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The Significance of Agricultural Production Cooperative in Kyrgyzstan: Responding to the Expansion of the Individual Management Sector of Member Farmers

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Summary

The continuity of agricultural production cooperatives in Kyrgyzstan with the former agricultural enterprises in terms of people, land, and equipment has allowed cooperatives to continue agricultural production from the chaotic period of post-independence land reform to the present, and has enabled the distribution of food and feed for private livestock to member farmers. Currently, the trend toward the individualization of farm households has increased due to the penetration of the market economy, and agricultural cooperatives have also expanded their operations to include contracted work for individual sectors of their members. At the same time, however, the high price of farmland and other factors have led to the withdrawal of members from the cooperative. In addition, some individual farmers have been purchasing agricultural machinery, creating a situation in which the cooperatives themselves are outsourcing work on machinery that can no longer be updated. Since agricultural cooperatives are shrinking, it is necessary to move more aggressively to attach the necessary functions to the individual management sector, which will expand further in the future.

Key words : Kyrgyzstan, Agricultural Production Cooperative, Land Reform, Individualization

1. Introduction

1) Objective of the Study

Following Kyrgyzstan's independence from the Soviet Union came agrarian reforms and the privatization of agricultural land. These reforms resulted in fewer than 500,000 individual farmers¹⁾ in the country today. These reforms also facilitated the establishment of agricultural cooperatives, reaching 567 by 2023. Production cooperatives, which share common means of production, constitute the majority of these cooperatives (Beishenaly, 2021).

Furthermore, the majority of these cooperatives were formed by one or multiple families.

However, assessing their organizational development remains challenging²⁾. By contrast, only a few production cooperatives originated from former Soviet-era agricultural enterprises³⁾, yet such cooperatives are highly active (Hoshino, 2022).

Kyrgyzstan is a mountainous country with limited arable land. The average operational scale of individual farmers is 2.9 ha⁴⁾, which is considerably smaller than that of the former Soviet-era agricultural enterprises. While agricultural cooperatives have been expected to solve the problems faced by such small-scale farmers, the government has primarily positioned them as a means of restructuring the country's agricultural structure⁵⁾. The government, concerned about declining commodity productivity due to the small size of individual farm households, has signifi-

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cantly advanced land reform since 1994. Such reforms have aimed to ensure self-sufficiency among farming families, to prevent rural depopulation in the wake of post-independence social upheaval, and to mitigate the sharp decline in agricultural production by clarifying land rights to encourage productivity (Kaneda, 1995). Measures for addressing the concerns of that era are now being implemented.

Under Kyrgyzstan's market economy, farmers have developed independent management practices. Thus, the government's actions may not sufficiently meet their expectations of an agricultural cooperative. Additionally, a significant gap exists between the intended objectives and the actual development of the country's agricultural cooperatives. To address this gap and foster a more constructive understanding of agricultural cooperatives, where farmers collaborate effectively, the role and significance of agricultural production cooperatives that have existed from the country's independence to the present must be examined, particularly in relation to the expansion of the individual sectors of their members.

2) Literature Review and Study Objectives

Agricultural cooperatives in Kyrgyzstan were established during the following two periods: the land reform period and the period of response to the resulting individualization of land. During the land reform period, the former Soviet-era agricultural enterprises were dismantled, and the new agricultural cooperatives were some of the recipients of the allocated land. Subsequently, as the land reforms progressed, donor support was provided to the individual farmers who emerged. Thus, the establishment of agricultural cooperatives gained momentum in the early 2000s.

Many researchers have assessed the poor performance of the agricultural cooperatives that have been established (Beishenaly and Namazova, 2012; Lerman, 2013). This underperformance can

be attributed to the Western conception of agricultural cooperatives as organizations established to provide services beyond those offered by individual farmers. This perspective is grounded in the notion that agricultural production units form the foundation of such cooperatives. It is also grounded in the negative perception of cooperatives inherited from former agricultural enterprises. Such perceptions not only reduce productivity but also hinder cooperation among people. As a result, the actual condition of the production cooperatives that have existed since the early land reform period have not been sufficiently examined.

Cima's (2020) ethnographic study critically examines the post-socialist and developmentalist approach of these researchers. However, this study merely demonstrated the presence of everyday, informal social relations among members of the agricultural cooperative examined in the case study. Thus, Cima suggested incorporating the findings into evaluations of agricultural cooperatives but did not address any specific conditions within the cooperatives. As a result, no concrete connection to the previous discussions of agricultural cooperatives can be identified.

To advance these discussions, we propose that an essential perspective for understanding the actual conditions of agricultural cooperatives in Kyrgyzstan is how the farmer members utilize the cooperatives. This perspective is particularly relevant because such cooperatives fundamentally operate based on their members' usage. Lerman and Sedik (2017) examined this issue by conducting a questionnaire survey with several agricultural cooperatives. Their findings revealed that production-oriented agricultural cooperatives also provide various services. The next step should be to add a chronological perspective to analyze how the cooperatives were established and how they have continued to function over time.

