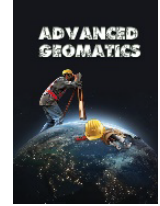




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Road-Parcel Situations and Property Analysis of Neighborhoods in Çukurova Regional Airport Project after Land Consolidation Projects

Nuri Erdem*¹ , Rumeysa Gdl¹ ¹*Osmaniye Korkut Ata University, Faculty of Engineering, Department of Surveying Engineering, Osmaniye, Trkiye*

Keywords

Land Consolidation,
Expropriation,
Airport Construction,
Property Analysis.

ABSTRACT

The construction of Çukurova Regional Airport, which is being built in Tarsus district of Mersin province and will be the second largest airport in Turkey with a capacity of 30 million passengers when completed, continues to work on the lower and upper structure. It is planned that the project will be completed and put into service within 2 years. It is aimed that the fragmented, scattered, distorted shaped parcels in Çiçekli, Karsavuran, Ballica, Kargili and Çağbaşı neighborhoods within the scope of this project will be brought together and turned into more regular and suitable parcels for use. In addition, in relation to these parcels, it is aimed to combine and reorganize in accordance with the principles of modern agricultural management and the development of irrigation services together with in-field development services. In this study, the project region and the studies were introduced, economic analysis of the old and new situation with maps and screenshots supporting the new Land Use situation and ownership structure to be formed, and it is aimed to create an academic base for similar projects to be carried out after that.

1. INTRODUCTION

Airports are an important part of the air transport system; operate as an infrastructure provider in the system. In addition to these important roles, airports also have strategic importance in terms of the regions they serve. In terms of its geographical location, Turkey is positioned as an important crossroads between the transition points between Europe, Asia and the Middle East regions. Especially in recent years, Turkey's policies have transformed this geographical location into an important center for passenger transportation. Airport passenger traffic in Turkey has increased significantly in the last decade. It is important to understand the development dynamics of the industry in terms of both the air transport industry and the Turkish economy (Ustamer and Şengr; 2018).

Population structure and population growth rate, developments in the tourism sector, the increase in national income per capita also causes an increase in the number of passengers using the airports, thus affecting the airline transportation sector. Due to the fact that Adana Şakirpaşa Airport, which is currently in use in the region, exceeds its current capacity, remains in the city settlement and does not have the opportunity to develop, a new regional airport is needed to serve the region. For this reason, Çukurova Regional Airport, which is within the borders of Tarsus district of Mersin province, gains great importance (MGS, 2009). Transportation to the project area is provided by the D-400 Highway from Mersin and Adana provinces. Figure 1 shows the location of the Çukurova Regional Airport Project and the 8 km connection road to Mersin-Adana highway, which is required for transportation to the airport.

*Corresponding Author

*nurierdem@osmaniye.edu.tr ORCID ID 0000-0002-1850-4616
(rmysgd1000@gmail.com) ORCID ID 0000-0003-3043-4400

