Considering the Rationality of Land-lease Farming in Korea: A Survey of Farmers in Jeollabuk-do Province

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https://doi.org/10.15017/7170256

出版情報：韓国経済研究. 21, pp.23-42, 2024-03. 九州大学韓国経済研究会
バージョン：
権利関係：

Considering the Rationality of Land-lease Farming in Korea : A Survey of Farmers in Jeollabuk-do Province[1)]

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Introduction

Korea's farming population has declined with economic growth since the 1970s. The decline in the farming population has resulted in a shortage of farm labor. Consequently, farmland leasing has increased to adjust the excess and shortage of labor among farmers and has become a characteristic feature of Korean agriculture. Farmland leasing was previously illegal, and there was controversy in the 1960s and the 1970s about legalizing farmland leasing[2)]. However, the controversy remained unsettled; legislation was delayed, and the Farmland Law was finally enforced in 1996 (Fukagawa 2002: 98). Meanwhile, the amount of leased land has continued to increase, and critical studies on land leasing have emerged.

In land-lease farming, landowners can take farmland and convert it for uses other than farming. Land-lease farmers are reluctant to invest in fixed capital for facility farming in the suburban areas of large cities, where the potential for farmland conversion is greater. Environmental farming, which requires long-term investments in land improvement, is also difficult (Lee, Seok-Ju 2005: 68). In paddy farming, it is not easy to make fixed capital investments in large machinery if farmers cannot rent the land for a long period (Sa, Dong-Chun 2010: 132). Farmers who rent land have difficulty recovering the capital invested in farm machinery if the contract period is short (Chung, Kyung-Mi 2013: 105). According to Kim, Hong-Sung et al. (2016 : 31), most contracts for facility farming are documented to last for several years, while most contracts for paddy farming are oral contracts lasting one year[3)].

Paddy fields and facility farming require a long time for capital recovery. However, as Kim, Hong-Sung et al. (2016) pointed out, unlike facility farming, paddy field farming is often based on oral contracts renewed

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1) This paper is a substantially revised version of the following paper: Fukagawa, Hiroshi (2023), "The Land-Lease Farming in the Lowland Rural Areas of Korea: A Survey of Farmers in Jeollabuk-do Province," Kyushu University, *Journal of Economics*: 90; 2, 3, 4.

2) The main issue in the controversy was the eligibility and ownership limit of farmland. The government side, which sought to relax them, and the academic community and the mass media, which opposed them, repeatedly criticized each other. During the long period of controversy, the absence of a farmland law in Korea continued, and the regime of subsistence farming receded (Fukagawa 1993: 259).

3) Rice farmers, field crop farmers, and open field vegetable farmers, who cultivate annual crops, are more likely to use the oral contract form. The oral contract rate is 53.5% for farmland where rice is grown (Kim, Hong-Sung et al. 2016: 31). Perennial crops and crops that require a lot of investment in facilities mostly have long-term lease contracts. In particular, in the case of institutional vegetables and fruit trees, more than 70% of lease contracts are for 5 years or longer (Kim, Hong-Sung et al. ibid.: 60)

for one year. It requires not only fixed capital investment in large machinery but also a certain amount of leased land to maintain the operational efficiency of large machinery. If a contract is not renewed, farming plans may be hindered.

From the perspective of the recovery of invested capital, paddy leases, which are primarily short-term oral contracts, appear unstable. However, the ratio of leased land to the total paddy area remains large and has not exhibited a significant downward trend. As farmers continue to age and more people leave farming, the pressure to lease farmland increases, and it is possible that land-lease farming will continue in the future.

This study surveys and analyzes the actual situation of paddy leasehold farming in lowland farming villages, aiming to determine how paddy farmers cope with the instability of land-lease farming and how they manage their land rationally. We first provide an overview of the formation of agricultural structures through land leases and farmland policies. Next, we review recent studies on leased land and grasp recent trends in the research on leased land farming in Korea. We then consider the rationality of land-lease farming by analyzing a field survey in Jeollanam-do, a typical lowland rural area (Figure 1).

Figure 1: Study Area

1. Development of land-lease farming in Korean agriculture

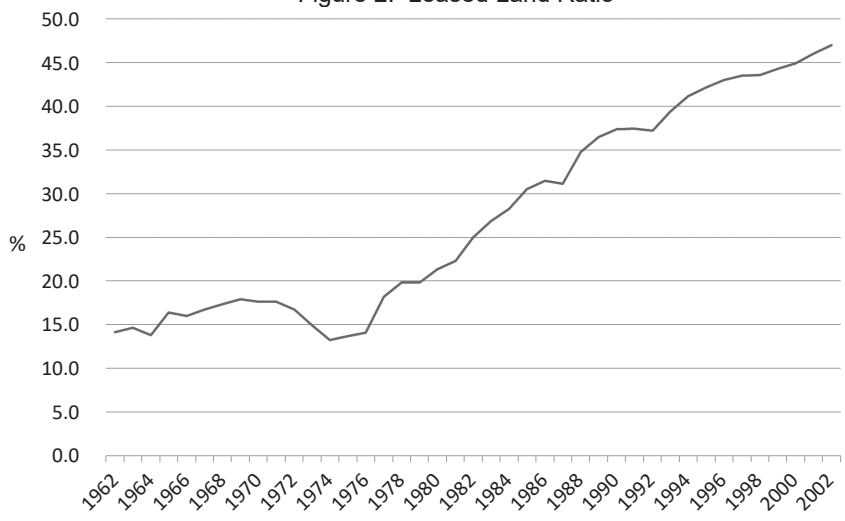
1) Formation of agricultural structure by land lease since the 1970s

Since Korea's liberation in 1945, farmland leasing has been the main issue in Korean agriculture. The Korean colonial economy was dominated by the agricultural sector. Under conditions of rural overpopulation, the high rate of farmland rent charged to tenant farmers formed the economic basis for the colonial landlord system. After the enactment of the Farmland Reform Law in 1949, the reform was in progress throughout the Korean War, and the distribution of farmland was almost complete by the late 1950s (Fukagawa 1987: 109).

In Japan, after the farmland reform, the Farmland Law was enacted to prohibit tenant farming, but in Korea, such a farmland law was not enacted, and tenant farming was regenerated in the 1960s[4] (Fukagawa 1987: 113). This was called the "regenerative tenancy system". In most cases of them, farmers who received farmland through the reform gave up their land because of economic hardships and returned to the tenants.

4) From the late 1950s to the end of the 1970s, the Korean government attempted to enact a farmland law by submitting farmland bills to replace the Farmland Reform Law with a new farmland law as many as six times. Each time a farmland law was proposed, it generated intense controversy, but no farmland law was enacted.

Figure 2: Leased Land Ratio



Source: "Farm Household Economic Survey," Agricultural and Fishery Trends Division, Social Statistics Bureau, National Statistics Office, Republic of Korea. Data obtained from National Statistics Office, KOSIS (Korean Statistical Information Service), https://kosis.kr/index/index.do (last accessed September 21, 2023).

Note: The Farm Household Economic Survey covers about 3,000 farm households. The sample is reconstituted every five years to reflect changes in the farmer population.