This necessity arises from the development

of individual farmers' sectors. Numerous studies on Kyrgyz farmers have investigated the impact of market economization following agrarian reform. Some of these studies have found that the farmers initially maintained semi-subsistence pastoralism (Shigaeva, 2007) and safeguarded their livelihoods through mutually beneficial social relations rooted in kinship (Yoshida, 2004). However, Hoshino et al. (in press) have demonstrated that family-based farmers subsequently evolved in response to market forces. Members of agricultural cooperatives face similar circumstances. Therefore, it is imperative to determine the role of agricultural cooperatives in relation to their members and to assess how it influences production-oriented agricultural cooperatives.

This study aimed to achieve the following specific objectives: (1) to clarify the establishment and continued operation of production-oriented agricultural cooperatives, which constitute the majority of agricultural cooperatives in Kyrgyzstan; and (2) to clarify their significance to farmers, particularly those engaged in individual management, by examining how such cooperatives support their members.

3) Methodology of the Study

Five active⁶⁾ production cooperatives that originated from former collective farms were selected from the list of member cooperatives of the Cooperatives' Union of Kyrgyzstan (CUK). Of these, we selected and interviewed Cooperative B in Administrative Village (ayıl ökümotü⁷⁾) A, which was the only cooperative we were able to survey. The interview was conducted with a representative of Cooperative B and three other members during a three-day stay in Village A in September 2022. For determining the status of agricultural cooperatives in 2013, 2015, and 2017, the values from JICA's annual reports on "Strengthening the Role and Function of Farmers' Organizations in Central Asian Countries" were used.

The remainder of the paper is organized as

follows: Section 2 describes the process of establishing Cooperative B from the land reforms; Section 3 describes the transition of Cooperative B's business; Section 4 describes the current business activities that followed; and finally, Section 5 examines the actual business conditions of the members and their relationship with the cooperatives, with three members who differ in the degree of their business's individualization.

2. Background of the Establishment of Cooperative B

1) Description of the Study Area

(1) Administrative Village A

Administrative Village A in Kyrgyzstan's Issyk-Kul Region is an administrative village that comprises three villages located around the northern part of Issyk-Kul Lake. It is approximately 200 km from the capital Bishkek.

The central village, Village A, is located on a plain near the lakeshore, while Villages K and C are located in the northern foothills. The central village was founded as a Russian settlement in what is believed to have been 1874⁸⁾.

Even today, there is a diverse population of Kyrgyz and Russians in this village district, along with various other ethnic groups: 71% are Kyrgyz, 19% are Russian, 6% are Kazakh, and the remainder comprise other ethnicities, with most Russians residing in the central village (figures from 2022).

As of 2018, the Village A precinct had 2,781 households and a population of 10,392 people, averaging 3.7 persons per household. The population of Village A accounts for 88% of the total population (2022 values), which indicates that most residents live in the central village.

(2) Land Use and Agriculture

Administrative Village A covers an area of 20,000 ha, half of which is covered by mountain pastures (state-owned land; Table 1). The administrative village area has 4,743 heads of cattle (including 2,806 dairy cattle), 9,003 sheep and

Table 1 Land use in Administrative Village A (2018 values) Unit: ha, %

	Area	Percentage
Village district total	23,338	100.0
Pasture	13,039	55.9
Summer and winter pasture (Note 1)	7,001	
Spring and autumn pasture (Note 2)	6,038	
Arable land	4,600	19.7
Residential area	635	2.7
Industrial and transportation areas	91	0.4
Unused land	9	0.0
Reserve land	4,964	21.3

Sources: "Future Plans for the Distribution of the State Land Fund in Administrative Village A" and the author's interviews.

Notes: (i) The "Forest Fonds" were used as summer and winter pastures. (ii) The data contained 10,638 ha of "agricultural land," but this was higher than the figure obtained from the interviews; thus, the figure was interpreted as the sum of "spring and autumn pastures" and "arable land" around the village. The table used the value estimated from the 4,600 ha of arable land.

goats, 1,625 horses, and 14,420 poultry, with the average number of heads owned per household being 1.7 (1.0), 3.2, 0.6, and 5.2 respectively. There are also 72 pigs.

By contrast, the plains cover 4,600 ha of arable land. Many types of grain (e.g., wheat and barley), grass, fodder corn, potatoes, and fruit trees (e.g., apples and pears) are produced here.

2) Establishment of Agricultural Cooperative B

(1) Collective Farm in the Soviet Period

A collective farm, Kolkhoz A, existed within the current Administrative Village A. Figure 1 depicts the evolution from this situation to the establishment of Cooperative B:

At that time, the kolkhoz had 4,600 ha of arable land in production and approximately 2,500 households. It was divided into three brigades (work units), with the westernmost in Village A being responsible for the farthest western area. Village A was the westernmost village, working on approximately 1,300 ha of arable land.

