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Master's Thesis  
Academic Year 2023

Enhancing the sense of community by co-creating  
a Community Gardening Program for the  
residents in Yonamoto Housing Complex



Keio University  
Graduate School of Media Design

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A Master's Thesis  
submitted to Keio University Graduate School of Media Design  
in partial fulfillment of the requirements for the degree of  
Master of Media Design

Jianrui Zhao

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Abstract of Master's Thesis of Academic Year 2023

Enhancing the sense of community by co-creating a  
Community Gardening Program for the residents in  
Yonamoto Housing Complex

Category: Action Research

Summary

This action research study aims to enhance the sense of community, build social capital, and strengthen the relationship through co-creating a community gardening program with actors within the Yonamoto Housing Complex. The concept of this action research is: first, to gain a comprehensive understanding of the residents' context, the research incorporates various methods such as conducting discussions, administering questionnaires, and conducting interviews. The research aimed to evaluate how well the program functioned in practice and implemented the program by testing. The effectiveness of the community gardening program is validated through various means, including direct observations, interviews, and participant feedback. The study's findings underscore the positive impact of the community gardening program. They indicate that the program successfully enhances the sense of community, builds social capital, and creates an aesthetically pleasing environment for elderly residents within the Yonamoto Housing Complex.

Keywords:

Elderly, Community Gardening, Social Capital, Tickets to Talk, Sense of Community

Keio University Graduate School of Media Design

Jianrui Zhao

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# Chapter 1

## Introduction

### 1.1. Research Field

This research focuses on the residential complex of Yonamoto in Yachiyo City named Yonamoto Housing Complex in Chiba Prefecture, Japan. Constructed in the 1970s, this housing complex comprises approximately 3000 units.<sup>1</sup> In this community, 44.8 percent of the residents are at 65 years older or older than 65.<sup>2</sup> Because most of the residents are elderly, this neighborhood could be considered as an aging community. Notably, the location of the Yonamoto housing complex is somewhat isolated from major commercial areas, posing challenges for residents to engage in various activities. It takes about 20 minutes to reach the nearest train stations, which also serves as the primary commercial hub in this area.<sup>3</sup>

The community within Yonamoto Housing Complex predominantly comprises elderly residents, many of whom live independently. The distance from commercial centers, the inconvenience of public transportation, and the inconvenient directness of going out have reduced some residents' social activities. The inability to reside and extended family members or their spouses' loss could contribute to the residents' feelings of loneliness and social isolation, reducing their willingness to go out. Therefore, the residents need activities inside the community to maintain social activities. Organizations from the Japanese government and residents'

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1 UR Website, <https://www.ur-net.go.jp/aboutus/publication/web-urpress63/special2.html>, last accessed Jun 13, 2023

2 The Population of Chiba Cities, <https://www.city.yachiyo.lg.jp/soshiki/7/2001.html>, last accessed Jun 12, 2023

3 Google Map, <https://www.google.com/maps/place/Yonamoto+Apartments>, Last accessed Jun 10, 2023

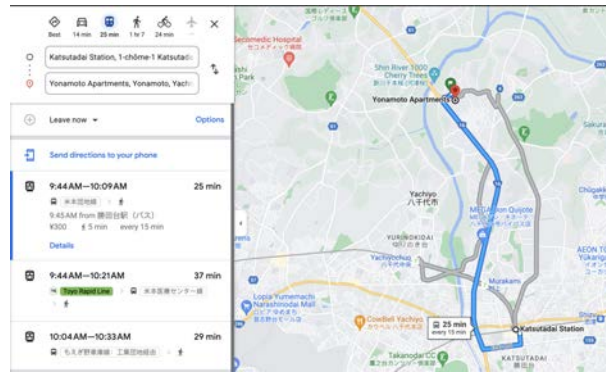


Figure 1.1 The Map location of Yonamoto Housing Complex



Figure 1.2 Community Information Board



Figure 1.3 The Entrance of Yonamoto Housing Complex

spontaneous organizations emerged and organized activities for the elderly residents living in the Yonamoto Housing Complex to promote a well-being lifestyle for the residents.

The organizations in this research field are essential as the primary actors: Hokkori Yonamoto, Yonamoto Municipality Association, Urban Renaissance Agency, and Aso Mutsu Regional Integrated support center. They host various events and initiatives, including cafe sessions, group exercises, workshops on Alzheimer's prevention, and flower-planting activities to enrich the residents' lives. These activities provide opportunities for residents to engage in conversations, promote social capital, and enhance their sense of community, thereby contributing to the community's overall well-being. The following sections will discuss those actors' roles, goals, and relationships.

## 1.2. The Actors

In this research, four key actors supported the well-being of elderly residents in the Yonamoto Housing Complex. These actors include Hokkori Yonamoto, Yonamoto Municipality, Aso Mutsu Regional Integrated Support Center, and the Urban Renaissance Agency (UR). Each actor has specific responsibilities and contributions to support the residents and provide well-being to the residents.

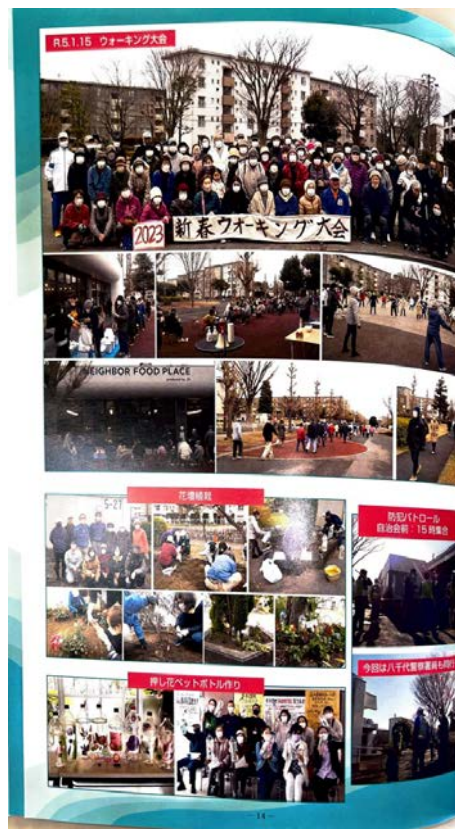


Figure 1.4 Flower Activities in the Community

In the framework of service-dominant logic, the co-creation of value is emphasized through the integration of resources from multiple actors. This includes the traditional roles of firms or service providers and the active participation of customers, other customers, and other entities involved in the value-creation process [1]. The actors in the Yonamoto Housing Complex are considered active participants in the value-creation process. Rather than being passive recipients of value, they actively engage by bringing their own resources, knowledge, and skills. Their unique needs, preferences, and contexts become crucial considerations in the design and delivery of the community gardening program. The importance of building relationships and fostering collaboration among actors is mentored in service-dominant logic. To develop long-term, mutually beneficial relationships within the Yonamoto Community.

### 1.2.1 Hokkori Yonamoto

Hokkori Yonamoto, as the community center for the residents of the Yonamoto Housing Complex, plays a crucial role in promoting a healthier lifestyle and improving the well-being of its residents. Through diverse activities and programs, Hokkori Yonamoto creates opportunities for residents of all ages and backgrounds to engage in meaningful and enriching experiences.<sup>4</sup>

Hokkori Yonamoto organizes and hosts various activities to promote a healthier lifestyle and enhance well-being. They host activities such as guided group exercises, Hokkori Cafe, and handcraft workshops. Guided group exercise sessions, Nobi Nobi Salon, offers sports activities to promote physical fitness and active living among the residents. Hokkori Cafe provides a social space for residents to meet with friends and have conversations. Handcraft workshops provide residents with creative outlets and opportunities to learn new skills. By engaging in hands-on activities, residents can express their creativity, enhance their cognitive abilities, and develop a sense of accomplishment.

Hokkori Yonamoto shows community involvement and consultation in addressing issues and improving the quality of life for its residents. Through its commitment to “community development through welfare,” Hokkori Yonamoto promotes

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<sup>4</sup> Hokkori Yonamoto, <https://www.yachiyosyakyo.jp>, last accessed Jun 22, 2023





Figure 1.5 Hokkori Nobi Nobi Salon

the community's overall well-being.

### **Hokkori Cafe**

The Hokkori Cafe, operating on Tuesdays from 13:30 to 15:30, offers an affordable price of 100 yen for coffee or tea that attracts elderly residents. It is a gathering place that encourages social interactions among them. They discuss current topics and share stories and experiences.

For the research team, the Hokkori Cafe became a significant field for their study. By participating in the cafe sessions, the research team had the opportunity to immerse themselves in the residents' daily lives and gain valuable insights into the context and dynamics of the community. Through conversations and interactions with the cafe visitors, the team could gather firsthand information, experiences, and perspectives, enabling them to understand better the residents' needs, challenges, and aspirations.<sup>5</sup>

### **Core Members of Hokkori Yonamoto**

The core members at Hokkori Yonamoto play a crucial role as community center figures. They engage in conversations and establish connections with the residents.

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5 Hokkori Yonamoto, <https://www.yachiyosyakyo.jp>, last accessed Jun 22, 2023



Figure 1.6 Hokkori Cafe Session

By listening and understanding their needs, interests, and concerns, they develop meaningful relationships and gain valuable insights into the community dynamics.

In the context of the research, the core members at Hokkori Yonamoto have been instrumental in facilitating the understanding of the residents' context and needs. Their close relationships with the community members have provided the research team with valuable insights and perspectives. By collaborating with the core members, the research team has been able to co-create the community gardening program, ensuring that it aligns with the preferences and requirements of the residents.

### 1.2.2 Aso Mutsu Regional Integrated Support Center

As a government-funded and managed counseling organization, the center is crucial in supporting and assisting elderly residents. Its presence ensures that elderly residents can access reliable resources for guidance and assistance when facing difficulties. The inclusion of social workers, nurses, and welfare specialists within the support center signifies a multidisciplinary approach to addressing the needs of the elderly population.

The research team's commitment to reporting the process and regularly seeking suggestions from the support center is commendable. The community gardening program will benefit from the active involvement of the support center as it can

provide guidance and expertise in areas such as community engagement, social welfare, and counseling. The center’s professionals can contribute their knowledge and experience to the research process, ensuring that the project aligns with the goals and values of the residents.<sup>6</sup>

### 1.2.3 Yonamoto Municipality Association

The Yonamoto Municipality Association has a clear and comprehensive purpose that revolves around mutual assistance and community development. The association aims to create a sense of togetherness and solidarity among its members while striving to improve the living environment within the Yonamoto community.

One of the association’s key objectives is to foster camaraderie and mutual assistance among its members. This involves promoting a strong sense of community spirit and encouraging residents to support and help one another.

The association also focuses on self-disaster prevention and crime prevention. By promoting awareness and providing education on disaster preparedness and crime prevention strategies, the association empowers its members to take proactive measures to ensure the safety and security of the community.

Environmental beautification is another important aspect of the association’s work, by actively. Its subsidiary group, The Flowerbed Management Association, plays a significant role in maintaining and managing flower beds within the Yonamoto Housing Complex.

The association takes on responsibilities related to managing and operating its assets and facilities. This includes maintaining and utilizing the association’s resources effectively to meet the needs of its members and the community’s needs. The association also engages in discussions and negotiations with various administrative organizations, such as prefecture and municipal authorities, to advocate for the interests and concerns of the community.<sup>7</sup>

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6 Aso Mutsu support center website, [www.kaigokensaku.mhlw.go.jp](http://www.kaigokensaku.mhlw.go.jp), Last accessed Jun 23, 2023

7 Yonamoto Municipality Association website, [www5.plala.or.jp/m-jichikai/guide/guide.html](http://www5.plala.or.jp/m-jichikai/guide/guide.html), last accessed Jun 20, 2023



Figure 1.7 Yonamoto Municipality Association in the Summer Matsuri

### **The Flowerbed Management Association**

The Yonamoto Municipality Association serves as the parent organization of Hananokai, the flower bed management association. Currently, it has 18 members. This association oversees the operations and activities related to the maintenance of flower beds in the Yonamoto Housing Complex. The association has received funds from the Urban Renaissance Agency, highlighting the recognition and support it receives for its efforts in creating and maintaining beautiful flower beds. The flowerbed management association has a history of running for 24 years.<sup>8</sup>

- The flower beds are regularly maintained approximately six times a week.
- The association follows a seasonal schedule for transplanting, conducting this activity twice a year, in June and October.
- The association procures seeds and seedlings from gardening stores, ensuring a reliable supply of diverse plant varieties for flower beds.
- The association receives flower donations from individuals who cannot care for them due to old age.

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<sup>8</sup> Yonamoto Flowerbed Association website, [www.ur-cm.co.jp/business/commu/kankyau.html](http://www.ur-cm.co.jp/business/commu/kankyau.html), last accessed Jun 22, 2023



Figure 1.8 Yonamoto Municipality Association Office

### 1.2.4 Urban Renaissance Agency

The Urban Renaissance Agency (UR) plays a crucial role in the management and maintenance of the Yonamoto Housing Complex, making them a significant stakeholder in the research on community gardening in this context. The UR maintains and daily cleaning of the housing complex. At the same time, they are the landowner of flowerbeds around this complex. Their corporation and support are essential for facilitating access to the flower beds and ensuring the smooth progress of the research. Their collaboration can provide the permissions, resources, and logistical support necessary for carrying out the community gardening program.

The UR is an organization for the residents. They are responsible for the maintenance and cleanliness of the community,

### 1.2.5 The Relationship between the Actors

The research team benchmarked the relationships between key actors within the Yonamoto Housing Complex through fieldwork and previous research conducted in this field. This was accomplished by observing the interactions among residents and the core members of the organizations and engaging them in dialogues to gain insights into their relationships.

The team classified these relationships based on the frequency of cooperation and interactions:



Figure 1.9 The unmaintained Garden

- Organizations with frequent interaction and long-term cooperation were considered to have strong relationships.
- Organizations that occasionally interact and cooperate only for major community events were deemed to have partial relationships.
- Organizations with infrequent cooperation and loose connections were categorized as having weak relationships.

Two resident-led organizations, Hokkori Yonamoto, and the Yonamoto Municipality Association, have been instrumental within the Yonamoto Housing Complex. Their history of collaborating on large-scale community events like the traditional Japanese Matsuri, community sports events, and New Year celebrations characterizes their relationship as a partial one. However, the lack of long-term joint projects suggests potential for strengthening this relationship, optimizing community resources, and fostering development.

The Aso Mutsumi Integrated Support Center and Urban Renaissance Agency (UR), organizations responsible for providing essential information and resources to residents, have a weak relationship due to their lack of cooperation within the community.

Yonamoto Municipality Association and UR share a strong relationship, with the former receiving regular funding from UR for community flowerbed maintenance. Their regular meetings to strategize fund utilization to enhance residents' living conditions further bolster this relationship. Conversely, the relationship between the Municipality Association and the Integrated Support Center is weak, with no evidence of cooperation found during the fieldwork.

The relationship between Hokkori Yonamoto, UR, and the Integrated Support Center is weak. Additional evidence would be necessary to assess these relationships more accurately.

### **1.2.6 The Missing Co-creating Opportunities around the Yonamoto**

Despite the relationship among the community organizations surrounding the Yonamoto housing complex, the level of collaboration and co-creation within this

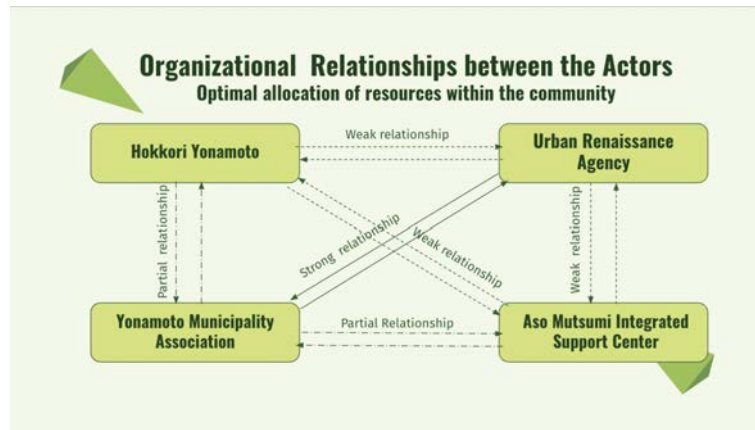


Figure 1.10 Organizational Relationships between Actors

community has been limited due to . The organizations largely operate independently, with collaboration primarily occurring during major community events such as the summer Matsuri.

Introducing more collaboration and co-creation activities is crucial to enhance the overall sense of community and foster greater interaction among the actors. By doing so, community organizations can work together more closely, leveraging their collective knowledge and resources to address shared challenges and pursue common goals.

The next section of the research will explain a detailed exploration of each actor within the community. It is understanding the roles and interests of the community organizations and residents. By understanding the dynamics and potential areas of collaboration among these actors, the research aims to identify opportunities for meaningful engagement and co-creation.

### 1.3. Action Research Plan

This research work is based on action research principles, involving stakeholder collaboration and following an iterative cycle of understanding the context, co-creating the program, testing it, and reflecting on and implementing it for long-term sustainability. The cycle allows for continuous learning and improvement throughout the research process.



The research team can gain valuable insights and perspectives by actively involving actors in the research field, such as the residents, community center staff, and local organizations. This collaborative approach ensures that the community gardening program is designed and implemented to address the community's specific needs.

### **Step 1: Understanding the Context**

The research begins by deeply understanding the community's specific needs, challenges, and aspirations. This involves conducting interviews and questionnaires, and ethnography. The research team collects data and insights to inform the design of the community gardening program.

### **Step 2: Co-creating the Program**

Building upon understanding the community context, the research team collaborates with stakeholders to co-create the community gardening program. This participatory approach involves core members of the community and other residents in the planning and decision-making process. Ideas, goals, and strategies are shared, discussed, and refined together to ensure the program meets the community's preferences.

### **Step 3: Testing the Program**

Once the program is co-created, it is implemented and tested. The research team works closely with stakeholders to organize workshops and establish the garden. During this phase, data is collected to assess the program's effectiveness, gather participant feedback, create new designs, and identify improvement areas. The program is continuously monitored and adjusted based on the insights gained during this testing phase.

### **Step 4: Reflecting and Implementing for Long-Term Sustainability**

The research team and stakeholders reflect on the outcomes and experiences of the program. They analyze the data, discuss the feedback received, and identify opportunities for long-term sustainability. Based on this reflection, adjustments

and improvements are made to the program design and implementation. The research team and stakeholders work together to implement these refinements, ensuring the program's continued success and sustainability over time, even when the research team leaves the field.

