

Economic Analysis of Land Consolidation Results by Surveys

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ABSTRACT: Agriculture appears as a sector. In other words, it is an economy that can be expressed in numbers. The cost of landholding and the profit they earn from the products are the basis of this economy. Consolidation works bring water channels, combine scattered parcels, bring modern roads and "increase the profit from agricultural activity. Kozluca Quarter of Burdur, which was previously consolidated, was identified as the study area in this study.

One of the most important items that increase economic income in agriculture is the construction of modern irrigation channel system. As a result of the survey, 78% of the farms stated that they were satisfied for the parcel reached the irrigation channel. In another heading, 70% of enterprises stated that pre-consolidation roads were not sufficient. After the consolidation, 78% of the enterprises stated that they were satisfied with the roads. After the consolidation, the fuel costs decreased.

Regarding the increase in land value after consolidation, 45% of the enterprises stated that there was an increase in value, 40% remained the same and 15% stated that the value decreased. Landholding owners do not have sufficient information about consolidation. In addition, it was observed that some Landholding owners were emotionally approaching the answers of the surveys because they could not get the field from their desired location in the distribution. As a result, in all interviews conducted with all farmers, it was observed that there was an increase of 20% yield after consolidation.

Key Words: Land consolidation, Economic Analysis, Land value

1.INTRODUCTION

As a result of advances in modern medicine and improvements in living standards in the last two centuries, life expectancy has increased and the world population has increased dramatically. So much so that the population of the world has reached 7 billion in the last 200 years, although it has taken hundreds of thousands of years to rise to 1 billion (UNFPA 2017).

Experts' opinions; The determination that one of the indispensable factors of production in the direction of food production in terms of meeting the nutritional requirements of the growing world population, where food will be in strategic position in the 21st century, determines the

capabilities and qualities of the country's land and makes land use planning as a necessity (Ekinci ve Sayılı 2010).

(TUIK 2014) according to data from the growth rate of agricultural growth rate in Turkey, with the exception of 2007 and 2009 seems to be the correct proportions. In addition, it is observed that the growth rates of GDP have decreased significantly in these years. This situation shows how important the agricultural economy is for the national economy.

Land consolidation is essential for ensuring economic viability of rural areas, facilitating environmental management and controlling urban growth (Cay ve ark 2010). Consolidation works increase the economic return of agriculture and help to make modern agriculture. Furthermore, it is essential to provide a basis for national food security, improve agricultural infrastructure conditions, increase the efficiency of use of production factors and provide a platform for harmonious development of urban and rural (Jin ve ark 2016).

Land consolidation is primarily to increase the welfare levels of rural people in order to meet the needs of modern and fragmented, scattered and deformed lands belonging to real and legal persons (Cay ve Cevik 2009, Boztoprak ve ark 2015).

The insufficient land size of enterprises before consolidation increases transportation and carrying losses and thus increases cost in enterprises. As a result, farmers cannot give the necessary importance to their land, cannot find the environment to implement modern inputs and cannot create capital accumulation. After consolidation, infrastructure services such as roads, water, drainage and leveling are going to the land pieces of enterprises and their cost decreases (Ekinci ve Sayılı 2010).

The first issue that can stand out when concrete analyzes are carried out after aggregation is the economy which can be expressed in numbers (Van Huylenbroeck ve ark 1996). While the return of agricultural activities to the national economy is 9%, when the costs are considered, this figure is 8% (Van den Noort 1987). In their studies, (Sklenicka ve ark 2009) claimed that the cost increased due to the increase in the number of parts in the field of consolidation. A major contribution of the investment of the land consolidation project on the regional economy can easily be determined from the data that regional GDP increased by 16.05% in the implementation phase and increased by 10.16% in the benefit phase (Jin ve ark 2016).

For this reason, it is important to increase the economic efficiency by conducting economic analysis of land consolidation projects primarily in our country and in the world, while doing this without disturbing the sustainability of natural life. Survey studies have a special importance in economic analysis of consolidation studies. By going to the project site with the surveys, the status of the project site can be seen in practice. In addition, it can be seen in the emotional answers of farmers by asking a lot of questions to the farmers.

2. MATERIAL AND METHOD

As for the project area, Kozluca Quarter in Burdur province, where land consolidation works have been done before, has been selected. During the analysis process, the project site was visited and surveys were made about the project site and the opinions of the farmers were asked. In this way, some of the theoretical information have been seen practice results.

