

Roles and Effectiveness of Agricultural Cooperatives in Japan, with Special Emphasis on Organized Farm Activities

Anura R. Rajaratne

Graduate School of Environmental Sciences, University of Tsukuba,
Tsukuba, Ibaraki 305–8572, Japan

Japanese agriculture cooperatives (JACs) make up a huge organizational network in Japan. The network is not limited to agricultural activities, but is also involved in social, cultural, and industrial sectors. Through encouraging member participation, JACs have done an excellent job in responding to their members' needs. Community mobilization, collective efforts, and member participation are crucial factors in this. In comparison, the coordination mechanisms of farmers' organizations in Sri Lanka are far less powerful. As a result, Sri Lanka lacks high quality marketing facilities and practices, and the agricultural sector is not well developed.

In this study, I conducted a literature review of JACs, then analyzed data collected by the University of Tsukuba and from farmer interviews. The Tsuchiura and Yatabe areas in Ibaraki Prefecture were selected as study sites. Farmers in these areas primarily cultivate lotus and organic rice, respectively. The agriculture cooperative's participatory group approach uses marketing information and improved marketing strategies, which were key factors in the Tsuchiura area. The cultivation activities of the lotus farmers is coordinated with social and cultural activities, and the JACs play a vital role in provision of infrastructure facilities such as warehouses, transportation, research, and supply inputs. Organic rice cultivation is quite important in Yatabe, and 29 local farmers practice fully organic rice farming. The demand for organic rice is greater than the supply in Japan, which represents an opportunity for farmers in Yatabe.

Agricultural cooperatives are important organizations that have helped in Japan's rapid agro-economic development. They have also contributed to national development in Japan, socially, culturally, and economically. My intent is to apply the results of this study to build a pilot model to increase the effectiveness and efficiency of rural agricultural communities in Sri Lanka. Over time, the model could be expanded to include more areas.

Key words: Farmers' organization, Agriculture cooperatives, Marketing strategies, Product development, Sri Lankan Agriculture

1. Introduction

Japanese agricultural cooperatives (JACs) are considered to be among the most effective and efficient agricultural organizations in the world. They cater equally well to farmers and consumers. The history of JACs dates back to the seventeenth century, when credit unions were the primary organizers of the cooperative movement. Sontoku Ninomiya was the first promoter of the agricultural cooperative system in 1868; he called them *Hotoku-Sha*. Later, the Japanese government encouraged

modernization and industrialization for rapid economic growth. Traditional small-scale producers were forced to compete with much larger enterprises, thus creating an urgent demand for cooperative organizations to bring economies of scale to small operators. In 1910, the Japanese government enacted the cooperative society law, which played a vital role in the development of the agricultural and commercial sectors (Hoynden, 1960). This had a positive impact not only on the cooperative movement but also on the Japanese agricultural economy and rural development. At present, JACs play very

significant roles in the development of the agricultural sector and in food safety. They also play a very substantial role in promoting the export of agricultural products.

Agriculture is the most essential part of Japan's economy. The agricultural sector is significant not only for farmers and consumers, but also for the Japanese economy as a whole. However, agriculture in Japan is carried out dominantly by small-scale family farmers with an average of only 1 ha of farmland. So the government and the Ministry of Agriculture, Forestry and Fisheries (MAFF) have addressed the economic development of the agricultural sector by the means of organized farming activities.

The main focus of my research was to study the internal organizational structure and organized farm activity of JACs. From this point of view, the most significant aspect of JACs is how they operate at the grass-roots level. The study identified how JACs operate strategically to fulfill the requirements of both Japanese farmers and consumers in the most efficient and effective way. The JACs' farm group activities, leadership, collective efforts, community mobilization, participatory decision making, product development, and marketing are all functions related to agriculture productivity and divisional coordination (Paget-Clarke, 1998). I attempted to study these aspects as well as the types of strategies used for improving agricultural productivity, marketing, decision-making processes, and strengthening relationships among members.

In the future, my intent is to apply the outcomes of this analysis to the agricultural sector in Sri Lanka and propose methods for improving the farmer cooperative system there. Therefore, I have included a brief summary of Sri Lankan farming organizations (FOs) and also explore applying the results of this study to FOs in Sri Lanka.

