

Article

Maintaining Agricultural Production by Building Local Distribution Systems in the Northern Area of Japan

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Abstract: In the field of vegetable farming, it has become a common approach for farmers to advance into the secondary and tertiary industries to increase their income, an initiative known as the sixth industrialization. Under these circumstances, a growing trend is to outsource a part of the sixth industrialization activities in order to improve consumer satisfaction, strengthen market competitiveness, and avoid investment risks. However, owing to a mismatch between farmers and processors, there are few cases that result in collaboration. Under such circumstances, a new distribution channel called local distribution systems have been born, and its importance is increasing in Japan. This paper demonstrates how a local distribution system for farmers living in rural areas could address this distortion. The concept of local distribution systems has been used since the 1990s, and yet, its significance and importance are still increasing in relevancy in today's Japanese agriculture. In this study, the subject is an intermediary (Company A) that originated from farmers, so it was able to understand the behavioral principles of farmers and to identify businesses that could not be covered by the management resources of farmers themselves. Through the entrustment of the business, company A could support the production and sales activities of the farmers. The following conclusions were drawn: (1) the company does not directly involve members in the decision-making of sales methods but instead provides a number of options for decision-making, and (2) the needs on the production side will match those on the consumer side and play the role of communication. By building such a collaboration system, the company succeeded in establishing a local distribution system. In the distribution of vegetables, which is characterized as perishable items, it is essential to pursue efficiency and rationality through a wholesale market system to distribute the products from producers to a large number of consumers. However, constraints in the wholes system limit the extent to which this local distribution functions. This paper demonstrates how a local distribution system for farmers living in rural areas could address this distortion. The concept of local distribution systems has been used since the 1990s, yet its significance and importance are still increasing in relevancy in today's Japanese agriculture.

Keywords: local food system; vegetable production; commitment; cooperative relationship



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1. Introduction

1.1. The State of Japanese Agricultural Production

Agriculture in Japan has been facing increasing difficulties due to demographic changes in the farmer population and also general changes in the agricultural system. First, the number of agricultural producers is declining. According to statistics reported by the Ministry of Agriculture, Forestry, and Fisheries of Japan (JMAFF), the percentage of farmers aged 65 years or older clearly shows a steadily increasing trend (Table 1); the Japanese farming population shrank by 51.9 percent from 5.4 million in 1985 to 2.6 million in 2010, and over this 25-year period, the number of “senior” farmers (65 years old or older) increased from 1.4 million to 1.6 million. This indicates a dire situation that the agricultural industry is facing compared with other industries. For example, the number of industrial workers has increased by 270,000 in the 10 years since 2012 due to the return

from overseas expansion following the depreciation of the yen. However, Japan, as a whole, has been coping with the declining birthrate and progressive population aging, leading to the prospect that food demand will shrink significantly in the future.

Table 1. Numbers of all farmers and older farmers aged ≥ 65 years.

Year	1990	1995	2000	2005	2010	2015	2020
All farmers (Unit: 1000)	4819	4140	3891	3353	2606	1757	1404
Older farmers aged ≥ 65 years (Unit: 1000)	1597	1800	2058	1951	1605	1140	979
(Unit: %)	33.1%	43.5%	52.9%	58.2%	61.6%	64.8%	69.7%

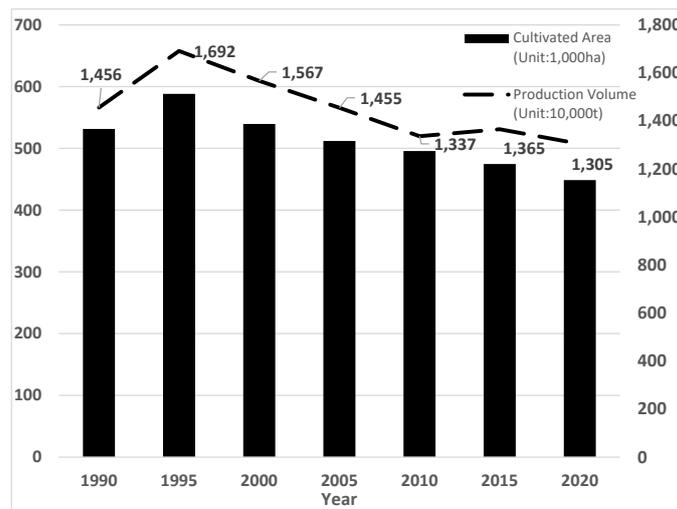
Source: JMAFF Statistics. Note: "Farmers" refers to individuals who are engaged mainly in farming.

Secondly, technological innovations such as storage and transportation systems have promoted the globalization of food markets. Along with this, the import of inexpensive agricultural products from overseas has grown, whereas the prices of domestic agricultural products have remained sluggish over the long term. Thirdly, a deterioration of the production environment has been observed. The influence of abnormal weather, such as torrential rainfall and long-term drought, as well as damage caused by wildlife including monkeys and wild boars, is expanding and having detrimental effects on producers.