Nonfarm employment was limited until the early 1960s, when farmers were forced to remain as tenants in rural villages after losing their farmlands (Kuramochi 1985: 16). As the number of tenant farmers increased, the proportion of leased land to farmland (hereinafter, "leased land ratio") rose from 14.1% in 1962 to 17.6% in 1969[5].

Thereafter, industrialization and urbanization led to an increase in non-agricultural employment, which reduced the number of tenant farmers. The inflow of funds from Japan under the Japan-Korea Basic Treaty of 1965 led to infrastructure development. Direct investments from Japan and other countries increased the demand for employment in the labor-intensive manufacturing sector. Many people left the rural areas to work in this sector. This reduced the number of tenant farmers, and the leased land ratio fell to 13.2% in 1974 (Figure 2).

However, the leased land ratio began to increase again in the late 1970s. In 1980, the leased land ratio increased to 21.3%, and it further surged to 36.5% by 1990. There were two main types of land tenancies. One involved a relatively large farmer who leased out farmland and became a landowner in his village because he lacked the necessary labor for farming as some of his family members had migrated to the city. Another

5) By the 1960s, large-scale farming had emerged. The upper limit of farmland ownership is usually determined by the Farmland Law. However, since there was no Farmland Law in Korea at that time, the Farmland Reform Law of the 1950s was used instead. The rule was "self-management or self-cultivation of 3 ha. In this case, "self-management" meant that farmland could be owned without "self-cultivation. At that time, the limit of self-cultivation by family labor was 2 ha, and large farmers expanded the scale of farming to 3 ha and more by hiring permanent laborers (Fukagawa 1993a: 86).

Table 1: Decline in Farm Population

Year	Total population (000)	Farm population (000) A	Farm population ratio (%)	Change in farm population (000)	Percentage change in farm population (%)	Number of farm households (000) B	Change in number of farm households (000)	Percentage change in number of farmers (%)	Average size of households (n) A/B
1960	2,501.2	1424.3	56.9	–	–	232.9	–	–	6.12
1970	3,224.1	1442.2	44.7	17.9	1.3	248.3	15.4	6.6	5.81
1980	3,812.4	1082.7	28.4	△359.7	△24.9	215.5	△32.8	△13.2	5.02
1990	4,286.9	666.1	15.5	△416.6	△38.5	176.7	△38.8	△18.0	3.77
2000	4,700.8	403.1	8.6	△263.0	△36.9	138.3	△38.4	△21.7	2.91
2010	4,955.4	306.3	6.2	△96.8	△24.0	117.7	△20.6	△14.9	2.60
2020	5,182.9	231.4	4.5	△74.9	△24.5	103.5	△14.2	△12.1	2.24

Source: Census of Agriculture, Agriculture and Fisheries Statistics Division, Statistics Bureau.
KOSIS (Korean Statistical Information Service), https://kosis.kr/index/index.do (last accessed September 29, 2023)
Note: "Farm" refers to farm household.

involved a farmer who leased out his land and left the village to become a small absentee landlord in the city (Kuramochi 1985: 22). As mentioned above, the regenerative tenancy system of the 1960s was due to farmers' loss of land whereas land leases that started in the late 1970s were precipitated by labor shortages and farmers leaving their farms and villages.

An agricultural census (Table 1) confirms this decline in farm population since the 1970s, from approximately 14,422,000 in 1970 to 4,031,000 in 2000. It has decreased by approximately 10 million over the past 30 years. The farm population ratio declined from 56.9% in 1960 to 28.4% in 1980 and to 15.5% in 1990. The farm population fell by 3,595,000 in the 1970s, and by 1980 was 24.9% lower than in 1970. In the 1980s the number fell by 4,166,000 and the rate of decline during the decade of the 1980s was as high as 38.5%. In the 1990s, the number declined by 2.63 million, but the rate of decline remained high at 36.9%. Since 2000, the rate of decline has remained in the high 24% range, the same as in the 1970s.

Meanwhile, the number of agricultural households fell by 328,000 in the 1970s, a 13.2% decline rate. This decline increased in the 1980s to 388,000, with a decline rate of 18.0%. In the 1990s, the number of agricultural households continued to fall by the same amount, to 384,000, with the decline rate peaking at 21.7%. The decline rates of both the farm population and number of farm households fell sharply from the 1980s to the 1990s, but the decline rate of the farm population was greater than that of farm households, with the average number of family members in farm households halving from 6.12 in 1960 to 2.91 in 2000.

Particularly in the 1980s, farmland leasing increased as the farm population declined. Most farmers, regardless of their farm size, from large to small, operated their farms on leased land. Hence, competition for leased land drove up land rents. Small tenant farmers were impoverished by the burden of rent payments, and land leasing became a social problem (Fukagawa 2002: 77). Medium-sized land-lease farmers were also unable to expand their farming scales because of the slow pace of mechanization. Large-scale land-lease farming emerged only after the diffusion of agricultural machinery in the 1990s.

2) Farmland policy in the 1990s under the opening of domestic agricultural markets to foreign markets

The government responded to criticisms of the impoverishment of small farmers as follows. In 1988, the government launched the "Farmland Purchase Support Program" to alleviate the land-lease problem by helping small farmers purchase farmland and convert leased land. Subsequently, in 1990, the government launched the "Farmland Purchase and Sale Program" to expand the scope of farmland purchase support from small to large farmers. In parallel with this program, the government raised the limit on farmland ownership from 3 ha to 20 ha in 1994, shifting support for farmland purchases from small to large farmers. Although this program was successful in increasing the amount of farmland owned by farmers, it increased land prices and inflated the program budget, leading the government to scale back the program in the mid-1990s (Fukagawa 2002: 89).

As described above, land leasing became a social problem in the 1980s, and the government tried to curb land leasing by promoting the purchase of farmland; however, this did not have a sufficient effect, and the area of leased land continued to increase.

Subsequently, the government changed its policy from curbing leasing to encouraging leasing. The turning point came with the opening of the agricultural commodity markets. In the early 1990s, the completion of the GATT Uruguay Round negotiations increased pressure on open agricultural commodity markets. Korea was highly dependent on exports, as manufacturing exports drove economic growth and maintained a free trade regime; hence, the opening of agricultural commodity markets was inevitable. As a domestic measure to open the market, the government adopted a policy to improve international competitiveness by promoting large-scale rice farming in rural lowland areas and providing financial support to rice farmers (Fukagawa 2002: 87).

Domestic farmers had to increase productivity and reduce costs to compete with cheaper, foreign-sourced rice in the rice market. The government tried to stabilize the leasing system through the "Long-term Lease Program" and launched the "Agricultural Machinery Half-price Supply Program" (hereinafter, the "Half-price Program"). The Half-price Program subsidized half of the cost of machinery purchases, enabling farmers to obtain large-scale machinery. Institutional development and mechanization supported the expansion of the farming scale, and by the end of the 1990s, large-scale rice farmers started to emerge in rural areas (Fukagawa 2002: 99)

The Half-price Program was initially aimed at large farmers, but the scope of the subsidy project was later extended to include small and medium-sized farmers. They constituted the majority of farmers who opposed market opening. The government tried to suppress their opposition with subsidies and promote market opening. Many small and medium-sized farmers bought machinery with subsidies but were overequipped in relation to the size of their farms. They began to contract agricultural work using their machinery to compensate for its depreciation (Fukagawa 2002: 178).