(2) Dismantling and Change of Business Category to Association

Land reform in Kyrgyzstan comprised four phases of progress. The first phase began in 1991; the second phase was from 1992 to 1993; the third

was from 1994 to 2003; and the fourth was from 2004 onwards⁹⁾. Until the second phase, there had been little progress in agrarian reform, as the scope of dissolution was narrow, including only loss-making collective operations.

This case also continued to operate as Kolkhoz A until the second phase of land reform; however, a significant change occurred during the third phase. The kolkhoz faced being dismantled in 1996 and reorganized into Association A. A total of 500 ha (10%) was set aside for the National Land Redistribution Fund (LRF), and the association's portion was set at 900 ha (20%). The distribution of land to nonassociation residents was established at 0.5 ha per person, and 3,200 ha (70%) went to residents. This was followed by the conversion of use rights to ownership in 1998.

As these reforms progressed, a new law titled "On Cooperation" was enacted in 1999 to replace the aforementioned repealing of the Law on Cooperatives. Regarding the form of land ownership, it was noted that when a distributed land parcel was invested in an agricultural cooperative, the farmer members held their ownership, and the cooperative was given only the right to use the land. This was later succeeded

Administrative Classification	Administrative Village	Administrative Village A								
	Village	Village A			Village K			Village C		
Movement of Former Collective Management, Agricultural Cooperatives, and Individual Farmers	Soviet Period - Just after Independence	Kolkhoz A(4,600ha)								
		First Brigade (1,300ha)			Second Brigade			Third Brigade		
	1996 Land reform phase III	LRF	Association A (total 900ha)	Individual	LRF	Association A (total 900ha)	Individual	LRF	Association A (total 900ha)	Individual
	2002 Establishment of Cooperative B	LRF	Cooperative B (600ha)	Individual	LRF	Cooperative Z (20ha)	Individual	LRF	Cooperative Y (30ha)	Individual
	2022 Present Time	↓ continuation			↓ dissolution			↓ dissolution		
		LRF	Cooperative B (168ha)	Individual	LRF	Individual		LRF	Individual	

Figure 1 The linkage between the dismantling of former collective management and the establishment of agricultural cooperative in Administrative Village A

Source: the author's interviews.

Notes: (i) "Individual" refers to individual farmers. Although there seem to be some agricultural cooperative established after individualization in Administrative Village A (NSC data), they are not listed here to focus on those derived from the former collective management.

(ii) The shaded sections are national and the "National Land Redistribution Fund", abbreviated "LRF".

by a law titled "On Cooperatives" enacted in 2004.

(3) Process of Separation from Associations to Agricultural Cooperatives

Distribution progressed gradually during the third phase of land reform. Lerman and Sedik (2009) considered agrarian reform to have been completed in 2003, when the target privatization rate of 75% was exceeded.

In Administrative Village A, even after the association was established in 1996, there was a tendency for individual operations to separate from the association. In 2002, Cooperative B was established with some members from the first brigade (of the three brigades of the associations) becoming members. The company invested approximately 100 ha (≈ 0.5 ha * 217 members) of its allotment to 217 service members as well as 500 ha (for 1,000 members) from nonservice members, for a total of approximately 600 ha. "Nonservice members" refer to pensioners and workers in other industries who did not serve but only invested in land. Since such persons were

indicated at the time of this interview by the term "cooperative's member" (müchö) without distinction, they are included and treated as union members here.

Compared with the original size of the first brigade, Cooperative B was inaugurated at approximately 40% of its initial size. The number of plots was also spread across the distribution of land to other residents (Figure 2). Additionally, two agricultural cooperatives were established based on the remaining two brigades (20 ha with five households and 30 ha with five households), although they have since been dissolved. Consequently, many individual farmers left the organization when the agricultural cooperatives were established from brigades or following the creation of agricultural cooperatives in Administrative Village A. Notably, many of them lease or sell their arable land.

