

[Research note]

A study on the significance of community farms

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Abstract

Intro: Due to Japan's aging population, there is a lack of successors for farmers, and the declining agricultural population has led to an increase in abandoned farmland. Furthermore, the demand for nursing care is expected to increase because of the aging population. This study aims to contribute to the future development of community farms by examining their significance and challenges. **Methods:** The author searched the literature in Google Scholar with keywords such as community farms and citizen farms and found literature related to this research. The literature was organized and analyzed using a matrix method. **Results:** Although there is a possibility that participation may become more passive as the population ages, it is thought that exchange activities at community farms can contribute to mutual aid, health maintenance, communication, preventive care, empowerment, the joy of the harvest, and mental healing. **Conclusions:** Aging is a generational issue that can be addressed better through communication. Because community farms hold many meanings for not only older people but also young participants, it is essential to consider how the issues involving these farms can be complemented.

Keywords: community farms, contribution, challenges, literature review, aging population

I Introduction

Japan's Ministry of Agriculture, Forestry, and Fisheries promotes the development of community farms under the Act on Promotion of Development of Community Farms, in order to help ensure a healthy and comfortable life for people, to contribute to creating an excellent urban environment, and to promote rural areas (Ministry of Agriculture, Forestry and Fisheries, 2024a). Such citizen farms are called community farms, and it has been reported that 2,819 (2002) to 4,235 (2021) such locations have been established (Ministry of Agriculture, Forestry and Fisheries, 2024b). The main entities that open such facilities are local governments, agricultural cooperatives, farmers, companies, and NPOs, each with many farms. With a high ratio of local governments and brain cooperatives, this trend changed little until recently. However, the number of farmers, companies, NPOs, and others involved has now increased significantly (Ministry of Agriculture,

Forestry and Fisheries, 2024b). In addition, Japan's aging population (65 years and over) was 29.0% of the total population in 2023 (Ministry of Health, Labor and Welfare, 2024). Leisure time usually increases as people age, and many want to enjoy farming in their retirement. In addition, some young people seem newly interested in farming. While the aging rate will become 36.3% in 2045 (Ministry of Internal Affairs and Communications (2023), the number of people who want to farm increases with age. It is expected that the demand for community farms will continue to increase. In addition, due to Japan's aging population, there is a lack of successors for farmers, and the declining agricultural population has led to an increase in abandoned farmland. As the demand for nursing care is expected to increase owing to the aging population, it is thought that these two issues will be alleviated through the efforts of community farms.

This study contributes to the future development of community farms by examining their significance and their challenges, based on a review of the literature.

II Background

1. Current status of Japan's aging population

Japan's aging rate (the ratio of people aged 65 years and over to the total population) is increasing at an unprecedented rate. It has increased from 4.9% (1950) to 29.0% (2023) (Ministry of Health, Labor and Welfare, 2024a). Furthermore, the aging rate is predicted to reach 36.3% by 2045. The rate is predicted to rise in all prefectures, with the highest in Akita (38.1 %) and the lowest in Tokyo (22.9 %). Japan's aging population is predicted to spread nationwide, reaching 50.1% in the prefectures and exceeding 30% even in Tokyo (Cabinet Office, 2024b).

2. Current status and issues of abandoned land

According to the Ministry of Agriculture, Forestry, and Fisheries, abandoned cultivated land is cultivated land that has not been planted in the past year or more and has no plans to be cultivated again in the next few years (Ministry of Agriculture, Forestry and Fisheries, 2007). While the area of working farmland has been decreasing, the area of abandoned cultivated land increased to 1.8 times the area of Tokyo in 2005. The most common cause of this is a shortage of labor due to aging, followed by low productivity, underutilized farmland, and poor land conditions. The problem with the increase in abandoned cultivated land is the abandoned cultivated land becomes idle farmland (agricultural land that is not currently being used for cultivation purposes and is not expected to continue to be used for cultivation purposes), which may cause farming problems to the surrounding farmlands. Therefore, the Ministry of Agriculture, Forestry, and Fisheries established seven support measures in 2007 to support efforts to utilize available land as community farms (Ministry of Agriculture, Forestry and Fisheries, 2007).