1.1 Japanese Agricultural Cooperatives

Using the principles of management, ethics, and cooperation, community-based organizations such as agricultural cooperatives have considerable potential to fulfill social needs through providing essential services that are part of an efficient functioning community. Improving efficiency is a key factor in the effectiveness of agricultural cooperatives. The JACs fulfill members' requirements by re-

sponding to the needs of members and by encouraging participation. Members of the agricultural cooperatives need a better supply of inputs, market information, marketing facilities, and new technologies. The JACs provide technical support in the area of marketing, and as a result of these services, members have improved their marketing abilities and economic returns through value addition. The JACs also deliver adequate and timely credit to members, which have led to higher levels of agricultural productivity (APO, 1966). JACs provide a wide range of farm supporting services in the agricultural sector, and they offer a high level of market information, which leads to better decision making and a higher level of profitability. In addition, credit services such as saving accounts, loans, and real estate, car, and other insurance services are also provided to the membership. JACs provide fresh domestic agricultural products to consumers, which has led to good relationships being developed between consumers and producers.

The JACs have demonstrated a high level of managerial efficiency leading to overall institutional effectiveness (Suadi, 2006). They conduct business activities based on collective efforts and participation. This collective principle is very important for sustainable rural development and the maintenance of the JAC management system. They collectively purchase materials, and as a result, members gain competitive advantages. JACs also offer a good legal framework in which to operate and high-quality legal and administrative expertise. In particular, they are governed by what is known as the cooperative association law.

JACs are actively involved in the stabilization of product prices; thus, members are more financially confident on a day-to-day basis. Working capital and good cash-flow management are essential components of any cooperative system. The JAC has established an excellent country-wide cash-flow system, and there is no scarcity of credit. JACs are also effectively involved in the extensive distribution network of fertilizer, pesticide, and agricultural machinery. These services assist in the development of the agricultural sector and increase agricultural productivity.

Total annual transactions of JACs with different companies amount to more than 50 billion yen. All of the companies that deal with JACs operate on a

large scale, which helps to increase efficiency in transportation. Further, the services that JACs offer assist farmers in reducing the cost of production, and these lower costs can be passed on to consumers.

1.2 Agriculture and Rural Development in Sri Lanka

In Sri Lanka, the cooperative movement among farmers dates back to the early twentieth century. It first appeared as thrift and credit societies supporting the credit needs of small farmers. The cooperatives later evolved into more multipurpose organizations that supported farming activities through input supply and marketing of farm produce. The Agrarian Act of 1959 formally recognized farmer organizations as essential components in the administration of agriculture-related matters, and they are supervised by the Department of Agrarian Development. In the early 1970s the importance of farmer organizations (FOs) was recognized, and FOs were promoted. Although various attempts have been made to strengthen the activities of the FOs of Sri Lanka, the effectiveness of the system and its ability to meet the farmers' needs is very poor. The social aspects seem to have greater influence over the success of the farmer organizations than the institutional aspects.

In Sri Lanka, about 80% of the population lives in rural areas, and rural development and agriculture are quite interconnected. Therefore, FOs could play a very important role in the development of rural areas. Although there are about 15,000 FOs in Sri Lanka, the number that serves the needs of the farmers is very low.

At the grass-root and district levels, collaboration is the most essential issue in the Sri Lankan agricultural sector. Improving this coordination mechanism could play a significant role in rural development. The leaders of most FOs have some kind of political affiliation. Members participate in FOs primarily to gain economic advantages, and individual actions are not motivated by notions of supporting the group or developing community mobilization activities. In the past, various governmental agencies have tried to implement development projects in connection with agricultural and rural development, but they have not achieved sufficient results in rural agricultural areas. The princi-

pal problems are institutional settings, cultural and religious conflicts, and attitude of farmers. These problems have often resulted in FOs being converted into political organizations in rural areas, despite the fact that the primary need is agricultural development. Since independence, the government of Sri Lanka has implemented many rural development projects and programs for improving the standard of living of rural people, but Sri Lankan FOs have had trouble achieving a minimum sustainable level of development.

2. Methods

The strength of group activities of farmers from the conceptual point of the cooperative movement and the effects of JACs were investigated by reviewing the literature, analyzing secondary data and direct interviews with farmers in two agricultural areas in Ibaraki Prefecture (Tsuchiura and Yatabe).

Most of the farmers in the Tsuchiura area cultivate lotus (*Nelumbo nucifera*). Therefore, the group activities related to lotus farming in the Tsuchiura area were selected for study. Out of the population of 370 farmers in this area, a random sample of 55 farmers was selected. The farmers were interviewed individually as well as in their farmer groups.