The number of farmers contracted for mechanical work then increased, and competition among contract farmers resulted in lower contract fees. Large farmers with large machinery increased the area contracted

for work to offset depreciation costs. However, with the aging rural population, the number of elderly farm households without machinery increased, leading to an increase in the demand for contract work. Farmers with machinery were able to find older farmers to outsource their farming operations. Thus, the risks associated with long-term capital investment in large machinery could be mitigated by increasing the contract area. The issue that remained was to improve a farmland leasing system.

3) Institutionalization of farmland leases since the 2000s and the limits of lease control

The Farmland Law, which came into force in 1996, allowed for previous leases and conditionally allowed new leases of up to 1 ha. The law (Article 6.1) prohibited in principle the ownership of farmland other than for one's own agricultural purposes, stating that "no person may own farmland unless it is used or to be used for his own agricultural activities." As an exception, the law allowed ownership of up to 1 ha of farmland if the farmland was owned before January 1, 1996, was inherited, and if the farmer left the farm after at least eight years of self-cultivation[6] (Lee, Seok-Ju 2005: 68). The law was revised in 2003 to allow non-farmers to own farmland of at least 10 Ares for self-cultivation and to purchase farmland of less than 10 Ares for weekends and farming purposes (Lee, Seok-Ju, ibid.).

Furthermore, in 2005, the Korean Agricultural and Fishing Village Corporation and Farmland Management Fund Law was enacted, allowing farmland leasing through a "Korean Agricultural and Fishing Village Corporation" (hereinafter, "KAFVC"; Kondo 2015: 30). Farmland leasing under this law was initially limited to 2 ha, but amendments in 2009 allowed for farmland leasing in excess of 2 ha (Kim, Hong-Sung et al. 2016: 35). The Farmland Law attempted to discourage farmland leasing through ownership restrictions, but the number of land leases using the exception provisions in the Farmland Law continued to increase, thus widening the gap between the law's intentions and the actual situation. This was followed by a series of amendments to the Farmland Law that relaxed leasing regulations and promoted leasing control through the KAFVC.

However, according to Kondo, "Korean lease farmers tend to avoid the intervention of public agencies such as KAFVC" (Kondo 2015 ibid: 33). Most land leases are made by individuals and not through a KAFVC. Regarding contracts, the share of written KAFVC contracts is low, and that of individual oral contracts is high (Kim, Hong-Sung et al. ibid.: 35). This is due to the cumbersome procedures of the KAFVC and the fact that farmers experience no problems with farmland leases, even if they are individually contracted.

In a survey conducted by Takayasu (2015) in Jeollabuk-do, the same province analyzed in this study, farmers responded that they had no problems with oral contracts[7]. Leases are negotiated oral contracts with

6) The Farmland Law prohibits farmland leasing but allows it as an exception in the following cases. (1) farmland owned since before 1996, (2) inherited farmland of less than 1 ha, (3) farmland owned after retiring from farming after 8 years of self-cultivation, (4) farmland that cannot be farmed further due to special reasons (requisition, illness, etc.), (5) farmland under execution by a mortgage institution, (6) farmland of a retired farmer over 60 years old who has been self-cultivating for more than 5 years, etc. However, "in practice, this provision is not observed at all" (Lee, Seok-Ju, 2005: 69).

7) The survey was conducted in Ieup-si, Buan-gun, and Iksan-si, Jeollabuk-do, in August 2014.

no fixed terms and are relatively stable as long as landowners do not use the land for other purposes. The recovery of farmland by landowners is less than 10%. Contracts documented through a KAFVC can be complicated. For these contracts, farmers also must provide all personal and farmland information on the form and travel to the office and seal the form (Takayasu 2015: 46).

Farmers are also reluctant to participate in the KAFVC Farmland Exchange and Consolidation Program. The use of a KAFVC promotes exchange and consolidation to correct farmland dispersal through project financing and other means. However, according to farmers' responses to the Takayasu survey, in some cases, KAFVCs are not used. Without informing the landowner, the tenant exchanges a nearby field leased by someone else for his own distant leased land and cultivates it only during the cultivation season. The landowner only needs to be paid the land rent and is not involved in the exchange (Takayasu 2015: 40).

As we can see, the government has prepared mechanisms to stabilize land leasing, but farmers do not apply these mechanisms. Farmland leasing continues, regardless of institutional arrangements. Why does farmland leasing continue despite criticisms of its problems? Is there a rational economic mechanism behind the stability of farmland leasing in Korea?

4) Increasing pressure to rent out farmland due to the ageing of the farming population and labor shortages

What is the cause of the large amount of leased land despite the instability of land-lease farming noted in previous studies? According to Shinagawa (2018), the large amount of leased land arose from the "pressure to rent out farmland," which resulted from declining farm profits amid rising land prices and an ageing population. The practice of land leasing spreads as farmland prices rise owing to speculation and other factors. According to the farmers' survey responses, farmland "cannot even cover the interest rate on a loan to purchase farmland for farming" because of rising farmland prices (Shinagawa 2018: 239)[8].

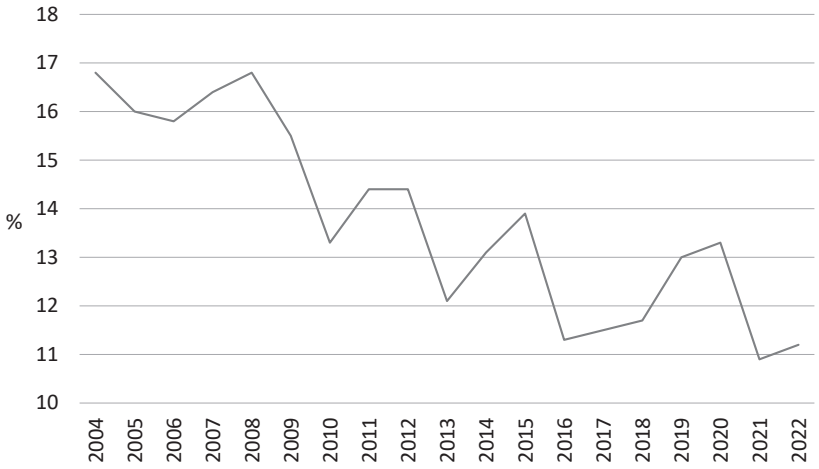
In Takayasu's survey, some farmers responded that they had purchased farmland in the past but that it was now too expensive to buy (Takayasu, ibid: 38). Many landowners own farmland through inheritance[9]. Even if someone else purchases farmland for speculative purposes, the new landowner will continue to rent out the farmland without farming it; thus, there is no problem for the tenant farmer continuing to lease the land. Even if the landowner becomes a non-farmer, they are obliged to cultivate the land and forced to lease it to farmers (Shinagawa, ibid.). Kim, Hong-Sung et al. identified the large number of absentee landlords as a problem in Korean agriculture (Kim, Hong-Sung et al., ibid. : 36), but this may not be a problem if absentee landlords are obliged to cultivate their land.

Some farmers shift from outsourcing to renting as they age. Older farmers usually run their own farms without renting out their land, as long as they can do light work, and they only outsource heavy work, such

8) The survey was conducted in 2015-16 in Kosan-myeon, Wanju Gun (Shinagawa ibid.: 239).