1.2. The Current State of Vegetable Production in Japan

Regarding the production of vegetables, there has been a long-term declining trend in Japan, characterized by increased import volumes from overseas. The structure of vegetable production has, over the years, undergone some changes driven largely by several factors: (1) domestic consumption of vegetables is decreasing, especially among young people; (2) domestic productivity has declined with the aging of vegetable producers and a decrease in arable land area. In addition, the prices of imported products are lowered because of the appreciation of the yen against the dollar and transportation technology innovation such as aviation and maritime transport.

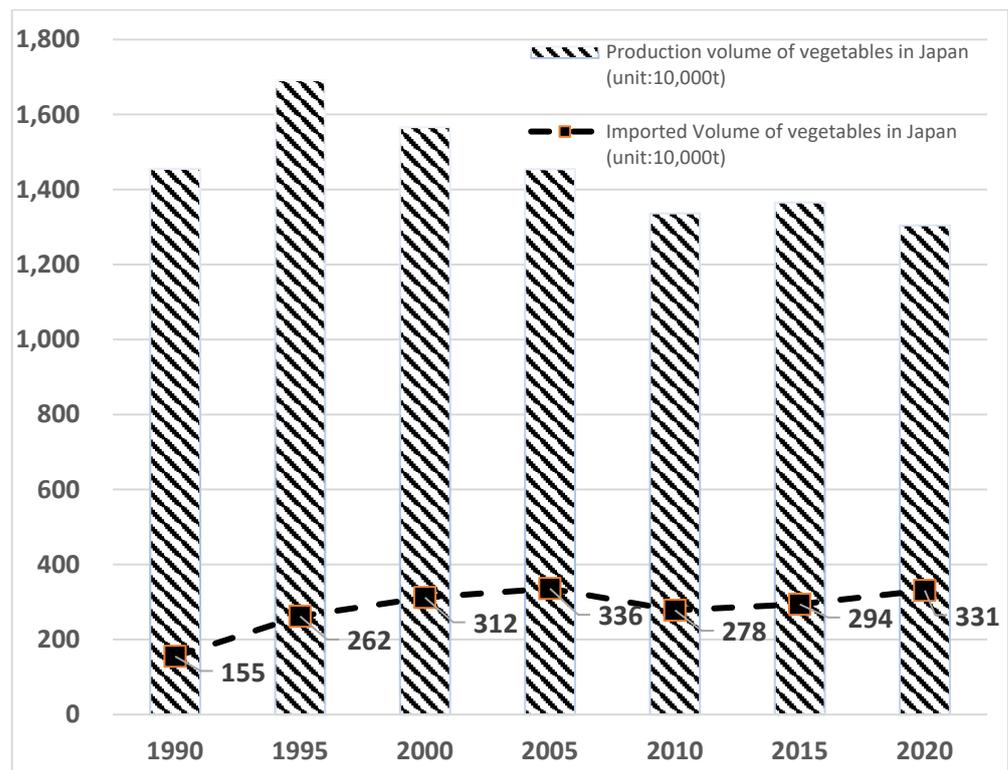
Japan has been witnessing a steady decline in the area under cultivation for vegetables. Figure 1 shows the trends in the cultivated area and the production volume of vegetables from 1990 to 2020. The cultivated area has shown a consistently decreasing trend since 1995 (approximately 500,000 ha) but has remained flat in recent years (approximately 430,000 ha in 2020). The production volume decreased from 14.5 million tons in 1990 to 13.0 million tons in 2020, showing a decrease of nearly 10% over the past 30 years.



Source: JMAFF Statistics.

Figure 1. Trends in cultivated area and production volume of vegetables in Japan.

Figure 2 shows the trends in the import volume of vegetables including processed goods. In 1980, the volume of vegetables imported to Japan from overseas was 280,000 tons; it increased to 1,550,000 tons in 1990, 2,620,000 tons in 1995, and 3,310,000 tons in 2020.



Source: Agriculture and Livestock Industries Corporation of Japan (JALIC) Statistics.

Figure 2. Trends in import volume of vegetables including processed goods.

China had been steadily expanding its vegetable export volume to Japan up until 2007 when a poisoning incident involving frozen dumplings occurred and slowed the rate of vegetable export from China. This incident led to distrust and doubt among Japanese consumers regarding the wholesomeness and safety of Chinese food products. The influence was apparent; the import volume of vegetables from China decreased by 40%

in February 2008 compared to 25% in the same period in the preceding year and by 25% in the entire year, 2008.

Figure 3 shows an outline of the main vegetable distribution routes. The thickest arrows represent the flow of distribution from vegetable producers to shipping associations (e.g., agricultural cooperatives) and wholesale markets, where trading is done. Currently, the flow through wholesale markets is on a long-term downward trend. Nonetheless, the flow through wholesale markets accounts for approximately 70% of all distributions, suggesting that the main distribution routes of vegetables still pass through wholesale markets. The reason why wholesale markets play such a prominent role in vegetable distribution is because they have a collection function (i.e., various products are gathered from all over the country and distributed to customers) as well as a settlement function for fee collection.