3. Changes in the number of people certified as requiring nursing care support

It has been verified that the number of people certified as requiring nursing care (under the category “requiring support”) in the long-term care insurance system has increased by approximately three times from 2,181,621 in 2000, when the system was launched, to April 2016 (Cabinet Office, 2024a).

In 2006, the government started a system of projects emphasizing nursing care prevention, with primary prevention (social participation), secondary prevention (delaying frailty), and tertiary prevention (delaying severity). The government emphasizes the importance of connections in the community as a basis for delaying the progression of age-related medical issues. As the population ages, the number of people requiring care increases, and this number is expected to increase further as the aging rate changes. Therefore, fostering connections in the community is important in the effort to slow down this rate of increase.

4. Changes in nursing care staff

Although the number of registered care workers increased by 875,262 from 2000 to 2012; currently, only approximately half of the registered population is engaged in nursing care employment (Ministry of Health, Labour and Welfare, 2013); the shortage of caregivers is still an urgent issue, as 2.43 million people will be needed in 2025, and in 2040 this number will rise to 2.8 million people (Ministry of Health, Labour and Welfare, 2024b).

5. Community farm definition

Non-farmers use farmland to grow flowers and vegetables for various purposes, including recreation for office workers and city residents, adding to purpose in life for older people, and experiential learning for students and children. Of course, people enjoy eating the food they grow, as well.

III Research purpose

The significance of community farms will be considered based on an understanding of the current situation.

IV Method

1. Target literature

Google to understand the current situation in recent years and research papers from 2020 onwards. The author searched the literature in Google Scholar with keywords such as community farms and citizen farms, and found literature related to this research.

2. Analysis method

The literature was organized and analyzed using a matrix method.

3. Ethical considerations

Since this research is a literature study, it has not been reviewed by a research ethics committee. When references are included in the paper, they have been summarized.

V Results

1. Overview of target literature

Table 1 presents an overview of the six documents that were analyzed.

2. Community farm results

The results for community farms are described in the literature.

Literature 1

Farmers managed the community farms for an extended period, and the work involved various tasks, including complex aspects such as facility management and cleaning, and soft aspects such as offering advice and the promotion of exchange. In the separate garden type, events bring about interaction, and managers hold contests, work on village forest development, and offer classes such as soba-making. In the communal type, farming and harvesting brought about interactions between parents and their children, friends, and residents.

Literature 2

According to the results of the participant survey in this study, in the main category of “Support,” participants expressed support for the project, such as [Please do your best], [I want to think about a fun time together], and [I still feel like I'm finding my way, but that's a good thing].

Second, regarding “unusual experiences,” students said things like [Thank you for taking care of my child], [I was able to see the smile on my child's face that was different from the one I saw at home], and [Thank you for opening up the university to the public in this way].

Thirdly, as an “educational opportunity,” opinions included: [It's a good experience for the children], [It's something they don't usually get to experience], [I want to experience nature with my children], [I want to try other agricultural experiences, such as rice planting], and [I want my children to experience harvesting more].

The main category from university students was “Interacting with children” with the subcategory and [I enjoyed interacting with children] was the answer. The second subcategory “Awareness of farmers” included [I felt the value of vegetables] and [I have become conscious of the presence of farmers].

The third major subcategory “Rewarding” had the [I was happy to see the vegetables grow] response and the fourth “Encounters” subcategory had the answers [I had the opportunity to interact with people passing by the fields], [I'm glad I had the opportunity to interact with children] and [It was a valuable opportunity to interact with citizens].

The fifth subcategory, “friendliness,” had the responses [I thought the university was open to the local community] and [I thought it would be difficult to gather event participants, but there were residents around the university].