9) According to a survey by Kim, Hong-Sung et al., 53.9% of absentee landowners acquired farmland by inheritance, 12.2% by gift, and 33.9% by sale (Kim, Hong-Sung et al., ibid.: 66).

Figure 3: Rent Ratio



Source: Same as Figure 2.
Note: Rent ratio (%) = Ratio of rent fee / total crop production on leased land.
*Total crop production is the yield of main and secondary products * unit price.

as harvesting, to other farmers who own machinery[10]. In this case, the income typically exceeds the land rental income from renting out farmland (Fukagawa 2018: 32). By contrast, when we look at the situation from the perspective of farmers who contract farming work or rent land for farming, land-lease farming is more advantageous because the income after paying land rental exceeds the income from contract work. Older farmers will shift from outsourcing work to renting out farmland when aging makes it difficult to carry out even light work. In a recent survey by Takayasu, some undertook farmers asked the outsourced farmers to rent their farmland (Takayasu 2015: 38). Outsourcing farm work can therefore be positioned as a step towards leasing out farmland.

Previous studies have criticized the risk of farmland recovery because of contract instability, which is a disincentive for long-term capital investment. However, the supply of farmland increases as the population ages, and the risk of farmland recovery is not as high as before. According to Professor Hwang, Jae-Hyun of Dongguk University, "As farmers age, more farmland is leased, making it harder for aging farmers to find tenants for their farmland. In particular, small, remote, and mid-mountain areas are not attracting renters"[11] (Fukagawa, 2023). According to Takayasu's survey, most farmland lenders in mid-mountain areas are elderly farmers, and it is relatively easy to rent farmland from them (Takayasu, ibid).

The increased pressure to rent out farmland is also reflected in rent activities. According to the Farm Household Economic Survey, these have declined from the 15-16% range in the 2000s to the 10-13% range in the late 2010s (Figure 3). Furthermore, when rent activities were broken down into categories of cash, in

10) According to Kim, Hong-Sung et al., most of the reasons why landowners in rural areas lease their farmland instead of selling it are for the purpose of inheriting it. He predicts that as the population of farmers ages, an increase in farmland leasing by rural landowners will become inevitable (Kim Hong-Sung, et al. ibid.: 64).
11) Based on an interview with Professor Hwang, Jae-Hyun of Dongguk University on October 10, 2023.

kind, and no-rent-payments, an increase in the no-rent-payments category was found. This category remained below 10% until around the mid-2000s but exceeded 10% in the 2010s and has recently hovered around 17% (Table 2). In mid-mountain areas, it is difficult to find farmland tenants, even without rent requirements.

As discussed above, despite criticisms of farmland leasing in previous studies, the situation surrounding farmland leasing does not threaten its continued existence. On the contrary, it seems to be stable and has a certain rationale for its continued existence. We confirmed these points by examining actual situations.

Table 2: Form of Rent Payment

Unit: %

Year	In kind	In cash	No rent	Total
2004	51.9	39.3	8.8	100.0
2005	51.3	38.7	10.0	100.0
2006	50.8	40.0	9.2	100.0
2007	50.0	40.6	9.4	100.0
2008	48.6	41.5	9.9	100.0
2009	42.7	42.8	14.5	100.0
2010	37.8	41.7	20.5	100.0
2011	36.6	45.6	17.8	100.0
2012	34.8	48.7	16.5	100.0
2013	32.7	51.1	16.2	100.0
2014	28.1	55.3	16.6	100.0
2015	28.8	55.2	16.0	100.0
2016	25.1	58.0	16.9	100.0
2017	19.8	63.9	16.3	100.0
2018	27.8	57.8	14.4	100.0
2019	23.6	60.5	15.8	100.0
2020	24.9	58.6	16.5	100.0
2021	20.1	62.3	17.6	100.0
2022	20.0	62.3	17.7	100.0

Source: Same as Figure 2.

2. Actual situations of farmland leasing in lowland rural areas

1) Overview of the survey area - Iksan City and Gimje City, Jeollabuk-do Province

This study investigated land-lease farming in lowland farming villages. We focused on Jeollabuk-do, a typical lowland agricultural region in Korea, and surveyed two farming cooperatives, one in Iksan City and the other in Gimje City. Iksan City is a regional city with a population of approximately 300,000, and the neighboring city of Gimje has a population of approximately 90,000. To examine the characteristics of the region, we calculated the percentage of paddy field areas in farmland in 2020, which was 70.1% in Jeollabuk-do, 80.4% in Iksan, and 80.7% in Gimje, compared with 55.2% nationwide, indicating that the study area is a typical paddy field area in Korea (Table 3).

The proportion of paddy fields has been declining in recent years: comparing 2005 and 2020, the national proportion decreased from 62.8% to 55.2%. The decrease in the proportion of rice paddy fields was due to the policy of promoting rice conversion as a countermeasure to rice overproduction. The policy aimed to control rice overproduction and stabilize its price. Consequently, the rice paddy field proportion in Jeollabuk-do decreased from 76.1% to 70.1% over the same period, but the rice paddy field proportions in Iksan City and Gimje City remained at approximately 80%.

The proportion of Jeollabuk-do's paddy fields under lease increased from 43.2% in 2005 to 46.9% in 2015 and then declined to 41.2% in 2020 (Table 4). This decline was not limited to Jeollabuk-do, but was a nationwide trend, the causes of which will be discussed in a separate paper.

Regarding the changes in the number of rice paddy farm households by scale of farmland management, the index for 2020, with 2005 set at 100, was 161.9 for farm households with 10.0 ha or more of farmland

Table 3: Change of Paddy Field Proportion in Jeollabuk-do

Unit: ha, %

Area of arable land				
Year	2005	2010	2015	2020
Nationwide	1,510,548	1,449,418	1,309,787	1,115,613
Jeollabuk-do	187,374	177,057	164,433	140,247
Iksan City	23,841	21,864	22,087	16,895
Gimje City	26,914	25,146	21,823	18,497
Area of paddy field				
Year	2005	2010	2015	2020
Nationwide	948,345	839,996	737,415	615,279
Jeollabuk-do	142,671	128,392	118,092	98,303
Iksan City	20,537	18,201	18,394	13,582
Gimje City	22,638	20,938	18,529	14,927
Ratio of Paddy Field				
Year	2005	2010	2015	2020
Nationwide	62.8	58.0	56.3	55.2
Jeollabuk-do	76.1	72.5	71.8	70.1
Iksan City	86.1	83.2	83.3	80.4
Gimje City	84.1	83.3	84.9	80.7

Source: Same as Table 1.

Table 4: Change of Leased Land Proportion in Jeollabuk-do (paddy fields)

Unit: ha, %

Area of paddy field				
Year	2005	2010	2015	2020
Nationwide	948,345	839,996	737,415	615,279
Jeollabuk-do	142,671	128,392	118,092	98,303
Iksan City	20,537	18,201	18,394	13,582
Gimje City	22,638	20,938	18,529	14,927
Area of leased land				
Year	2005	2010	2015	2020
Nationwide	373,134	338,302	310,252	237,134
Jeollabuk-do	61,614	58,770	55,433	40,487
Iksan City	8,544	7,855	8,188	4,493
Gimje City	9,907	9,745	9,058	6,205
Leased land proportion				
Year	2005	2010	2015	2020
Nationwide	39.3	40.3	42.1	38.5
Jeollabuk-do	43.2	45.8	46.9	41.2
Iksan City	41.6	43.2	44.5	33.1
Gimje City	43.8	46.5	48.9	41.6

Source: Same as Table 1.