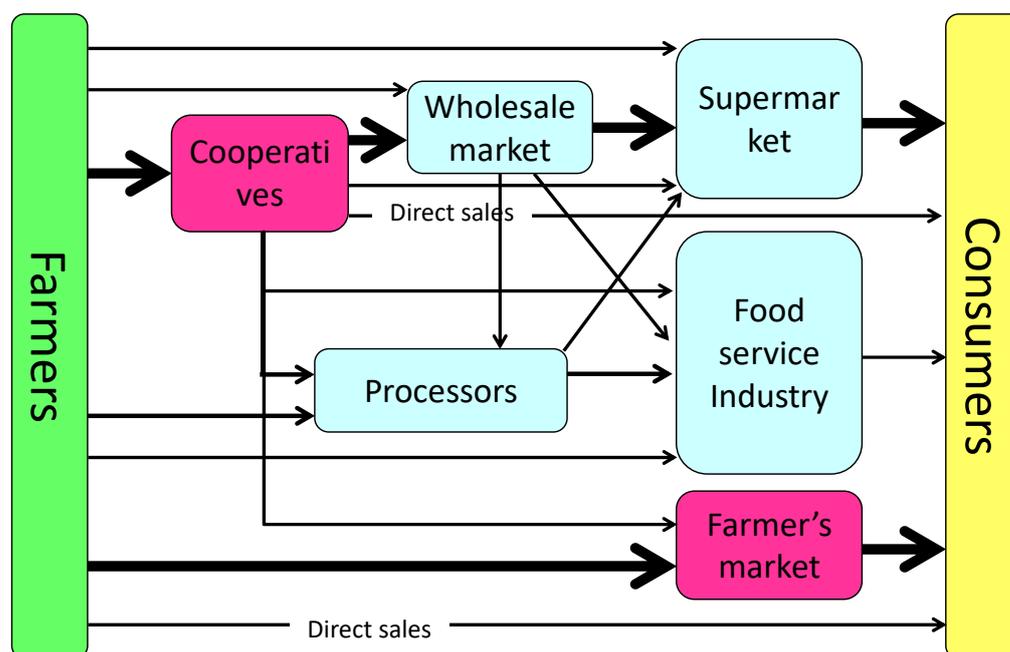


Figure 3. Main vegetable distribution routes in Japan. Source: JALIC Statistics.

The number of vegetable producers who do not go through wholesale mostly ship their products directly to processors or to end-users in the food service industry. In addition, a more recent trend is for vegetable producers to bring in and sell their products directly to direct sellers in farmers' markets.

There is also an indirect path via mediating agricultural cooperatives and processors. They seek producers who can supply the products as long as possible in order to ensure the annual supply of vegetables. Because an annual supply system is difficult to establish for vegetables, they adopt measures such as inter-production systems that take advantage of their own network. In addition, if there are missing products as a result of various conditions such as natural phenomena, they will depend on vegetables purchased from wholesale markets or imports from overseas.

Agriculture in the Tohoku region is centered on paddy field agriculture; arable crops such as wheat and soybean are now being promoted. In 2019, the area of paddy fields in the Tohoku region was approximately 600,000 ha, accounting for about a quarter of the total area of paddy fields in Japan. In addition, the Tohoku region has approximately 830,000 ha of arable land, of which approximately three-fourths are used as paddy fields. There were roughly 250,000 agricultural companies in 2015, showing a 21% decrease over a 5-year period from 2010. Rice was the main crop. It is known that the proportion of farmers who cultivate only rice is particularly high in the region (59% in the Tohoku region, 77% in

Akita Prefecture). There are approximately 10,000 companies with 10 ha of land or more (an increase of 18.9% over 5 years from 2010), accounting for roughly 5% of the total.

For vegetable producers contracting with processors and the food service industry, one of the benefits is that their cultivation is not restricted by weight-based transaction standards [1]. Rather, it is transformed into weight-oriented cultivation. Moreover, transaction prices are usually determined every half a year, so they are less susceptible to price fluctuations due to unseasonable weather conditions.

On the other hand, contract cultivation can be difficult in situations where the shortage of items is not allowed. Because the needs of customers must be met by ensuring the supply of products at a “fixed time, fixed amount, fixed price, and fixed quality,” the correspondence becomes important. The producer side is required to provide the ordered quantity at the price predetermined according to the quantity within the delivery date. However, agricultural production is unstable because it is affected by natural phenomena and climate change. Therefore, as a way to deal with the shortage of products, producers cultivate approximately 1.5 times more than the usual amount to avoid risks. Even so, if a shortage occurs, the producers must resort to purchasing the products at a wholesale market for shipment.