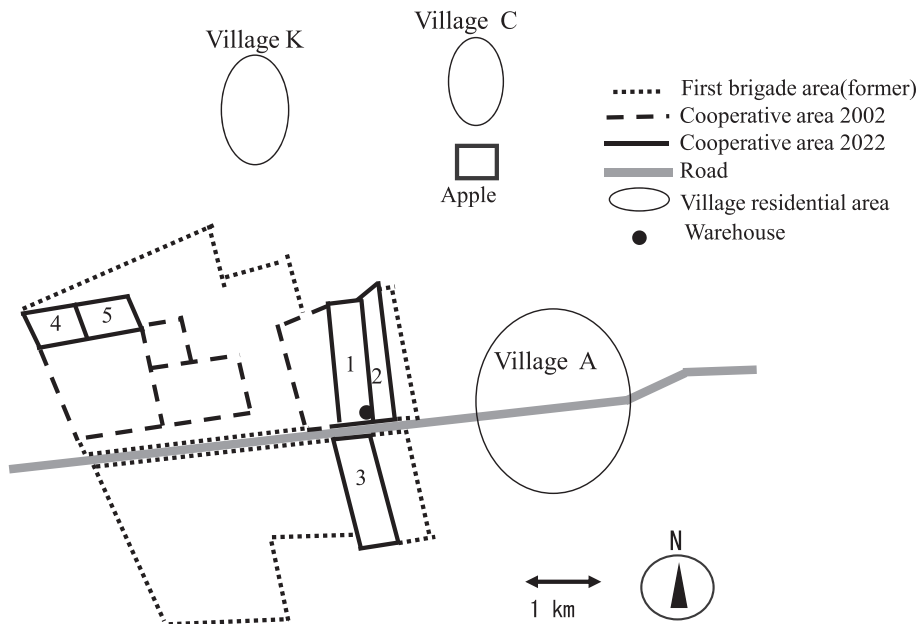


Figure 2 Change in the area of arable land managed by Cooperative B

Source: the author's interviews.

Note: The numbers refer to five management plots in 2022.

3. Changes in the Cooperative B System

1) Decreases in the Area Managed and Number of Members

As shown in Table 2, the cooperative management, which started with 600 ha, has been shrinking— to 350 ha in 2013, 220 ha in 2017, and 168 ha in 2022. In 2022, the arable land managed by Cooperative B is shown by the area enclosed by the solid line in Figure 2. Additionally, the area at the beginning of the establishment included the parcel enclosed by the dashed line, which was 600 ha. In the first brigade, the dotted-line area was the plot in charge (1,300 ha).

Since Cooperative B has not taken out any new land leases like the LRF as an agricultural cooperative, this downsizing likely resulted from its decision to leave the cooperative for various other reasons. In fact, no new members have joined the cooperative, and the number of cooperative member households declined from 330 in 2002 to 140 in 2022, a decrease of a third.

While the decline in cooperative members has affected service and nonservice members, the former have seen a new trend of young men in their 20s joining, succeeding their fathers' generation and helping to maintain the workforce somewhat.

At the time of the 2022 survey, a member with 2 ha of land was discussing which part of the land he would return when he mentioned he was leaving the cooperative. Conversations about which portion to return have been challenging and become a pressing issue because they relate to how the cooperative management plots are divided.

The reason behind the secession is the sale of land for speculative purposes. The land sold at auction is structured such that relatively wealthy farmers purchase the land to expand their scale. Cooperatives do not own the land, nor do they know when it will be sold; thus, they cannot make investments in the face of a shrinking business.

Table 2 Changes in the area of arable land under management and the number of members in Cooperative B

Unit: ha, people, household

	Management Area			Number of Members			Number of Member Households		
	Total	Service Members' Share	Nonservice Members' Share	Total	Service Members' Share	Nonservice Members' Share	Total	Service Members' Share	Nonservice Members' Share
2002	600	100	500	<i>1,217</i>	217	<i>1,000</i>	<i>445</i>	60	<i>385</i>
2013	320	<i>63</i>	<i>257</i>	<i>640</i>	<i>126</i>	<i>514</i>	<i>233</i>	35	<i>198</i>
2017	230	<i>45</i>	<i>185</i>	<i>460</i>	<i>90</i>	<i>370</i>	170	25	145
2022	176	36	140	352	72	280	140	20	120

Sources: 2013 and 2017 JICA reports and interviews with representatives of Cooperative B.

Notes: (i) Italicized figures are estimates. Calculated using the distribution land area per person and the average number of household members.

(ii) For the average number of household members, 3.6 was used for service members and 2.6 for nonservice members. The former value was obtained from the 2002 value of 217/60 and is considered reasonable compared to the 2022 Administrative Village Average. The latter was obtained from 370/145 in 2017, and this value is reasonable given that the number of household members is considered low based on the story that many of the nonservice members are elderly households.

2) Current Structure of Cooperative B

The current membership of 140 households (an estimated 352 members) is half Russian and half Kyrgyz. The cooperative is headed by a Kyrgyz man, Mr. A (b. 1963), who has held this position since 2018. He worked as an agronomist in the first brigade of Kolkhoz A, the predecessor of the cooperative, and has been a member since its inception. The previous union president was a Russian man with a similar background, who had served since its inception.

Including Mr. A, there are 30 other service member households in the cooperative; this group is also half Russian and half Kyrgyz. Ten of these households are occupied by elderly residents who have recently become pensioners and no longer work full-time; thus, the system is a 20-person (20-household) operation. Their land share is 36 ha, which accounts for 20% of the total arable land area managed by the cooperative.

An estimated 120 nonservice member households account for 131 ha or 80% of the total cultivated land area. They are pensioners, displaced villagers, part-time farmers, and others who are unable to produce their own food.

4. Business of Cooperative B

1) Agricultural Production Business

(1) Crop Growing

The main business of Cooperative B involves production on a total of 176 ha of arable land. All of the cultivated land is irrigated. With the exception of an 8-ha apple orchard near the residential area, the land is divided into five plots with the following crops: (1) 28 ha of wheat and 10 ha of potatoes; (2) 22 ha of wheat; (3) 30 ha of barley, 15 ha of mixed wheat and oats, and 36 ha of grass; (4) 18 ha of wheat; and (5) 9 ha of wheat.