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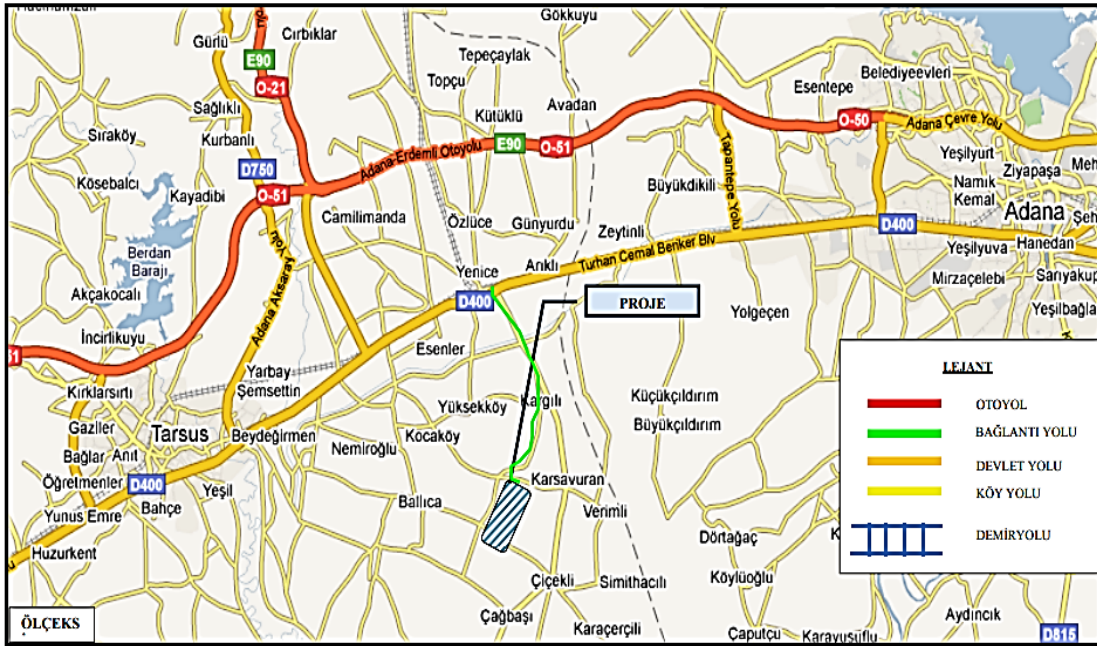


Figure 1. Map showing the transportation network of the region (Çukurova Regional Airport EIA Application File 2009).

2. METHOD

After the neighborhoods within the airport project were taken into the public area, there was a change in the boundaries of the new neighborhoods to be formed, and consolidation was carried out in line with the region by informing the owners. While consolidation was carried out, the expropriation limits were preserved exactly. As a result of land consolidation in the region, it was aimed to increase productivity in agriculture and living standards in rural areas by combining the fragmented lands. In addition, increasing the economic value of the

land, establishing common facilities for neighborhood roads and drainage channels, determining pre-investment barriers, producing solutions and determining the possible effects of the project on the value of agricultural enterprises are among the objectives of the project (Figure 2a, 2b). The consolidation process of the Çukurova Regional Airport Project, which is under construction, has been made by the State Hydraulic Works (DSI), and the registration process is carried out by the Mersin Tarsus Cadastre Unit.