1.3. The Current State of Agricultural Production in the Northern Part of Japan

Located in the northeastern part of Japan, the Tohoku region consists of six prefectures: Aomori, Iwate, Miyagi, Akita, Yamagata, and Fukushima (Figure 4). These six prefectures take up roughly 30% of the country’s land area, and their combined population accounts for about 7% of the entire country’s population. In addition, many of these prefectures are located around the 40th parallel north, have an annual average temperature approximately five degrees lower than that in Tokyo, and have characteristically heavy snowfall in winter.



Figure 4. Location of the Tohoku region in Japan.

In the Tohoku region, the past 10 years has seen a growing gap between the east and west sides. The eastern part of Tohoku, which was severely damaged by the 2011 Great East Japan Earthquake and subsequent tsunami and nuclear disaster, has undergone a major transformation in the reconstruction process. Specifically, agricultural companies with more than 100 ha of paddy farming fields have emerged; these companies have achieved stable management by introducing various innovative advanced technologies and expanded their scale of operation.

On the other hand, having suffered little damage from the disaster, the agricultural structure in the western region has remained highly dependent on rice cultivation, of which the growing season is from spring to autumn. Despite attempts to move away from rice-dependent agriculture since the 1980s, farmers in the area have not been able to transition away from the monoculture/part-time rice farming structure [2].

As the demand for rice in Japan continues to decline, the impact of falling prices has become a major opportunity to break away from rice-dependent agriculture. Demand for rice in Japan in 2019/20 was 7.14 million tons; five years ago, in 2015/16, it was 7.66 million tons. The rate of decline was 100,000 tons per year, showing an increase from 80,000 tons per year in the first half of the 2010s.

A decline in rice prices directly leads to a decline in income for those with a rice cultivation-dependent production structure. The selling price of rice in Japan has been on a long-term downward trend, averaging 17,171 yen per 60 kg in 2001, 15,215 yen in 2011, and 14,963 yen in 2021. The rate of decline in rice prices has slowed in recent years, but there is no sign of a turnaround.

This decline in rice demand and price, however, is a trend that has been observed in Japan since the 1980s. In particular, the liberalization of rice distribution in the latter half of the 1980s has led to a significant decline in agricultural income due to declined rice prices. Yet, opportunities for side jobs are unstable, and wage levels remain low compared with other regions. Moreover, in recent years, significant reductions in public work projects continue, decreasing further the opportunities for farmers to work outside the agricultural sector.

In the western part of the Tohoku region, where agriculture has been maintained by monoculture (rice) farming, not only the number of farmers but also the population in the region continues to decrease. This has raised concerns about the increasing burden of maintaining and managing the infrastructure in daily life and community functions. In addition, there also arise problems related to the fragility of conservation and management of local resources such as farm roads and drainage channels, which have traditionally been maintained through unpaid labor mainly provided by farmers. A decrease in the number of farmers means a decrease in the number of people responsible for these maintenance activities, and reduced local resources related to this particular agricultural production will lead to a further decline in agricultural income, resulting in a negative spiral.

The predominance of rice cultivation in agriculture has continued to decline. The food law enacted in 1995 and the revision of the law in 2004 further liberalized the distribution of rice, while demand for rice declined at a pace of more than 80,000 tons per year; rice prices continued to follow the downward trend in tandem with this. Under such circumstances, some farmers have begun to grow away from rice farming and start working on vegetable production. The farmers that have been linked to agricultural cooperatives are trying to shift their management styles towards local direct sales via farmers' markets, and the direct sales are equipped with functions to support this conversion.

The guidance and technical development led by the government and JA on the production, shipment, and coordination of new core vegetables in the region are often targeted at large-scale, full-time farmers and agricultural companies that are premised on mechanization. Therefore, vegetable producers such as female and elderly farmers who grow a variety of vegetables in small amounts cannot enter this business model and are thus required to explore their own sales channel. There are cases in which small-lot, multi-item vegetable farmers build new distribution channels in order to sell agricultural products to

local consumers, going beyond the framework of conventional local distribution systems such as farmers' markets.

2. Theoretical Framework and Research Question

2.1. Research Area

Many researchers have focused on the rice cultivation-dependent agricultural structure since the 1970s. In particular, the promotion of vegetable production as a response to the rice acreage reduction policy introduced in the 1970s has attracted much attention. Later, with the establishment of agricultural machinery cooperatives in the Tohoku region, the introduction of vegetable farming was promoted as a measure to utilize the surplus labor force resulting from the widespread use of machinery. However, until 2000, rice prices remained relatively high, and due to constraints, such as being far away from high consumption areas (e.g., Tokyo, Osaka), the promotion of vegetable production did not appear to be effective.

Since 2000, with a continuous downward trend in rice prices, the following changes in the distribution environment surrounding vegetables have been observed.