Seven hectares of the potato crop land in (1) belong to the agricultural cooperative, which distributes the produce to its members and sells the remainder. The remaining 3 ha are available for use by cooperative members who wish to use it. Specifically, 2 ha are used by 10 members (0.2 ha per person), who are ceding members looking for more potatoes, while the remaining 1 ha is used by 10 nonservice members.

Some of these crops are also produced for seed, which is used within the cooperative and sold to members and other local farmers. As fertilization of crops is only possible in some cases, yields are often lower than the regional average.

(2) Farming Management System by Service Members

The 20 service members play specific roles, including tractor drivers, repairmen, and apple orchard managers. For example, a tractor driver is assigned to each tractor, and the person in charge of each tractor drives it with different attachments according to the work that must be done. The cooperative members have time off during the off-season from December to March. Throughout the busy farming season, they gather at the warehouse every morning before starting work.

(3) Distribution of Products to Cooperative Member and Sales

The harvested grain and grass are stored in a former Kolkhoz A warehouse owned by the cooperative. First, the produce is in-kind distributed to cooperative members, while the remainder is sold. The in-kind distribution is determined by the yield of the year, but it is paid in kind at a lower price than the market price. Members consume it for food, use it for livestock feed, or sell it for cash.

Seed sales also generate income for the cooperative. However, some of it must be sold at unfavorable prices due to the insufficient storage capacity.

Although the total sales amounts are unknown, it is believed that Cooperative B has managed to maintain its current status despite being unable to renew its machinery, as its member have been leaving, thus causing it to shrink.

2) Ownership of Cooperative Machinery and Expansion into the Contractor Business

The cooperative owns farm machinery, all from the former kolkhoz era, and utilizes it not only for its own plots but also for outsourcing work to members and local nonmembers. In Administrative Village A, there is a particular need for combine harvesters as not many are available.

In addition, since the machinery cannot be updated, it is becoming unusable. In 2013, the cooperative had eight tractors (six 80 hp and two larger ones); however, by 2017, it only had three. Similarly, the number of combine harvesters has fallen from four to two.

The members would like to renew their machinery; however, they have not been able to do so because of the high costs involved. Leasing machinery is also impractical because of the steep interest rates and the difficulty of making initial payments under the current management. Additionally, as the maintenance costs are high and unprofitable, the cooperative outsources the work that cannot be done using the members' own combine harvesters at an annual cost of 240 thousand som. Some farmers possess larger combine harvesters with superior performance than their cooperative's machines, which enables outsourcing. An increasing number of individual farmers, like the aforementioned one, are seizing the opportunity for ownership and contracting out work, regardless of the administrative village.

5. Role of Cooperatives in the Members' Individual Sectors

This section examines the role of Cooperative B in each farm household based on case studies of three of the 20 service members (see Tables 3 and 4). These three members have a wide range of individually managed arable land, listed in numerical order, and the role of the cooperative is expected to differ. Despite half of the respondents being Russian, Kyrgyz members were targeted this time due to the language used.

1) Concurrent Farmers Who Relies on Cooperative for Livestock Feed

Farmer 1 was born in Village A in 1964. He completed the 9th grade of school in Village A and studied mechanical engineering at a vocational school from 1981 to 1983. After serving in the military from 1984 to 1985, he began working at the first brigade of Kolkhoz A in 1986 after

Table 3 Outline of members of Cooperative B about Their Family and Animals (2022)

Unit: people, ha, head

Farmer's number		Farmer 1	Farmer 2	Farmer 3
Year of birth		1964	1970	1970
Birthplace		Village A	Village A	Village A
Same household	Number	5	5	3
	Members	Himself, wife, second son, third son, fourth son	Himself, wife, and 3 children	Himself, wife, second son
Household members moving out		Eldest son (Moscow), eldest daughter (married out)	2 children (Bishkek)	Eldest son (Bishkek), Eldest daughter (unknown)
Non-agricultural income		Third and fourth sons work locally.	unknown	None
Houseplot (ogorod)		0.4	0.4	0.2
Number of livestock	Dairy cattle	4	4	7
	Calf	2	4	7
	Ox		4	
	Sheep	8	10	10
	Horse		1	3
Summer livestock feeding		Milking cows and calves remain at home, others are consigned to herders	unknown	Outsourced to herders.

Source: the author's interviews

returning home. He first worked as a tractor driver and continued in that role even after transitioning to Cooperative B in 2002. However, after his health declined in 2019, he began to work as a repairman.

He currently lives with his wife and his second, third, and fourth sons (the fourth being a student). His second and third sons work in various local jobs, while his wife is a homemaker. His eldest son went to work in Moscow, while his eldest daughter got married.

The investment in the cooperative is 2 ha, which is the land allocated to the four household members at the time of land distribution (Farmer 1, his wife, his eldest son, and his second son). He has no other arable land under his management and no plans to acquire more. The household plot (ogorod) is 0.4 ha and is used to grow vegetables and other subsistence crops.

