

Land Consolidation and Share Use of Parcels: The Case of Kesik Village*

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ABSTRACT

Agricultural land in Türkiye is being fragmented in a way that makes it difficult to process the soil. The most important causes of land fragmentation are fragmentation through inheritance and transfer, as well as through sales made by shares and division. A land torn apart by share sales shows that parcels that appear to be one piece are used by dividing them by more than one person. Land consolidation studies examine the ownership status of existing parcels in the project area. Parcels that are divided into shares by the wishes of land owners are combined with land consolidation work. In this study, stock land use was examined by the data obtained from land consolidation studies conducted in Kesik village of Yeşilhisar District of Kayseri province. Before the land consolidation study, the number of parcels in the project area was 2136, while after the consolidation it was reduced to 1562 parcels. In this case, the consolidation rate is 26%. However, when the number of parcels with shares was taken as the number of parcels before the consolidation, the number of parcels increased to 3745 parcels. When the parcel number was accepted as 3745 parcels, the change in the consolidation rate and how the shareholding situation affected the land consolidation projects were examined.

Keywords: Land Consolidation, Share Parcel Use

INTRODUCTION

Nowadays, with the increasing population, the need for agricultural production has become even more important. However, the fact that the soil composition of our country has not changed and the constant fragmentation of agricultural land through inheritance makes it difficult for us to meet this need. Land consolidation studies are carried out to optimally combine and reshape parcels that have been dispersed over time and fragmented in a way that does not allow to carry out agricultural activities (Kirmikil et al. 2012; Kesici Bahar, S., Kirmikil, M., 2020; Yaslioglu, E., Arici, I., Kuşçu, H., Gundogdu, K.S., Akkaya Aslan, S.T., Kirmikil, M., 2008). In many countries, improvement and development of production and working conditions to increase productivity on agricultural lands and maintain the continuity of receiving products are carried out within the scope of land consolidation studies (Köseoğlu and Gündoğdu, 2004; Arslan and Değirmenci 2016). In our country, land consolidation works were started in 1960.

There is more than one reason for fragmentation, which negatively affects agricultural activities. Among these, the most effective ones are fragmentation by inheritance and transfer, as well as fragmentation by share and division sales (Ekinçi and Sayılı, 2010). Besides these, “fragmentation caused by geographical and topographical location”, “fragmentation through expropriations made for various purposes” and “fragmentation through tenancy and partnership made due to lack of capital and labor” are the causes of fragmentation, albeit less effective (Küsek, 2014).

Division by inheritance and transfer is the biggest factor in the fragmentation of agricultural land. In our country, transfer operations cannot be performed officially and cannot be carried out on time. As a result, the problem of share use of parcels in agricultural lands is encountered. Agricultural lands that appear to be officially owned by a single person are used in more than one share manner (Kirmikil et al., 2012).

The fact that more than one person has rights to a single parcel is explained as a condition of share status. In the study conducted by the United Nations World Agricultural Organization (FAO) on 18 countries located in Europe and Central Asia, the state of fragmentation of countries on agricultural lands and the share ratio of enterprises were examined (Table 1). In 11 of these 18 selected countries, it was found that agricultural land is highly fragmented and parcels are multi-share. Among the 11 mentioned countries is located in Turkey (Erbarur, 2020).

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Table 1. Parcel Fragmentation and Share Status of the Countries in the FAO Study.

COUNTRIES	PARCEL FRAGMENTATION STATUS	PARCEL SHARE STATUS
Albania	High	High
Armenia	High	High
Azerbaijan	High	High
Belarus	Low	Low
Bosnia and Herzegovina	High	High
Macedonia	High	High
Georgia	High	High
Kazakhstan	Low	Low
Kosovo	High	High
Kyrgyzstan	Low	Low
Moldova	High	High
Montenegro	High	High
Serbia	High	High
Tajikistan	Low	Low
Turkiye	High	High
Turkmenistan	Low	Low
Ukraine	Low	Low
Uzbekistan	Low	Low

As can be seen from Table 1, the fragmentation and share ratio of agricultural lands in Turkiye is very high. There is a problem with shareholding at 43% of land assets in Turkey. As the number of shareholders on a parcel increases, the land area available to shareholders decreases. In this case, it means that agricultural land use will be inefficient (Dönmez, 2021; Akkaya Aslan, S.T., Gündođdu, K.S., Yaslioglu, E., Kirmikil, M., Arıcı, I., 2007). Turkey is the 14th country in the world with an agricultural field presence although it ranks 40th with 3 decare in the ranking of agricultural areas per capita. (ITB 2014).