(1) The sophistication of logistics technology and progress in freshness preservation technology. It has become possible to produce vegetables even in areas far from Tokyo and Osaka, for example, in the Kyushu and Hokkaido regions.

(2) Farmers' markets have become an important sales channel for vegetables. Agricultural direct sales stores, where producers themselves determine prices and sell their products, have undergone a unique evolution in Japan.

(3) The predominance of rice cultivation in agriculture has continued to decline. The food law enacted in 1995 and the revision of the law in 2004 further liberalized the distribution of rice, while demand for rice declined at a pace of more than 80,000 tons per year; rice prices continued to follow the downward trend in tandem with this.

2.2. Research Question

The market distribution rate of domestic vegetables remains over 70% (in 2018: 79.2%), and wholesale markets are still the main distribution channel today, although the distribution rate is decreasing year by year. It has long been pointed out that the price-setting function of wholesale markets has weakened.

Against this backdrop, the following two points have become clear. First, agricultural companies need to make management decisions such as "where and how to sell agricultural products"; mass retailers including supermarkets want to procure domestic raw materials and ingredients in a stable manner [3]. Secondly, the presence of local distribution systems, such as farmers' markets, has become a key component among many options for selling agricultural products [4]. In particular, traditional agricultural companies that have been linked to agricultural cooperatives are trying to shift their management styles towards local direct sales via farmers' markets, and the direct sales are equipped with functions to support this conversion.

In addition, female and elderly farmers who cultivate a wide variety of products in small quantities need a sales channel in place of the market distribution channel that has stringent standards and requires a stable supply. Under such circumstances, new sales channels are being constructed through which local farmers can sell agricultural products to local consumers. In the current distribution system, agricultural products produced in rural areas are collected in urban areas, returned to the rural areas again, and sold at local retail stores. However, with the aim of maintaining agriculture in local areas, some local farmers managed to build new collection systems and sales channels to bring back various profits that flow out to urban areas.

In this paper, "local distribution areas" refer to regions where agricultural products cultivated by farmers in the fields can be delivered to consumers within one day through distribution channels, which are defined as "local distribution systems." These systems

may be built by farmers themselves to help maintain small-scale production and part-time farmers who cultivate a wide variety of vegetables in small quantities.

In response to this situation, there are cases where farmers in the Tohoku region themselves construct new local distribution systems, return various profits that flow out to Tokyo, and aim to maintain regional agriculture. Our research question is to clarify the role of the local distribution system built by farmers and contributing to the maintenance of production by small, elderly, and part-time farmers who produce a large variety of vegetables in small quantities, as well as the securing of sales channels for large-scale full-time farmers.

2.3. Research Methods

In the local distribution system, the main path comprises sales at farmers' markets and shop-in-shop sales at local supermarkets. The system promotes new value, such as local production for local consumption, and facilitates face-to-face relationships among farmers. On the other hand, several problems inherent to the local distribution system have been pointed out. For example, farmers may cancel their contracts with local mass retailers if wholesale market prices rise even for a short period of time, and mass retailers cannot conclude contracts because they cannot convey the merits of contracts to the farmers [5]. In addition, farmers are required to plant in amounts that exceed the amount specified in the contract in order to avoid production fluctuation risk.

To address these issues, the operators of farmers' markets and shop-in-shops at local supermarkets should play a role in building and maintaining continuous relationships with farmers, mass retailers (e.g., supermarkets), and consumers [6]. The continuation of relationships and actions between organizations (including individuals) is explained by the concept of "commitment" in organizational theory, especially micro-organization theory.

The data used for analysis were obtained from multiple interview surveys conducted with Mr. and Mrs. B from July 2021 to November 2022. In particular, through interview surveys, how they gain the trust of members and other questions were analyzed through qualitative data using micro-organization theory. There are almost no farmers working on such local distribution, not only in the Tohoku region but also in Japan as a whole. Therefore, this research is not a comparative study between cases but an analysis of rare cases and an extraction of necessary elements for future benchmarks.

In micro-organization theory, "commitment" is interpreted as "being continuously involved in responsible events and things" [7]. Elucidating the process by which members of an organization and stakeholders "understand" the meaning of events and continue to do so is the most important aspect according to this theory.

This "commitment" process can be divided into three stages. The first stage is "sensing." When a new environmental change is brought about by an individual or an organization's actions, we "sense" the change and move on to the second stage of "interpretation," that is, we "interpret" the change on the basis of objective information and accurate analysis. The method differs depending on the individual or organization, and, therefore, it is extremely important to align interpretations with farmers. In other words, an organization is required to select a specific interpretation from a variety of interpretations. By doing so, the third stage, "action," will be continuously performed.

In Akita Prefecture, farmer's income from side jobs was low because of the unstable nature of these jobs, whereas income from agriculture, especially rice farming, was high. Projects such as Akita Prefecture's vegetable mega-complex development project, which aims to develop highly market-competitive vegetable production areas with a market distribution system, have been promoted under the leadership of the government, agricultural cooperatives of Japan (JA), and commerce associations.