Farmer 1's livestock includes four dairy cows, two calves, eight sheep, and chickens. Two milk cows and two calves remain at home during the

summer, while the others go with the herdsman (malchi) to the summer pasture (jailoo). The dividends from the cooperative are sufficient to feed the remaining livestock at home and throughout the winter months.

2) Fruit Farmer Dependent on Cooperative for Livestock Feed

Farmer 2 was born in Village A in 1970 and spent the first 10 years of his life in his hometown. After graduating, he studied mechanical engineering for three years. He then served in the military for two years and worked at a shoe factory upon returning to Village A. His father worked as a cattleman (uichu) in the first brigade of Kolkhoz A; however, when the cattle disappeared from the kolkhoz around 1990, he started to work in the association's apple orchard. He has been a member since the cooperative was established. After his father's death in 2011, he became the owner and assumed management of the orchard.

The arable land invested in the cooperative consists of 1.5 ha allocated to his father, mother,

Table 4 Outline of member of Cooperative B about Relationship with Coepetative B (2022)

Unit: ha

Faimer's Number		Farmer 1	Farmer 2	Farmer 3		
Soviet Period Career		Compulsory education → Vocational school → Military service → the First Brigade (tractor operation)	Compulsory education → Vocational school → Military service → Shoe factory in the Village A	Compulsory education → Vocational school → the First Brigade (tractor operation)		
Joining Cooperative B	Year	2002	2002 (himself 2011)	2002		
	Reason	Member of the First Brigade	His father was a member of the First Brigade (pastor)	Member of the First Brigade		
Work at the cooperative		Tractor operation → Repairer	Apple orchard management	Tractor operation		
Invested Land	Area	2.0	1.5	1.0		
	Allocation	Himself, wife, eldest son, second son	Father, Mother, Himself	Himself, Wife		
Individual Sector Land	Total Area	none	1.5	7.0		
	Each Area		1.5	2.5	2.5	2.0
	How to Obtain		Buy	Buy	Buy	Buy
	Year Obtained		Around 2000	2003	2007	2016
	Planting Crops		Apple	Potato 1, Spring wheat 1.5	Grass	Grass
Use of the Cooperative		The feed is sufficient for the dividends from the agricultural cooperative.	Dividend available.	Dividends available. Use of cooperative machinery for sowing, spraying and harvesting on owned farmland, and harvesting on own managed arable land.		
Remarks		Retired from tractor driving for health reasons from around 2019.		One day is hired to harvest potatoes. Intention to increase the number of livestock.		

Source: the author's interviews

and himself. He also purchased a 1.5-ha apple orchard near his home in 2000, which he manages. The current household comprises his wife and three children, the older two of whom attend school in Bishkek. Their household plot is 0.4 ha.

The number of heads of livestock is as follows: four dairy cows, four calves, four oxen, 10 sheep, and one horse. He feeds them the allocation from the cooperative. Although their summer husbandry was unknown, at the time of the survey he was observed feeding the cows with undergrowth from his orchard.

3) Farmer to Expand the Individual Management Sector

Farmer 3 was born in 1970 in Village A. He

studied at the local school until the 9th grade and then studied mechanical engineering at a vocational training school. In 1978, he started working as a tractor driver in the first brigade of the kolkhoz. He has been a member of the cooperative since it was founded in 2002.

Currently, he lives with his wife and second son. He has three children. His eldest son works in Bishkek and his eldest daughter is married. Neither he nor his wife have another job.

Their household plot is 0.2 ha. Their crops include apples, cherries, pears, tomatoes, and cucumbers, which are only sold when in surplus. He and his wife have invested 1 ha of their allotted land in the cooperative.

In addition to his investment, Farmer 3 also acquired arable land in Village A. Later, he purchased a total of 7 ha of irrigated land and divided it into three plots of size (1) 2.5 ha, (2) 2.5 ha, and (3) 2.0 ha. Plot (1) was purchased in 2007 from a Kyrgyz person who left the village for work, (2) was purchased in 2003 from a Russian person who returned to Russia, (3) was purchased in 2016 from a Kyrgyz person. The plots' crops as of 2022 were (1) grass, (2) 1 ha of potatoes and 1.5 ha of spring wheat, and (3) grass.

Farmer 3 purchases potato seeds himself, as opposed to obtaining them from the cooperative. When harvesting in the fall, he finds his own laborers from the village and finishes in a day. Because of the high expenditure on fuel and the hiring of workers for potato production, and because inflation in recent years has made the situation even more difficult, the fields are essentially no longer profitable.

Because Farmer 3 does not own a tractor, he uses the tractor he drives at the cooperative for spring wheat seeding, potato harvesting, grass harvesting, and pesticide spraying. He is thus able to fill the tractor with gasoline and not pay a contracting fee.

His livestock include the following: seven dairy cows, seven calves, 10 sheep, two mares, and one riding horse. This is being gradually increased through feed allocations from the cooperative and his own production from individually managed land. All horses except riding horses are entrusted to a herdsman during the summer.