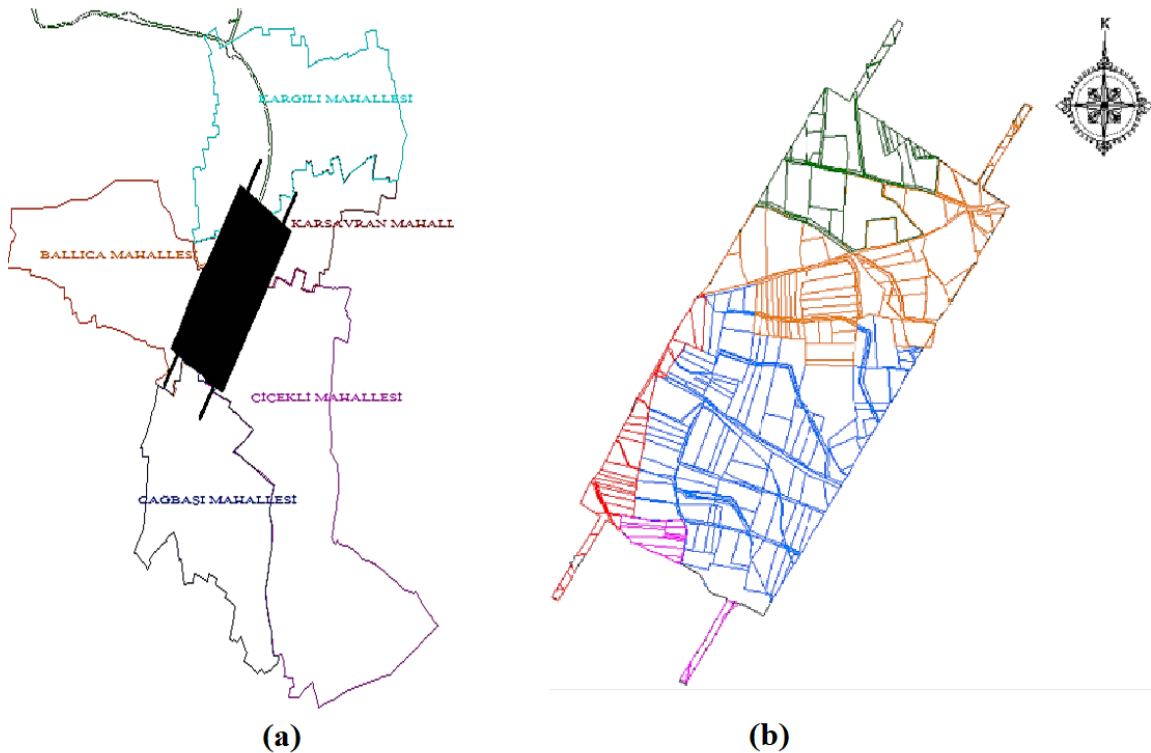


Figure 2. General view from the project site and expropriated parcels

The airport area in general has a slightly salty structure with insufficient drainage and consists of alluvial soils that can be used for irrigated agriculture. Project area III. Class is irrigated agricultural land (MGS 2009). It is a moderately fertile land for field crops that bring good income with suitable agricultural methods on it. The general features of this class of land are that the slope is moderate, the sensitivity to erosion, intense wetness, superficial soil, presence of base stone, too much sand or gravel, low water holding capacity and low productivity status (URL_1).

Land grading in the project area At the same time, it is one of the important factors in finding the share of the beneficiaries in the areas to be used for public facilities, paying the land prices to be expropriated, and giving land of equal value to the former landowners to their previous lands (Boyras, Z and Üstündağ; 2008). The values of individual parcels before consolidation are found by overlapping the rating and old property maps (Arici et al. 2017). By using these data, the land values of agricultural enterprises are obtained. New parcel distributions are also made on these values (URL_2).

Tarsus River flows 5 km west of the study area and Seyhan River 10 km south. Its distance to the Mediterranean Sea is 20 km. A wastewater treatment plant will be established to clean the wastewater from the operation of the project. In order to minimize dust emissions that may occur during the construction phase, the project area will be irrigated at certain intervals. Necessary measures are taken to ensure that the water

resources are not adversely affected during the construction and operation phases of the airport (Çukurova Regional Airport EIA Application File 2009). According to the net calculation made on the Netcad map drawing program, the project area is 7896223.041 m² in total.

3. RESULTS

3.1. Topographical Situation of Ballica District and New Property Analysis

The topographic structure of the Ballica District is slightly inclined and covers a total of 550.35 hectares (Figure 3). Transportation is provided from Adana-Mersin Highway. The typical Mediterranean climate prevails in the project area. Ballica Neighborhood is located within the boundaries of Mersin Tarsus Plain land consolidation and T.İ.GH project. There are not many fixed facilities affecting the project in the Ballica District, the existing ones have been preserved. The same amount of deductions was made from all of the newly formed roads and canal shares in the project area. The roads were preserved in such a way that the existing roads used on the ground were used, and new roads were planned in case of need. Some of the lands have been detached, and some of them have been left as shares at the request of the owners, and the parcellation plan of the neighborhood has been completed.