2.1. Application Field Explanations

Kozluca Quarter is located in Burdur Province. Kozluca Quarter is located in the district of Merkez. Kozluca Village map location is $37^{\circ} 29' 37.3128''$ North and $30^{\circ} 7' 57.4716''$ East coordinates. The distance of Kozluca Quarter to Burdur city center is about 28 km. The altitude of the Kozluca quarter is 1109 m.



Figure 1. Kozluca Quarter

The area of the Kozluca Quarter consolidation project is 470 hectares. There are 385 enterprises in the field of consolidation and the total number of cadastre parcels is 1216. 276 of these cadastral parcels are share parcels. The average size of the cadastral parcels is 3848 square meters. There are four parcel indices, 39,78,82 and 84, in the application area. The share of participation in joint facilities is calculated as 0.045519. There are 35 agricultural islands in total.

3. RESULTS AND DISCUSSION

A survey was conducted with 102 farmers in Kozluca Quarter. In order to provide more accurate results of the survey studies, surveys were conducted with as many enterprises as possible.

With the questions asked in the survey studies, firstly the satisfaction level of farmers from consolidation was tried to be determined. In addition, it was tried to determine which subjects were satisfied and which subjects were not satisfied. While determining the satisfaction levels of the farmers, the factors that have more economic impact on the consolidation studies were emphasized.

In addition, it was determined whether the answers given by the farmers to the questions were consistent with the survey studies. Because some farmers are able to look at the consolidation work emotionally and give emotional answers. The consistency of farmers' answers was determined with these questions.

The survey was started with how much farmers care about the consolidation. In order to determine this, first of all, "How important is aggregation for you?" was asked. 2% of farmers said that this question is not very important. 8% of the farmers said it was not important, while 47% said it was important. 43% of the farmers stated that they are very important.

Table 1. How important is consolidation for you?

Soru 1) How important is consolidation for you?						Number of Attendance		102	
Not Very Important	2	1,96%	Not Important	8	7,84%	Important	48	47,06%	
Very Important	4	43,14%							

Looking at the first question of the survey, it is seen that the consolidation works are important for the farmers. One of the most important reasons why the consolidation works are important for the farmers is the development of the region where the consolidation works are carried out.

With the second of the questions asked to farmers, farmers' parcels has been identified whether it approaches the village center. For this purpose, the farmers were asked the question: How it changed distance of your fields to the village before and after consolidation? 92% of farmers remained the same. 8% of farmers stated that they are getting closer.

With the consolidation activities, it is aimed to shorten the distance of the agricultural areas from the village center. With the new roads, the transportation distance between the fields and villages is reduced. In addition, combining the fragmented agricultural lands and making fewer and larger parcels also shortens the distance. With the decrease in the distance between the village center and agricultural areas, diesel fuel costs of the farmers are significantly reduced. Thus, farmers' costs are reduced and their net profits increase. This situation increases the economic return of agriculture.

Table 2. Distance status to the village center of the fields before and after consolidation

Soru 2) How did the distance of the fields to village become before and after consolidation?						Number of Attendance		102	
It Turned Away	0	0,00%	Remained the Same	94	92,16%	It Drew Closer	8	7,84%	

The majority of farmers in the Kozluca Quarter stated that the distance of the agricultural areas from the village center remained the same. This shows that there is no decrease in the round-trip item in diesel fuel costs of farmers.

Another question posed to farmers is the mechanization situation in agriculture after consolidation. For this reason, the farmers were asked the question "Are you satisfied with the mechanization of agriculture? ". 2% of the farmers stated that they were not satisfied. 24% of the farmers stated that they were undecided. 65% of the farmers stated that they were satisfied and 10% of the farmers stated that they were very satisfied.

Table 3. Satisfaction status of mechanization in agriculture

Soru 10) Are you satisfied with the mechanization of agriculture after consolidation?						Number of Attendance		102	
Never no Satisfied	0	0,00%	No Satisfied	2	1,96%	Undecided	24	23,53%	
Satisfied	66	64,71%	Very Satisfied	10	9,80%				

Consolidation works provide modernization in agriculture. One of the foundations of modernization in agriculture is mechanization in agriculture. Labor force decreases with mechanization in agriculture. As a result, time is saved and direct efficiency is increased. As a result of all this, the economic return of agriculture increases.

One of the most important items that increase economic income in agriculture is the construction of modern irrigation channels. For this reason, farmers were asked the question, "Are you satisfied with the parcels' irrigation channel? ". 78% of farmers answered yes to this question, 22% of farmers answered no.