According to a 2014 study by Küsek, there are over 40 million shares in 24 million ha of agricultural land located in Turkey. According to this data, it was found that the lands used by each agricultural enterprise are owned by an average of 13 shareholders. In this case, he stated that business owners cannot receive the benefits they want from agricultural land (Küsek, 2014; Akkaya Aslan, S.T., Kirmikil, M., Gündođdu, K.S., Arıcı, I., 2018; Kirmikil, M., Terziođlu, B., Durgut, A., 2021).

The main purpose of land consolidation studies is to combine lands to prevent high levels of fragmentation and share use. It is aimed to combine fragmented and shared plots belonging to a single enterprise and turn them into a single parcel suitable for agricultural activity. The success of land consolidation works depends on the consolidation rate calculated at the end of the project. This ratio is calculated by subtracting the number of old parcels from the number of new parcels and dividing it by the number of old parcels. In projects where the shareholding situation is intense, the consolidation rate is low, which makes the project unsuccessful. In this study, the success of the post-consolidation project was interpreted by examining a project with intensive share use.

MATERIALS AND METHODS

In the study, land consolidation data carried out in Kesik Village of Yeşilhisar district of Kayseri Province (Figure 1) and completed in 2019 were used. The substrates, maps and cadastral information belonging to the period before and after land consolidation formed the main material of the study. The LITOP 6.6 capabilities were used for the analysis of non-graphical data such as NetCAD GIS 8.0, land distribution information and social structure survey reports for the processing of graphical data before and after land consolidation.

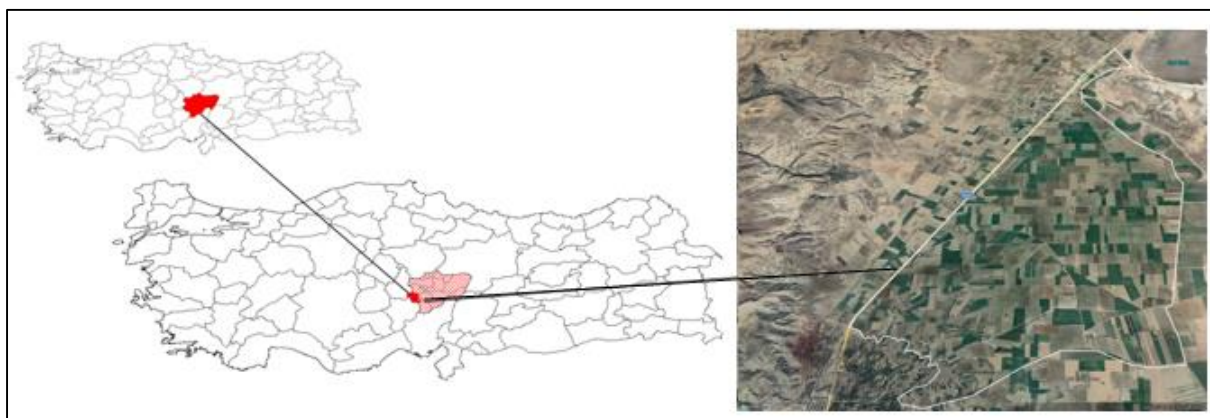


Figure 1. Kayseri-Yeşilhisar District and Kesik village Google Earth image (viewing date: 28.08.2021).

The size of the study area is 39,805 decares and there are 2136 parcels in the pre-consolidation project area.