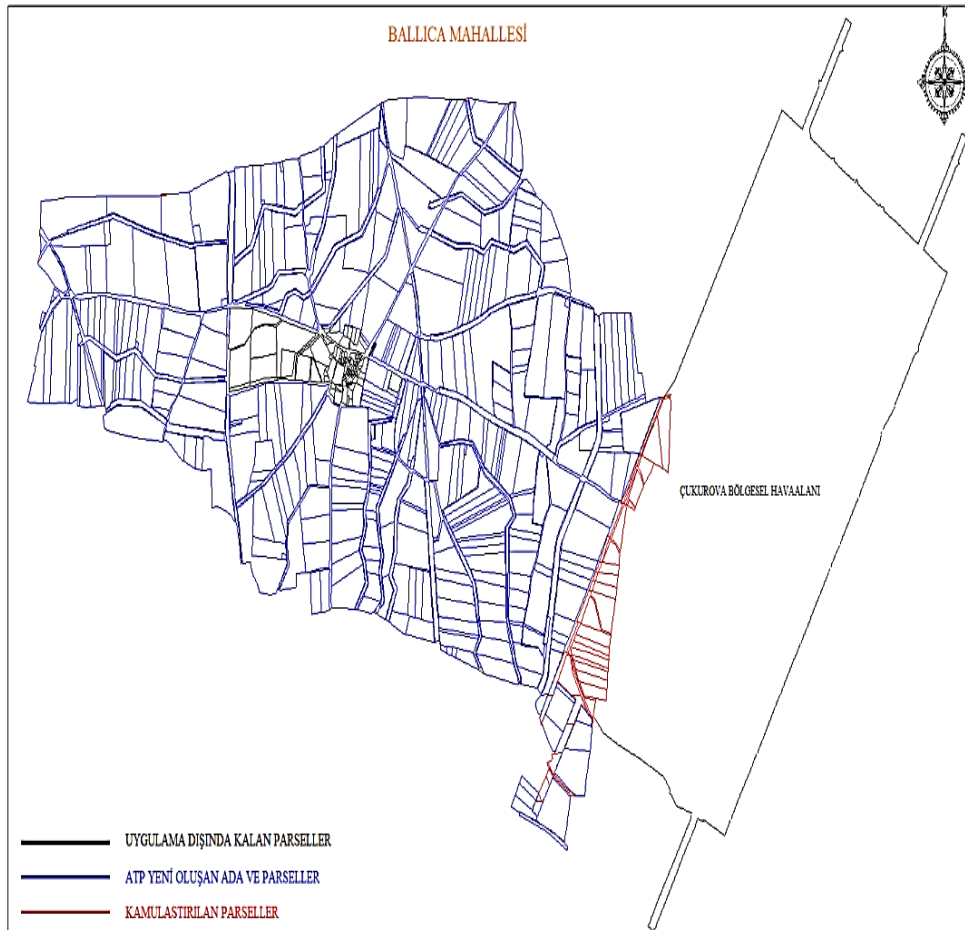


Figure 3. Ballica neighborhood newly formed island-parcel and expropriated parcels

After creating the rating map, the parcel index value found in productivity, soil structure and location and the number of parcel values are found by multiplying the area of the parcel. As a result of the number of parcel values included in the consolidation and the redistribution and determination of the parcels, the total expropriated area in Ballica District is 12796737.56 m². Grading is done according to the Land Consolidation Regulation. The total number of cadastral parcels in Ballica District was 813, the number of owners was 1457, the number of islands was 119, the number of parcels was 447, and the average index value was 0.7700.

3.2. Çağbaşı District Topographical Situation and New Property Analysis

Mersin Tarsus weather is generally seen as a warm climate. Annual precipitation is around 700 mm on average (URL_3). Çağbaşı Neighborhood is located within the boundaries of Mersin Tarsus Plain land consolidation and T.İ.GH project. The height of the project site above sea level is 10-40 m. between. The general slope is north-south. The surface of the land is flat and it is a plain area and Adana-Mersin Highway passes through the project site. The total area of Çağbaşı District is 1492.39 hectares (Figure 4).