# Chapter 2

## Related Works

### 2.1. Community Gardening

Engaging in gardening is a favored recreational activity among the elderly population [2]. Gardening Community Gardening can provide many physical and psychological health benefits for the elderly residents living in the Yonamoto Housing Complex. Research conducted in South Korea examined the benefits that gardening could provide for elderly women; this research proved that gardening could provide benefits such as decreasing depression, a higher amount of daily physical activity, and improving cognitive function [3].

Gardens are thought to improve social interactions within urban communities [4], which could stimulate the growth of bonding social capital and a sense of community with other residents [5]. Additionally, community gardens contribute to the neighborhood's beautification and create aesthetically pleasing spaces. This improvement in the physical environment can enhance residents' sense of place attachment, which refers to the emotional bond and connection individuals have with their neighborhood or community. [6]. These studies further support the notion that community gardens can stimulate bonding social capital and enhance the sense of community.

This research focuses on understanding and exploring the social benefits of community gardening for the residents of the Yonamoto Housing Complex. This research aims to delve into how community gardening contributes to the sense of community and social capital within this community. Residents can develop social connections, share knowledge and resources, and establish social support systems by participating in community gardening.

### 2.1.1 Health and Social Benefits of Community Gardening

Community gardening can provide many health and social benefits and promote healthy aging and lift quality for the Japanese elderly. A study by Machida conducted a web-based survey with 3,144 participants who considered elderly people living in Japan to ask about their health status and gardening habits. Compared to non-gardeners, those who enjoy gardening have better mental and physical health. It found that community gardening provides a sense of community [7].

Community gardening can build social capital and social connection. Community gardens are open-space places where people collaboratively cultivate plants [8]. Previous studies have presented the benefits and insights of community gardening. A study in Copenhagen, Denmark, examined a community garden to understand how it enhances bridging social capital by conducting a qualitative analysis of participants' motivations for participation. Quantitative data from questionnaires and data from local Community gardens can build social capital between people from different backgrounds by setting the same goal. The community garden can be a ticket to talk and a platform for people to share gardening knowledge [9].

In "Community Gardening as Social Action", written by Claire Nettle explores how community gardening can promote positive change through social actions at the community level. The book examines how community gardens in the United Kingdom can empower the community and promote social capital. The author also discusses how community gardening can create social interaction and foster a sense of community among gardeners through shared activities, a sense of belonging, and opportunities. Community gardening sets the same goal that requires group involvement, which can create opportunities for social collaboration and interactions. Participants can get to know each other and share gardening ideas and knowledge. Additionally, the book suggests that community gardening can foster social capital by creating opportunities for bridging social capital. [10]

### 2.1.2 Design and Motivation of Community Gardening

Community gardening indeed plays a crucial role in providing a common space within the neighborhood. The presence of trees, flowers, and grass in community gardens helps create an inviting and attractive environment that encourages residents to gather and engage in various activities [11]

Research by Veen reviews several studies of community gardening in the Netherlands, suggesting that the design and motivation of gardens are essential to determine the effectiveness of promoting social cohesion and social capital. Different design elements influence the social outcomes of a community gardening program. This research suggests that gathering space with seating areas, physical layout, and location of the garden can also affect its ability to foster social interaction. The garden is located in a busy area where everyone could have access to could have better outcomes of social [8].

## 2.2. Co-creating Cycle

In the context of the research on community gardening, co-creation could support the long-term and promote a sense of community and build social capital. By actively involving multiple stakeholders in the action plan's design, development, and implementation, the research aims to create opportunities for active engagement and participation within the community.

Research by Heimburg suggests that the co-creation process involves initiating discussions, organizing workshops, and facilitating joint decision-making processes. This approach ensures that all stakeholders have a voice and can contribute their perspectives, ideas, and expertise to shape the community gardening practice. By considering the stakeholders' diverse needs, preferences, and experiences, the research aims to create an inclusive, meaningful, and responsive practice to the community's aspirations. The research seeks to foster a sense of ownership and empowerment among the participants through co-creation. The research aims to create a shared responsibility for the community gardening program by actively involving them in the decision-making and implementation processes. This collaborative approach enhances the community's sense of belonging and identification and promotes social capital by building trust, mutual respect, and collective effi-

cacy. [12]

The research seeks to co-create a meaningful, inclusive practice that reflects the community's aspirations by actively involving multiple stakeholders and considering their perspectives. This collaborative approach acknowledges the contributions of all stakeholders and creates opportunities for active engagement and participation, ultimately contributing to the well-being and cohesion of the community. [13]

### 2.2.1 Value Co-creation

Value is not created solely by the provider but co-created through interactions between the provider and the customer. Both parties bring their unique resources, knowledge, and skills to the exchange process, actively participating in value creation. Vargo and Lusch proposed that regardless of the type of service, the client always plays a role as a co-creator of value through their active involvement in the service creation process. It is worth noting that service value cannot be unilaterally created or delivered; it requires the collaborative efforts of all involved parties. [1] In the context of value co-creation for the Yonamoto community, the value co-creation happened between the research team and the actors. They bring their knowledge, unique resources, and skills in gardening to exchange and co-create the program. During this process, values such as long-term sustainability for this program and enhancing the sense of community could be achieved.

### 2.2.2 Co-creating with the Elderly

To gain a comprehensive understanding of co-creation with the elderly, exploring existing research in this area is valuable. By studying research conducted by Yang, we can uncover insights into the design of value co-creation and its impact on senior organizations.

Yang's study highlights the transformative power of value co-creation in senior organizations. It suggests that adopting a value co-creation approach enables the active participation of seniors, shifting their traditional passive roles. Through interactive services and engagement, seniors are empowered to contribute to the co-creation process actively, fostering innovative development and enhancing the

service experience in senior organization design. [14] By applying the principles of value co-creation, the program can effectively involve the elderly population in the co-creation process, addressing their specific needs and aspirations. This research can contribute to the development of more inclusive and impact strategies for engaging the elderly in co-creation activities.

### **2.2.3 Co-creating a Sustainable Program**

In this research, one of the key aspects is the focus on co-creating a sustainable community gardening program that ensures a long-term succession plan with the actors in the Yonamoto Housing Complex. The ideas presented by Vargo and Lusch regarding the importance of prioritizing the client's needs and empowering employees are highly relevant to the success and sustainability of such a program. Their research proposed that a service must prioritize the needs of the client in order to be successful and sustainable. [1] In the context of community gardening, this means understanding and considering the residents' specific needs, preferences, and goals. By actively involving the residents in the co-creation process, their perspectives and input can be incorporated into the design and implementation of the program, ensuring that it addresses their needs and provides value to them.

## **2.3. Senses of Community**

The co-creation of a community gardening program in the Yonamoto Housing Complex has the potential to foster a strong sense of community among its residents. The activities involved in the program, such as flower planting workshops, watering the flowers, and rounds of meetings, have the potential to build a sense of community by providing opportunities for residents to come together, interact, and engage in shared activities.

The validation of the community experience framework within a single organizational setting holds great significance in contributing to the existing literature [15]. This research aims to deepen our understanding of the community's role in organizational contexts in the Yonamoto Housing Complex.

### 2.3.1 Elements of the Sense of Community

Community work could strengthen social relations and create a sense of community [16]. David W. McMillan's theory of Sense of Community, presented in 1996, provides a valuable framework for understanding and validating the sense of community. A sense of community is characterized by four elements: membership, influence, integration and fulfillment of needs, and shared emotional connection [17]. While a sense of community may already exist in the Yonamoto Housing Complex, further investigation is needed to explore the specific dynamics and impacts of the community gardening program on the sense of community.

#### Membership

Membership refers to individuals feeling a sense of belonging and identification with the community. Common goals and shared values influence membership [17]. It has also considered the impact of contextual variables [18]. Through their participation in the community gardening program, residents might develop a shared identity and sense of belonging as they collaborate and work towards a common goal of creating and maintaining a beautiful garden space.

#### Influence

Influence relates to individuals' belief in their ability to impact and shape their community. It involves opportunities for participation, decision-making, and having a voice in community affairs. The degree of influence individuals perceive within their community significantly affects their sense of ownership, commitment, and engagement. [17] By participating in workshops, watering, and other activities, the responsibility of caring for the community garden could empower individuals and enhance their sense of influence, leading to a stronger community.

#### Integration and Fulfilment of Needs

Social integration and social contributions could lead to a sense of community. [19] Integration refers to how individuals' social needs are met within the community. This includes the availability of social support, opportunities for interaction, and the satisfaction of psychological and emotional needs. [17]. In the context of



community gardening programs, providing opportunities for social interaction, fostering social support networks, and facilitating individuals' participation in meaningful activities contribute to social integration.

## 2.4. Social Capital

Not only the sense of community, the community gardening program can also potentially foster the development of social capital among the residents of Yonamoto Housing Complex. Through engagement in gardening activities focused on cultivating flowers and enhancing the local environment, participants work towards a collective objective and shared purpose. Forming teams within the program facilitates mutual support and cooperation among participants. Exchanging gardening knowledge and skills between the experienced elderly and others interested in planting flowers. The involvement of organizations such as Hokkori and the Flower Bed Management Association further enhances the program by providing necessary resources for cultivating the garden in teams. Within this context, this community gardening program has been observed to generate social capital, characterized by increased social connections, trust, and reciprocity among the residents of the Yonamoto Housing Complex.

Social capital can provide various benefits, including physical and mental health advantages. Strong social connections and mutual support within a community can improve the overall well-being of the elderly. [20] The research by Liang explores the relationship between positive attitudes, social capital, and physical health among the elderly in rural China. The study utilizes a cross-sectional survey to measure social capital and health status, aiming to understand how social capital can influence health outcomes in this population. The study's findings indicate a significant connection between social capital and the health of the elderly in rural China. A stronger social capital was found to have multiple potential impacts on the elderly overall health. This suggests promoting social capital fosters social connections, trust, and cooperation within the community. [21]

### 2.4.1 Definition of Bridging Social Capital

Social capital is the values obtained from social relationships and networks. Social capital is an intangible asset that builds through social activities and interactions, which provide people with community-level trust, coordination and cooperation, and norms. [18]

Social capital can be divided into bonding, bridging, and linking. Bonding social capital exists between individuals who share similar characteristics and backgrounds. Linking social capital is the connection between people of different social statuses. Bridging social capital is the connection between individuals with weak ties, which means the connections are not strong. It is seen as an essential resource for access to new information and promoting social cohesion, building trust in the community. [20]

### 2.4.2 Bridging Social Capital in the Japanese Elderly

Kishimoto suggests that group involvement can foster bonding and bridging social capital, creating connections between different social groups. This research examines how the relationship between self-rated health and group involvement can influence different types of social capital. The results showed bridging social capital has a stronger implication than bonding social capital and fostering community connections. [22]

### 2.4.3 Community-level Social Capital

A study finds that psychological distress is associated with lower levels of social capital at the community level among the Japanese elderly. The results show that community-level social capital is related negatively to psychological stress among the Japanese elderly. The authors also argue that efforts to promote community-level social capital, such as through the development of community-based programs and services, may effectively reduce psychological distress and improve the mental health of older adults in Japan. In addition, developing social support networks and fostering Social Connections promote individual-level social capital. [23]

#### **2.4.4 The Measurement of Social Capital**

In the book “Social Capital and Health,” Community-level social capital can be determined by survey-based measurements. These surveys usually ask respondents about their social interactions and level of trust with other people, their sense of social connections, and their participation in community activities and belonging. In addition, social capital also can be measured using qualitative and ethnographic methods, such as interviews or focus groups, to gather detailed information about the nature and quality of social relationships and networks, such as in-depth interviews, participant observation, and focus groups. Some other approaches are contextualized approaches that can capture the nuances of social relationships. [20]

### **2.5. Community Autonomy**

Autonomy refers to an individual’s ability to make decisions and take actions based on their own values, preferences, and beliefs. It is often considered a fundamental ethical principle in medical and research ethics, emphasizing the importance of respecting individuals’ self-determination and right to choose their bodies and participation in research. The book argues that an exclusive focus on individual autonomy can overlook the significance of community values, norms, and decision-making processes in certain cultural contexts. In many communities, decisions are not solely made by individuals but are influenced by communal deliberation, shared beliefs, and collective well-being. [24]

#### **2.5.1 Self Determination Theory**

The relationship between autonomy and relatedness is interconnected and mutually supportive. When individuals have a sense of autonomy, they are more likely to engage in personally meaningful activities, pursue their own interests, and experience a sense of ownership and self-determination. This, in turn, positively influences their relatedness needs by fostering authentic connections with others based on shared interests, values, and mutual respect.

Autonomy refers to the need for individuals to experience a sense of choice,

volition, and control over their own actions. It involves feeling independent, having the freedom to make decisions, and being able to act in accordance with one's own values and interests. Autonomy is an essential psychological need that contributes to intrinsic motivation and well-being.

Relatedness, on the other hand, refers to the need for social connections, a sense of belonging, and a sense of being cared for and supported by others. It involves feeling connected to and understood by others, experiencing positive social interactions, and having meaningful relationships. Relatedness is also a fundamental psychological need that is crucial to human motivation and overall psychological well-being.

Likewise, when individuals feel a sense of relatedness, such as being part of a supportive community or having meaningful relationships, it can enhance their sense of autonomy. Feeling connected to others and having a social support system can give individuals the confidence and encouragement to make autonomous choices, take the initiative, and pursue their goals.

### **2.5.2 The Transition from Supported to Full Autonomy**

The transition from community support to full autonomy involves recognizing and respecting the collective decision-making processes, cultural values, and norms within a community. It requires a shift from a purely individualistic perspective to one that acknowledges and embraces the significance of community involvement in decision-making. [24]

To achieve full autonomy, the book suggests actively engaging the community, seeking their input, and involving them in decision-making. This includes fostering open and transparent communication, promoting dialogue, and ensuring community members have the necessary information and resources to make informed choices. [24]

This book also highlights the importance of empowering communities by providing them with the tools and knowledge to participate in decision-making processes actively. This can be achieved through educational initiatives, capacity-building programs, and the creation of supportive environments that foster community engagement. [24]

# Chapter 3

## Action Cycle

### 3.1. Concept

The action research cycle in this study unfolded in several key steps, involving co-creating a community gardening program with the actors in the Yonamoto Housing Complex.

Initially, the issues of the abandoned flowerbed, the residents' desire for more conversation topics, and the lack of cooperation between the actors were identified. Initial testing and discussions with core members of Hokkori helped uncover a latent interest in gardening within the community. Following this, interviews and surveys were conducted to understand the motivations behind residents' interest in gardening and assess the relevant organizations' capabilities. This led to the design of a community gardening program tailored to the findings and needs of the community.

The proposed design was then presented to all stakeholders for feedback, and modifications were made accordingly. The refined program was re-presented and subsequently implemented, with close monitoring of its usage and potential for improvement. Evaluations were conducted to assess the program's effectiveness and to empower a management group to oversee the community garden.

The ultimate goal of this action research cycle was to foster a sense of autonomy among the participants in managing the community garden, indicating their ability to handle its operations and maintenance independently. This autonomy is integral to the envisioned outcome of the community gardening program, where participants assume responsibility for the garden's activities, ensuring its sustainability.

Active participation in the garden contributes to its long-term development and

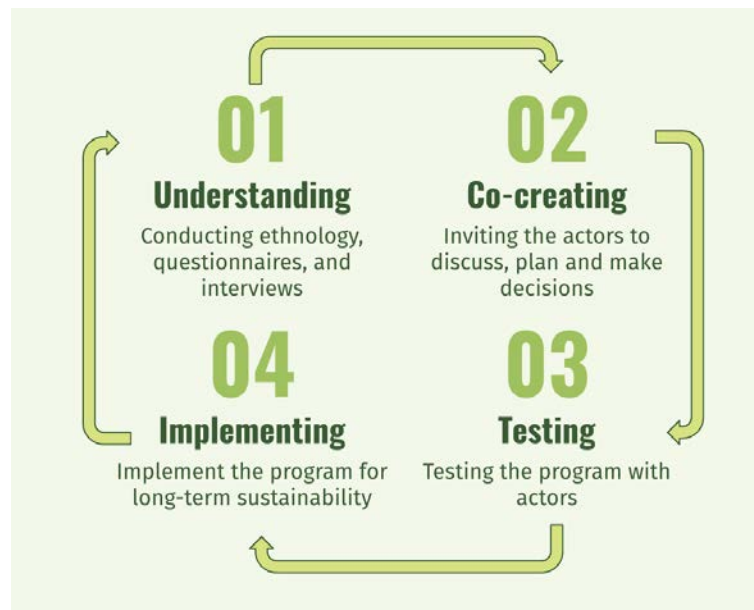


Figure 3.1 Action Cycle Concept

deepens the sense of community within the Yonamoto Housing Complex. This sustained effort not only strengthens the sense of community, but also nurtures social capital. As the participants collaborate and engage with each other through gardening activities, they foster a more robust community.

### 3.2. Understand the Context of the Residents

Initial research was conducted to understand the context of the elderly residents' gardening practices. Engaging residents in a preliminary planting process gave valuable insights regarding their preferences, abilities, and methods of documenting gardening activities. These tests offered an opportunity to observe firsthand the techniques and approaches used by the residents, thus creating a rich foundation of knowledge that would inform the design of the community gardening program.

### 3.2.1 Initial Test with a Core Member of Hokkori

A small-scale gardening experiment was conducted to test and observe the planting practices and willingness to record the process among elderly residents. The experiment involved using a strawberry seedling and a passion fruit seedling provided by Imae-san, who had a garden in Yonamoto. Yamoto-san, a core member of Hokkori and an interested participant, was selected for this initial test.

Before handling the seedlings, they were planted in the pot and given a small notebook for the planting diary. The recording consisted of documenting activities such as watering, fertilizing, taking notes, and observing plant growth changes. Yamoto-san, who had expressed a long-standing interest in gardening, had previously maintained a small garden in the back of Hokkori where she grew flowers and vegetables in the back of Hokkori.

Throughout the experiment, the research team closely monitored Yamoto-san's activities, tracked the growth progress of the plants, and examined the contents of her planting diary. Yamoto-san showed a strong ability to maintain detailed records, using written descriptions, photographs, and drawings to document the process.

By the end of the gardening experiment, bad weather conditions led to the death of the passion fruit seedling. Despite this setback, the strawberry seedling thrived and grew successfully under Yamoto-san's care. As the strawberry plant reached a suitable size, Yamoto-san transplanted it into Hokkori's garden.

The findings from the initial test provided valuable insights into the recording and writing skills of the elderly participants when it comes to maintaining a planting diary. Yamoto-san's exemplary record-keeping abilities, including detailed notes, photographs, and drawings, demonstrated the potential for effective documentation within the community gardening program.

