans, technicians, and farmers in the community so they know how to build the garden and can contribute" (Cuifu resident 1).

Residents' acceptance of the garden design

The residents' acceptance of the garden design directly impacts their satisfaction and engagement with the garden. While the technical aspects of design are beyond the scope of this paper's discussion, I focus on two aspects, shared vision of the garden and involvement of the residents in the design process, that are found to be relevant to gardens' success in the literature (Aptekar 2015; Eizenberg 2012; Witheridge and Morris 2016).

The lack of a shared vision between residents and expert designers is a significant inhibitor in the Happiness Garden. The

following quote is representative of the community residents' attitude toward the design: "the garden is poorly built. The theory is divorced from reality... those foreign permaculture principles are not applicable in China... Our needs are simple, we just want to see flowers and have a place for recreation. We don't need an expert designer and spend the wrong money" (Happiness resident 1). The designer also reflected on the discrepancy between their and residents' vision of the garden: "their needs center on neighborhood greening and beautifying, but we have gone to the next level of ecological awareness and bringing wildness to cities... Next time we would avoid imposing our values on them" (Project coordinator and designer from Seed Nature Studio). Since residents are the long-term users and stewards of the garden, a design that fails to match their needs hinders their satisfaction and desire to be involved.

While there is no linear relationship between residents' involvement in design and the degree of acceptance in my four case studies, a higher amount of involvement increases the chance of acceptance. In Happiness Garden, the residents' involvement is low because of hasty preparations and promotion: "there were only four days before the participatory design workshop...the information of garden workshops was not well delivered. On the first day, there were only one resident" (designer and project coordinator from Seed Nature Studio). This causes residents to complain about the design because it does not reflect their needs: "we don't even know of the design plan. They should listen to the opinions of the residents, and then make an assessment" (Happiness resident 1). In Cuifu Garden, residents told Gaiascope Studio about the space's existing problems during participatory design workshops and proposed plans to make a change. According to the project director at Gaiascope, the garden's ratio of 90% flowers and 10% vegetables was the residents' idea. In Hongxu Garden, residents were not involved in designing the garden, but the end product turned out to be satisfactory. In Xin Garden, residents joined the discussion during the design process, and there is no particular complaint directed at the garden design. Therefore, it is possible for residents to

embrace a garden's design without participating in the process, but high involvement in the design process can increase residents' acceptance of the garden design.

External recognition

I found that external recognition in the form of positive media coverage and government representatives visiting the garden to be facilitators of success in the maintenance stage. Hongxu Garden's project coordinator from Clover Nature School stated that residents in the garden team often get visits from the Street Office administrators and media reporters. Affirmations from the Street Office and positive media coverage make them feel accomplished and proud of the garden, which fuels the residents' passion for taking care of the garden. Similarly, the most active resident gardener in Cuifu Garden proudly introduces that "this garden is a scenic spot in the community. Fatou Street Office had representatives visiting us and taking pictures. We are an example for other communities to learn" (Cuifu resident 1).

In comparison, Xin Garden gets little media exposure. It is interesting to note that Happiness Garden won honorable mention in the International Federation of Landscape Architects Africa Asian Pacific Middle East (AAPME) Awards of 2020, but the impact on community residents was relatively small because it was an award for landscape design professionals. The recognition did not trickle down to the gardeners. I found that direct visits and affirmative interactions at the site are effective forms of recognition that boost residents' confidence in and engagement with their community garden.

Discussion and Conclusion

This paper evaluates residents' satisfaction and engagement with four state-sponsored community gardens in Beijing and Shanghai based on observation and interview data. It analyzes the five most significant factors that emerged from the four case studies, corroborating some findings in existing literature on community gardens while contributing new insights. Poor intergroup actors' relations inhibit success, resonating with research showing that conflicts between gardeners and steering committees as well as

coordination issues are barriers to a successful community garden. Good relations between gardeners and authorities as well as adequate forms of governance and administration are important enablers (Wesener et al. 2020, 657). Dedicated leadership and a strong core group of volunteers lead to success and vice versa. A lack of shared vision of the garden between different actors inhibits garden success. What is unique to state-sponsored community gardens in China is the critical role of the Residents' Committee, as it connects the state with the residents and coordinates different actors. Some significant factors highlighted in existing literature, particularly funding and land-tenure, did not appear as significant in state-sponsored gardens in China because these issues are taken care of by the state and actors who are willing to cooperate with the state-sponsored projects.

I found two factors not discussed in previous research, the preparedness of residents for self-governance and the role of external recognition, that impacted the community gardens' success, which might be distinctive to the state-sponsored community gardens scenario. Because community gardens aim to promote self-governance and residents are expected to take care of the gardens, whether the residents are ready and willing to take on this role becomes key to the gardens thriving in the long term. While the encouragement brought by media exposure might have been a factor overlooked in other studies, the positive effect of government representatives visiting the garden may be particularly strong for the state-sponsored gardens. Because successful community gardens show the merit of Residents' Committees' work in organizing residents and enhancing public welfare, having government representatives visit the gardens is an affirmation that the Residents' Committee is doing their job well. Moreover, lots of gardeners are Party members who have strong faith in the government, so recognition from the government is especially heartening to them.

Furthermore, my results show that it is hard to isolate single factors that lead to success or failure, and different factors impact one another. Commitment of Residents' Committee

staff impacts their relations with residents as well as residents' preparedness for self-governance. The presence or absence of a single factor does not cause success or failure, and an absence of one enabling factor can be made up for by the presence of other enabling factors, usually more significant factors. For example, in Hongxu Garden residents did not get involved in the design and building process, but committed key actors and their strong relations led to success.

Since I focus on sociocultural and political-administrative factors, biophysical factors such as garden location, micro-environmental conditions, and the size of gardens are worth future research. There is a climate difference between Beijing and Shanghai, but success and failure cases are both present in each city. Residents did not mention soil, water, micro-environmental conditions, and land access as important factors, but how a garden's location, size, and physical arrangement impact engagement needs to be examined. Another limitation of my research is that I did not examine the impact of residents' age, gender, and status on satisfaction. Due to the subjective nature of residents' satisfaction, systematic surveys of residents in different age groups and economic and educational backgrounds will help determine if the perceived failure of gardens varies greatly among residents. Future studies of community gardens in China should also measure other aspects of success beyond satisfaction and engagement, such as enhancing social capital and participation in community governance.

This paper concludes that the following characteristics and strategies can increase state-sponsored community gardens' success. First, communities where residents approve of the Residents' Committee's work are highly inclined to succeed. Residents' satisfaction with community gardens is related to their feelings toward the Residents' Committee's overall effort in the community, and it is hard to gain residents' satisfaction with the community gardens alone if they are discontent with their Residents' Committee. More systematic and comprehensive community environment improvement also needs to happen. Second, leadership from a Residents' Committee staff

member and a core group of resident volunteers is key to the success of community gardens. Residents' autonomous management of the garden should not be assumed, and clear communication and organization of the garden team are necessary. Third, communities that have started to cultivate residents' participation in community activities and public affairs prior to the community garden's development tend to construct a more successful garden. Organizing activities where residents can step in and feel accomplished facilitates their participation in community gardens. Fourth, getting residents involved in the design process and prioritizing their vision of the garden boosts the garden's success in the long term. The strategies above provide practical suggestions for successful community gardening in institutional settings where state actors are significantly involved in community gardens. It adds to the community garden literature by contributing case studies from a top-down institutional setting. These findings also shed light on community governance and community-based actions beyond state-sponsored community gardens.

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