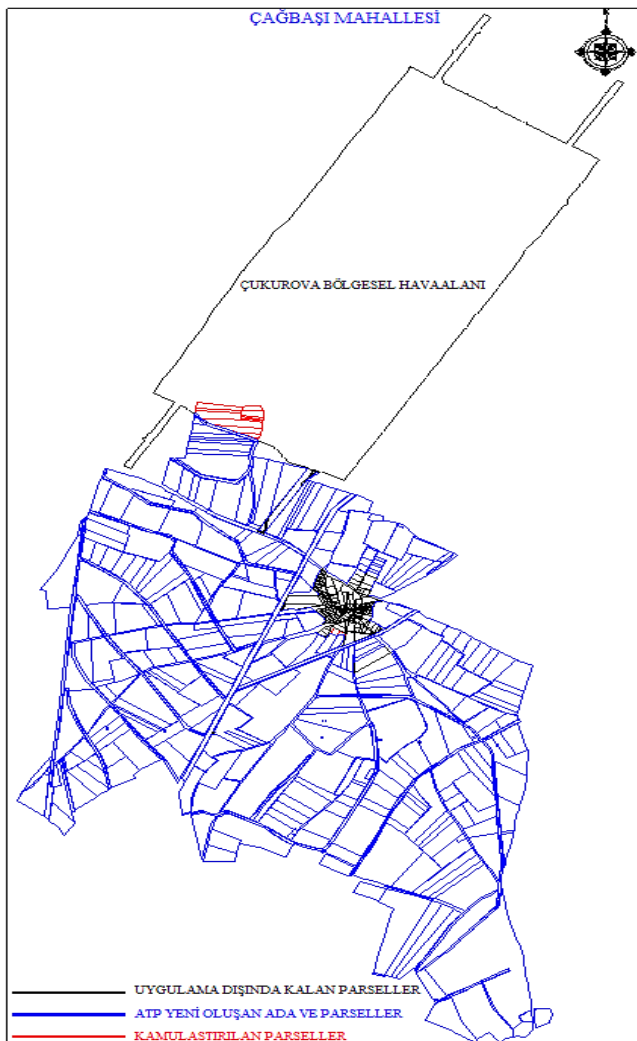


Figure 4. The newly formed island-parcel and expropriated parcels in Çağbaşı district.

The aim of the works carried out within the scope of the project is to reduce the small and scattered parcel sizes to an appropriate level, to prevent fragmentation and to ensure that there are no corrupt parcels for farmer welfare. In addition, minimizing the shareholding situation and ensuring territorial integrity is one of the important studies. In the project area, some of the lands have been detached, and the shares have been left at the request of the owners. There is a pasture area and there is no registered or unregistered protected area in the neighborhood. The roads were preserved in such a way that the existing roads were used, and new roads were planned in case of need.

The same amount of deductions was made for the new roads and canal shares to be created from the parcels in the project area. It was created from the road and used in channel blocks. The deduction calculation was calculated by dividing the total number of values of the parcels entering the project area (multiplication of the indices of the old parcel areas) by the total number of values of the parcels after subtracting the value numbers of the newly created blocks. The areas created from the road are deducted from this cut. After total consolidation, the net area is **14924989.95** m². The total number of cadastral parcels in Çağbaşı District was 586, the number of owners 905, the number of islands 117, the number of parcels 371, and the average index value was 0.7700.

The size of the consolidation rate is an indicator of the success of the consolidation. As this ratio grows, agricultural enterprises become more suitable and accordingly, the efficiency of land consolidation increases (Arslan and Tunca, 2013). It is envisaged that this consolidation and Çukurova Regional Airport Project in the Tarsus district of Mersin will enable tourism, cargo transportation, financial development and developments to be provided to Mersin and Tarsus regions.

3.3. Çiçekli District Topographic Situation and New Property Analysis

Çiçekli (Frengülüs) Neighborhood Mersin Tarsus plain is located within the boundaries of the land consolidation and T.İ.GH project. The land surface is flat and plain land. The average altitude of Çiçekli District is 30-40 meters above sea level. The same amount of deductions was made for the new roads and canal shares to be created from the parcels in the project area. There is no pasture area in Çiçekli District and there is no registered/unregistered protected area that will affect the consolidation. In the consolidation process, some of the lands were detached and some of them were left as shares. Its topography is slightly inclined and the total area is 1778.34 hectares. As seen in the new situation map formed after the consolidation, the red areas are the expropriated parcels, the blue areas are the newly formed island and parcels of the ATP, the black area is the residential area, which is out of the application, and the pink areas are the agricultural reform implementation areas (Figure 5).