These findings suggest that elderly residents within the Yonamoto Housing Complex exhibit both the interest and capability required to record their gardening activities, which is essential to maintaining a healthy and thriving community garden. This signals the potential to integrate gardening diaries as a central component of the community gardening program, not just as a tool for tracking plant growth but also as a means to foster a deeper connection between participants and their gardening efforts. The results of this preliminary experiment will guide



Figure 3.2 The Seedlings gave to Yamoto-san

the future design and implementation of the program, ensuring it is tailored to the abilities and interests of its participants.

### 3.2.2 Ethnography

Engaging in ethnographic research by visiting and observing the Yonamoto Housing Complex and talking with the elderly residents is a valuable approach to gaining deeper insights into their interests in gardening and flowers. The research team gains a deeper understanding of their interests in gardening and flowers. This research approach allows capturing rich, contextualized data that can inform the design and implementation of the Community Gardening Program in a way that resonates with the residents' needs, build social capital, enhance the sense of community, and strengthen the relationship between the actors.

#### **Imae-san's Vegetable and Fruit Garden**

To conduct an initial investigation, an ethnography of Imae-san's vegetable and fruit garden was done. Imae-san cultivated various plants around his residence, such as tomatoes, eggplants, strawberries, and other species. His initial inspiration came from observing his neighbor's homegrown watermelon, which he found to have a superior taste to store-bought watermelons. This experience motivated Imae-san to embark on his gardening journey.



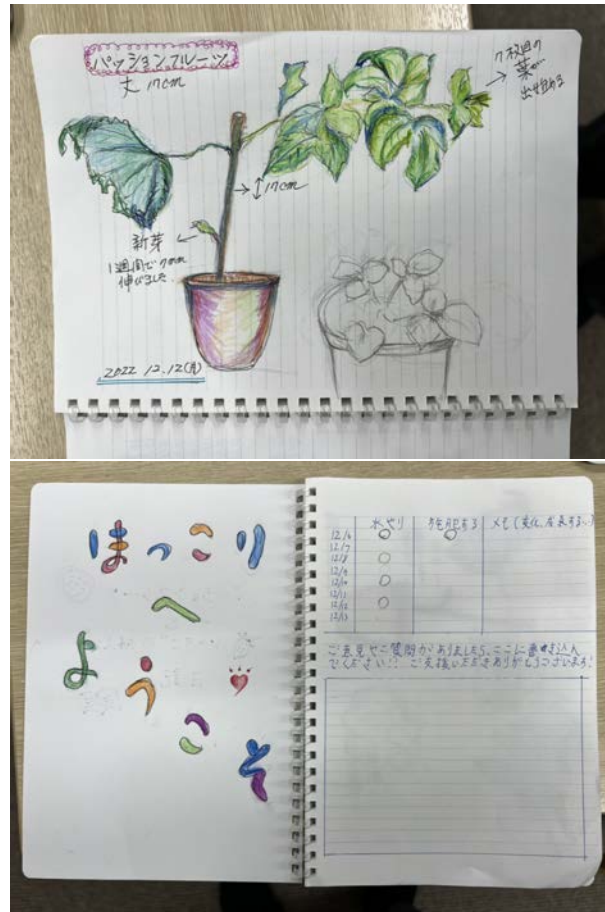


Figure 3.3 Yamoto's Recording

Initially, Imae-san had limited knowledge about plant cultivation, prompting him to research the internet and watch instructional videos on platforms like YouTube. Through this self-guided learning process, he acquired knowledge and skills in planting. Imae-san displayed great enthusiasm in answering gardening-related questions, offering detailed responses that combined his theoretical knowledge with practical experience. Engaging in gardening brought Imae-san closer to his neighbor, strengthened his social connection, and made his life more prosperous and meaningful. The shared interest in planting became a source of conversation and bonding social capital between them.

During a subsequent visit to Yonamoto Danchi, an elderly man, originally from Brazil and residing in Japan for the past 30 years, expressed a keen interest in gardening. Seeking guidance on suitable plants and reliable sources of information, he reached out to the support center. The social welfare worker involved in the project connected him with Imae-san, who was eager to assist.

Imae-san shared his experiences with the older Brazilian man, conversing about plants. It became evident that Imae-san possessed extensive knowledge about various types of plants and could readily identify them. Drawing upon this expertise, Imae-san offered practical advice and suggestions to the older man, addressing his inquiries regarding suitable plants for cultivation.

Moved by the connection they had established through their shared passion for gardening, Imae-san gave the Brazilian man a passion fruit seedling and a strawberry seedling. This gesture brought immense joy to the older man, who expressed deep gratitude for his newfound friendship with Imae-san. The shared interest in planting played a crucial role in fostering their relationship and helping them get to know each other better.

### **Other Gardening Activities in the Yonamoto Housing Complex**

In November 2023, a colleague named Xiaoxi from Itoma organized a hydroponic planting workshop at Hokkori in the Yonamoto Housing Complex. Her hydroponic gardening design quickly gained popularity among the participants. The workshop sparked significant interest in gardening and planting within the community. During gatherings at Hokkori Cafe, visitors frequently converse about their hydroponic plants, seeking advice on the growing process and the optimal



Figure 3.4 Strawberry Seedlings in Imae-san Garden

watering schedules. The residents' enthusiastic response and active participation highlight their interest in gardening.

For another example of gardening activities in the Yonamoto Housing Complex, a dedicated group of individuals who share a common interest in flowers and a strong motivation to beautify their community has formed the Flowerbed Management Association. This association operates as a subsidiary of the Yonamoto Municipality Association and is responsible for managing several flowerbeds within the complex.

The management approach adopted by the Flowerbed Management Association involves assigning individual members responsible for caring for specific flowerbeds located near their homes. Each member takes on the task of maintaining and nurturing one or two flowerbeds, ensuring their proper growth and appearance.

The Flowerbed Management Association exemplifies how a shared interest in flowers and a desire to improve the local environment can drive positive change within a residential complex. Talking with Yamaguchi-san, the members of the Flowerbed Management Association come together to discuss about specific roles and responsibilities among themselves. By assigning individual tasks, such as



Figure 3.5 Flowerbed Management Association

tending to specific flowerbeds or areas within the community, the association ensures efficient and organized management of the gardening activities.

### 3.2.3 Interviews with Core Hokkori Members

To gain a deeper understanding of the community context and identify potential users for the design, a group discussion was conducted with three core members of Hokkori: Haishi-san, Nishi-san, and Yamoto-san. This interview utilized the focus group method, selecting participants based on their social status. By bringing together these individuals for a guided discussion, valuable insights and an in-depth understanding of the residents living in the Yonamoto Housing Complex were gained.

During the group discussion, various topics were explored, including the backgrounds of the participants, their experiences with Hokkori cafe, and their perspectives on planting and gardening. Haishi-san shared her passion for creating a great experience for people at Hokkori and her background as a social welfare worker. She emphasized the importance of volunteering, social interaction, and helping others. Yamoto-san expressed her long-standing interest in and experience with caring for plants, highlighting the popularity of flowers among community members and their role in facilitating social connections. Nishi-san's insights and experiences also contributed to the discussion, providing valuable perspectives on



Figure 3.6 Hokkori Backyard Garden

the community's needs and interests.

The Hokkori opened in 2020, and the building has been around for a long time. The opening of Hokkori gave this building a second life. Hokkori is a place for gathering. Haishi-san said she wants people who come here can have a great experience. She used to work as a social welfare worker. She likes volunteering, talking with people, and helping others.

During the interview, their planting habits and how they thought about the planting habits were also asked. Yamoto-san said she likes planting and has had the experience of caring for plants for a long time. She also mentioned that many people like flowers and know how to care for them, and flowers are more accessible than vegetables and fruits. Haishi-san also talked about hydroelectric planting bringing up topics for the elderly to discuss, too, creating a chance to generate social connections.

By conducting a focused group discussion with these core members, the research captured diverse perspectives and gathered insights that may not have been obtained through individual interviews alone. Focus group discussions could trigger discussions between the participants. This approach facilitated a richer under-



Figure 3.7 Hydroponic Planting Workshop

standing of the community context. It provided a solid foundation for designing and developing a community gardening program to enhance social engagement and well-being within the Yonamoto Housing Complex.

### **3.2.4 Questionnaire for People who Visited Hokkori Cafe**

To gain a deeper understand the residents' preferences for gardening and their current social status, a questionnaire was designed and distributed during the Hokkori cafe session. The questionnaire was divided into basic information, social status, and gardening interests. Care was taken to make the questionnaire elderly-friendly using a larger font size and clear language. Additionally, considering that some participants may have difficulty with handwriting, the questionnaire was designed to minimize the need for writing. Instead, multiple-choice options were provided; for certain questions, participants were allowed to provide a different answer if none suited their response. Haishi-san also helped distribute the survey. She also briefly explained it to the participants.

This approach ensured that the questionnaire was accessible and easy for the elderly residents to complete, reducing any potential barriers and ensuring their full participation. By gathering information on their basic demographics, social engagement levels, and gardening interests, this questionnaire will provide valuable insights into their preferences and inform the development of a community gardening program tailored to their needs and interests.

Most respondents, around 95 percent, were female and aged between seventy and eighty years old. Regarding physical ability, approximately 50 percent expressed confidence in their health condition, indicating the feasibility of maintaining a community garden. However, over 70 percent of respondents said they visited Hokkori cafes only occasionally, indicating the need for more social engagement and activities.

Regarding gardening, 90 percent of the respondents mentioned having plants at home, with around 48 percent specifically planting flowers. This highlights the popularity of flower gardening among elderly residents. Furthermore, when asked about their preferred type of flowers to grow, 65 percent expressed their interest in flowers. This indicates a strong inclination towards flower gardening in the community.

In the next part, the questions are if they had heard about community gardening before. 41 percent responded negatively, indicating a lack of awareness about this specific gardening concept. This finding emphasizes the potential to introduce and educate the residents about the benefits and possibilities of community gardening.

The questionnaire provided valuable insights into the residents' gardening preferences, physical abilities, and social engagement levels. This information will contribute to developing a community gardening program tailored to the needs and interests of the elderly residents in the Yonamoto Housing Complex.

### **3.2.5 Short Interview to Discover the Interest in Flowers**

After discovering the elderly residents' interest in flowers, the research aimed to delve deeper into their specific preferences regarding flower types and colors. An interview was conducted at the Hokkori Cafe, where the research team engaged with visitors at each table. The interview consisted of two questions: their preferred flower types and their preferred colors for the flowers.

The interview results revealed that 75 percent of the respondents were female, while 25 percent were male. The most popular colors among the participants were purple, pink, and orange. As for the preferred flower types, Camellia, Buttercup, and Daisy emerged as the top choices. When asked why they liked these colors, participants expressed that purple is elegant and conveys a sense of high quality. Interestingly, one male participant preferred yellow, considering it an excellent color.

This interview provided valuable insights into the specific flower preferences of the elderly residents and shed light on their interest in flowers. Some participants expressed a desire for the garden to be situated in front of Hokkori so that it could be enjoyed by everyone passing by. These findings provide a more detailed understanding of the flowers that should be planted in the garden and reflect the residents' genuine enthusiasm for this initiative.



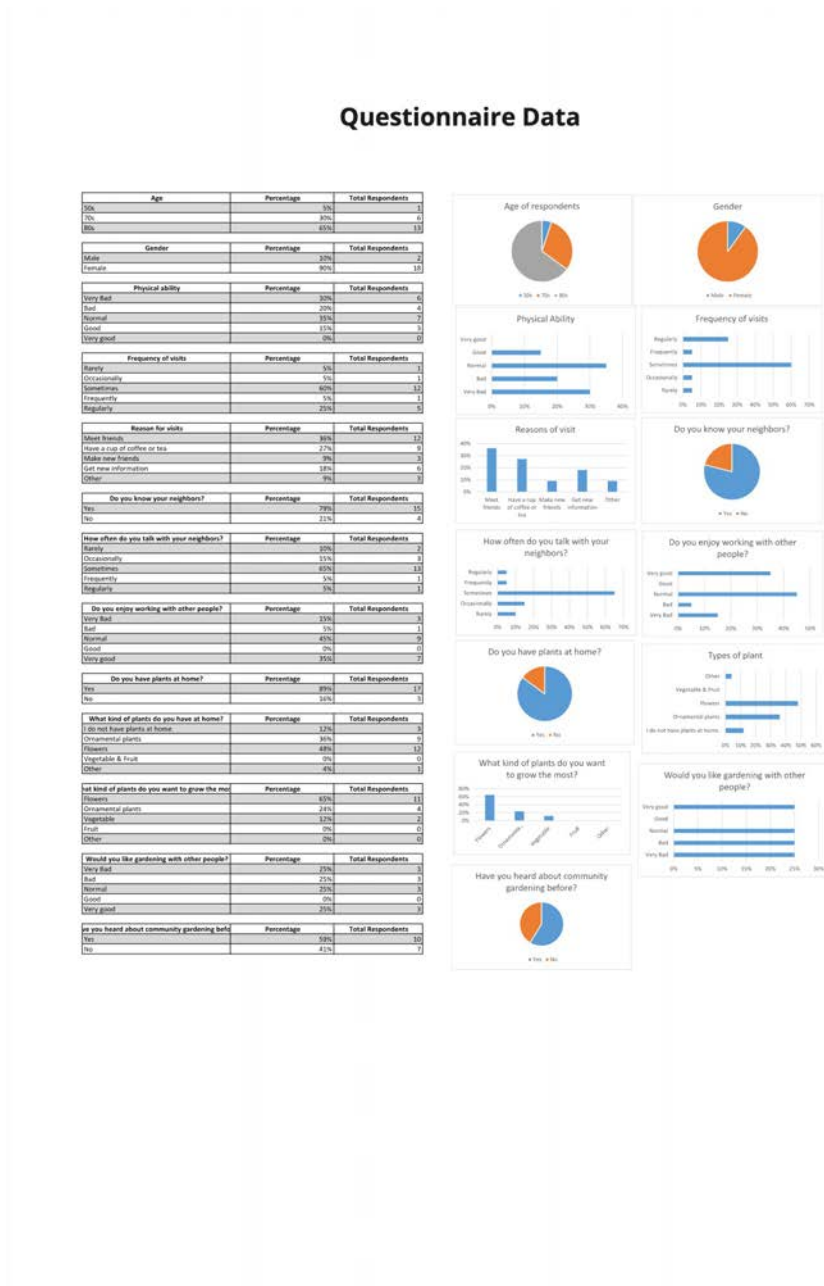


Figure 3.8 Hokkori Cafe Questionnaire Data

### **3.3. Co-creating the Community Gardening Program with the Actors**

After analyzing the data collected from various sources, such as surveys, interviews, and Ethnography, the next crucial step in the community gardening project is to develop and present the design to the relevant stakeholders. This phase focuses on creating a collaborative and inclusive design incorporating key actors' input and feedback, including residents and community organizations. The aim is to ensure the community gardening program aligns with their needs, preferences, and goals.

#### **3.3.1 Cultivating more People to be Involved**

After careful consideration and consultation with various stakeholders and residents, it has been determined that locating the community flower garden in front of Hokkori, replacing the abandoned garden, would be more advantageous. However, since the abandoned garden is currently managed by the Urban Renaissance Agency (UR), their permission will be necessary to proceed with the project.

To gain the required support and involvement, it is crucial to garner the backing of key organizations and cultivate broader community participation. The Hokkori and Yonamoto Municipality Association, composed of residents, play a significant role. Notably, the Yonamoto Municipality Association has established connections with the UR, making their support particularly valuable.

To rally support and generate enthusiasm for the project, the research team has presented a comprehensive design proposal highlighting the potential benefits for the community. One of the critical advantages emphasized is how community gardening can foster stronger social connections and a sense of unity by bringing people together to work towards a shared goal. In the garden, elderly residents can engage in collaborative activities, strengthening their social capital and sense of community.

To effectively communicate the project's vision, two versions of the proposal have been created: a detailed version with comprehensive information and a simplified version that presents the ideas clearly and concisely through easily understandable words and visual representations. This approach ensures that all

stakeholders can easily comprehend the proposal, encouraging their active participation and support for the community flower garden initiative.

### **3.3.2 Discovering the Conflicts within the Community**

In chapter one, each organization's functions and the main stakeholders have been explained, and their connections and conflicts have been seen too. The research team has invited many stakeholders to participate and collaborative design the community gardening program. Understanding the power balance between the stakeholders and the collaboration and conflicts within this community is important.

It is important to understand why it is difficult for the Yonamoto Municipality Association to request the Urban Renaissance Agency to re-construct the garden in the front yard of Hokkori. After talking and making further discoveries in the field, It suggests that the association may have refrained from proposing ideas that could incur financial costs or affect the community to maintain a harmonious relationship with the Urban Renaissance Agency.

The association desires a beautiful garden for the community but may have hesitated to directly address this matter with the Urban Renaissance Agency due to concerns about potential conflicts or strain on their relationship. They may have felt a need for a neutral third party to champion the idea and bring it to the attention of the UR office, ultimately obtaining their approval and support.

Then, the research team needs to pitch the proposal to the managers from the Urban Renaissance Agency to get their permission to use the land.

#### **Pitch the Flower Gardening Program to the Landowner with UR**

The residents of Yonamoto Housing Complex have expressed a strong desire to revitalize and transform the neglected central area in front of Hokkori into a beautiful and well-maintained garden. The community strongly believes revitalizing this space will bring the residents joy, happiness, and a stronger sense of community. This garden's transformation can positively impact the residents' overall well-being and quality of life, fostering a greater sense of belonging and connection.

The research team has also considered the benefits this project can bring to

**コミュニティ ガーデニングとこのプログラムとは何ですか？**

コミュニティ・ガーデニングとは、しばしば高齢者が集まって共同で植物を栽培することを指します。この活動には、運動量が増えること、新しいスキルを身につける機会があること、そしてコミュニティとの繋がりや社会的結束力の向上などの多くの利点があります。



花が育った後、みんなで収穫に参加し、その後、一緒に包装や装飾を行います。最後に、隣人に贈ることができます。それはひとと繋がれることができるし、社会性を叶えます。

**このプログラムの可能的な参加者は誰ですか？**

「ほっこり」を訪れる高齢者だけでなく、ガーデニングに興味がある人なら誰でも参加できるよう、ご招待申し上げたいと思います。私の調査による、高齢者の間では花を植えることに強い関心があり、軽作業に適しているようです。

**このプログラムはどのように進行しますか？****庭の可能なスペースはどこですか？**

「ほっこり」の裏庭をガーデニングの会場として利用することは可能です。私は山本さんと話し合い、彼女もこの概念に興味を示しました。ただ、彼女は花を植える前に土壌を整える必要があると指摘しています。

**いつこのプログラムを開始しますか？**

活動が屋外で行われるため、温かい季節に活動を行う方が良いでしょう。

**このプログラムがなぜ米本団地に住む人々に役立つのか？**

コミュニティ・ガーデニングは、人々を共通の目的に向けて一緒に働かせることにより、社会的繋がりやコミュニティ感を促進することができます。高齢者たちはガーデンで一緒に働くことが楽しく、彼らの人間関係を強め、社会的つながりを向上させることができます。

さらに、花を贈ることは、既に社会的に活発な人々が、社会的でない高齢者にアウトリーチする手段となることができます。これによって、より多くのつながりや信頼関係が築かれ、より強いコミュニティが形成されることが期待されます。

Figure 3.9 Proposal to Pitch the Program

the Urban Renaissance Association (UR), recognizing the importance of gaining support and approval for the garden transformation. By highlighting the positive impacts on the community and addressing the UR's interests and concerns, the research team aims to increase the chances of receiving their approval for the project.