The farmers in Yatabe area engage primarily in farming organic rice (*Oryza sativa*). Paddy farming in the Yatabe area can be classified as either full organic paddy farming or semi-organic paddy farming, depending on the farming methods used. All rice farms participating in fully organic rice cultivation, accounted for 29 farm households, were selected for the study. Semi-organic rice farms were 132 farms. Full organic rice farms were selected and interviewed in the same manner as the Tsuchiura farmers.

The investigators made regular visits to the farmers to collect information on their marketing strategies, supply chain, processing techniques, product development, cost of production, and yield. Attention was also given to risk-minimizing factors and market uncertainty. The survey also posed questions about extension services and agricultural policies, as well as on the contribution of consumer societies to farming.

3. Results and Discussion

3.1 Cultivation and Marketing of lotus in Tsuchiura

Tsuchiura is a famous nation-wide for production area of lotus (edible lotus a traditional Japanese food). Table 1 shows the importance of lotus in terms of agricultural production in Tsuchiura. Lotus cultivation starts in April, and harvesting is done at the end of the year. December is an important month in Japan because many festivals are held at the end of the year. The demand for lotus roots usually increases in December, and the farmers of Tsuchiura focus on supplying lotus roots during this period. The farmers of Tsuchiura have gained a dominant place in the lotus root market and occupy 80% of domestic production share in Japan. Similar organized group activities are hardly visible among Sri Lankan FOs.

The government provides subsidies to JACs for fertilizer and chemicals. Preparation of seeds for cultivation is done by farmers themselves within their farm group, and one seedling nursery is maintained for all of the farmers in the group. Through this action, the growers obtain the best quality seedlings at a lower price. In Sri Lanka, individuals must satisfy their own input needs. Similar actions could be promoted in Sri Lanka to lower the price of seeds and seedlings while at the same time increase productivity through using higher quality seeds.

Mechanical power is widely used for land preparation practices, and other cultivation practices are

usually done by hand. The exchange of manual labor within the farm group was observed, as was the hiring of labor from outside. In Japan, the exchange of farm labor provides many group benefits, including facilitating the spread of technology among group members and contributing to higher levels of productivity. The exchange of labor within farm groups was once very common in Sri Lanka, but this practice has been decreasing. Sri Lankan FOs should once again consider the use of this type of system.

The JACs play a vital role in provision of infrastructure facilities such as warehouses, transportation, research, and supply inputs. Groups in Tsuchiura also possess adequate working capital. These conditions are lacking for Sri Lankan farmer groups, and the lack of infrastructure and working capital may be a major inhibitor in promoting of group activities. At the initial stage of any new program, therefore, government support may be necessary until the Sri Lankan FOs become self-sustaining.

A well-established supply management system was also observed in Tsuchiura, including supply-chain management activities such as harvesting, processing, packaging, and branding. These would be very effective methods with which to introduce group activities to Sri Lanka's FOs.

Tsuchiura farm groups were identified as being a creative marketing group. This group has a shared vision for farm members. The internal structure of the organization enables quick and informed decision making and good communication. They also

Table 1. Sales of Tsuchiura Agricultural Cooperatives in 2006

	Thousand Yen	(%)
Rice	719,303	13.3
Wheat	8,061	0.1
Vegetables	3,829,358	70.6
Lotus	2,643,298	48.7
Other vegetables	1,186,060	21.9
Fruits	274,250	5.1
Animal Products	104,745	1.9
Cut flowers and Potted plants	480,843	8.9
Others	7,916	0.1
Total	5,424,476	100.0

Source: Annual Report of Tsuchiura Agricultural Cooperatives, 2006.

have established an excellent bookkeeping and financial management system. These attributes are lacking in a majority of Sri Lankan FOs and would have to be developed.

The JACs support transportation and packaging and coordination with supermarkets in Chiba, Yokohama, and Tokyo as well as the effective utilization of market information and intelligence. The marketing of agricultural produce is an individual effort in Sri Lanka that rarely reaches small farmers in rural areas. The promotion of group marketing would provide substantial benefit to Sri Lankan farmers.

The JACs expect to expand organic lotus production for local and international markets. There have strong product development and quality assurance programs as well as excellent group dynamics. Development of a similar environment would assist Sri Lankan farmers to increase farm income.