Literature 3

First, the user registration/login function enables display of the information used by each user. Second, farm and environmental information can be visualized by graphing the information collected regarding temperature, sunlight, soil moisture, and wind speed through the sensor network installed on the citizen farms. Third, by using the diary function, beginners in farming can quickly learn about the flow of farming and see tips by viewing diaries published by more experienced farmers. Fourth, the agricultural work history of the same field user is displayed in a graph with different colors for each type of work. Fifth, the agricultural work/growth status recording application “Agrikiwoku” allows the recording of farm work, growth status, and photos of cultivated crops, and visualizes all of the information.

Literature 4

By utilizing underused parks as farms and introducing working farms that neighborhood residents collectively visit regularly, parkland was utilized and contributed to community formation. Agricultural landscapes have an essential meaning in people's lives: they enrich life, bring commemorations and memories, connect us with folklore, and serve as a medium for communication.

Literature 5

Although a planter is a tiny space compared to a field, it allows you to touch the soil and enjoy the joy of harvesting vegetables, seeing beautiful blooming flowers, and being involved in the natural growth process. Gathering around planters serves as a place for residents to communicate with each other about processes and results.

Literature 6

Even though the participants had met for the first time, they naturally opened up to each other soon after the event began and were able to experience teaching and cooperation through weeding, gardening, and cooking. The participants felt that there was an exchange that transcended

differences between generations, countries, and languages. All participants commented that the events were fun and reported that they wanted to participate again. There were children's comments such as [Weeding is fun] and [It's refreshing].

In addition, students from elementary school to university, international students, and the local community are encouraged to accept diversity and take advantage of it as an opportunity to demonstrate their abilities. This study describes the significance of communication and connections with people in establishing local communities. It also mentions self-reliance, interest in plants, and reducing loneliness and isolation.

3. Community farm challenges

Literature 1

Managers in their 60s or older account for 77% of the total, and aging is an important issue. In addition, 37 people cited problems such as securing users (19), aging users (17), and lack of field management (12). Suburban gardens managed by farmers and others have had issues such as securing users, holding events, and being left with trash to clean up. A neighborhood association manages the farm project.

The burden was disproportionately placed on the more confident leaders. The vegetable harvest season and children's activity days did not match, and coordination was complex. The crops harvested were not considered evenly distributed.

Literature 2

The participants' opinions for the Dissatisfaction category included [A lot of traveling], [I don't have enough time], [Poor plant growth], [Poor preparation], and [It's too hot to do outdoor activities on a sunny day in summer].

The university students' opinions for the Imperfection category were as follows:

We didn't follow the manual for growing vegetables, but we all came together and did trial and error.

At first, we didn't know how to interact with the children, so we were worried.

It was necessary to create a system to make it easy for people to participate in the event repeatedly.

Literature 3

The study conducted demonstration experiments on current practices and verified the usefulness and effectiveness of each function.

Literature 4

Resident involvement is also required from the perspectives of aesthetics and crop contamination.

Literature 5

Neglecting to care for planters may cause problems for neighboring planters and trouble between residents.

Table 1: Existing studies on community farms

Authors	Summary
1 Osawa (2015)	Kobe City's seven community gardens can be divided into sectional and communal garden types. The sectional garden type effectively holds events and contests, but holding events causes a burden to suburban families. In the collaborative type, farming and harvesting have an exchange effect, and selling the jointly harvested vegetables energizes citizen groups. Still, it is mentioned that the burden is biased toward certain leaders as the neighborhood association manages them.
2 Sakurai (2016)	As a result of an exploratory examination of university students at a campus community farm, it was found that the vulnerability of university students, such as their immaturity and imperfections, has both positive and negative effects on their awareness of themselves and of other generations, and on their interactions as a whole.
3 Matsumoto et al. (2017)	The authors created an intelligent community farm system to use efficiently and quickly, improved the visualization of agricultural information and community functions, and made it possible to record farm work using an app.
4 Shinbo (2021)	It is mentioned that by utilizing underused parks as farms and introducing farms that are visited regularly, new uses for parkland are contribute to community formation.
5 Yonezawa (2022)	In Taipei, an urban area, people are growing vegetables in planters as a community farm on the third floor and roof of a 12-story public housing building that houses social welfare services. It is mentioned that the point of contact will reduce prejudice towards users, make it easier to choose services, and create a platform that is open to the community.
6 Saito et al. (2023)	As a result of a local community farm conducted by university club students, it was suggested that health, regional revitalization/mental healing, acceptance of diversity/strength, communication/connection with people, self-sufficiency/interest in plants, and reduction in isolation and loneliness were achieved. Therefore, it is mentioned that it can contribute to creating a city where SDG 11 (Sustainable Development Goal 11: Sustainable cities and communities) can be maintained.