Note: There are differences in leased land ratio between this table and Figure 2. The data in this table are from the “Census of Agriculture, Agriculture and Fisheries Statistics Division” and the data in Figure 2 are from the “Farm Household Economic Survey”. While the “Census” is a survey of all households, the “Farm Household Economic Survey” is a sample survey of approximately 3,000 households, and the sample is reorganized every five years.

Table 5: Number of Paddy Field Farmers in Jeollabuk-do by Scale of Farmland Area

Unit: n,%

2005								
Farmland Scale (ha)	Total	below 0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	5.0-10.0	over 10.0
Nationwide	938,136	412,001	270,571	161,114	43,392	32,614	15,311	3,133
Jeollabuk-do	101,562	34,023	28,030	22,049	6,948	6,115	3,522	875
Iksan City	12,165	3,496	3,253	2,857	937	874	555	193
Gimje City	11,085	2,576	2,452	2,766	1,104	1,205	791	191
2020								
Farmland Scale (ha)	Total	below 0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	5.0-10.0	over 10.0
Nationwide	555,990	296,054	126,704	69,921	21,437	21,831	14,972	5,071
Jeollabuk-do	60,374	25,647	13,872	9,924	3,176	3,717	2,741	1,297
Iksan City	8,223	3,204	2,040	1,494	437	523	349	176
Gimje City	5,660	1,488	1,188	1,153	462	617	493	259
Index for 2020 (2005 = 100)								
Farmland Scale (ha)	Total	below 0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	5.0-10.0	over 10.0
Nationwide	59.3	71.9	46.8	43.4	49.4	66.9	97.8	161.9
Jeollabuk-do	59.4	75.4	49.5	45.0	45.7	60.8	77.8	148.2
Iksan City	67.6	91.6	62.7	52.3	46.6	59.8	62.9	91.2
Gimje City	51.1	57.8	48.5	41.7	41.8	51.2	62.3	135.6

Source: Same as Table 1.

nationwide (Table 5). The indexes for Jeollabuk-do and Gimje City were 148.2 and 135.6, respectively. The index for Iksan City was 91.2, but the degree of decline for the 10.0 ha and above group was relatively small compared with the other farm-size groups. These results indicate that some paddy farmers were increasing the size of their farms, despite a decrease in the paddy and leased land area ratios.

Rice is the main crop in both cities, whereas paddy soybean is widely grown in Gimje City. Table 6 compares the data for both cities with the national data on the proportion of rice and paddy soybean areas to the total farmland. While the national rice area was 53.4%, the area in Jeollabuk-do was 67.1%, and the area in Iksan City was 78.5%. Soybeans were prominent in Gimje City, at 13.1%, compared with 3.7% nationally and 4.6% in Jeollabuk-do.

Table 6: Rice and soybean acreage (2020)

Unit: ha, %

Acreage			
	Total arable land	Rice	Soybean
Nationwide	1,115,613	595,405	41,726
Jeollabuk-do	140,247	94,067	6,487
Iksan City	16,895	13,262	289
Gimje City	18,497	13,828	2,415
Composition ratio			
	Total arable land	Rice	Soybean
Nationwide	100.0	53.4	3.7
Jeollabuk-do	100.0	67.1	4.6
Iksan City	100.0	78.5	1.7
Gimje City	100.0	74.8	13.1

Source: Same as Table 1.
Note: The Soybeans are cultivated in paddy fields.

We conducted interviews with a farming cooperative that grows mainly rice in Iksan City and a farming cooperative that grows soybeans in Kimje City[12]. The cooperative in Iksan City consisted of seven rice farmers. All of them were engaged in leased land farming with large machinery, and some of them had a total area of more than 100 ha together with their back crop of wheat. The cooperative in

Kimje City was responsible for selection and sorting of soybeans. The cooperative owned five soybean-specific combines and performed mechanical work for the farmers. In addition to the cooperative, each invested farmer owned 15 general-purpose combines, which were used by each farmer for harvesting and other operations. They can be considered as a group of farmers who individually invest fixed capital in machinery. The cooperatives in Iksan and Iksan and Kimje City are typical examples of leased land farming in lowland paddy fields.

2) The case of Hangul Farming Cooperative

The subject of the Iksan City hearing was the Hangul Farming Cooperative in Geumgang-dong, Iksan City. The cooperative was established in 2008. Seven farmers, most born in the 1970s, participated in the establishment of the cooperative at a relatively young age, in their 30s[13]. These seven farmers engaged in complex farming, mainly rice cultivation. As of 2014, the cooperative's total cultivation area was 415 ha, including rice, wheat, Korean cattle, and strawberries (Table 7). Both Korean cattle and strawberries are labor-intensive crops; however, the cooperative is trying to stabilize its farming operations by shifting to complex farming operations that include wheat cultivation.

In 2017, the farmers started to cultivate paddy soybeans in response to the rice production adjustment policy but continued to manage their fields mainly with rice. The main reason for the success of this cooperative was that it was a lowland field and there were conditions for scaling up through mechanization.

Table 7: Paddy crops cultivated by members of the Hangul Farming Cooperative

Unit: ha, %

Farmer	Year of birth	Rice	Barley	Wheat	Italian ryegrass	Total Cropping Area	Other
①	1975	24	10	–	–	34	200 pyeong of mushrooms
②	1969	64	24	24	–	112	
③	1972	50	10	–	32	92	230 heads of Korean cattle
④	1973	12	1	–	–	13	1,800 pyeong of strawberries
⑤	1975	52	24	–	–	76	Small RPC operations
⑥	1977	24	12	–	–	36	
⑦	1979	32	20	–	–	52	
Total		258	101	24	32	415	

Source: data obtained during the field survey.
Note: RPC stands for Rice Processing Center(Rice Mill).
The data is as of October 2014.

12) On August 7, 2019, an interview was conducted with the chairman and two directors of Hangul Farmers' Cooperative, Geumgang-dong, Iksan City, Jeollabuk-do. On the same day, an interview was also conducted at Chiksan Paddy Soybean Farming Cooperative, Chiksan-myeon, Gimje-si, with Han Eun-sung, secretary general of the association. On the same day, a separate interview was conducted with a paddy soybean farmer who employs temporary foreign workers. In addition to the author, Takayasu, Yuichi (Daito Bunka University), Hwang, Jae-Hyun (Dongguk University), Mizuno, Atsuko (Kyushu University), and Cho, Ga-Ok (Chonbuk National University) participated in this survey. An additional survey was conducted by e-mail on October 10, 2023.

13) For more information on the background of the establishment of the cooperative, see Fukagawa (2020: 183).