3.2. Cultivation and Marketing of Organic Rice in Yatabe

The Yatabe area is famous for cultivating organic rice and vegetables. As shown in Table 2, currently organic and semi-organic rice production exceeds 50% of the total rice production. The soil types in the area are very good for rice cultivation, and the area has an irrigation system for paddy cultivation. Some farmers have adopted organic practices, whereas others use semi-organic practices. Most of the semi-organic farmers are engaged in paddy cultivation on a part-time basis. Organic rice farmers use paper mulching methods

to control weeds in the paddy fields, which has helped to reduce herbicide usage. Organic rice producers in the area cultivate the rice collaboratively with the Machinery Company—a company that supplies inputs for farmers at a concessionary rate.

Twenty-nine farmers practiced fully organic rice cultivation. They cultivated about 20 ha of the 1,527 ha of paddy land, a comparatively small area. The cost of production of organic rice was 200 yen per kg and the market price was 400 yen per kg. The area under semi-organic rice production is about 210 ha. When compared with the cost of producing organic rice, the cost of producing semi-organic rice is not significantly different, but the market price is comparatively lower, at about 300 yen per kg.

These farmers supply their products mainly to the Tokyo market, and the link between farm leaders and market agents are very strong. These links have helped to create good pricing techniques and stable market prices. There is a high demand for organic rice in Japan, and farmers cannot currently supply adequate quantities to meet the demand. Therefore, there is a significant potential for expansion of organic rice cultivation in Japan.

4. Conclusion

Japanese agricultural cooperatives are among the most effective and efficient organizations in Japan. The farm group concept has been significant in improving and sustaining high levels of agricultural productivity, and all groups show a long-term vi-

Table 2. Sales of Yatabe Agricultural Cooperatives in 2006

	Thousand Yen	(%)
Rice	423,866	20.5
Organic Rice & Semi-Organic Rice	240,055	11.6
Traditional Rice	183,810	8.9
Wheat	7,678	0.4
Vegetables	1,368,965	66.2
Fruits	13,639	0.7
Animal Products	184,636	8.9
Lawn Grass	66,220	3.2
Others	2,859	0.1
Total	2,067,863	100.0

Source: Annual Report of Yatabe Agricultural Cooperatives, 2006.

sion. Farmers share experiences, and often have daily discussions of common problems and how to solve them. They are empowered not only economically but also sociologically and culturally. For example, they conduct cultural activities through the cultivation process. The participatory principle is highly valued in the Tsuchiura and Yatabe areas.

JACs operate at many levels, including the national, prefectural, and village (divisional) levels. The organizational structure and activities of JACs help to improve agricultural productivity and the efficiency of the agro-marketing system.

The Tsuchiura and Yatabe farmers' communities are empowered by participatory group activities and visionary farm leadership. It is an important factor in the success of the cooperatives. Community mobilization through group activities and the further dissemination of technology will help to expand the market share the products of both Yatabe and Tsuchiura. Government policy should help fulfill the farmers' need to increase income through lifting community living standards while also satisfying of consumers' needs and wants. Japanese agriculture organizations, through their networks and horizontal and vertical coordination mechanisms, have helped to develop a delivery system for both consumers and farmers, from the national to the village level. The JAC model is an ideal model for developing countries to use to revitalize and modify developmental administrative processes.

By providing access to market information, packaging, market and product development, and other innovative activities, the JACs have helped to maintain excellent supply-chain management practices. In addition, the JACs have fostered profitability, social responsibility, and a closer relationship with consumers, all of which have contributed to sustainable rural development in Japan.

The agricultural cooperatives in Japan are amalgamated with the consumer cooperatives to enable fulfillment of needs and wants of both farmers and consumers. The natural resources, infrastructure facilities, MAFF policies, and commitment of dynamic farm leaders have contributed immensely to developing a powerful organizational network to commercialize the Japanese agricultural system.

4.1 Sri Lankan Farming Organizations

The results of this study can be used to create a new agricultural productivity model (a farm services delivery mechanism) for Sri Lanka. This new model should be a pilot project that has the capacity to be adjusted after two or three years of experience. The model should be evaluated by comparing objectives and practical outcomes. If any reform or adjustment is needed, the model should be amended to achieve the desired results.

What are the successful factors for an organizational network to improve agricultural productivity? Participatory group activity is the most important. Farmer participation and motivation are also extremely important. On the other hand a marketing information system must be established, and financial sustainability and the appropriate use technology are also critical factors in attaining the desired organizational outcomes.

Current Sri Lankan FOs do not have sufficient farmer participation. A majority of farmers, including female farmers, must participate for an organization to succeed in rural agricultural development in Sri Lanka. This model must also be sustainable over the long term, and these organizations must have social acceptance in addition to economic viability.

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