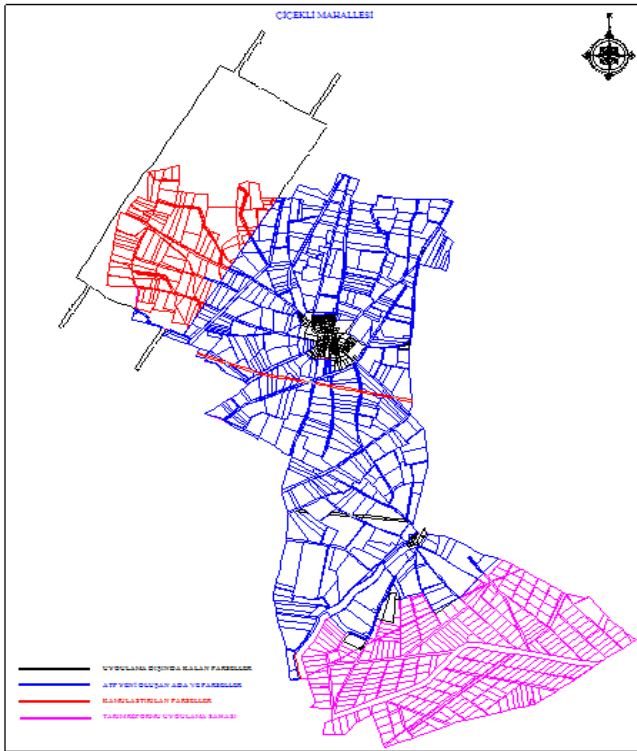


Figure 5. Çiçekli neighborhood old and new situation map.

Agrarian Reform; It is defined as a set of measures aimed at eliminating fundamental problems, prioritizing technological development and economic efficiency, and aiming to increase farmer incomes (Türker 2010). Agricultural Reform (Official Gazette 1984) application area was carried out on the land arrangement in the irrigation areas numbered 3083 in the project area, and then it came under the responsibility of DSI.

If we compare the old and new situation maps, it is observed that the parcels have been brought to the appropriate shape and size, the deformed parcels have been made square and rectangular in order to minimize the area losses, and new roads have been created to increase the transportation and agricultural labor value. A farmer's agreement has been achieved by making the same deductions from all of them for the new roads and canal shares to be created from the parcels in the project area. By specifying fixed points on the parcel borders, border conflicts between the owners are eliminated in this way. The total consolidation area is 17783429.14 m². Flowering The total number of cadastral parcels in the neighborhood was found to be 926, the number of owners 878, the number of islands 125, the number of parcels 497, and the average index value was 0.7700.

3.4. Kargılı District Topographical Situation and New Property Analysis

Kargılı District is located within the boundaries of Mersin Tarsus Plain Land Consolidation and T.İ.GH project. Premium farmland is painted light green on the map. It indicates fertile land with flat, well-drained, deep and fertile soils suitable for growing all kinds of plants growing in the region, with few limiting factors that would make land use difficult (URL_2). The airport project received its first tender in 2011 and its first

foundations were laid in 2013, and the completion process has been extended to the present day. The reason for this is that Kargılı neighborhood is first class agricultural land. The submitted EIA report was suspended for a while and then work continued with the approval given.

While the parcel information of Kargılı Neighborhood, whose consolidation has been completed, was in the suspension announcement, it was subjected to re-examination by the Consolidation Administration as a result of the objections made by the owners. Therefore, its registration has not been completed and the net area cannot be specified. According to the approximate value obtained from the TKGM parcel query system, the total area of Kargılı District is 1931.93 hectares (Figure 6).