4) Relationship between Members and Cooperatives

The three examples demonstrate four features of the relationship between service members and agricultural cooperatives.

The first is that regular members worked in the same brigade under the former collective farm in the same area. The former collective farm had also taken over a tractor, and the members could continue operating the tractor and doing

other work at the brigade.

Second, all of the allotted land received from the land distribution was invested into the cooperative. Since the location of each distributed plot of land was not clearly defined, the land distribution was only nominal, and the area was shared with other members of the same brigade, who were mainly related to the same brigade. In other words, one plot of land could be received on a large scale.

Third, the individual land holdings, aside from the investment share, primarily comprised the household plot. Individual management involved livestock rearing on state-owned pastureland and, similar to Farmer 1's situation, winter fodder was subsidized by dividends from the cooperative. The members obtained the necessary funds for their children's higher education and other needs through the migration of household members.

The fourth characteristic is the emergence of management entities that have expanded the individual management sector. In some cases, such as Farmers 2 and 3, members have acquired land from neighboring farmers as a private enterprise and expanded their operations. Farmland acquired in this way is not considered investment land for the cooperative. Additionally, the characteristics of the cooperative members are changing. In line with this, Farmer 3 seeks to expand his own sector, especially in terms of land use (e.g., potato production and foraging). As a result, such members demand that work be contracted out using farm machinery owned by the cooperative. These farmers are becoming less dependent on migrant work and are seeking to earn cash through agriculture.

6. Considerations

From the case study of Cooperative B, agricultural production cooperatives have remained in place while their members, arable land, and machinery and equipment have downsized when former collective farms were forced to

dismantle during the land reform period. The arable land managed by the cooperative is the investment land of its members. It was distributed land that the cooperative members received through the land reform, and it has been privately owned since 1998. The cooperative has continued to operate its production business with this land. The current state of agricultural cooperatives is that their members have performed productive labor and received dividends in kind.

They were joined by nonservice members, mainly elderly members, who only rented land. They were unable to produce their own food at the time of the land distribution and chose to receive in-kind donations, mainly fodder for private livestock and potatoes, to become self-sufficient.

Therefore, the first thing members wanted from the cooperatives was to achieve efficient production on cohesive land and to continue to produce grain, grass, and potatoes for distribution. For farmers, especially those who did not have a separate management sector on their arable land, such as Farmers 1 and 2, this was a means of obtaining essential feed for livestock rearing.

The operation of machinery and equipment used for the individual sector was established as a contractor business, as opposed to the expansion of the individual sector, which did not exist during the Soviet period. Some members with arable land in the individual sector, such as Farmer 3, used this service by paying only the cost of gasoline themselves. Farmers who were not members of the cooperative also used the system.

Recently, however, land has been leased to entities with better conditions than those of the cooperative owing to high farmland prices; as a result, agricultural cooperatives have been shrinking in size. The growth of the individual sector and the rise in farmland prices indicate that farmers' need to earn cash is increasing, and they are shifting to cash crops instead of relying on dual employment, such as migrant work. This

trend is likely to increase the demand for contracting businesses in the individual sector for agricultural cooperatives; however, the cooperatives' structure prevents them from expanding their operations. This trend suggests that agricultural cooperatives may see increased demand for contractor services and other offerings in individual sectors.

Although these cooperatives have taken over while still using machinery from the previous era of collective farms, they cannot expect to earn enough to renew their equipment in a production environment primarily focused on the distribution of in-kind goods, which reduces the number of available farm machines. Even if they were to obtain a loan from a financial institution to purchase new machinery, they would struggle to make repayments due to the declining business area of the cooperative; thus, they are holding off from doing so.

7. Conclusion

This paper has examined the establishment of agricultural production cooperatives in Kyrgyzstan since the land reform period, the types of business they are engaged in, and how they are used by their increasingly individualized members.

Initially, production cooperatives were not solely focused on land accumulation and revenue generation through the distribution of dividends but were rather subsistence-oriented. However, over time, they began to provide support for the expansion of their members' individual farming sectors. In response to the multilayered composition of their membership, these cooperatives have adapted by catering to the diverse needs of their members. They achieve this by providing services to individual sectors—such as contract-based agricultural services—while maintaining their production activities as the foundation of their operations.

Conversely, a wave of market economization

has led to the downsizing of the agricultural cooperative business. In Cooperative B, members have withdrawn their membership, and individual businesses have begun to acquire tractors for rental purposes. The environment surrounding farmers has changed as they have begun to make investments using funds they have accumulated through migrant work and other means, all while the demand for farmland increases. Furthermore, China's "One Belt, One Road" initiative (alongside other policies) has improved roads and brought in inexpensive machinery and goods.