Source: Prepared by the author

VI Consideration

As a result of analyzing the current achievements and challenges of community farms, the results of each community farm were obtained according to the reports of the six analyzed papers. There were two types of community farms: the communal garden type and the sectional garden type, of which three were of the communal type, two were of the sectional type, and one was both. In the communal gardening style, it is said that the ease of participation, discussion of how to grow plants, and the harvest itself can have a positive social effect, but it is thought that it is different from home gardening. However, the author noted a problem with the uneven burden placed on administrators.

Members of community farms believe that the presence of participants makes the harvest and events more fun because of the interaction, and being able to participate at any time gives them more freedom. But unpredictable levels of participation also burdens the management; therefore, a solution must be found. This is characteristic of episodic volunteering and can place a burden on the individual.

Smart community farms using ICT are being developed as part of research focusing on reducing this burden. These issues will need to be evaluated in the future, but groundbreaking research is underway to allow farmers to understand the current status of their farms without necessarily having to be there. However, it is possible that people become less willing to utilize ICT as they get older, while it is necessary to consider that the older people are, the more they tend to want a farm.

In the divided garden type, each person grows flowers and vegetables in their section, which leads to the enjoyment of growing and interacting with each other and encourages participation by making it one's responsibility for one's planters or section. Moreover, it is easy to set up and does not require large fields or farms, which is an advantage. For example, using a specific floor or rooftop area of a condominium that does not require movement promotes participation and enables interaction.

Population aging is an issue facing community farms. In reference 6, elementary and university students intentionally operate community farms with older people as part of intergenerational exchanges on campus or in the local area. The comments from participants that “our university is a university that is open to the community” indicate that the university is contributing to the community.

Although there is a possibility that participation may become more passive as the population ages, it is thought that exchange activities at community farms can bring mutual meaning. Through gardening work, the younger generation can learn from older people how to grow and cook the vegetables produced. Simultaneously, older people are encouraged to reminisce about their youth through interactions with university students and with their own grandchildren. The significance of community farms is that people become more conscious of maintaining their health as they get older, which also leads to a reduced need for nursing care, contributing to resolving the shortage of

caregivers.

In addition, university students at the community farm are conscious of empowerment, as are international students. Farming and its related social activities are educational experiences that build student independence, which society requires. I think this is a method that can nurture these elements.

Regarding the issue of attracting participants in urban areas, there is a waiting list to join regardless of whether it is a communal garden or a separate garden, so it is thought that there is a shortage of community farms in urban areas.

A further point of significance of a community farm is that it can serve as an evacuation center during a disaster. It can contribute to mutual aid, health maintenance, communication, preventive care, empowerment, the joy of the harvest, and mental healing.

VII Conclusion

By reviewing the literature on several community farms, we can understand the current situation and consider the significance and issues that provide a reference for future community farm management. Because community farms hold many meanings for people, including improved communication, it is essential to consider how the issues involving these farms can be better complemented. I believe that this research will contribute to future community farming practices. As for opening a community farm in the future, it is easier to open one in an urban area if it is set up in planters. Utilize public spaces to encourage participants. Aging is a generational issue that can be better managed through communication. I want to use these ideas as references to continue creating community farms where university students can be empowered.

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