RESULTS AND DISCUSSION

According to the data obtained from the land consolidation project of Kesik Village, there were 2136 parcels in the study area before the consolidation, while the number of parcels after the consolidation decreased to 1562. The study area is divided into 102 blocks and the aggregation rate is calculated as 26%. The pre-and post-consolidation parcel map of the land is shown in Figure 2. The change in the number of parcels and the aggregation rate is shown in Table 2.

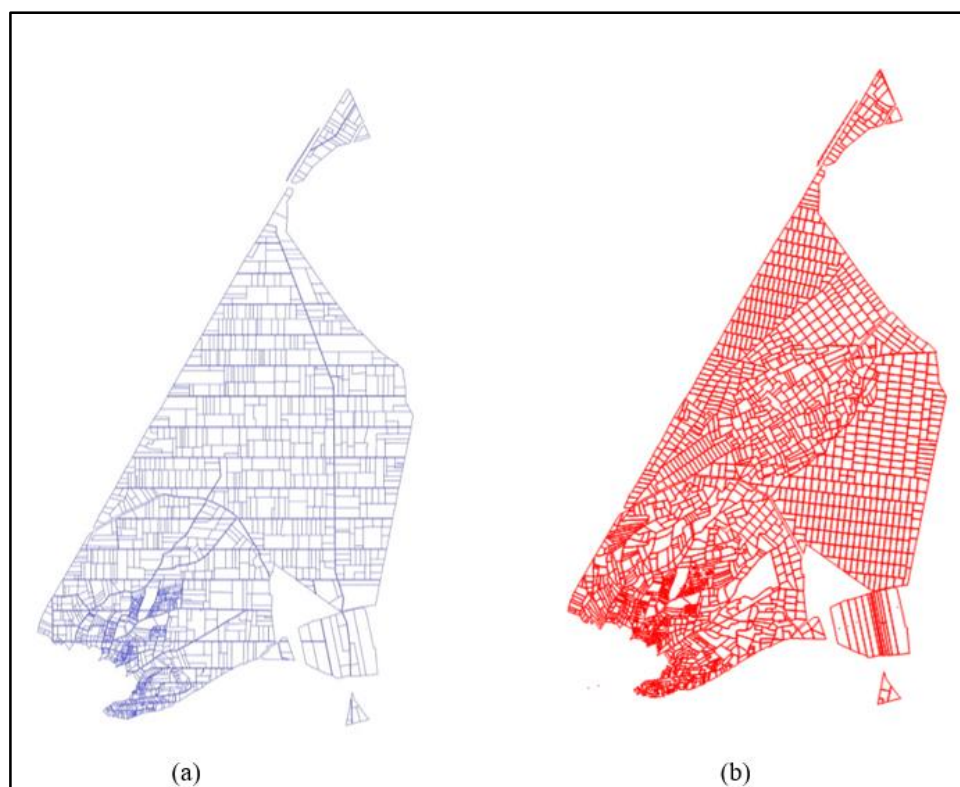


Figure 2. Before (a) Land Consolidation and After (b) Parcel Map

When the Kesik village land registry data were examined, it was seen that the use of share parcels was widespread in the region. Looking at the pre-consolidation data, it was seen that the number of single-share parcels in the project area was 1690. This shows that 79% of the land assets in the area are single-share parcels. In addition to the single-share parcels in the project area, there is a land-use with shares ranging from 2 shares to 33 shares in the remaining parcels (Table 2). Considering the shareholding status of the parcels, considering that each share is processed as a single land, it is seen that the total number of parcels has increased to the number of parcels of 3745 (Table 2). This number is 1.7 times higher than the number of known parcels in the project.

In the case where we consider the number of parcels with shares as the number of parcels before consolidation, the consolidation rate also changes. The aggregation ratio is found according to the equation given below.

$$\text{The Rate of Consolidation} = \frac{\text{Number of old parcels} - \text{Number of new parcels}}{\text{Number of old parcels}}$$

According to this equation, the consolidation ratio is calculated as $(3745-1562) / 3745 = 58\%$ in the case where each share is processed as land, not the number of parcels, according to this equation.