The research team has engaged with key stakeholders to gather valuable feedback and suggestions, including the Yonamoto Municipality Association and Hokkori Yonamoto. The proposal presented the rationale behind the garden transformation, emphasizing the significance of community gardening. The proposal outlined the target participants, the designated location for the gardening program, and the intended design approach. Furthermore, it addressed important aspects such as funding and responsibility, clarifying who will bear the financial costs, and assuming the program's management.

Ultimately, the research team aims to convey how this community gardening program will benefit the Yonamoto Housing Complex community and the UR. By creating a beautiful and well-maintained garden, the program will enhance the residents' happiness, social connections, and overall quality of life. Additionally, the garden transformation can contribute to the attractiveness and desirability of the Yonamoto Housing Complex, aligning with the UR's goals of creating vibrant and livable communities.

### **3.4. Test the Program**

With the necessary permissions from the UR and the support of all other stakeholders, the research team is now ready to conduct a pilot test of the Community Gardening Program. This pilot test is a crucial step in the program's development as it allows for practical implementation and provides an opportunity to gather valuable feedback and insights. With the supports from Hokkori, the research team could test the program.

The pilot test will involve a smaller-scale implementation of the program's activities, focusing on a specific area or a limited number of participants. During the pilot test, the research team will closely monitor various aspects of the program, including the workshop flow, observe the program after the workshop, and seek



Figure 3.10 The Proposal used to Pitch with UR

potential new features to gather comprehensive feedback from the participants and the stakeholders.

By conducting a pilot test, the research team aims to validate the program's effectiveness, make necessary adjustments based on feedback, and gather evidence to support its wider implementation. The insights gained from this process will contribute to the continuous improvement and long-term success of the Community Gardening Program in enhancing the sense of community, promoting social capital, and fostering tickets to talk in the Yonamoto Community.

### 3.4.1 A Gardening Pilot Test with Hokkori Members

] To ensure the workshop's effectiveness and gather valuable insights for future improvements for the community gardening program, a gardening pilot test was conducted with members of Hokkori. This test aimed to identify potential design issues and obtain feedback that could inform optimizations of the workshop and the overall community gardening initiative. The pilot test took place on March 17, 2023, and involved the participation of approximately 11 individuals, primarily



Figure 3.11 UR's Construction of Flowerbeds

consisting of core members of Hokkori. Given limited space constraints, the pilot test utilized four long flower pots instead of planting the flowers directly into the ground.

### **The Preparation of the Pilot Test**

On March 14, 2023, the research team proposed hosting a pilot test of the Community Gardening Program to the members, including the core members of Hokkori. The proposal was well received, and Hokkori agreed to support and participate in the pilot test. Karasawa-san, a member of Hokkori, was responsible for preparing the soil, seeding the flowers, and arranging the pots for the pilot test. The team purchased four kinds of flowers in different colors to ensure a vibrant and visually appealing garden.

### **The Pilot Test**

A gardening pilot test was conducted with Hokkori members to understand potential design issues and gather insights for future workshop and community gardening optimizations. On March 17, 2023, an initial round of user testing gathered approximately 11 participants, most of whom were core members of Hokkori. Due to land limitations, the pilot test occurred in front of Hokkori, where four long flower pots were used instead of planted directly into the ground. The workshop



Figure 3.12 Preparation of the Pilot Test

aimed to plant flower seedlings in these larger pots, with Hokkori providing the necessary tools, flower seedlings, soils, and fertilizers.

Before the pilot test, participants received a pre-workshop questionnaire to gather information about basic information, planting habits, and social situations. The workshop started at 10:00 AM and was planned to conclude around 11:30 AM, encompassing several key activities and discussions.

At the start of the workshop, participants introduced themselves, allowing everyone to familiarize themselves with each other's names and backgrounds. Subsequently, participants engaged in the process of preparing the soil by combining it with various types of fertilizer, including natural options such as horse manure. Equipped with gloves and shovels, they worked together to ensure a well-mixed and nourishing soil composition. The prepared soil mixture was then carefully placed into the designated flower pots.

Next, participants embarked on the exciting task of arranging and planting the flower seedlings. With guidance from flower experts, they experimented with different flower arrangements, considering factors like color combinations and plant heights. Once satisfied with their choices, participants dug holes in the soil and



planted seedlings.

Following the planting process, the flowers required adequate hydration. The flower experts emphasized the importance of thoroughly watering the pots to ensure the plants' well-being and growth.

Upon completing the gardening activities, the social workers from Hokkori facilitated a clean-up session, ensuring the workshop space was tidied and organized. To commemorate the occasion, a group picture was taken, capturing the collective achievement and spirit of the participants.

The workshop concluded with an open discussion, during which participants were encouraged to share their feedback, suggestions, and insights. Haishi-san's comment about people having difficulty remembering the names of flowers highlights the importance of considering practical ways to label and identify the flowers in the garden. Yamato-san's observation regarding the distance of the water sources and the challenges faced by elderly participants in carrying water for watering the flowers is another crucial insight. Those valuable exchanges of ideas allowed the research team to gather input to enhance future workshop designs and foster a co-creating process where participants actively contributed to the program's development. During the discussion, the

The workshop encompassed engaging activities, collaborative efforts, and thoughtful discussions, providing a meaningful and enjoyable experience. The pilot test revealed several insights. Participants demonstrated extensive knowledge of plant cultivation, enabling them to work at a faster pace than expected. The workshop provided valuable information about their flower planting process and work style, offering essential insights to improve future workshops and enhance the overall user experience.

### **3.4.2 Follow-up Designs to Maintain the Community Garden**

Tracking the progress of the participants and the garden's development is a crucial step in the research process. Approximately a week after the workshop, the research team continues to monitor and assess the outcomes of the community gardening program.



Figure 3.13 The Beginning of Test



Figure 3.14 Planting the Flowers during the Test



Figure 3.15 Watering the Flowers during the Test



Figure 3.16 Group Picture after the Test

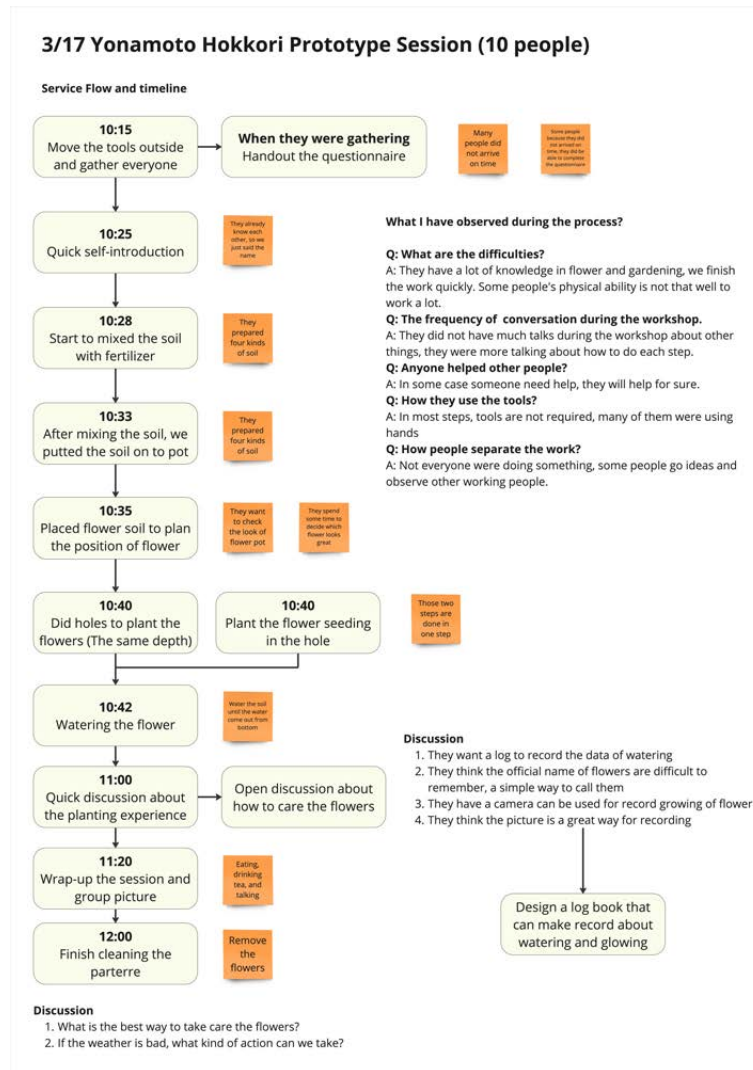


Figure 3.17 Pilot Test Flow



Figure 3.18 The Flowers Planted during the Test

The team visits the garden regularly to observe the growth and maintenance of the planted flowers—their actions, such as using flower recording and making flower tags. The team also maintains communication with the participants. They engage in conversations to understand their experiences, challenges, and successes in caring for the garden. Those insights could support the research team in the future development of this program.

### Flower Planting Recording

The planting recording tool is a thoughtfully designed instrument to support and enhance the community gardening experience for elderly participants. The tool is a transparent plastic box with two layers, carefully organized to serve multiple functions.

The top layer of the box is dedicated to providing essential information about the flowers being planted. It displays the name of each flower along with important details such as watering requirements, preferred sunlight exposure, and even the language of the flowers. This information provided users with knowledge about the specific needs of each flower, ensuring proper care. By understanding the language of flowers, participants can also explore the symbolic meanings associated with each plant.

The first layer of the tool features a calendar and a notebook. The calendar

serves as a visual representation of the gardening journey, allowing users to mark significant milestones and record important activities. The notebook provides a space for personal reflections, observations, and thoughts about their gardening experiences. This combination of a calendar and notebook enables participants to document their progress, track the growth of their plants, and capture their thoughts and emotions along the way.

The tool includes stickers for participants to make entries in their calendars and notebook to facilitate easy recording. This feature particularly benefits those facing handwriting or fine motor skill challenges. Users can effortlessly document their gardening activities by placing stickers on designated areas and visually representing their achievements.

Initially, the tool included seasonal flower pictures to provide inspiration and visual appeal. However, a new design element was introduced based on the feedback received. Instead of generic seasonal flowers, the tool now features the "birthday flower of the day" concept. Each day, a specific flower associated with that day's birthday is highlighted, accompanied by its corresponding language of flowers. This addition aims to spark conversations among participants, encouraging them to share stories about their or their friends' birthday flowers. This interactive element strengthens memory recall and personalizes the tool, fostering a sense of connection and engagement within the community.

Overall, the planting recording tool facilitates gardening engagement, instills confidence, and promotes participant social interaction. It serves as a practical guide, a personal journal, and a conversation starter, all within a compact and user-friendly format. By utilizing this tool, elderly participants can enjoy the pleasures of gardening and create meaningful connections with nature, memories, and their community members.

### **Flower Name Tags**

During the after-workshop visit, the research team made an interesting discovery regarding the flower name tags for each kind of flower planted in the garden. These tags were created using paper wrapped with plastic to ensure durability during rainy weather or flower watering.

To create the flower name tags, the members who take care of the flower hand-



Figure 3.19 Recording Box



Figure 3.20 Recording Sheet with Birthday Flower



Figure 3.21 Flower Tags made after Pilot Test

write the names of the flowers on the paper. They then coated the tags with plastic wraps and added a layer of waterproofing to prevent the ink from smudging or the paper from getting damaged when exposed to rain or moisture during watering.

By labeling each flower with its name, the participants aimed to provide valuable information to those visiting the garden, enabling them to easily identify and appreciate the different plant species. The flower name tags serve as conversation starters, allowing the elderly residents to discuss the various flowers and share their knowledge and experiences with others. This action promotes tickets to talk and encourages social interaction, building social capital among the elderly.

### 3.5. Reflecting and Implementing for Long-Term Sustainability

After analyzing the pilot test, the next step involved testing the community program and planting flowers in the flowerbed in front of Hokkori. To facilitate this process, a Flower Planting Workshop was organized on May 18, 2023, with the participation of ten individuals. Before the planting day, two preparatory steps were undertaken. The first step involved loosening and fertilizing the soil. The second step entailed procuring the necessary flowers for planting. Those steps stage was set for the subsequent planting of flowers and the beginning of the



community gardening project.

### **3.5.1 The Preparation of the Workshop**

the research team holds several rounds of meetings with the stakeholders. These meetings confirm the specific dates and times for the workshop and assign responsibilities for each task. Clear communication and coordination are crucial to ensure all necessary preparations are smoothly completed by the workshop day.

Before the workshop, the research team understands that two critical tasks must be completed: land arrangement and the procurement of flower seedlings. These tasks are crucial for successfully implementing the community gardening program in the Yonamoto Housing Complex.

The first task involves preparing and arranging the land where the flowers will be planted. This includes clearing debris or unwanted vegetation, loosening the soil to promote proper root growth, and potentially applying fertilizers to improve soil quality. Proper land preparation is crucial to create a suitable environment for the healthy growth of the flowers.

The second task is to purchase the flower seedlings planted in the garden. Careful consideration should be given to selecting appropriate flower varieties based on local climate and soil conditions. Ensuring the budget for purchasing the seedlings is essential for the stakeholders, and the kind of flowers that can be healthily grown in this garden.

By completing these tasks before the workshop, the research team can ensure that the necessary groundwork is in place and that participants can plant the flower seedlings for the community gardening program.

#### **Preparing and Arranging the Land**

The community gardening program can commence after the completion of the flowerbed construction by the Urban Renaissance (UR) office. Before planting, preparing the soil by loosening and fertilizing it is essential. The Flowerbed Management Association and Hokkori took the initiative to arrange the necessary tools and fertilizers. On May 12, 2023, a land arrangement workshop was conducted with the participation of approximately ten elderly residents, predomi-



Figure 3.22 Poster to recruit Participants

nantly members of the Flowerbed Management Association and Hokkori. The workshop started at 10:00 AM, aiming to prepare the soil for future planting.

The first step involved loosening the soil, which was accomplished using hoes and shovels. This task required some physical strength, which could be challenging for many elderly women among the participants. Secondly, the participants fertilized the soil using cups to measure and distribute the fertilizers. This step was relatively light work and was completed efficiently. The final step in the land arrangement process involved mixing the fertilized soil thoroughly to ensure an even distribution of nutrients.

By undertaking this land arrangement activity, the research team and community members prepared the soil effectively, creating a suitable foundation for the subsequent planting of flower seedlings.

### **Purchase the Flower Seedlings**

The selection of suitable flower seedlings is very important for the success and aesthetic appeal of the community garden. The research team, accompanied by Yamaguchi-san, Imae-san, and Ms. Onodera, embarked on a trip a day before the flower planting workshop to carefully choose the desired seedlings.

Ms. Onodera, with her knowledge and passion for flowers, took on the role of guiding the team in the selection process. The team had a 20,000 yen budget



Figure 3.23 Flowerbeds after Land Arrangement



Figure 3.24 Group Picture after Prepare the Land



Figure 3.25 Prepare the Garden

for the purchase, and they considered several factors to make informed decisions. These factors included price, color variations, suitability for the prevailing seasons, and the data collected on flower interests from previous research activities.

Considering these considerations, the team purchased diverse flower seedlings to create an appealing and vibrant garden. They selected two kinds of flowers, each with two to three different colors, resulting in approximately 100 flower seedlings. One selected flower was Aztec Marigolds, available in yellow and orange colors. Each set of seedlings included four plants and cost approximately 150 yen. The team also acquired Petunias in various colors, including pink, purple, yellow, and white. The cost of each petunia seedling ranged from 150 to 200 yen. Overall, the team spent around 15,000 yen on purchasing the flower seedlings.

Yamaguchi-san, the leader of the Flowerbed Management Association, paid for the purchase using funds from the Yonamoto Municipality Association. This collaboration between the research team, Yamaguchi-san, and the association ensured the availability of necessary resources for the community garden project.

By leveraging the insights gained from previous fieldwork, the results of investigations, and the expertise of Ms. Onodera, the team made decisions in selecting the flower seedlings. The aim was to create an appealing and visually captivating garden that aligned with the interests and preferences of the community. The careful selection of the seedlings would contribute to the overall success and aesthetic appeal of the community garden in the Yonamoto Housing Complex.

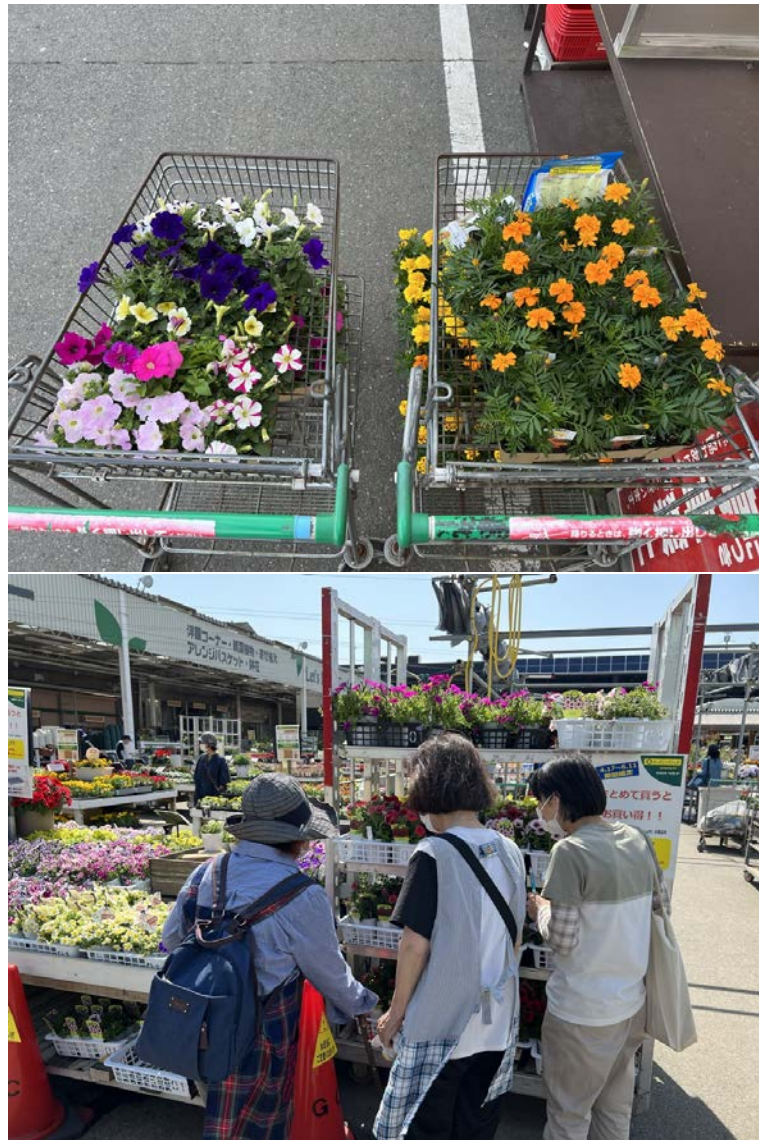


Figure 3.26 Purchase Flower Seedlings

### 3.5.2 Flower Planting Workshop Day

The workshop on flower planting serves as the initial step in the community gardening program, and its structure has been redesigned based on the feedback received during the pilot test. First, questionnaires are handed out to participants upon their arrival, aiming to gather information about their backgrounds, gardening experience, and social status. This helps the research team understand the participants better.