Table 8: Area of leased land and contracting methods of Hangul Farming Cooperative members

Unit: ha, %

Farmer	Rice cultivation area					Ratio		
	Total (A)	Own land	Leased land			Leased land ratio (B/A)	Contract with the Corporation (C/B)	Individual contract (D/B)
			Sub-Total (B)	Contract with the Corporation (C)	Individual contract (D)			
①	24	4	20	1.6	18.4	83.3	8.0	92.0
②	64	32	32	8.0	24.0	50.0	25.0	75.0
③	50	8	42	4.0	38.0	84.0	9.5	90.5
④	12	4	8	0.8	7.2	66.7	10.0	90.0
⑤	52	14	38	4.8	33.2	73.1	12.6	87.4
⑥	24	6	18	2.0	16.0	75.0	11.1	88.9
⑦	32	10	22	4.0	18.0	68.8	18.2	81.8
Total	258	78	180	25.2	154.8	69.8	14.0	86.0

Source: same as Table 7.
Note: All individual contracts for leased land are oral contracts with annual renewals.

In addition, they inherited management from their elderly parents' generation, joined the cooperative management team at a relatively young age (in their 30s), and expanded and diversified the scale of their farming while maintaining loose ties within the cooperative.

The total area under rice cultivation by the seven farmers was 258 ha, of which 78 ha was their own land and 180 ha was leased land, for a land lease proportion of 69.8% (Table 8). Half of the leased land was owned by absentee landlords who did not live in the villages. Each farmer was equipped with a tractor, transplanter, combine harvester, and dryer. Because of the depreciation of machinery, each farmer was contracted to work in an area almost equal to their farmland (Table 9).

The total area cultivated by the members, including contracts at work, is more than 400 ha. The area of rice cultivation was 352 ha, meaning that the cooperative members had 94 ha of contract work in addition to their own farming area of 258 ha. Approximately 30% of the farmers in the region participated in the cooperative through land leases and contract farming. Of the remaining 70%, the larger farmers who did not participate were often "older and less active owners."

Table 9: Number of agricultural machinery owned by members of the Hangul Farming Cooperative

Farmer	Tractor	Rice planting machine	Combine	Dryer
①	4	1	1	3
②	5	2	1	6
③	5	1	1	5
④	3	1	1	2
⑤	5	2	1	4
⑥	4	1	1	4
⑦	4	1	1	4
Total	30	9	7	28

Source: same as Table 7.

Table 10: Changes in rice cultivation area of Hangul Farming Cooperative

Unit: ha

Survey date	Rice cultivation area	Area of increase/ decrease
2012 Nov.	244.0	–
2013 Nov.	258.0	14
2014 Nov.	261.2	0
2015 Nov.	261.2	0
2016 Nov.	261.2	0
2017 Nov.	270.0	8.8

Source: same as Table 7.
Note: The acreage of 2014 defers from that of Table 7 and 8, because of the period of data collection.

Table 10 shows the paddy area of this cooperative for the six years from 2011-17, which remained virtually unchanged. If there had been a recovery of farmland, it would have fluctuated; however, for these six years, it remained the same or slightly increased from the previous year. In other words, in terms of fluctuations in paddy area, there is no evidence that land-lease farming was unstable because of the criticized large number of individual contracts. The figures represent the total area of paddy fields, but it can be inferred that almost the same amount of farmland was renewed each year, even for leased land, which accounted for 70% of the total.

3) The case of Chiksan Paddy Soybean Farming Cooperative

Gimje City, like Iksan City, has a large area of lowland farmland. In Gimje City, soybeans are cultivated on a large scale in rice paddy fields. If we look at the number of soybean farmers by farm size, the nationwide average in 2020 was 0.8%, but in Jeollabuk-do, it was 2.3%, and in Gimje-si, it was 14.4%. Jeollabuk-do had 500 soybean farms that were 2.0 ha or larger, of which 255 were concentrated in Gimje City (Table 11).

What enabled large-scale farming was the use of machinery. Looking at the number of food crop farm households by the type of machinery owned, Gimje City had a larger proportion of farmers with machinery than the nation as a whole and Jeollabuk-do. In Gimje City, the percentage of farmers who owned a tractor was 35.2%, compared with 11.9% nationally and 14.3% in Jeollabuk-do. The percentage of farmers who owned combine harvesters was 13.7% in Gimje, compared with 1.7% nationally, and 2.9% in Jeollabuk-do. The proportion of farmers who owned seeders was also high in Gimje City (Table 12), which has made progress in the mechanization of large-scale soybean production. Of the 404 farm households in Chiksan Myeon, 10.6% had more than 10 ha of farmland, and if the 5.0-10.0 ha group was included, 104 farm households had more than 5 ha of farmland, accounting for 25.7% of all farm households (Table 13).

We conducted interviews with the Chiksan Paddy Soybean Farming Cooperative, located in Chiksan Myeon, Gimje City. Its operations included paddy soybean farming (480 ha in 2018), contract mechanical work, and soybean selection and sorting. This cooperative contracted with soybean farmers to select and sort harvested soybeans. It also performed contracted mechanical work for soybean cultivation. As of 2019,

Table 11: Number of soybean farmers by scale of cultivation in Gimje City

Unit: household,%

Farmland Scale (ha)	Total	below 0.1	0.1-0.3	0.3-0.5	0.5-1.0	1.0-2.0	over 2.0	Soybean cultivation area
Nationwide	252,904	178,813	45,597	15,015	8413	3,086	1,980	41,726
Jeollabuk-do	22,210	14,535	4,333	1,438	916	488	500	6,487
Gimje City	1,774	688	357	178	153	143	255	2,415
Nationwide	100.0	70.7	18.0	5.9	3.3	1.2	0.8	100.0
Jeollabuk-do	100.0	65.4	19.5	6.5	4.1	2.2	2.3	15.5
Gimje City	100.0	38.8	20.1	10.0	8.6	8.1	14.4	5.8

Source: Same as Table 1.
Note: Soybean farmers include those who cultivate soybeans on a small scale and cultivate mainly rice or vegetable.

Table 12: Number of food crop farmers with agricultural machinery (2020)

Unit: household,%

	Number of food crop farming households	Walking tiller	Riding tiller	Combine harvester	Management machines	Dryer	Seeding machine	Low-temperature storage
Nationwide	140,111	37,664	16,659	2,446	36,197	30,223	5,065	13,064
Jeollabuk-do	10,330	2,541	1,480	300	2,357	2,251	444	1,754
Gimje City	1,011	344	356	139	335	315	148	233
Nationwide	100.0	26.9	11.9	1.7	25.8	21.6	3.6	9.3
Jeollabuk-do	100.0	24.6	14.3	2.9	22.8	21.8	4.3	17.0
Gimje City	100.0	34.0	35.2	13.7	33.1	31.2	14.6	23.0

Source: Same as Table 1.

Table 13: Number of farm households by arable land scale in Chiksan myeon

Unit: household,%

Farmland Scale (ha)	Total	below 0.5	0.5-1.0	1.0-2.0	2.0-3.0	3.0-5.0	5.0-10.0	over 10.0
Jeollabuk-do	92,262	41,129	19,987	14,964	5,368	5,264	3,743	1,807
Chiksan myeon	404	69	47	73	49	62	61	43
Jeollabuk-do	100.0	44.6	21.7	16.2	5.8	5.7	4.1	2.0
Chiksan myeon	100.0	17.1	11.6	18.1	12.1	15.3	15.1	10.6

Source: Same as Table 1.

the cooperative has 73 members. After 2011, the cooperative member farmers took advantage of subsidies from the government's production adjustment (reduction in rice area) to switch from paddy rice cultivation to soybean cultivation in the paddy fields. Initially, they grew soybeans individually. However, through cooperative work and joint sorting, they developed into a cooperative corporation.