The current downward trend in the future development of production-based agricultural cooperatives is expected to continue at this rate. While new members may join the cooperatives to use the contractor business, land investment is not likely to occur. The reason for this is that farmers who are expanding their respective business operations are not attracted to dividends in kind. Additionally, these cooperatives are unlikely to invest in land that belongs to new members as such acquisitions could create enclaves and reduce work efficiency. They may also respond to the shrinking production by increasing contractor service fees. However, if these fees exceed the market rates set by each village district, then the cooperatives would risk losing their competitive advantage amid the growing amount of privately owned farm machinery.

As the market economy progresses, the former collective farm inheritance type of agricultural production cooperative has gradually given rise to individual farms, which have consequently decreased in size. Nevertheless, as the significance of the individual sector among members increases, production cooperatives have the potential to develop businesses that cater to this sector's needs. One such model is the contractor business, in which the cooperatives are currently engaged. Another model is the provision of seeds and other agricultural materials; however, this

was not discussed in detail in this paper due to the lack of available data on its actual utilization. Although loans are presently unavailable, cooperatives must recognize the investment period required for land, coordinate with members, formulate plans to enhance production, provide essential services, and accumulate funds—all of which are initiatives that must be driven by their members. The next generation of cooperative members is expected to shape this strategy. It is also important to devise a strategy for new members who have already established individual management sectors to join these cooperatives based on their cash investments rather than their land.

Finally, we wish to highlight three future issues that are related to the support for agricultural cooperatives in Kyrgyzstan. First, previous production cooperatives, such as Cooperative B, possessed collective plots, machinery, and equipment inherited from former collective farms, which enabled them to develop their production businesses. In addition, service members were entrusted with the allotment sites due to prior experience of working on the same collective farm. Therefore, if the transition to subdivided fields and the demonstration of benefits for farmers and non-farmers in joining a cooperative are possible, then agricultural production cooperatives can be expanded. Second, individuals who withdrew from such cooperatives leased their land to other farming entities when farmland prices increased. Thus, newly established agricultural cooperatives and those that seek new members must secure cash payments for land leases according to the surrounding farmland price. Third, in the expansion of the service sector, it is necessary to understand the current demands of farmers, not only in the cooperatives but also the surrounding areas. These difficulties must be eliminated to protect the future development of agricultural cooperatives in Kyrgyzstan.

Notes

- 1) Values for the agricultural sector in 2023 are taken from “Kyrgyzstan in Numbers 2024” published by the National Statistical Committee of the Kyrgyz Republic (NSC) in June 2024. The total value of 486,940, the sum of peasant (farmer) farms (krest’ yanskies (fermerskie) khozyaistva) and part-time farmers (individual’nye predprinimateli), was considered for individual farmers.
- 2) According to CUK, in 2003–2007, when a series of agricultural cooperatives were established, many agricultural cooperatives were created with family household members as members for the time being in expectation of support from donors. This means that it is difficult to distinguish their activities as agricultural cooperatives from those of mere family-run businesses, which makes it difficult to evaluate their activities.
- 3) Kolkhoz (collective farms) and Sovkhoz (state farms) are collectively referred to as agricultural enterprises.
- 4) Calculated from NSC data for 2023, based on 1,048.5 thousand ha of land used by farmers and 361,497 peasant (farmer) farms.
- 5) Lerman and Sedik (2018) are also concerned about this point. In fact, measures have been taken to prioritize borrowing from the LRF, and the National Strategy for 2013–2017 states that agricultural cooperatives are to be integrated with small farmers as “growth points” with support for efficient production entities with an arable land area of 100 ha. Currently, in the “Development of Agricultural Cooperation in 2023–2027,” the term agro-industrial complex (agropromyshlennyy kompleks) is used to integrate entities.
- 6) By “active,” we mean that they meet the following two criteria: (1) they have participated in CUK training and other seminars; and (2) they have not failed to report their activities to the relevant authorities as required. Since it is not quantified, it was divided among CUK representatives. The CUK criteria were established with the support of German donors and are not free from bias, but since 71% of all agricultural cooperatives at the time were members of the organization, they are treated in this paper as having a certain degree of credibility.

- 7) Italicized text indicates the Kyrgyz language or Russian language in romanized form.
- 8) According to Nishiyama (2002), a succession of such villages was established in northern Kyrgyzstan in the late 19th century.
- 9) Dekker’s (2018) steps 1–3 and Lerman and Sedik’s (2009) step 3 in that order.

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要約

キルギスにおける生産農協は、人や土地、設備などの点で旧集団経営と連続性を持ち、独立後の土地改革の混乱から現在にかけて農業生産を継続したことで、食料や私有家畜への飼料の組合員への配当が実現されていた。現在は市場経済の浸透から組合員農家の個別化傾向が強まったが、農協も組合員の個別部門に対する作業受託等の事業を広げてきた。しかし、同時に農地価格の高騰等の理由により組合員の脱退が進んでいる。また、一部の個別農家による農機購入が進み、農協自体で更新できなくなった機械作業を委託する事態も生まれていた。このように農協の規模は縮小傾向にあるといえ、今後さらに拡大する個別経営部門に対して必要な機能をより積極的につけることが求められる。

キーワード：キルギス，生産農協，土地改革，個別経営化