However, the guidance and technical development led by the government and JA on the production, shipment, and coordination of new core vegetables in the region are often targeted at large-scale, full-time farmers and agricultural companies that are premised on mechanization. Therefore, vegetable producers such as female and elderly farmers who

grow a variety of vegetables in small amounts cannot enter this business model and are thus required to explore their own sales channel. There are cases in which small-lot, multi-item vegetable farmers build new distribution channels in order to sell agricultural products to local consumers, going beyond the framework of conventional local distribution systems such as farmers' markets.

In Section 3, we organize the relationships between vegetable farmers and a company that has been working to build new distribution channels in Akita Prefecture. Based on the commitment theory, our analysis will focus on how the stakeholders' understanding has been enhanced and the continuity of the relationships has been achieved.

2.4. Emerging Innovative Companies in Agriculture in Japan

Recently in Japan, farming companies demonstrating a dramatic breakthrough in their development have emerged. Such companies often extend their business activities beyond farming, engaging in other entrepreneurial endeavors including the distribution (i.e., collecting and marketing) of agricultural products, transportation services, food processing, and mail-order and internet sales.

Until recently, research on farm business development in Japan has tended to center on the managerial ability of farm executives (owners or managers). While entrepreneurship with innovation as its central element has been considered the primary engine of economic development, it has distinct meanings for a diverse range of researchers, the establishment of a market, and the creation and management of a business.

In Europe, for instance, researchers have articulated agricultural entrepreneurship with competence of farm managers, organizational capability, policy measures and institutional frameworks. In Japan, where private financing, consulting services, and human resource providers are far less developed than most European countries, farm managers face many challenges and understand the need to figure out alternatives, such as networking with partners. Despite the dearth in research on entrepreneurship, researchers on farm management should delve into agricultural entrepreneurship to better support rising entrepreneurial farm companies.

2.5. *Rokuji-sangyo-ka* and Japan's Agricultural Cooperatives (JA)

Rokuji-sangyo-ka means, if translated literally, sixth or hexadic industry/industrialization. The sixth industry is all industries combined or multiplied, i.e., 1 (primary) + 2 (secondary) + 3 (tertiary) = 6, or $1 \times 2 \times 3 = 6$.

Let us first introduce the backdrop against which *Rokuji-sangyo-ka* has emerged in Japan's farming and food sectors. One of many dire problems facing Japanese farming and rural communities is the decline in income and in the rural economy. As consumer demands have diversified, retail sectors are eager to respond by developing new products. This results in increased influence and control over the upstream side of value change, or the primary sector, resulting in lowered prices of products. While the downstream sector may gain more added value, the most critical problem is that primary sector producers, such as farmers, tend to be left out from such benefits. Global competition can exaggerate the pressure to lower product prices. Aging and depopulation of rural communities also contribute to the loss of economic vitality.

In response to this situation, the *Rokuji-sangyo-ka* movement intends to help primary sector producers, i.e., farmers, increase their income by integrating pluri-sectorial business activities. By doing so, farmers are expected to be able to market their products, control prices, gain profits from added value that would otherwise belong to downstream players, increase their income, and contribute to reviving the local economy. *Rokuji-sangyo-ka* business can be instigated in different ways, with one of the most straightforward examples being the initiative of farmers who wish to do processing of their products on their own and market and sell them directly to consumers. With this business model, the farmers could gain more from added value. Another pattern is to start a joint venture with players of other sectors such as processing and retail.

In our previous study, we identified diverse patterns of *Rokuji-sangyo-ka* business development. The first one, which is an ideal and typical pattern of farmer initiatives, demonstrates that *Rokuji-sangyo-ka* can be done by outsourcing processing. The second pattern is a more comprehensive pattern in which farmers incorporate processing and direct sales to retailers and consumers into their business practices. As their businesses grow and sales increase, oftentimes more ingredients are needed. Thus, some farmers doing processing and marketing would build a network of collaborating growers who supply ingredients. Finally, the third pattern demonstrates a more complex business endeavor that incorporates more service-sector oriented businesses, e.g., a vineyard with a restaurant, café, or wedding services.

In the agri-food value chain in Japan, JA Group has been playing vital roles in connecting products of predominantly small-scale farmers to downstream sectors; however, JA Group is now faced with the same problem of lowered product prices.

3. Results

Company A, located in Akita Prefecture, cultivates rice and vegetables, which are sold to local supermarkets along with those cultivated by neighboring farmers. This company has five divisions that handle (1) rice production, (2) vegetable production, (3) vegetable processing, (4) vegetable and processed food sales, and (5) consumer cooking experiences.

Based on the concept “a new farmer group that can survive in the 21st century,” Company A uses a small distribution system, conducting everything from production to sales and consumption within the region and connecting farmers, supermarkets, and consumers to improve the agricultural income of its members. The company also strives to contribute to the promotion and revitalization of agriculture in the local area and the securing and training of farmers.