The cooperative's assets included five soy-specific combines: a wide-area pest-control machine, cooperative warehouse, office building, and line of selection and sorting equipment. One combine harvest was 40 ha per year, whereas the cooperative's five combines worked on 200 ha of fields per year. As the cooperative's soybean acreage was 480 ha, the cooperative was responsible for 40% of the acreage, and individual farmers were responsible for the rest.

Each combine harvester was approximately 100 million KRW (around $90,900 at the 2018 exchange rate of 1 KRW = 0.000909 USD) and had a useful life of 6–7 years. The cooperative hired operators, paying them 200,000 KRW per day. The harvest period in autumn was 30-50 days. In addition to the cooperative, there were 15 combine harvesters owned by individual members of the cooperative, and in many cases the members worked individually at each farm and only the sorting and scouring was outsourced to the cooperative's line (Table 14). The cooperative's paddy soybean yield was 370 kg/10 a, double that of 165 kg/10 acres in other areas. This area was originally a paddy field and had good water utilization, resulting in a high unit yield.

The Cooperative operated with a capital contribution of 4 million KRW per member. The cooperative's operating income came from the operation of the combine harvesters, selection and sorting fees, and other

Table 14: Kinds of machine owned by Chiksang Soybean Farming Cooperative and the member farmers

Work description	Machinery owned	Owner of machinery
Tilling and clearing	Tractors and farmland preparation machinery	Farmer
Fertilisation	Tractor-attached fertiliser simultaneous seeders or soybean seeders	Farmer
Seeding	Large four-row sowing machines	Farmer
Weeding	Power sprayers (early weeding) and conventional sprayers (mid-term weeding)	Farmer
Pest control	Wide-area pest control machines (4 t.)	Cooperative
	Power sprayer	Farmer
Harvesting	5 combine harvesters dedicated to soybeans (Yanmar, Kubota)	Cooperative
	General purpose combine harvesters - (15 units)	Farmer
Drying	Grain dryers (4 units x 5 t., converted for soybeans for dual use)	Cooperative
	Grain dryers (5 t., converted for soybeans for dual use), Grain dryers (2 t.)	Farmer
Selection and sorting	Selection and sorting lines (3 t./hour)	Cooperative

Source: data obtained during the field survey.

sources. The cooperative collected an annual membership fee of 50,000 KRW per 1,200 Pyeongs (1 Pyeong = approximately 3.3m^2). Members were paid for their participation in large-scale pest control machine work and selection and sorting work, and the remainder comprised the cooperative's operating income. Farmers earned 5 million KRW per 1,200 Pyeong crop per year and earned an income of 3 million KRW (based on the leased farmland).

In addition, the cooperative had various sales channels. The cooperative was a full member of the "I-Cup Co-op" and grew more than 600 tons per year under contract. Approximately half of the soybeans were sold to the co-op (4,700 KRW/kg) and the other half to the government (The Soybean Purchase Program, 4,200 KRW/kg) and the general market.

At Chiksan Myeon, we interviewed a soybean farmer apart from the cooperative. The farmer owned a German tractor and combine harvester and farmed 60 ha with his son. He planned to receive a subsidy for converting paddies to soybeans and to lease farmland on reclaimed land in the suburbs to expand the scale of his operations. He emphasized that he would lease land to avoid tying up his funds by purchasing farmland.

4) Considering the rationality of land-lease farming

The Hangul Farming Cooperative in Iksan City is a group of relatively large farmers who lease a certain area of land. To stabilize their farming operations, they diversify their farming operations to include livestock and strawberries, and simultaneously undertake machinery work to reduce the burden of depreciation. Cooperatives sustain individual farming operations while maintaining loose ties among farmers.

The leased land ratio in the cooperative was approximately 70%, half of which was held by absentee landlords. Cooperative members' land lease contracts were mainly individual, with a few leases made through KAFVCs. Individual leases lasted for one year, with no guarantee of renewal in the following year. Either the landlord or the tenant could stop renewing the contract at any time, for either party's convenience. All indi-

vidual contracts were oral and not written.

The cooperative's rice acreage remained virtually unchanged over the past six years. If there had been a withdrawal of farmland, the area would have fluctuated greatly; however, there was no significant increase or decrease in the area under cultivation, and it remained stable. In other words, there seems to be no evidence of the instability of land-lease farming arising from the criticized large number of individual contracts.

According to Professor Hwang, Jae-Hyun "The oral contract is convenient not only for the lessor but also for the lessee."[14] The convenience for both parties increases the rate of oral contracts. The lessor may not renew the contract the following year for some reason. The lessee may not be able to renew the contract because of difficulties in securing labor. In such cases, oral contracts are flexible. In the case of a KAFVC, there is a provision for a minimum term during which the contract cannot be terminated. It is believed that most contracts are personal, because both the lessor and the lessee cannot be flexible if they are bound by a contract.

Although a high proportion of individual contracts seems to destabilize farming operations, land-lease farming is carried out under certain rational decisions.

The Chiksan Paddy Soybean Farming Cooperative in Gimje City is responsible for the post-harvest selection and sorting of soybean paddies and farm operation contracts. After switching from rice paddies to soybean paddies, many of its farmers started leasing as individuals, but subsequently, the cooperative developed through cooperative work and joint sorting. Its soybean paddies yield twice as much as soybeans grown in other regions because well-watered paddy fields are used. The land also offers favorable conditions.

Our field survey confirmed that the land rent for paddy soybeans was 12 bales (720 kg) per hectare of hulled rice. Twelve bales of land rent per ha would be 1,183,464 KRW if the 2020 government purchase price of 16,437 KRW/10 kg for hulled rice is applied.

In the case of rice production, the average production value per hectare was 8,711,610 KRW, which was obtained by multiplying the average yield per ha of 5,300 kg in 2020 by the government purchase price of 1,643.7 KRW/kg. The land rent rate was 1,183,464 W/8,722,610 KRW = 13.58%.

In the case of renting rice fields to produce soybeans, if the average price of 4,450 KRW/kg is calculated from the purchase price of the co-op (4,700 KRW /kg) and the government (4,200 KRW/kg) and taken as the basis for calculation, the soybean production value of 1ha would be 3,700 kg × 4,450 KRW /kg = 16,465,000 KRW. Thus, the land rent rate for soybeans would be 7.19% (1,183,464 KRW/16,465,000 KRW).

In other words, if farmers leased rice paddies to grow soybeans, their land rent would be reduced by half compared with growing rice. In addition, they could receive subsidies for shift cultivation.

Farmers rented farmland instead of buying farmland because the price of farmland was extremely high compared with the level of land rent. The average price of farmland in Jeollabuk-do in 2020 was 487,000,000 KRW /ha[15].

14) Same as previous note 11.

Dividing this price by the land rent of 1,183,464 KRW, we get 411.5, meaning that it was better to rent than buy. It was also stated in local interviews that if they bought land, they would not be able to increase the area significantly and would have to pay hundreds of times more than the cost of renting land.