Table 2. The Share Status of Kesik Village Parcels Before/After Land Consolidation.

Number of Shares	Share Status Before Land Consolidation		Share Status After Land Consolidation	
	Number of Parcels	Total Shares	Number of Parcels	Total Shares
1	1690	1690	1195	1195
2	171	342	149	298
3	70	210	58	174
4	49	196	39	156
5	52	260	38	190
6	22	132	21	126
7	22	154	17	119
8	13	104	10	80
9	10	90	7	63
10	8	80	3	30
11	5	55	7	77
12	10	120	5	60
13	2	26	2	26
14	1	14	1	14
16	0	0	1	16
17	1	17	0	0
20	1	20	0	0
21	0	0	1	21
22	2	44	2	44
23	0	0	0	0
24	1	24	1	24
25	1	25	1	25
27	3	81	1	27
28	1	28	1	28
33	1	33	1	33
Total	2136	3745	1562	2827

When looking at the post-consolidation data, the number of parcels decreases from 2136 to 1562 (Table 2). The number of single-share parcels, which was 1690 before the consolidation, decreased to 1195 after the consolidation, and the ratio of the number of single-share parcels to all parcels after the land consolidation is

calculated as 73%. This situation shows that there is more than one shareholder in 369 parcels in the post-consolidation project area and share use is ongoing.

According to the study conducted by İşcan et al. (2020) on the comparison of interview and block priority-based distribution models, they showed that the block priority-based distribution model was more successful when the number of parcels with shares decreased. As a study area, they used the land consolidation data of Sobuca, Tekeli and Halilbeyli villages of the Koçarlı district of Aydın Province. They stated that the number of parcels with shares decreased from 75 to 12 in Sobuca village, from 85 to 32 in Tekeli village, and from 178 to 65 in Halilbeyli village.

Some reasons lead to the fact that agricultural enterprises lose their parcel size in an economic sense. These are share sales, unconscious expropriation, inheritance sharing, etc. are disintegrations that arise from causes. Although this negatively affects agricultural activities, it reduces the yield (Yağanoglu et al. 2000; Peter and Dağdelen, 2016; Yaslioglu, E., Akkaya Aslan, S.T., Kirmikil, M., Gundogdu, K.S., Arıcı, I., 2009).

Considering that each shareholder processes his land, the area of land that they can process decreases as the number of shareholders increases. It is seen that the average parcel area was 18.64 before the consolidation (Table 3). After the consolidation, the average parcel area increased to 25.65 da. The increase in the average parcel area means that agricultural land can be processed more effectively and efficiently.

Table 3. Average Number of Parcels Before/After Consolidation.

Before The Consolidation Average Parcel Area (da)	After The Consolidation Average Parcel Area (da)
18.64	25.65

The consolidation rate is one of the criteria indicating the success of land consolidation projects. The low rate of consolidation creates an atmosphere of insecurity in the region where the project is being carried out and negatively affects the point of view of farmers on land consolidation projects. In our example of the Kesik village consolidation project, it was calculated that the consolidation rate was 26%, and this rate increased to 58% when each share was evaluated as a separate parcel. This situation shows us that the state of hidden fragmentation and share status will positively affect the success of the project if it is evaluated within land consolidation projects. Land consolidation projects reduce share use and hidden fragmentation. However, after the consolidation, the share divisions of the parcels and the hidden fragmentation continue. For this reason, the project areas can return to their previous state after many years without land consolidation. To prevent the problem of share use and hidden fragmentation by precise means, it is necessary to make and implement legal regulations in such a way as to prevent division by inheritance and transfer.

If the shareholding situation and hidden fragmentation are taken into account in every land consolidation project, this will ensure that the land consolidation projects carried out in our country will yield more successful results. After the project, the implementation of legal regulations that can prevent the division through inheritance and transfer will prevent the re-fragmentation of land and the formation of multi-share land. Thus, land consolidation projects will retain their effect for many years.

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