3.1. Overview of Company A

In this section, an overview of Company A is provided, which engages in diversified management of paddy rice, vegetables, pickles processing, and sales through husband-and-wife cooperation in response to the needs of local residents in a single rice-cropping area. In particular, how to build a local distribution system is provided for agricultural products and processed products operated shop-in-shop in partnership with a local supermarket.

In 1986, Mr. and Mrs. B, who established Company A, took over the management. At the time, the rice sales environment was deteriorating, and there were many inquiries from neighboring residents about the sale of their paddy fields. In addition, vegetables such as green soybeans, pokeweed, and pumpkin were being introduced as crops for rotation to improve yields and reduce costs. After 1986, they started to cultivate new vegetables (spinach, Japanese mustard spinach, other leafy vegetables, tomatoes, and melons) to strengthen the company’s vegetable division. In 1997, Mrs. B participated in an overseas training program for female agricultural creators in Germany, where she learned about green tourism initiatives and efforts to set up a direct sales store to carry out sales activities. This training gave her a hint, and after completing the training, she built the foundation for her current sales method, starting with home delivery and direct sales and then moving on to order sales from nearby hotels.

In 1998, she established an organization for selling vegetables with six female farmers in the area. Until then, she had been selling vegetables directly in a “hand selling” style using light trucks in an attempt to improve and establish door-to-door and home delivery sales. This also involved directly delivering vegetables every Wednesday to elderly people’s homes. In order to supply customers with a sufficient assortment of products, she adjusted the types and quantities of vegetables to be delivered each time and reflected those in their planting plans. As a result, the sales volume increased year after year.

In 2005, when opening a local supermarket of vegetables and fruits for local consumers, she proposed and adopted the shop-in-shop method (Figure 5). She initiated the method with 12 female members. In addition to expanding the variety of fresh vegetables used for

pickles (10 types of pickles including light pickles and smoked pickles) and boxed lunches, in 2008, she signed a partnership agreement with seven direct marketing companies in the prefecture, aiming to expand the membership inside and outside the region and handling volume of the stores. The number of stores in the prefecture has increased to 16 in 2022.



Figure 5. How vegetables and fruits are sold in a supermarket run by Company A.

With increases in the handling volume and number of transactions, opportunities for negotiations with supermarkets also increased. Thus, in 2013, the company was converted into a joint-stock company, which involved a rebuilding of its business management system. In 2017, a food and agriculture educational facility was established, its theme being to create a space where people of all ages can enjoy cooking together while being surrounded by nature in the mountainous areas.

3.2. Establishment of Local Distribution Systems by Building Cooperative Relationships

Company A expanded the direct sales networks and home delivery of fruits and vegetables. It also developed a sales network made up of local female farmers, increasing its name recognition mainly among elderly people and consumers. Taking advantage of the local supermarket it had opened, the company started introducing shop-in-shops. Today, it operates 21 shop-in-shops not only in the local area but also in neighboring municipalities, and these shops have been highly evaluated by consumers. The number of members also increased to 185 in 2022 from 12 at the time of its launch.

The sales system of Company A is characterized by the following three points.

1. Development of various shop-in-shop methods. The generally used shop-in-shop method by Company A is to create a purchase plan on the basis of the annual shipping plan submitted by the members (farmers) and matching it with the needs of the store.

Following this, the company delivers vegetables to the store, displays them, and collects consignment fees from the members. Company A customizes shipping, display, and sales methods for each farmer. Specifically, farmers can choose between container shipment and bag-packed shipment methods and select stores to which they sell their products. There are also traditional shop-in-shop consignment sales, and Company A purchases and sells the entire volume to supermarkets. There are many different ways of doing business with farmers.

2. Meticulous sales management and systems to address shortages. Company A has adopted a system in which items that are shipped in large quantities from farmers are purchased and delivered to all stores. In addition, it has devised ways to minimize unsold items, such as transferring products between supermarkets while monitoring sales. Moreover, by analyzing POS data, advice on shipping volumes is provided to each member to prevent food loss and reduce the shortage of hot-selling products. Furthermore, by ensuring the traceability of agricultural products such as the use of fertilizers and pesticides, the cropping situation can be grasped in a centralized manner.
3. Handling of the processed food sector, such as pickles and boxed lunches. Traditional in-store shops have strengths in small-lot, multi-item sales. Company A expanded its pickle and boxed lunch processing divisions. The processing business not only adds value to non-standard products but also allows the company to accurately grasp the needs of consumers who prefer traditional pickles.

By deploying this sales system, the members' sales channels expanded, and their incomes increased. This, in turn, helped the company secure more farmers and diversify production items.