Following the questionnaire, quick self-introductions occur to facilitate interaction and familiarity among the participants. Initially, the plan was to form small groups. Still, after considering the dynamics of the participants, the research team decided that working together as a larger group would be more beneficial.

The process of planting flowers starts with a discussion between the research team and the participants on arranging and positioning the flowers in different garden areas. Through trial and error, it was decided that yellow and orange Aztec Marigolds would be placed in a Z-shape pattern, with Petunias near them. The participants then proceed to dig holes and plant the flower seedlings. The planting process is completed quickly, within approximately ten minutes, thanks to the participants' teamwork, support, and tool-sharing observed by the research team.

The next step involves thoroughly watering the flowers. Due to the larger field size compared to the pilot test, the team prepared multiple watering tools. It is anticipated that watering will require significant effort and time. Participants volunteer for different roles, with some carrying water from the water source while others handle the watering. The roles are rotated to ensure everyone gets a chance to contribute. Overall, the watering process takes around twenty minutes to complete.

Following the gardening activities, the team quickly cleans up the area and gathers for a group photo. Then, the participants return to the rooms where they enjoy tea and snacks, taking a well-deserved break. During this break, discussions and conversations are encouraged, allowing participants to share their experiences, thoughts, and ideas about the community gardening program. During the discussion, the participants agree to name the garden Jerry Garden.

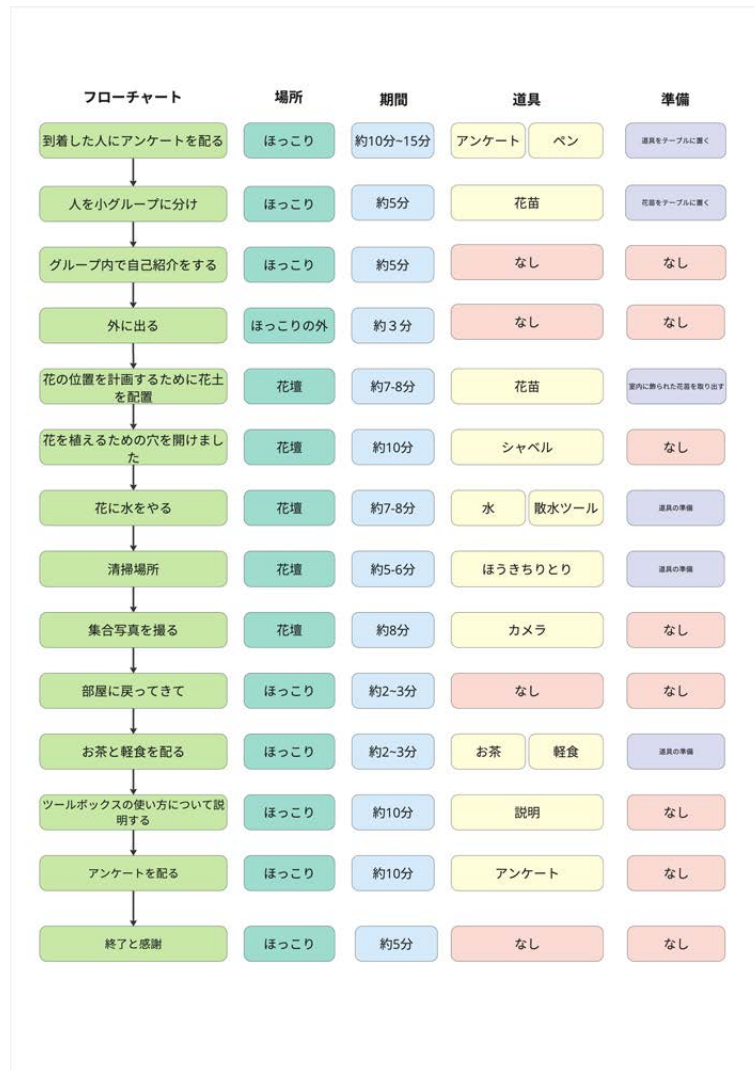


Figure 3.27 Workshop Flow



Figure 3.28 Participants fill the Servedy



Figure 3.29 Participants read the Instruction





Figure 3.30 The Participants Plant Flowers



Figure 3.31 Planted Flowers



Figure 3.32 Group Picture after the Workshop

### 3.5.3 Follow-Up Designs to Maintain the Community Garden

Continuing from the workshop, the research team recognizes the importance of co-designing tools that empower the elderly participants to maintain the garden and ensure its sustainability. These tools, such as the flower name tags and planting recording, are significant in facilitating independent management and fostering conversations among the residents once the research team leaves the field.

Since the workshop is only the beginning of this community gardening, designs that can help them continue to run the gardening on themselves and ensure healthy flowers and the gardening can trigger more conversation among the residents. The two major tools are the flower name tag and planting recording. The Flower Name Tags collaborate with the participants to refine the flower name tag design and an elderly-friendly design.

#### Flower Name Tag

In the pilot test, the participants emphasized the importance of naming tags for each type of flower in the community garden. Recognizing this need, Yamaguchi-san, the leader of the community gardening program, took the initiative to provide the names of the flowers planted in the garden. The research team took this information and designed flower tags that included the name of each flower, an

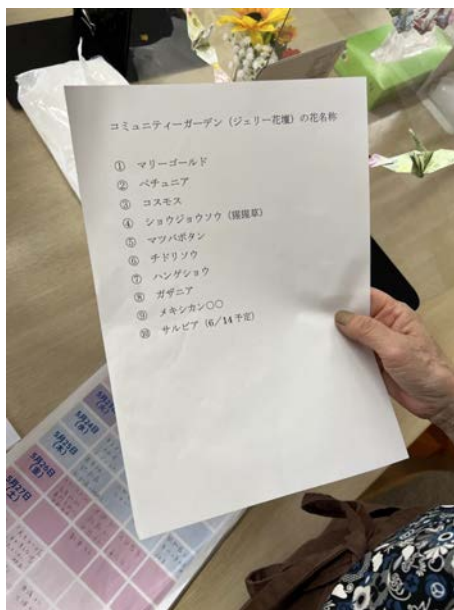


Figure 3.33 The List of Flowers Planted

alternative name familiar to the elderly participants, and a corresponding picture of the flower.

To bring these flower tags to life, the research team contacted Haishi-san, who had previously created the tags during the pilot test. Haishi-san was skilled in using the necessary tools to wrap the plastic around the printed tags, ensuring the tags could be waterproofed. Then, the tags were stuck with chopsticks to be inserted into the soil.

With the completed flower tags, the research team placed them strategically throughout the garden. Each tag was carefully positioned next to its corresponding flower, allowing residents and visitors to easily identify and learn about the different plants. The tags acted as "Tickets to Talk," inviting conversations and facilitating discussions about the various plants and their characteristics.

### Planting Recording

Considering the valuable feedback and suggestions received during the previous prototype test, the research team has developed an updated version of the flower recording design. The primary objective of this design iteration is to empower the



Figure 3.34 Flower Tags

stakeholders to manage and sustain the community gardening program independently. The design aims to meet the long-term needs of the users while considering practical aspects, such as ease of use, cost-effectiveness, and the ability to make copies without relying on the research team.

### **Planting Recording with Daily Question**

Based on the feedback from the pilot test, it was determined that the previous design incorporating the birthday flower did not effectively serve as a conversation trigger among the participants. The research team considered a new design approach to foster more engaging and meaningful discussions.

Drawing from the ethnographic observations and insights gathered during the study, it was noted that the elderly participants showed a keen interest in seasonal food, seasonal activities, and the cultural significance of changing seasons in Japanese society. Considering these factors, the research team shifted the focus from the birthday flower to a daily question format, which was expected to generate more interactive conversations among the elderly participants.

The new design consists of daily questions related to gardening, flowers, seasons, or nature. A different question is presented on the recording materials each day, and the answers are shown the next day. The questions invited the participants to discuss seasonal themes based on their experience. The questions are carefully crafted to stimulate conversation, evoke memories, and encourage knowledge exchange between the elderly.

To assess the effectiveness of this new design, the research team provided the participants with the updated recording materials and observed how they engaged with the daily questions.

The concerns raised by the participants regarding the sustainability of the planting recording design are valid and important to address. The research team recognizes the need for a long-term, sustainable solution that allows the participants to continue managing the community gardening program independently, even without the presence of the research team.

### **The Final Version of Planting Recording**

In response to the participants' concerns and feedback regarding the sustainability and user-friendliness of the planting recording materials, the research team is dedicated to developing a design that addresses these issues effectively.

To begin with, clear instructions and templates will be provided to the participants. The team will work closely with the participants, considering their specific requirements and preferences. The participants expressed a desire to save ink and paper. The design will be optimized to minimize resource consumption while still maintaining usability and clarity. Based on Yamaguchi-san's feedback during the interview, where she showed her small handwritten notes, it has been recognized that larger and more readable spaces are necessary. The design will accommodate this need by ensuring ample room for writing, allowing for clear and legible text that all participants can easily understand.

Then, this version of the design is very simple. This approach will reduce the participants' reliance on external support and enable them to independently maintain and replicate the planting recording materials. By working closely with the participants, understanding their preferences, and incorporating their feedback, the design will evolve to meet their specific needs effectively. Last, this design version considered the complexity of watering the garden. It had both morning and night to show the watering tasks.

The ultimate objective is to create a design that supports the participants in maintaining their gardening activities and fosters a sense of community. With a user-friendly and sustainable system in place, the community gardening program can thrive and continue to evolve, encouraging active participation and inviting other residents to join the program.

The final version of the recording was given to the flower maintenance group. The

#### **3.5.4 The Community Garden Maintenance Group**

The initiation of a maintenance group composed of Hokkori Yonamoto members and the Municipality Association serves as a testament to the transformative impact of the community gardening program. After the flower seedling planting

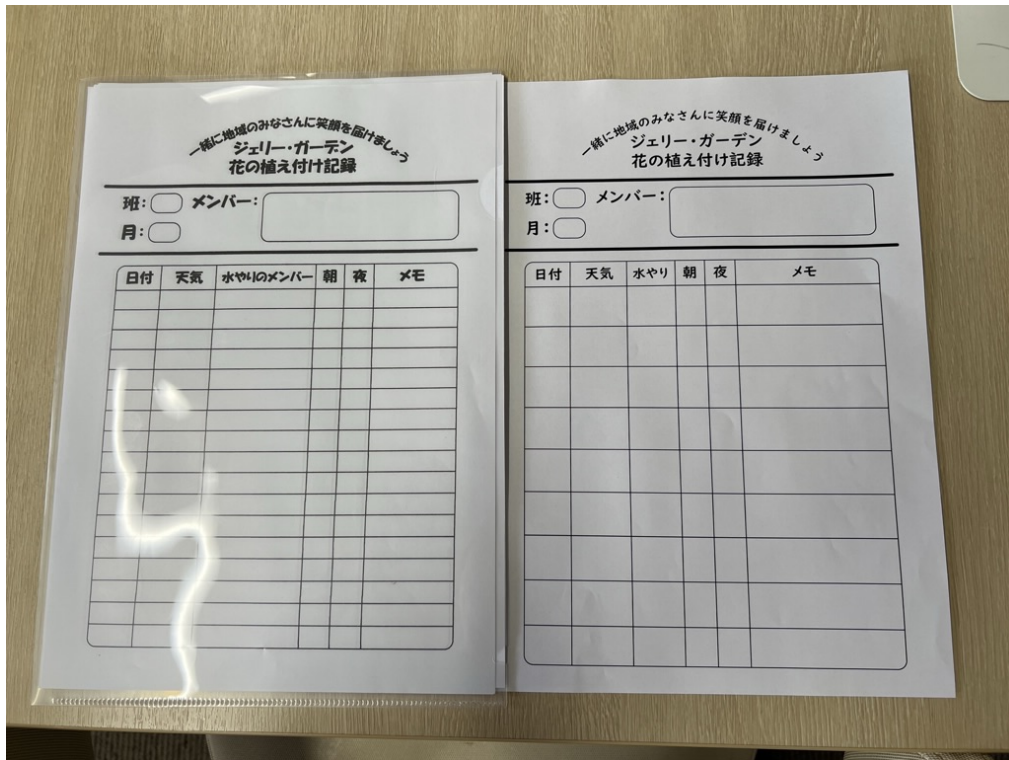


Figure 3.35 The Final Version of Flower Recording

session, this group was established to ensure the garden's upkeep. Activities such as watering, trimming, and planting new flowers are regularly conducted by this group, which in itself forms a sub-community within the larger context.

The maintenance group's meetings provide a platform for members to discuss key gardening considerations. These range from determining which types of flowers to plant, how to allocate resources among various actors, and the watering regimen for the garden. The latter proved to be a particularly challenging task during the flower-planting workshop, as watering demands considerable human resources and involves logistical considerations such as sourcing water, carrying it, and the optimal timing for watering.

To address this challenge, Yamaguchi-san, a core member of the Municipality Association, proposed a solution. He suggested dividing the members into smaller groups, each responsible for watering the garden on specific dates. This distributed the labor more evenly and further fostered a sense of responsibility and community amongst the members.

The Garden Maintenance group's efforts extend beyond routine care to enhance the garden's aesthetics and diversity. They have relocated flowers from other flowerbeds in the Yonamoto Community, enriching the garden's variety of blooms. These actions showcase the group's commitment to nurturing the garden and contributing to the overall sense of community within the Yonamoto Housing Complex.



# Chapter 4

## Validation

To validate the impact of community gardening on the social engagements of elderly residents in the Yonamoto Housing Complex, a series of validation processes were conducted. These processes aimed to explore the influence of community gardening on the sense of community and social capital. The validation processes involved various research methods, including interviews, observations, and questionnaires. The validation processes aimed to understand the data obtained from multiple sources, ensuring the reliability and validity of the findings. The qualitative data from questionnaires, interviews, and observations were analyzed and connected to the impact and outcome of community gardening.

This multi-method approach allowed the research team to corroborate and cross-reference data from different sources, thereby enhancing the reliability and validity of our findings. In particular, the research team looked for evidence of changes in the relationship between the actors, improved sense of community, and growth of social capital among the participants, and Strengthen the relationship between various organizations in the community.

### 4.1. Methodology

This section outlines the methods and procedures used to conduct the study. In the context of understanding the social impact of community gardening on elderly residents in the Yonamoto Housing Complex, this section includes details about the used techniques of observation, focused group interviews, and questionnaires. Using those three methods, the research team could understand how co-creating a community garden could enhance the sense of community, build social capital, and strengthen the relationship between organizations among the residents living

in the Yonamoto Housing Complex.

### 4.1.1 Observations

Observations were conducted during gardening activities, allowing researchers to observe the interactions, social engagements, and sense of community fostered by the gardening program. These observations helped capture the tangible and intangible aspects of the participants' engagement and connection experiences. [25] After the workshop on planting flower seedlings, the research team continued to visit the research field to observe how the gardening maintenance group ran the community garden.

During the site visits, the research team was intensely focused on capturing various dimensions of the residents' activities within the community garden. This included understanding how residents coordinated and divided labor for essential gardening tasks such as watering and maintenance. The team also paid careful attention to social interactions occurring within the garden. This aimed to provide insights into how shared tasks and common goals facilitated communication and cooperation among residents. The goal was to assess how the community garden served as a medium for enhancing the sense of community, building social capital, and strengthening the relationship between the organizations among the residents of the Yonamoto Housing Complex.

Given the constraints on observation time at the Yonamoto Housing Complex and limited temporal points when these observations could be conducted, there may be instances of missing or potentially inaccurate data. This could lead to an incomplete picture of the daily activities and interactions among the residents. To mitigate these limitations and enhance the accuracy of our findings, the research team complemented the observational data with in-depth interviews. These interviews provided an additional perspective on the residents' experiences and interactions directly from the participants themselves. They also offered an opportunity to delve deeper into aspects that were not fully captured during the observational periods.

### 4.1.2 Focus Group Interview

Several rounds of group interviews were conducted as part of this research to gather qualitative data and gain in-depth insights into the participants' experiences and perspectives regarding community gardening. These focus group interviews brought together a small group of participants who had participated in the community gardening workshop. Face-to-face focus group interviews were conducted with participants from the garden maintenance group. These interviews utilized group interactions to collect data, allowing participants to explore and clarify their perspectives in a manner that might be less attainable through individual one-on-one interviews. [26]

The first group interview took place immediately after the workshop, allowing participants to reflect on their experiences and share their thoughts and feelings. This interview aimed to capture their initial impressions and positive ideas about the name of this community garden.

The second group interview was conducted approximately a month after the workshop, on June 18, 2023. This follow-up interview aimed to explore the impacts and outcomes of this community garden. Participants were asked to reflect on any changes they observed in themselves and the community since participating in the workshop. Additionally, they were encouraged to share any challenges, solutions to challenges, values that appeared, and suggestions for improvement.

Both group interviews were conducted in a supportive and interactive environment to facilitate open discussions. A semi-structured interview guide was used to ensure that key topics were covered while also allowing flexibility for participants to share their unique perspectives, stories, and insights.

The data collected from these group interviews were transcribed and analyzed thematically. Common themes, patterns, and key findings were identified to provide a comprehensive understanding of the participant's experiences and the impact of community gardening on their lives.