Table 4. Satisfaction status of parcels irrigation channel

Soru 35) Are you satisfied that the parcels have irrigation channels after consolidation?						Number of Attendance	102
Yes	80	78,43%	No	22	21,57%		

One of the most important items that increase economic income in agriculture is the construction of modern irrigation channels. The construction of modern irrigation channels means better watering of the crops. This results in higher yields from the products. Therefore, it directly increases the income obtained from agriculture.

As a result of the survey, 78% of the farms stated that they were satisfied that the parcel reached the irrigation channel. Farmers stated that irrigation was possible in some places prior to consolidation and it was primitive in these systems. In addition, farmers stated that modern irrigation channels increase the yield after consolidation.

Consolidation works bring modern ways and enable the use of modern agricultural tools in the fields. In order to see the situation after the consolidation, the question "Have you solved the problems of road network situation after the consolidation? " was asked. 20% of farmers answered "no" and 80% answered " yes".

Table 6. Elimination status of road network problems after consolidation

Soru 21) Were your road network status problems solved after consolidation?						Number of Attendance	102	
I dont know	2	1,96%	Yes	80	78,43%	No	20	19,61 %

Farmers stated that before the consolidation, some fields did not have a road front, others went through their fields and had problems because of this. After the consolidation, these problems have been solved and the fuel costs have been reduced.

After the consolidation, these problems have been solved and the fuel costs have been reduced. The second one is economic returns for one time. An example of this type of return is the

increase in land value after consolidation (Cay ve ark 2018). Regarding the increase in land value after consolidation, 45% of the enterprises stated that there was an increase in value, 40% remained the same and 15% stated that the value decreased.

Table 7. Increase in land value status after consolidation

Soru 29) Did land value increase after consolidation?						Number of Attendance		102
Very Decreased	0	0,00%	Decreased	15	14,71%	Unchanged	41	40,20%
Increased	44	43,14%	Very Increased	2	1,96%			

In the interviews conducted with all farmers, it was concluded that there was a 20% increase in yield after consolidation. Farmers were asked the question "What was the yield situation after consolidation. 48% of the farmers stated that the yield increased. 38% of farmers stated that they remained the same and 15% decreased.

Table 8. Yield satisfaction status after consolidation

Soru 20) What was the yield situation after consolidation?						Number of Attendance		102
Very Decreased	0	0,00%	Decreased	14	13,73%	Unchanged	39	38,24%
Increased	49	48,04%	Very Increased	0	0,00%			

Some of these farmers abstained because there was no real increase in yield. Some of these farmers abstained because they thought there was injustice in the consolidation. The most important step in the thinking of the injustice of the farmers is the interviews.

The farmers were asked the question "To what extent did your wishes have been fulfilled in the interview?". 38% of the farmers said bad. 40% of farmers said normal. 22% of the farmers stated that they were good.

Table 9. Interview satisfaction status

Soru 11) To what extent were your requests fulfilled in the interview?						Number of Attendance		102
Bad	39	38,24%	Normal	41	40,20%	Good	22	21,57 %
Very Good	0	0,00%						

When we look at the graph, we see that the enterprises are not satisfied with the interview work. Farmers do not have sufficient information about consolidation. In addition, it was seen that some farmers approached the survey responses emotionally because they could not get a field from anywhere they wanted in the distribution.

4.CONCLUSION

In the study, it was seen that consolidation developed modern irrigation channels and allowed modern agriculture. Due to the arrival of irrigation channels, it was seen that the soil yield increased with the consolidation studies.

Farmers are very satisfied to see new and modern roads after consolidation. The arrival of modern roads both reduces the diesel costs of the farmers and ends the road discussions.

With the consolidation activities, the increase in yield and modern agricultural opportunities have increased the value of the fields. Consolidation works increase the land value and provide one-time economic contribution.

In the surveys conducted with the farmers, it was seen that the farmers did not have enough information about the consolidation. In addition, farmers are not satisfied with the consolidation. For this reason, it was observed that the farmers gave emotional answers to some questions in the surveys. This is understood from their inconsistent answers to the questions in the surveys. Interviews have had a significant impact on the satisfaction of farmers and the success of the consolidation efforts.

The survey showed that consolidation increases the economic income of farmers and reduces their costs. This increases farmers' earnings and competitiveness. In order to better understand the benefits of consolidation studies, it is important to conduct economic analysis at the consolidation sites.

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