Once a month, Company A holds regular meetings with all members at four venues in the prefecture. During the regular meetings, the secretariat communicates sales data as well as complaints and requests from supermarkets to improve members' sales motivation and foster their sense of responsibility and provides feedback on production and sales. In addition, seminars are held on the latest production/sales techniques and labeling methods to improve cultivation techniques and knowledge. Moreover, all employees conduct voluntary inspections of hygiene management and labeling of processed foods twice a year.

In collaboration with local supermarkets, the company composts food waste and provides the composted materials to create soil in farm fields to support the ecosystem. This initiative has been certified by the government on the basis of the Law Concerning the Promotion of Food Resources, and nine farmers are involved in this initiative.

Finally, in collaboration with consumers, the company actively seeks to utilize local resources, such as by holding tasting events every year. The company has established a food and agriculture education facility in Akita City, where food and agriculture education is offered (e.g., hands-on sausage and dry-cured ham making classes in the winter). In addition to supplying ingredients for school lunches and traditional rice cakes, it regularly holds farm workshops, handmade cooking classes, and sales experience classes for students.

The company provides a place for elderly people and women to play an active role in the community. For example, the above-mentioned food education activities are led by female members who have skills to make traditional local sweets. Such active efforts to create a place for food education is highly evaluated by educators.

4. Discussion

In this section, we analyze the relationships of Company A with farmers in light of the commitment theory. As described in the previous section, the basis of a wide variety of business relationships between Company A and farmers is the regular monthly meetings attended by all members. New information, such as sales data, and complaints and requests from supermarkets are shared during these meetings; this generates the driving force for changes in the production and sales environments.

Each farmer “senses” new changes in the information provided on a monthly basis. They move onto the process of “interpretation,” for which an important role is to exchange the information between members and to establish a forum for interaction among farmers of different generations. In addition to the regular meetings, Company A holds events that combine seasonal events, etc., to provide opportunities for the members to exchange information and interact across generations. These events also provide opportunities for veteran farmers to convey the joy and charm of farming to young farmers, and for male and female members of all ages to interact with each other.

Mr. B, the owner of the company, said, “Many farmers are sometimes selfish. We are creating various methods and mechanisms with the motto of being flexible and natural every day.” Occasionally, excessive demands are made by consumers and supermarkets, but in such cases, Mr. and Mrs. B stand at the supermarket and directly appeal to consumers and supermarket staff. They accept and respond to requests from supermarkets and consumers, adhering to the management philosophy, “a new farmer group that can survive in the 21st century.” Moreover, they provide sales destinations that “farmers can choose for themselves.” These activities lead to compatible contributions to the “understanding” of farmers.

The customization of a wide variety of sales methods that cater to individual farmers functions to promote the “understanding” of farmers. For large-scale farmers who produce a limited variety of vegetables in large quantities, Company A purchases products from the collection center and delivers them to each store. For farmers who produce multiple items, the company offers an option to adopt the traditional shop-in-shop style sales method. New farmers who wish to expand their sales channels will be provided an opportunity to negotiate directly with supermarket buyers to select a sales method. These are just a few examples, and each farmer can take a different sales approach. This gives “satisfaction” to each farmer and leads to “action,” the third process of continuous trading.

The local distribution system centered on farmers’ markets is generally faced with the problem of a chronic shortage of sales volume and product lineup due to the aging of the population and the lack of new members. Owing to the efforts of Company A to build a robust organizational structure, the number of young members, both male and female, is increasing, even though they do not specifically engage in recruitment. This initiative by Company A serves as a signpost for intermediaries responsible for agricultural product sales in the system regarding the roles they should play, as agricultural production is carried out by various companies that work hard to maintain agricultural productivity in local areas in Japan.

5. Conclusions

In the field of vegetable farming, it has become a common approach for farmers to advance into the secondary and tertiary industries to increase their income, an initiative known as the sixth industrialization. Under these circumstances, a growing trend is to outsource a part of sixth industrialization activities in order to improve consumer satisfaction, strengthen market competitiveness, and avoid investment risks. However, owing to a mismatch between farmers and processors, there are a few cases that end up in collaboration. In this study, it is an intermediary (Company A) that originated from farmers, so it was able to quickly identify businesses that could not be covered by the management resources of farmers themselves, and through the entrustment of the business, company A could support the production and sales activities of the farmers. The following conclusions were drawn: (1) the company does not directly involve members in the decision-making of sales methods but instead provides a number of options for decision-making, and (2) the needs on the production side well match those on the consumer side and play a role in communication.

By building such a collaboration system, the company succeeded in establishing a local distribution system. In the distribution of vegetables, which are characterized as perishable items, it is essential to pursue efficiency and rationality through a wholesale market system

to distribute the products from producers to a large number of consumers. However, the limits of the wholesale market system are actually occurring. The case presented in this paper demonstrates how a local distribution system for farmers living in rural areas could address this distortion. The concept of local distribution systems has been used since the 1990s, and yet, its significance and importance are still increasing in relevancy in today's Japanese agriculture.

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