### 4.1.3 Questionnaire

The questionnaire designed for the elderly participants in this research gathers information about their gardening experience and social status. Two sets of ques-

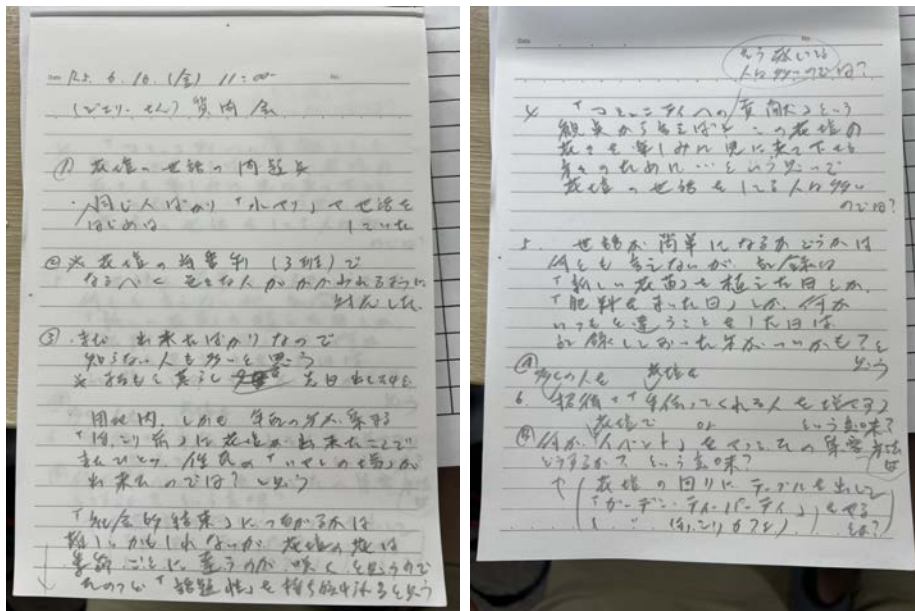


Figure 4.1 Yamaguchi-san’s Interview Notes

tionnaires were distributed at the beginning and another after the workshop to capture any changes or insights that may have emerged.

The questionnaire is structured into three main sections: basic information, gardening experience, and social status. Careful consideration has been given to ensure its accessibility for the elderly, with features such as larger font size and easily understandable language. To accommodate potential challenges with handwriting, the questionnaire avoids free-response questions and primarily includes multiple-choice questions that only require participants to circle their preferred answers. The length of the questionnaire is kept concise, consisting of approximately 5-6 questions for each section.

The basic information section of the questionnaire aims to collect demographic data such as age, gender, and residential status. This information helps establish the profile of the participants and provides context for analyzing the data.

The social status section delves into the participants’ social engagement and connections within the community. It includes inquiries about their involvement in community activities and the frequency of interactions with neighbors or friends. These questions are set to understand the depth of their social capital and sense

## Interview May 16th

### What kind of issues you have experienced during the development of this garden?

- Some flower only bloom in a certain time of year, what to plant next is always a common questions. Each flower have different period, how to manage it?
- They moved the flower seedling from many different area of Yonamoto.
- They are looking forward to what can be plant next season, each season can have different kind of flowers to be planted.
- How to invite more people to join the watering activity.
- They want to make more flower tags for the garden, so the new flowers
- They have keep to talk about flower.

### What kind of values can this garden provided to the residents since we planted those flowers last month?

- People like to gather in the garden
- Many people pass the garden would like to take a look of the gardening, some people keep looking at the flowers
- The benches around the garden is always full since we planted flowers
- In the morning, the elderly residents have a group exercise around the garden.
- Many people are interested in what kind of flowers have been plant here, they take a look of the flower name tags
- Some people want to know more about the flowers, like when is the season that flower will end.
- The older man who do not used to have a lot of interests in gardening and flowers started to show their interests in flowers, they like to take a look of the garden

### What kind of value can this garden provided to the ones who caring this garden?

- They said they feel happy, many people come over to see the garden
- They feel they feel healed while working in the garden, the connection with nature
- Some people live far from here, but they still want to visit the garden everyday, provide them a chance to walk more. They said they feel happy, many people come over to see the garden
- Because they have teams to rotated water flower, they feel their connection and relationship between with other team members become stronger

### Do you agree the planting recording makes caring flower easier? Do you believe the recording is a very important part for a community garden?

- The recordings are needed to run the garden.
- Sometimes they need to water in the morning, so it is difficult to make recording
- The place to write is a bit small, Yamaguchi-san wants to write a lot of memo
- They raised up questions like how can they know what they have down so far?
- Other people can check previous notes, and ask questions about it, this is

### Would you want to invite more people into Gardening? How can we invite them?

- They want to invite more people to join the gardening program

Figure 4.2 Focus Group interview Questions and Answers

of community.

By administering these questionnaires, valuable data can be collected to assess the effectiveness of the community gardening program and understand its social benefits in the context of the Yonamoto Housing Complex. The collected data will provide insights into the participants' gardening experiences, preferences, and social status, allowing for a comprehensive evaluation of the program's impact on the well-being and social engagement of the elderly residents.

## 4.2. Participants

This section provides information about the demographics and characteristics of the participants in our study and the broader populations they represent. Our research design includes two groups of participants: those who partook in the workshops and other residents residing in the Yonamoto Housing Complex.

This breakdown allows us to examine the differences and similarities between the two groups and how these might have affected the study's results. For example, those participating in the workshops might have more interest or prior experience in gardening, which could affect their levels of participation and the benefits they derive from the Community Gardening Program. Contrastingly, the other residents might bring a fresh perspective, being less familiar with gardening but equally capable of benefiting from the program's social and communal advantages. By studying both groups, we ensure our results and conclusions are more representative and applicable to the broader resident population.

### 4.2.1 Community Gardening Program Participants

The findings during the action cycle suggest that elderly residents within the Yonamoto Housing Complex exhibit both the interest and capability required to record their gardening activities. The research team maintained ongoing communication with the participants to validate the action research cycle. Through this process, the elderly residents collaboratively established a dedicated council responsible for maintaining and managing the community garden. The council primarily comprises Flowerbed Management Association members and Hokkori Yonamoto representatives. Their main objective is to organize regular meetings,

facilitate discussions, and plan ongoing activities and initiatives to ensure the garden's continuous development and success. The formation of this council showcases the residents' unwavering commitment and active engagement in promoting the long-term sustainability of the community garden project.

Validating the success of the community gardening program necessitated multiple rounds of interviews with the stakeholders. These dialogues offered valuable insights and feedback, enabling the research team to gauge the program's impact on strengthening community ties and enhancing social capital among the residents. Furthermore, they facilitated identifying and implementing necessary improvements to maintain and further develop the garden. The participatory approach employed in this research nurtured a sense of ownership and fostered a collaborative atmosphere, both of which are crucial for the longevity and success of community-driven initiatives.

#### **4.2.2 Yonamoto Housing Complex Residents**

The community garden was situated in the central and bustling area of the Yonamoto Housing Complex. As it was challenging to conduct continuous field observations, the research team opted to interview the core members of the Community Gardening Program council to gain insights into the participants' behavior and experiences.

Through these interviews, the researchers discovered that many residents displayed significant interest in the community garden following the workshop. It became apparent that the flowers and accompanying flower tags were catalysts for initiating conversations and fostering social interaction among the residents. The flower tags acted as "tickets to talk," sparking discussions and creating opportunities for meaningful connections within the community. This finding underscored the powerful role of the garden in bringing people together and facilitating social engagement among the residents.

### **4.3. Senses of Community**

The community gardening program at the Yonamoto Housing Complex has indeed cultivated a potent sense of community among its participants. As a boundary

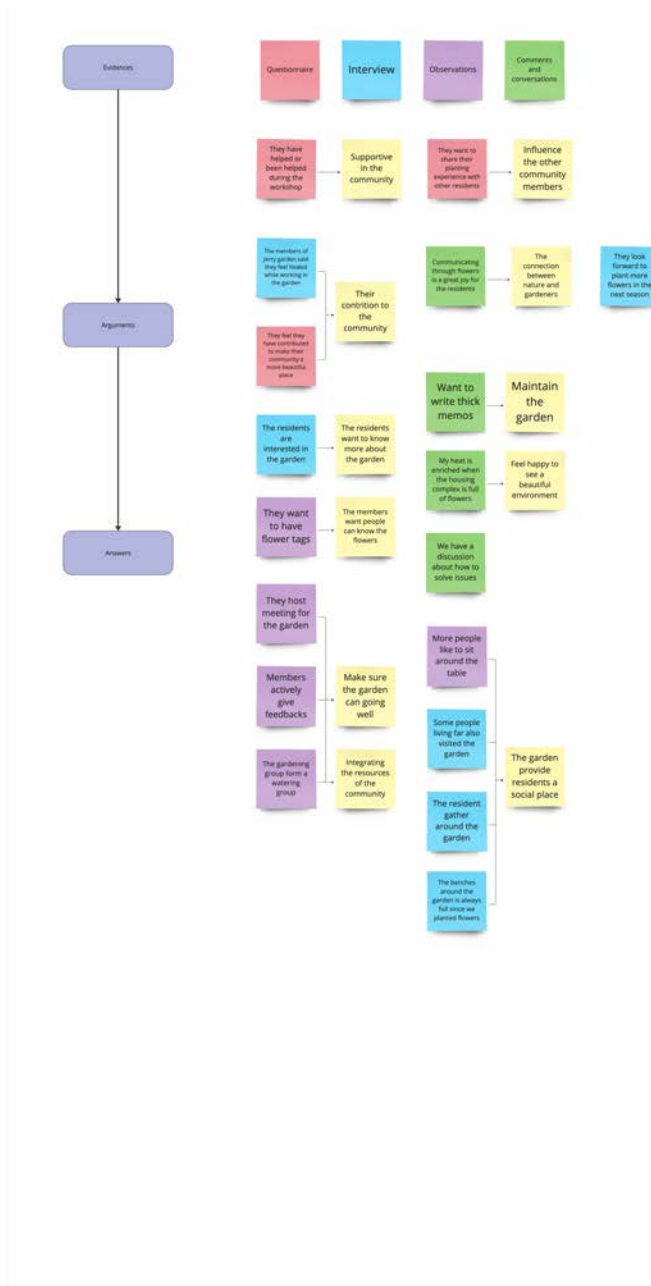


Figure 4.3 Evidence found for Validation



object, the garden draws together individuals from various backgrounds and experiences, all unified around the shared passion for gardening. It establishes a communal space, a harmonious junction where physical and metaphorical boundaries intersect, effectively turning individual disparities into a deep sense of unity and camaraderie. This environment, in turn, provides a secure and nurturing platform for open communication and emotional sharing. A relaxed atmosphere is cultivated with a shared interest in gardening and aided by conversation catalysts such as flower name tags. This setting encourages participants to freely exchange their gardening experiences, knowledge, and stories, in the process building trust and fostering emotional safety within the community.

The sense of community further intensifies through each resident's personal investment in the program. Their active involvement in tasks such as planting, watering, and maintaining the garden fosters a sense of ownership and pride. As residents witness the thriving beauty of the garden, a testament to their collective efforts, their attachment to the community deepens, and their commitment to the program strengthens. In addition, the garden symbolizes a shared identity, a tangible manifestation of collective pride and unity that further enhances their sense of community. The collaborative efforts and shared responsibility in maintaining the garden have led to the developing of social capital, building trust, reinforcing social networks, and fostering collective responsibility within their shared space.

In summary, the community garden has emerged as an integral part of life at the Yonamoto Housing Complex, significantly enhancing the sense of community. Through shared responsibilities, collective actions, and regular interactions in the garden, the residents have experienced social connection, mutual support, and a sense of shared identity, embodying the power of community engagement.

### **4.3.1 Membership**

The structure of the community gardening program at Yonamoto Housing Complex has successfully fostered a dynamic interplay between a sense of belonging and personal relatedness. The program instills a profound sense of ownership and personal investment by granting individuals autonomy to participate in ways that reflect their personal preferences and interests. The chance to select the plants they wish to nurture and define their care methods empowers individuals



Figure 4.4 The Community Gardening Members were working

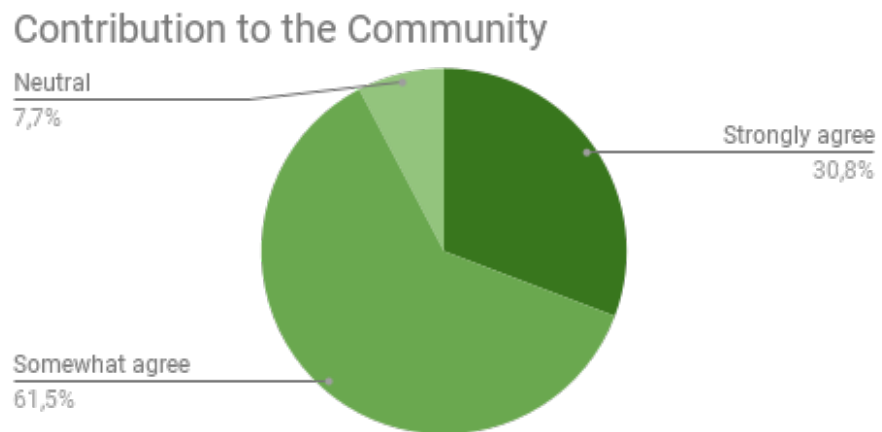


Figure 4.5 Questionnaire Question about Contribution

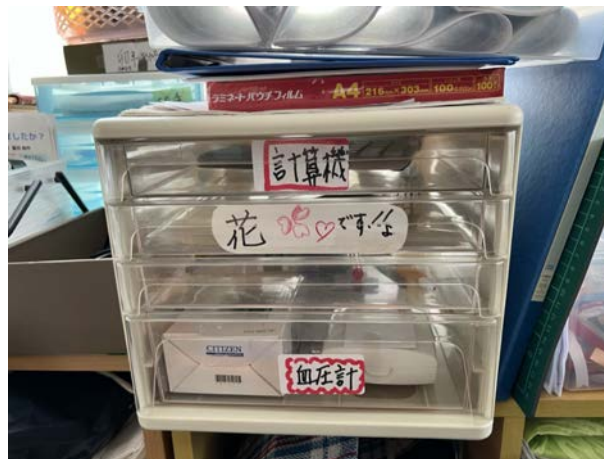


Figure 4.6 The storage of materials for the Garden

to thread their personal narratives into the community garden's tapestry. Their unique knowledge and skills enrich the collective gardening experience and give them significant roles within the community garden.

In this context, the garden blossoms into an organic extension of their personal lives, resonating with their stories, endeavors, and aspirations. The intricate balance between autonomy and relatedness forms a harmonious duet. Participants revel in the freedom to interact with the garden in their unique styles, while concurrently acknowledging their individual efforts as vital elements of the communal project. This equilibrium generates a sense of belonging as each person's distinct contributions play a crucial part in the garden's flourishing and the escalating unity within the community.

Moreover, the community gardening program unveils a platform for residents to form connections and interact, nurturing a sense of relatedness. As observed, following the workshops, participants formed a group to upkeep the garden, and community members collectively arranged a storage place for materials needed for garden maintenance. In engaging in these activities, individuals forge relationships with peers, share knowledge, and offer assistance and encouragement to one another. This nurtures a community environment that is supportive and inclusive, where every individual feels valued, understood, and integrated.

This symbiotic relationship between autonomy and relatedness in the community gardening program reinforces each aspect. Autonomy is exercised as individ-

uals make choices and take ownership of their gardening activities, simultaneously deepening their sense of relatedness through bonding with others over a shared gardening passion. Conversely, the connections and relationships formed within the community garden bolster the participants' autonomy by establishing a supportive network that validates their choices and spurs personal growth.

Community gardening fosters a mutually beneficial relationship between autonomy and relatedness. The autonomy to participate in personally meaningful gardening activities amplifies individuals' sense of ownership and self-determination. Concurrently, the sense of relatedness, grown through community interactions and connections, bolsters autonomy by providing a support network and fostering a sense of belonging. This synergy between autonomy and relatedness significantly contributes to the overall satisfaction and well-being of the individuals involved in the community gardening program.

At the heart of the Yonamoto Housing Complex, the community garden serves as a shared space of collaborative endeavor, fostering a profound sense of community and identification among its participants. This shared space symbolizes community pride, collective identity, and shared accomplishment. With each blossoming flower and growing plant, the garden is a vivid testament to community members' collaborative efforts and shared responsibility, resulting in a sense of unity and belonging that resonates with every participant.

Active involvement in the gardening program strengthens individuals' connections to the community, fostering a palpable sense of kinship with their fellow gardeners and the garden itself - a living embodiment of their collective effort and unity. This garden has become an integral part of their shared identity, a source of communal pride, and a hub for social engagement.

In a post-workshop discussion, the members named this blooming symbol of the community "Jerry Garden," paying tribute to Jerry, a core research team member. This naming reflects the recognition of Jerry's contributions and the appreciation of the sense of unity and camaraderie that the gardening program has instilled among the residents. The "Jerry Garden" christening emphasizes the deep-seated value the Yonamoto Housing Complex community places on fostering communal bonds, celebrating shared experiences, and acknowledging individual contributions. It is a testament to the power of collective action in strengthening

community ties and enhancing the sense of community.

### 4.3.2 Influence

The community gardening program has a profound impact on both the participants and other residents, fostering a sense of influence that is reciprocal in nature. The members feel their voices are integral in shaping the group's direction, and the group in turn, affects its members. The program's co-creation element played a key role in this process. Initially, the garden was planned to be in the Hokkori's backyard. However, after collaborative discussions with the residents, the idea of placing the garden in front of the Hokkori was presented and eventually realized. This evolution demonstrates how residents' voices were actively heard, and their suggestions were incorporated to optimize the program's benefits.

Simultaneously, considering residents' perspectives in the proposal for flower gifting further bolstered the sense of community. The research team suggested picking the bloomed flowers to form bouquets. Yet, many residents preferred to enjoy the flowers' beauty in their natural garden setting, viewing the picking as wasteful. The research team's acknowledgment and respect for these sentiments underscored the importance of resident feedback, fostering a greater sense of connection to the program.

The principle of co-creation is fundamental to the gardening program, recognizing the unique contributions of all stakeholders. By actively involving diverse stakeholders, such as residents, community organizations, and local authorities, the program seeks to cultivate an environment where everyone feels valued and has the opportunity to contribute their knowledge, skills, and perspectives. This shared ownership and collaborative engagement, coupled with active involvement in discussions, workshops, and joint decision-making processes, ensures that the program meets the community's diverse needs and strengthens social ties, fostering genuine relationships based on shared interests and mutual respect.

In conclusion, the interplay between residents' influence and the co-creation aspect significantly contributes to the sense of community. The cultivation of an inclusive, engaged, and interconnected community is a key success factor for the community gardening program, enhancing the sense of belonging and strengthening social capital within the Yonamoto Housing Complex.