According to the farmers' responses, if they bought land, it would take a long time to pay the price of the land from the income from the sale of the farm products, during which time they could not predict what would happen to their soybean cultivation. Therefore, they stated that it would be better to lease land and expand the scale of soybean cultivation. In any case, land rent is undervalued compared with land prices or land prices are too high; hence, it was better to lease land. Therefore, with land-lease farming, farmers have a rationale for expanding the scale of farmland.

Recently, land rent has been relatively low compared with farmland prices. While the leased-land ratio is at a relatively high level, rent-free leases are increasing. In the past, land rent increased because of competition for leased land. Currently, however, there are some areas where renters are not available even without land rent. Under these circumstances, it is also necessary to consider measures to make flexible use of the leased farmland and maintain agricultural production resources.

Conclusion

Previous studies have highlighted the impact of land-lease farming on investments in facilities, environmental farming, and paddy farming. While the first two are mainly based on documented contracts, paddy farming is primarily based on oral contracts, and the impact of land-lease farming on paddy farming is significant. Therefore, this study focused on paddy lease farming. The order of the narrative is as follows: the formation process of the land lease structure after the farmland reform and the farmland policy are reviewed; recent surveys and studies on land-lease farming are introduced, and actual situations of land-lease farming are described in detail.

First, the development process of land-lease farming in Korean agriculture was examined from the perspectives of the decline in the farmer population and formation of the land-lease farming structure, farmland policy under conditions of market opening, control of leasing and its limitations, population ageing, and pressure to lease farmland.

The results show that Korea's land-lease structure formed during the process of a declining farmer population in a period of economic growth. The government initially tried to curb land leasing because of its negative effects; however, the amount of leased land continued to increase. Eventually, the government stopped trying to curb leasing and shifted to a policy of institutional leasing control. It attempted to stabilize land leasing through public management and control.

15) Data from the following sources have been applied. The average farmland price per square meter (actual transaction price) in Jeonbuk in 2020 is 48,700 KRW " (*The Korea Farmers and Fishermen's Newspaper*, January 18, 2022, "Average 25,500 transactions per year - farmland price doubles in 10 years").

However, the government's farmland leasing system has stagnated since then. In recent years, most leases are privately conducted among individuals, without going through the public system. This is because land leases between individuals are relatively stable. As farmers age, there is increasing pressure for them to lease farmland, which has led to the stability of land-lease farming operations.

Leased farming has persisted because of declining farm incomes, rising land prices, and an aging farm population. Some of the leased land is owned by absentee landlords for speculative purposes, but this is no longer a major problem in the supply of leased farmland because even speculative-owned farmland must be cultivated.

Based on the review above, we analyzed the actual situation of land-lease farming and considered its rationality and stability.

The case study of Jeollabuk-do Iksan City showed few leases done through KAFVCs and individual leases as the main type of lease. Individual contracts are a one-year oral contract with no guarantee of renewal for the following year. Therefore, at first glance, a high rate of individual contracts may appear to be a sign of farming instability. However, a time series analysis of rice cultivated acreage shows no change, and there is no evidence that individual contracts cause farming instability, as has been criticized in the past. Instead, individual contracts allow for the leasing of land that is not tied to a contract.

A case study of soybean paddy cultivation in Jeollabuk-do, Gimje City revealed the advantage of leased land owing to low land rent. Low rate of land rent, which is approximately half that for rice, has led to the expansion of leased land. The advantage for land-lease farming is increasing because of the high price of farmland, and under favorable conditions, land-lease farming is relatively stable.

In the past, land-lease farming faced difficulties because of high land rents, but this is no longer the case. With an aging population, pressure to lease farmland is increasing. Land lease rents are declining and the number of rent-free leases is increasing; it is no longer the case that competition for leased land raises land rents, as was the case in the 1980s. Currently, there are areas where no tenants are found, even without land rent. Under these circumstances, land-lease farming has become more rational and relatively stable. Land-lease farming offers an environment in which flexibility can be demonstrated under loose lease control.

References

Kuramochi, Kazuo (1985) "Agricultural Land Reform in Korea and the Subsequent Development of Smallholdings," *Journal of Asian Studies* 32(2): 1-33.

Fukagawa, Hiroshi (1987), "A Review of the Farmland Reform in Korea," Kyushu University, *Journal of Economics* 53(3): 99-114.

Fukagawa, Hiroshi (1993), "The Progress and Issues of the Farmland Law Debate in Korea: Focusing on the Third Farmland Law Debate," Kyushu University, *Journal of Economics* 58(4-5): 259-280.

Fukagawa, Hiroshi (2002), *Korean Agriculture under Market Opening: Farmland Problems and Environmental Agriculture,* Kyushu University Press. 406p.

Lee, Seok-Ju (2005), "The Transition Process and Development Direction of the Agricultural Land System in Korea," National Association for Rationalization of Agricultural Land Tenure, *Land and Agriculture*, 35: 59-76.

Sa, Dong-Chun (2010), "Problems of Farmland Leasing," Hongik University, *Hongik Law Journal* 11(1): 131-167. (in Korean)

Chung, Kyung-Mi (2013), "A Study on the Improvement Plan of Farmland Leasing Legislation," *International Journal of Law* 5(11): 85-109. (in Korean).

Takayasu, Yuichi (2015), "A Study on the Field Dispersion of Large-scale Rice Farming in Korea: Focusing on the Survey of Farmers in Jeollabuk-do," *Daito Bunka University, Economic Research Report*, 28: 23-49.

Kondo, Katsunobu (2015), "Economic Growth and Agricultural Development in Korea: Focusing on Rice Productivity," *The Japanese Society of Agricultural Economics, Journal of Agricultural Economics* 87(1): 3-37.

Kim Hong-Sung et al. (2016), "Farmland Leasing Management Proposals for Efficient Use of Farmland," *Korea Institute for Rural Economy*, 150p. (in Korean).

Shinagawa, Masaru (2018), "Farmland Liquidity and the Possibility of Absentee Landlords in Korea," in Yoshiaki Iikuni et al. (eds.), *The Hollowing out of Land Tenure: Demographic Perspectives from East Asia*. Nakanishiya Shuppan 227-246.

Fukagawa, Hiroshi (2018), "On the Transition of Agricultural and Rural Policies in Korea: Bipolarization and Reintegration of Rural Society after 2000s," Kyushu University, *Journal of Korean Economy* 15: 23-47.

Fukagawa, Hiroshi (2020), "On the Conception and Current Status of Tornyeok Farming Management Body in Korea," Kumamoto Gakuen University, *Economic Review*, 26(1) 175-192.

Fukagawa, Hiroshi (2022), "Response to Seasonal Fluctuation of Labor Demand in Korean Agriculture: Focusing on Short-term Employment of Foreigners," Fukagawa, Hiroshi and Mizuno, Atsuko (eds.) (2002), *Acceptance of Foreign Workers in Japan and Korea: Institutional Reforms and the Agricultural Sector's Response*, Kyushu University Press, 193-225.

Fukagawa, Hiroshi (2023), "The Land-lease farming in the Lowland Rural Areas of Korea: A Survey of Farmers in Jeollabuk-do Province," Kyushu University, *Journal of Economics*: 90; 2, 3, 4.

Financial support

This study was supported by a Grant-in-Aid for Scientific Research (18K11816) from the Japan Society for the Promotion of Science.