Figure 4.7 The Community Press

### 4.3.3 Integration and Fulfillment of Needs

A community garden holds great potential in fulfilling the needs of its members, offering rewarding experiences through participation, and fostering a sense of community. The transformation of the garden at the Yonamoto Housing Complex is an illustrative example of these benefits.

As observed by the research team, the blooming garden has become a social playground, attracting residents of all age groups. It is not limited to the elderly residents who are the main participants in the gardening program but also extends to children who enjoy the vibrant and lively atmosphere. The garden's aesthetic transformation has fulfilled the residents' desire for a more visually pleasing living environment, and for those who appreciate the beauty of flowers, the garden offers a space to indulge in that passion.

For residents interested in gardening, the upkeep of the flowers provides an avenue to engage in their hobby. It allows them to practice their gardening skills, learn new techniques, and contribute to the garden's growth and beauty. This involvement meets their needs and contributes to their overall sense of satisfaction.

One participant from Hokkori shared during the focused group interview, "The residents like to gather in the garden; many people who pass by would like to take a look at the garden and flowers." This statement validates the garden's role as a social hub and emphasizes the garden's influence in fostering community connections. Residents gather, interact, and bond over their shared appreciation for the garden and its flowers, creating a sense of community rooted in shared interests and experiences.

The community garden at the Yonamoto Housing Complex meets the needs of its members in multiple ways - as a social hub, a source of aesthetic pleasure, and a venue for gardening activities. It strengthens community bonds, making participation in the garden's activities a rewarding experience for its residents.

### 4.3.4 Shared Emotional Connection

The shared emotional connection forms the cornerstone of the community. In the community gardening program context, shared goals, experiences, and histories have fostered deep emotional connections among participants and other residents.

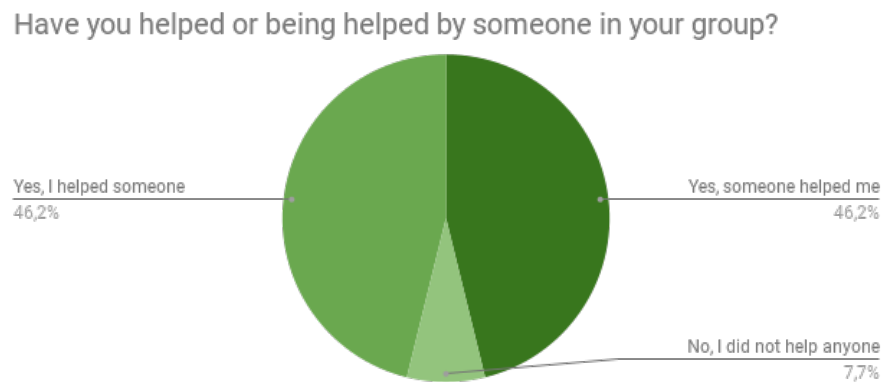


Figure 4.8 Questionnaire Answer for Cooperative

The goal of creating a beautiful garden for all to enjoy has acted as a unifying force, sparking connections that extend beyond the physical realm of gardening.

The participants, through their engagement with nature, have developed an emotional connection not only with the garden itself but also with each other. As stated by a participant from the Municipality Association during an interview, “I feel healed while working in the garden. I am happy to see other residents like the flowers.” This sentiment expresses the emotional fulfillment derived from working in the garden and seeing the joy it brings to others. Such shared experiences and feelings create a sense of community and deepen emotional bonds.

Furthermore, the interactions during the gardening workshops allowed participants to offer and receive help, underscoring the shared emotional connection. Participants’ responses in the questionnaire revealed that many had helped or been helped by someone during the flower planting workshop. This cooperative act signifies a shared commitment to the common goal of nurturing the garden and, by extension, the community. These experiences of mutual assistance foster emotional connections, highlighting the power of shared endeavor in creating a sense of community.

In summary, shared emotional connections, fostered through joint experiences and common goals, significantly contribute to a sense of community. In the Yonamoto Housing Complex, the community gardening program has leveraged these elements to cultivate a rich sense of community, underpinned by shared emo-



tional connections and a common commitment to enhancing their shared living environment.

## 4.4. Social Capital

The community gardening program has proven its ability to build social capital within the Yonamoto Housing Complex. Social capital refers to the network of relationships, trust, and cooperation among individuals within a community. Here's how the community gardening program can contribute to the development of social capital.

The program brings actors together, providing opportunities for them to build social connections. Participants form social capital and develop relationships with members through shared activities and regular engagement. Engaging in collaborative tasks and sharing responsibilities in the community garden can foster trust and reciprocity among participants. As individuals work together towards a common goal, which is the good maintenance of the garden, they develop trust in their abilities and intentions. Municipality Association and Hokkori residents form a new group to maintain the garden. This group work allows the residents to have

This trust enables the exchange of resources, knowledge, and assistance, strengthening the community's social capital. The community gardening program provides opportunities for exchanging and sharing knowledge and skills related to gardening. During the meetings, the research team observed. Participants can learn from one another, share gardening techniques, and discuss best practices. This knowledge-sharing enhances the collective expertise within the community and builds social capital by fostering a culture of learning and collaboration.

### 4.4.1 Bridging Social Capital

In the context of the community gardening program at the Yonamoto Housing Complex, the evidence suggests that the program has indeed fostered bridging social capital.

Firstly, the program facilitated interactions among residents who might not otherwise connect. People of all age groups were observed to participate, indicating



Figure 4.9 The Community Garden Members had a Discussion

the garden served as a meeting place that brought together diverse groups within the community.

Secondly, the program allowed participants to collaborate with different actors, including the Municipality Association and the research team. These collaborations built relationships and facilitated the sharing of knowledge and resources across different groups.

Thirdly, the program emphasized co-creation and considered all participants' views, irrespective of their backgrounds. This approach fostered an environment of mutual respect and understanding, further promoting bridging social capital.

Moreover, the decision-making process in the garden maintenance group, including discussions about watering methods, flower selection, and resource allocation, exemplified collective problem-solving involving diverse members.

Lastly, shared emotional connection and mutual aid during the gardening activities reinforced inter-group connections and fostered a sense of shared community, which is crucial to bridging social capital.

Therefore, based on the evidence, it appears that the community gardening program has successfully fostered bridging social capital among participants and residents of the Yonamoto Housing Complex. This has implications for social cohesion, mutual understanding, and collective action, thereby enhancing the community's overall well-being.

#### **4.4.2 Bonding Social Capital**

Based on the evidence from observation, interviews, and questionnaires, it can be inferred that the community gardening program has built bonding social capital among the residents of the Yonamoto Housing Complex.

First, establishing the Garden Maintenance group, which included members from both Hokkori Yonamoto and the Municipality Association, created opportunities for residents to work closely together. The joint tasks of watering, trimming, and planting new flowers required coordination and cooperation among members, strengthening their bonds.

Second, the decision-making processes within the group—such as determining watering schedules and deciding which flowers to plant—required negotiation, compromise, and consensus. This likely strengthened interpersonal connections

and trust among members as they worked together to achieve a common goal.

Third, the shared experiences and the emotional connections formed while working in the garden contributed to bonding social capital. As a participant from the Municipality Association stated, “I feel healed while working in the garden. I am happy to see other residents like the flowers.” These shared feelings and common experiences can contribute to a strong sense of camaraderie and unity among participants.

Lastly, the community response to the garden indicates a shared appreciation and mutual enjoyment of the space. As one participant mentioned, “The residents like to gather in the garden; many people who pass by would like to take a look at the garden and flowers.” This shared value of the garden likely contributed to a sense of collective identity and shared purpose, further fostering bonding social capital.

In conclusion, based on the information available, it appears that the community gardening program has successfully fostered bonding social capital among the participants and other residents of the Yonamoto Housing Complex. This likely affects social cohesion, mutual support, and community resilience.

## 4.5. Relationship between the Actors

The co-creation of the community gardening program resulted in a transformative impact on the relationships among the actors in the Yonamoto Housing Complex. It brought the residents closer and facilitated stronger connections between the actors, facilitated by the research team’s involvement.

Resident-formed organizations, Hokkori Yonamoto and Yonamoto Municipality Association saw their relationship strengthen from partial to strong. Following the garden’s establishment, members from both organizations formed a dedicated group to maintain it. The required activities for garden upkeep, such as watering, trimming, and planting new flowers, necessitate considerable human resources, leadership management, and allocation of tools and spaces. Community gardening provided a platform for these organizations to share resources effectively. Furthermore, Hokkori has become a central location for hosting meetings concerning the garden’s future plans, further solidifying their joint commitment.

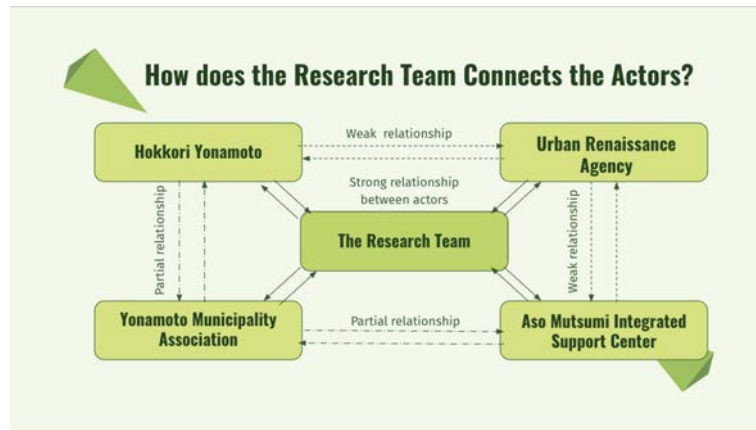


Figure 4.10 Research Team connect the actors

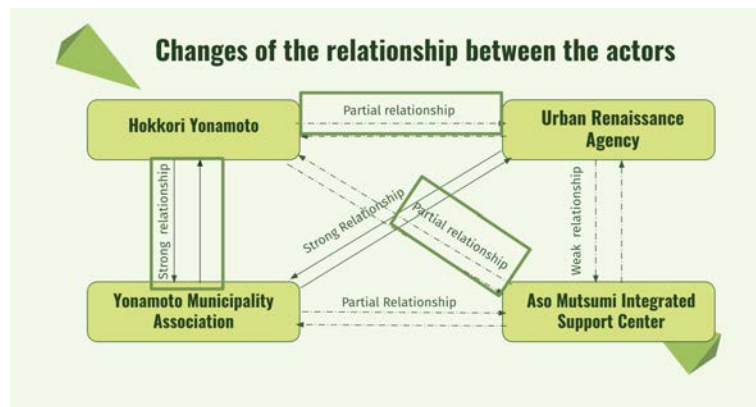


Figure 4.11 Relationship between the actors after the program

There was also a subtle shift in the relationship between Hokkori Yonamoto and the Urban Renaissance Agency (UR). During the proposal pitch for the community gardening program, Hokkori was directly involved in negotiations with UR, fostering increased engagement between the two actors.

# Chapter 5

## Conclusion

### 5.1. Conclusion

In conclusion, the action research undertaken within the Yonamoto Housing Complex's community gardening program has highlighted its potent and positive impact on the residents and broader community. The co-creation process and inclusion of diverse actors in the community allowed for a gradual transition from guided to full autonomy among residents. The garden played a pivotal role in connecting residents, nurturing a sense of community, and catalyzing the creation of social capital within the community.

Providing an inviting and inclusive space for residents to gather, socialize, and bond, the garden transformed shared experiences into a tightly-knit community fabric. The act of jointly nurturing the garden and watching it flourish fortified the residents' communal spirit. The research provided compelling evidence of how a community gardening program can reshape the interplay among community actors, enhance a sense of community, and foster the development of social capital.

Moreover, the community gardening program spurred the development of social capital within the community. Collaborating and sharing garden maintenance responsibilities allowed residents to build trusting relationships, amplify social networks, and cultivate a collective sense of ownership and pride for their communal space.

Nonetheless, it is crucial to acknowledge the limitations of this action research. The focus was predominantly on elderly residents, which might not fully encapsulate the viewpoints of all community members. Additionally, ensuring the program's long-term sustainability and continuous enhancement necessitates consistent efforts. These include tackling logistical challenges, incorporating diverse perspectives, and addressing the evolving needs and preferences of the commu-

nity.

In summary, this action research on the community gardening program at the Yonamoto Housing Complex has had a salutary impact on residents and the broader community, amplifying the sense of community and fostering social capital. With ongoing efforts and strategic improvements, the program can continue positively molding the residents' lives and serve as a blueprint for community development and empowerment.

## 5.2. Limitation

Despite the accomplishments of the community gardening program and the insightful findings from the research, certain limitations require recognition. Before the research, the involved actors had already established a long-term trust relationship. This established trust was a prerequisite for conducting research and fostering cooperation, without which the research could have encountered substantial difficulties.

The geographical isolation of the Yonamoto Housing complex also played a significant role in ensuring the success of this research. The relative inconvenience of leaving the neighborhood resulted in residents' preference to spend time within their community.

Firstly, the research primarily concentrated on the experiences and perspectives of the elderly residents within the Yonamoto Housing Complex. While this focus yielded valuable insights into this demographic's specific needs and benefits, it might not fully encompass the experiences and perspectives of other community members. These could include children, parents, or individuals with diverse backgrounds and interests. It is essential to acknowledge that the findings may not be generalized to the entire community and must be interpreted keeping this limitation in mind.

Another limitation was the challenge of conducting long-term observations within the community garden. Logistical constraints and the difficulties associated with prolonged field stays may have prevented comprehensive data collection over an extended period. This limitation could potentially impact the depth of understanding of the garden's development, dynamics of participation, and long-term

impacts on the community.

Considering these limitations, it is vital to approach the findings with a degree of caution and recognize the context-specific nature of the research. Future studies could aim to include a broader range of community members and address the challenges of conducting long-term observations. This would allow a more comprehensive understanding of the community gardening program and its impacts on the entire community.

Furthermore, the research could be expanded to involve other stakeholders and community organizations beyond the Yonamoto Housing Complex. This could provide a more holistic perspective and foster cross-community collaboration. Such efforts could enhance knowledge exchange, innovation, and collective endeavors to promote residents' well-being and social connectedness across different community settings.

In conclusion, while the research on the community gardening program has delivered valuable insights, it is critical to acknowledge its limitations. These should be considered when interpreting the findings and planning future research endeavors.

### **5.3. Future Work**

Future research directions should aim to build upon the success of the community gardening program at Yonamoto Housing Complex by extending its influence and efficacy. Future studies could involve applying the same framework in different contexts, which will allow the exploration of diverse community-based initiatives and their impacts on residents' well-being and sense of community. This approach provides an opportunity to validate and generalize the findings from the community gardening program and helps understand how similar interventions can be implemented across various settings.

Another intriguing aspect worth studying is the potential physical health benefits participants may have gained from their involvement in the program. Future research collaborations with health researchers or practitioners could yield interesting insights about aspects such as physical activity, nutritional benefits, or general health and well-being in relation to community gardening.



Additionally, exploring opportunities for knowledge-sharing and collaboration with other community gardens and organizations can foster the program's growth and sustainability. These could involve participating in networks, attending conferences or workshops, and engaging in dialogues with practitioners and researchers in the field. The exchange of experiences, best practices, and lessons learned can stimulate innovation, contributing to the benefit of both Yonamoto Housing Complex and the broader community gardening community.

Finally, future work should expand the program's reach, foster interdisciplinary collaborations, and continually monitor and evaluate the program. Exploring opportunities for cross-community engagement is also crucial. By pursuing these avenues, the community gardening program can continue to develop, thrive, and positively influence the residents' well-being and sense of community in and beyond the Yonamoto Housing Complex.

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# Appendices

A. Proposal

B. Questionnaire to understand the Context of Residents

C. Results

D. Workshop Flow

### コミュニティの花園

コミュニティの花園は、個人が協力してオープンな庭園で花を育てる取り組みです。参加者は一緒に作業することや、好きな花を育てたり、植物の手入れをしたりすることで楽しむことができます。以下に必要な手順が示されています:



#### 花を選ぶ 苗

- ・ 種類
- ・ 色



#### 一緒に花を植える

1. 土壌を準備する
2. 穴を掘る
3. 花を植える



#### 元気に花を咲かせる

- ・ みんな交代で
- ・ 定期的な水やり
- ・ 必要に応じて施肥
- ・ 剪裁

### 花の贈り物

花が完全に開花した後、皆で一緒に花を摘み、包装し、共同で飾り付けすることができます。最後に、隣人への贈り物として花を送ることができます。



#### 花を摘む



#### ラッピングとデコレーション



#### 隣人に花束を渡す

Figure A.1 Proposal for the Actors by Residents

**コミュニティ ガーデニングとこのプログラムとは何ですか?**

コミュニティ・ガーデニングとは、しばしば高齢者が集まって共同で植物を栽培することを指します。この活動には、運動量が増えること、新しいスキルを身につける機会があること、そしてコミュニティとの繋がりが社会的結束力の向上などの多くの利点があります。



花が育った後、みんなで収穫に参加し、その後、一緒に包装や装飾を行います。最後に、隣人に贈ることができます。それはひとつと繋がれることができるし、社会性を叶えます。

**このプログラムの可能的な参加者は誰ですか?**

「ほっこり」を訪れる高齢者だけでなく、ガーデニングに興味がある人なら誰でも参加できるよう、ご招待申し上げたいと思います。私の調査による、高齢者の間では花を植えることに強い関心があり、軽作業に適しているようです。



**このプログラムはどのように進行しますか?**



**庭の可能なスペースはどこですか?**

「ほっこり」の裏庭をガーデニングの会場として利用することは可能です。私は山本さんと話し合い、彼女もこの概念に興味を示しました。ただ、彼女は花を植える前に土壌を整える必要があると指摘しています。

**いつこのプログラムを開始しますか?**

活動が屋外で行われるため、温かい季節に活動を行う方が良いでしょう。

**このプログラムがなぜ米本団地に住む人々に役立つのか?**

コミュニティ・ガーデニングは、人々を共通の目的に向けて一緒に働かせることにより、社会的繋がりがコミュニティ感を促進することができます。高齢者たちはガーデンで一緒に働くことが楽しく、彼らの人間関係を強め、社会的つながりを向上させることができます。

さらに、花を贈ることは、既に社会的に活発な人々が、社会的でない高齢者にアウトリーチする手段となることができます。これによって、より多くのつながりや信頼関係が築かれ、より強いコミュニティが形成されることが期待されます。

Figure A.2 Proposal for the Actors for Residents



## コミュニティガーデニングの提案

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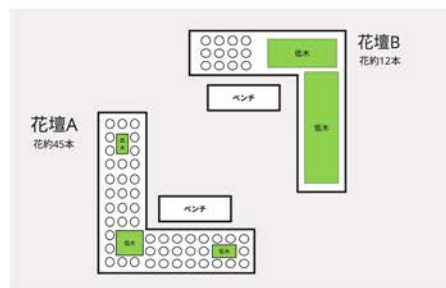
### コミュニティガーデニングとこのプログラムとは何ですか?

コミュニティ・ガーデニングとは、しばしば高齢者が集まって共同で植物を栽培することを指します。この活動には、運動量が増えること、新しいスキルを身につける機会があること、そしてコミュニティとの繋がりがや社会的結束力の向上などの多くの利点があります。

花が育った後、みんなで収穫に参加し、その後、一緒に包装や装飾を行います。最後に、隣人に贈ることができます。それはひとと繋がることができるし、社会性を叶えます。

### 土地をどこに使用したいの?

この花の園芸プログラムをほっこりからの人々、第二層生活支援協議体、および八千代市の阿蘇・睦地域包括支援センターに提案しました。彼らは、コミュニティを美しくすることができるほっこの前の花壇を使用することを提案しました



### このプログラムの可能な参加者は誰ですか?

「ほっこり」を訪れる高齢者だけでなく、ガーデニングに興味がある人なら誰でも参加できるよう、ご招待申し上げたいと思います。このプログラムには、1-3個の花を植えることができる20人の参加者が予想されています。

### この花畑の責任者は誰?

- ・ 米本団地自治会
- ・ ほっこり

### この花畑の費用は誰が負担しますか?

Figure A.3 Proposal for the UR 01



Figure A.4 Proposal for the UR 02

1. あなたの年齢に○をつけてください。

20代以下    30代    30代    40代

50代    60代    70代    80代以上

2. あなたの性別に○をつけてください。

男 ・ 女 ・ 回答したくない

3. 自分の身体能力をどのように評価しますか? 1~5

から○をつけてください。

1                    2                    3                    4                    5

最小限の身体活動

通常の身体活動

身体能力が非常に高い

4. ほっこりカフェにはどのくらいの頻度で行きますか? 1~5

から○をつけてください。

1                    2                    3                    4                    5

レア

時々

毎週

Figure B.1 Questionnaire to understand the Context of Residents 01

5. ほっこりカフェを訪れる理由は？ 回答が多い場合は複数選択可

- A. 友達に会う。
- B. コーヒーか紅茶をどうぞ。
- C. 新しい友達を作る。
- D. 新しい情報を取得します。
- E. 他の\_\_\_\_\_

6. 近所の人を知っていますか？

はい            いいえ

7. 隣人とのくらいの頻度で話をしますか？

1	2	3	4	5
レア		時々		しばしば

8. 他の人と一緒に仕事をするのは好きですか？

1	2	3	4	5
そうでもない		大丈夫です		好きです

Figure B.2 Questionnaire to understand the Context of Residents 02

9. 家に植物はありますか？

はい            いいえ

10. 家にはどんな植物がありますか？ 回答が多い場合は複数選択可

A. 家に植物を持っていません

B. 観葉植物

C. 花

D. 野菜や果物

E. 他の \_\_\_\_\_

11. 一番育てたい植物は？

A. 花

B. 観葉植物

C. 野菜

D. 果物

E. 他の \_\_\_\_\_

Figure B.3 Questionnaire to understand the Context of Residents 03

12. 他の人と一緒にガーデニングをしたいですか？
- |        |   |       |   |      |
|--------|---|-------|---|------|
| 1      | 2 | 3     | 4 | 5    |
| そうでもない |   | 大丈夫です |   | 好きです |
13. コミュニティガーデニングについて聞いたことがありますか？
- はい            いいえ
- ご支援ありがとうございました。

Figure B.4 Questionnaire to understand the Context of Residents 04

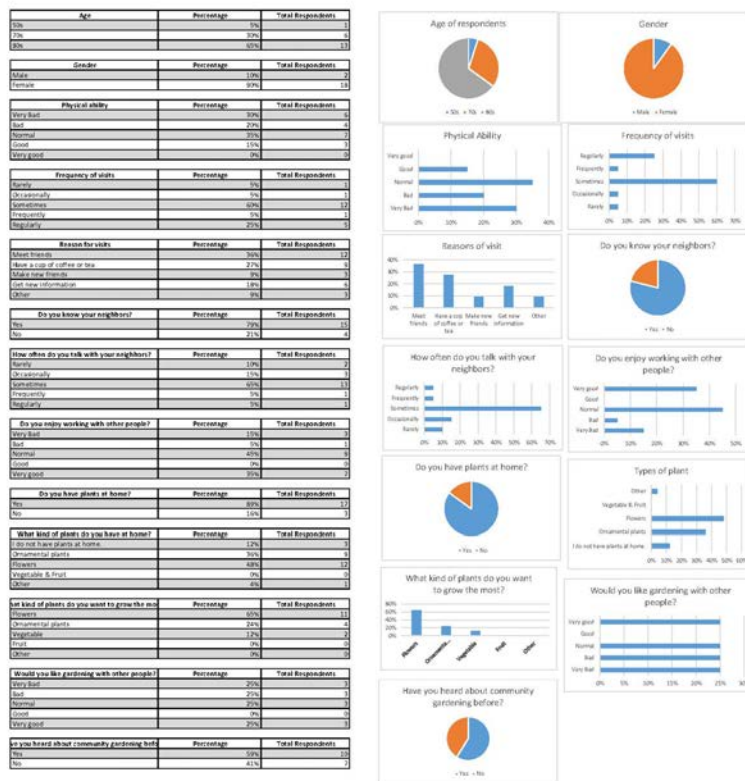


Figure B.5 Questionnaire Results

## Interview May 16th

### What kind of issues you have experienced during the development of this garden?

- Some flower only bloom in a certain time of year, what to plant next is always a common questions. Each flower have different period, how to manage it?
- They moved the flower seedling from many different area of Yonamoto.
- They are looking forward to what can be plant next season, each season can have different kind of flowers to be planted.
- How to invite more people to join the watering activity.
- They want to make more flower tags for the garden, so the new flowers
- They have keep to talk about flower.

### What kind of values can this garden provided to the residents since we planted those flowers last month?

- People like to gather in the garden
- Many people pass the garden would like to take a look of the gardening, some people keep looking at the flowers
- The benches around the garden is always full since we planted flowers
- In the morning, the elderly residents have a group exercise around the garden.
- Many people are interested in what kind of flowers have been plant here, they take a look of the flower name tags
- Some people want to know more about the flowers, like when is the season that flower will end.
- The older man who do not used to have a lot of interests in gardening and flowers started to show their interests in flowers, they like to take a look of the garden

### What kind of value can this garden provided to the ones who caring this garden?

- They said they feel happy, many people come over to see the garden
- They feel they feel healed while working in the garden, the connection with nature
- Some people live far from here, but they still want to visit the garden everyday, provide them a chance to walk more.They said they feel happy, many people come over to see the garden
- Because they have teams to rotated water flower, they feel their connection and relationship between with other team members become stronger

### Do you agree the planting recording makes caring flower easier? Do you believe the recording is a very important part for a community garden?

- The recordings are needed to run the garden.
- Sometimes they need to water in the morning, so it is difficult to make recording
- The place to write is a bit small, Yamaguchi-san wants to write a lot of memo
- They raised up questions like how can they know what they have down so far?
- Other people can check previous notes, and ask questions about it, this is

### Would you want to invite more people into Gardening? How can we invite them?

- They want to invite more people to join the gardening program

Figure C.1 Group Interview Questions and Answers



### Comments after the workshop

1. He said he weed might be grow up soon, we need people to take care of it.
2. She said when she come to work in Hokkori, she will take a look of the flowers, if the flowers need to water, she will water them, she want to take responsibility of the garden.
3. She said she feels healed when looking at the flowers, when she come to work in Hokkori, she will water the flower, clean the garden.
4. She said watering is a heavy duty, water is heavy, and it is difficult to carry around.
5. She discussed about how they can water the flowers, where to get the water from, how to water should be carried? The use of pipeline and get water from the men's toilet, she also worried about who pay water.
6. She said she looks forward to the growth of flowers, and work with everyone, who also want to maintain the garden.
7. She feels happy to plant the flowers with everyone and be able to talk with a lot of people, watering the flower is the most difficult task, maybe the flower need to be watered both in the morning and in the afternoon.
8. She said thank you everyone for coming today, and their help
9. She said when they are excusesing in the morning, they can water the flower and weeding. Using the plastic bottles to water the flower. it is not good to water them during the dat
10. She thinks she did not done a lot, she only water the flowers during the workshop, she want to say thank you to everyone who contributed during the workshop

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Figure C.2 Comments after the Workshop

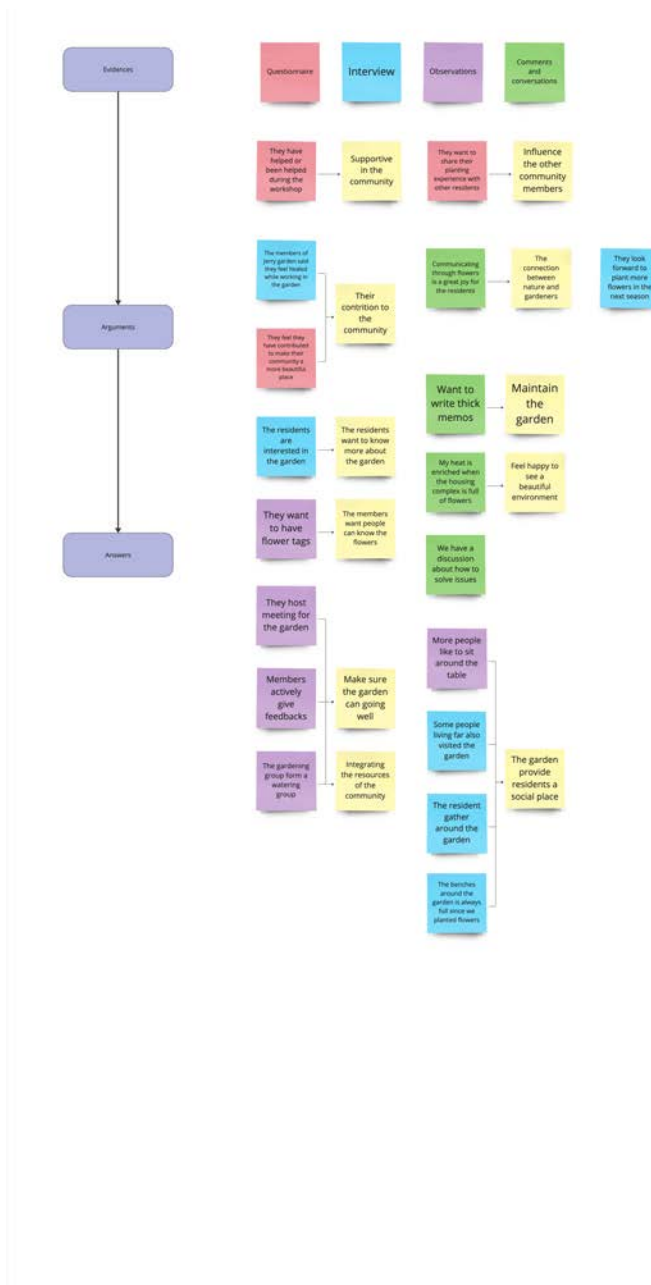


Figure C.3 Evidence

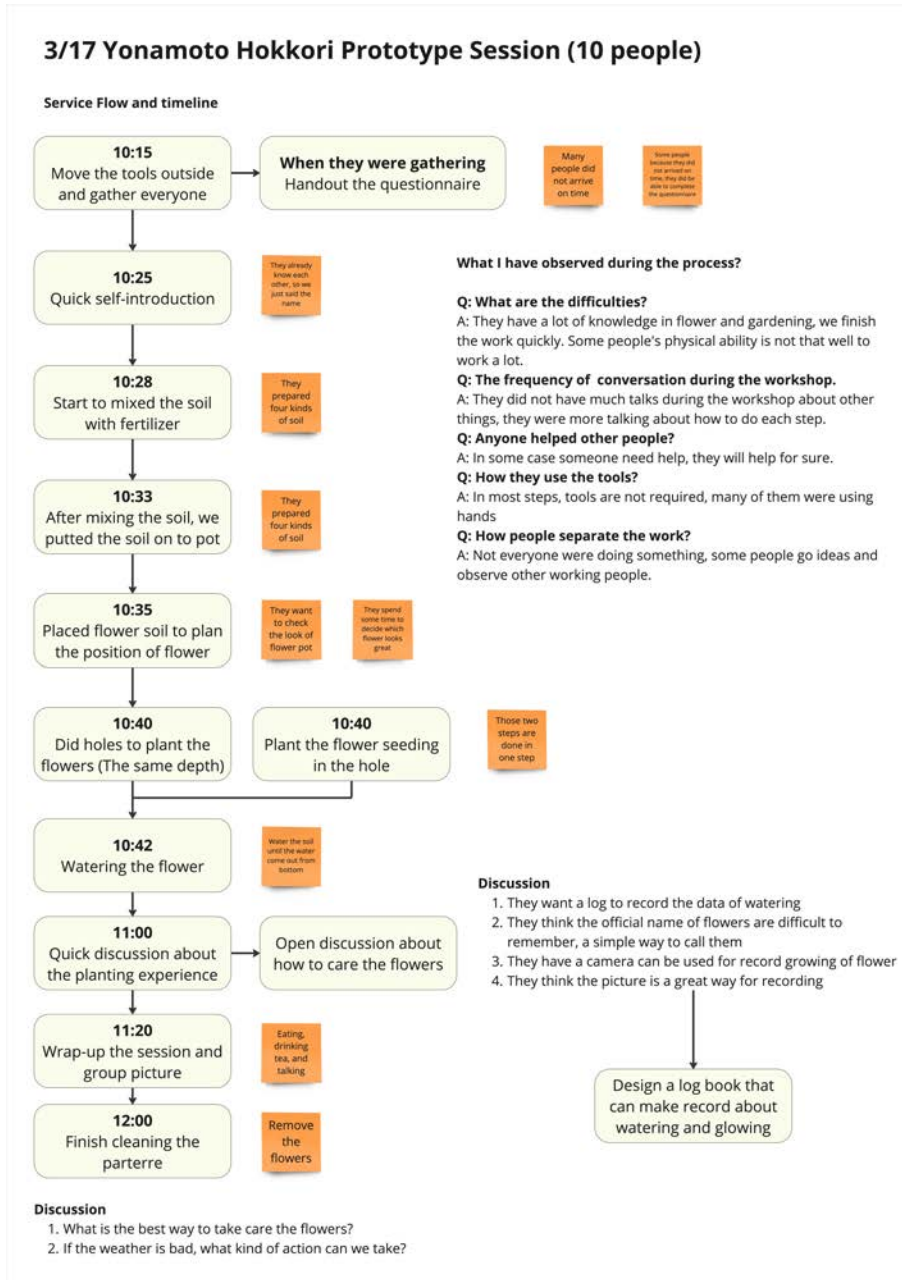


Figure D.1 Flow Chart of Pilot test

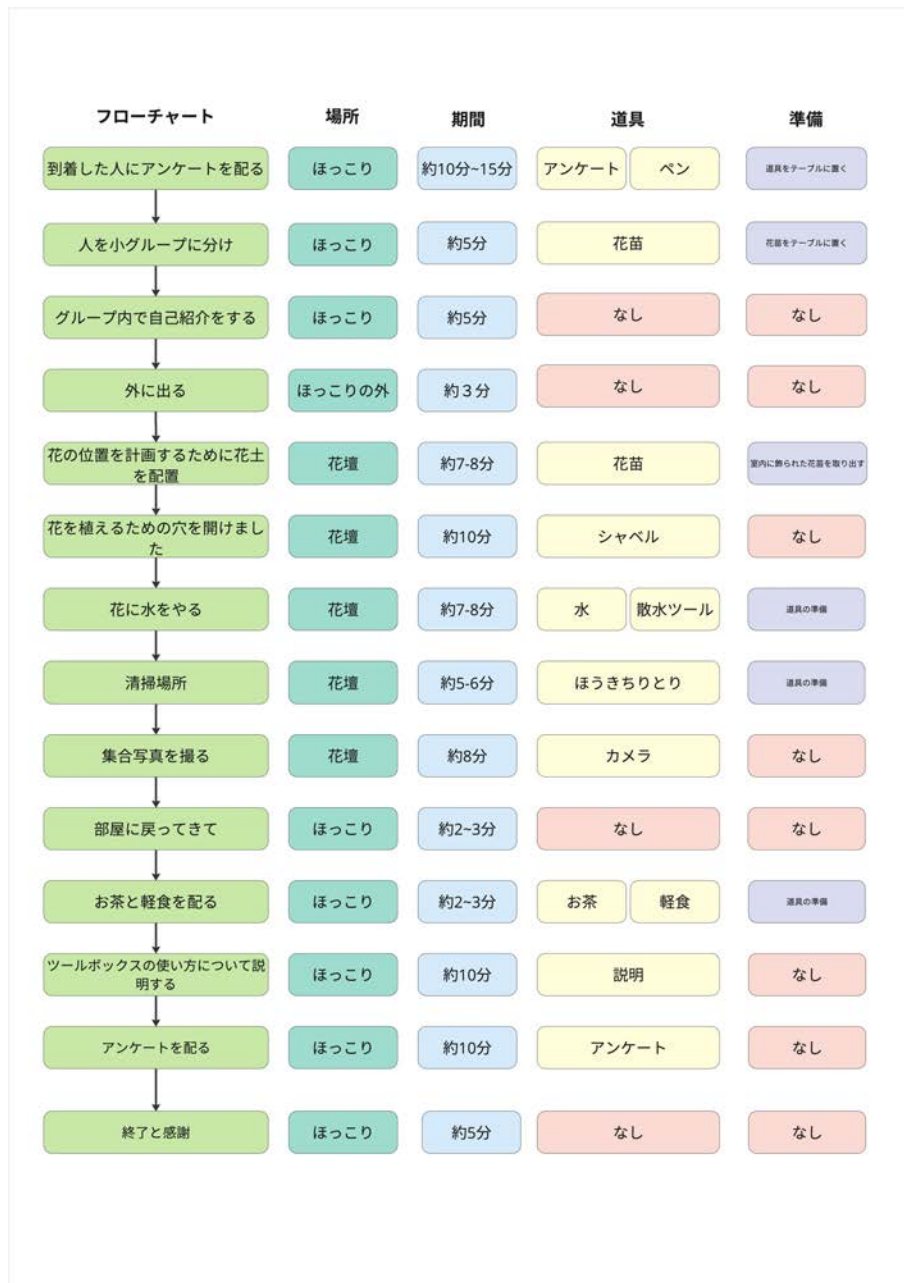


Figure D.2 Flow Chart of Flower Planting Workshop