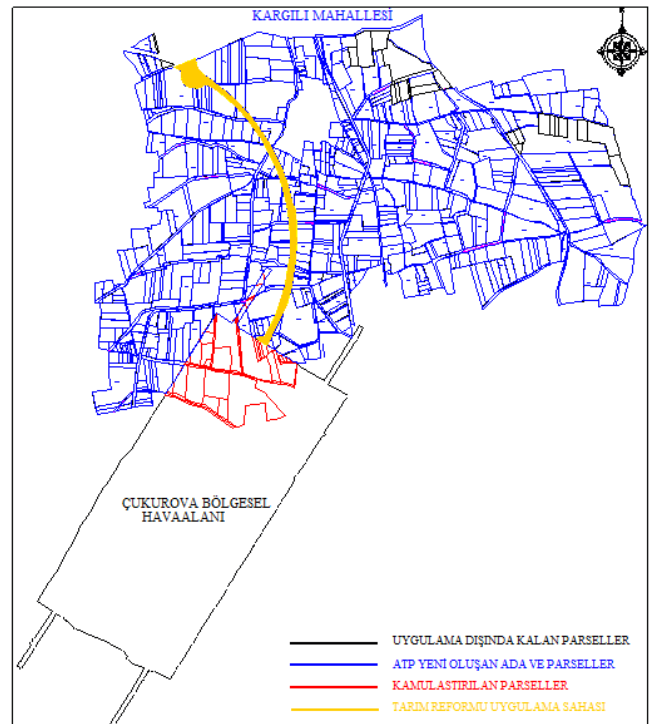


Figure 6. Kargılı District newly formed island-parcel and expropriated parcels.

3.5. Karsavuran District Topographical Situation and New Property Analysis

The topographic structure of Karsavuran District is slightly inclined and the total area is 1010 hectares. The areas remaining within the project site have been expropriated. The area outside the project area has been consolidated in order to facilitate the transportation of all parcels within the neighborhood and to remove the irregularly shaped parcels.

There are no fixed facilities affecting the project in Karsavuran District. There is no registered or unregistered site. The deduction calculation was calculated by dividing the total value of the parcels entering the project area by the total value of the parcels after subtracting the value of the newly created blocks, and the same deduction was made for the new roads and channels formed.

Land consolidation plays a key role in solving existing structural problems, developing rural areas, successfully implementing other basic elements used,

and fulfilling new tasks undertaken by rural areas in line with their intended purpose. In the study carried out in Karsavuran District, the production and working conditions of the landowners were improved, increasing the productivity in agriculture, and with this benefit, the cultivation of our land, which is the most important factor that will contribute to the Turkish economy, has been facilitated. Net area after consolidation 5063771,26 m² has been. The total number of cadastral parcels in Karsavuran District was 218, the number of owners 463, the number of islands 58, the number of parcels 127, and the average index value was 0.7900 (Figure 7).

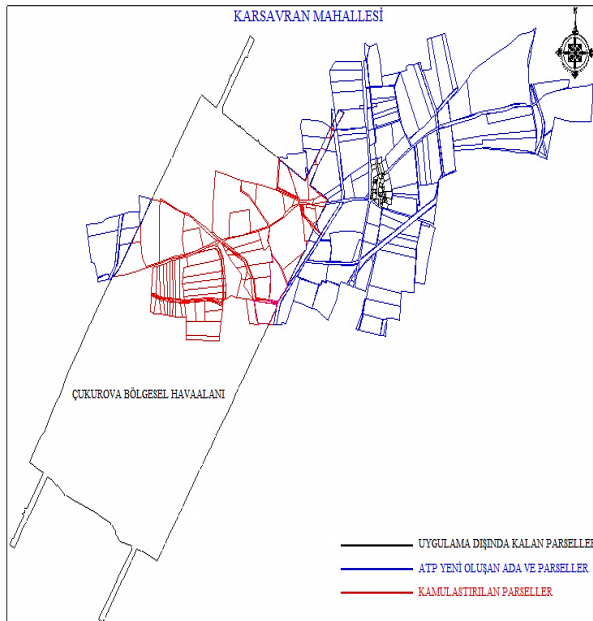


Figure 7. Karsavuran Neighborhood newly formed island-parcel and expropriated parcels.

4. CONCLUSION

- Due to the location conflict of the project in the determined neighborhoods of the project site, the consolidation was made and the social and economic problems that may occur were tried to be minimized.
- The average index values of the consolidation neighborhoods and the parcel value numbers of the parcels were determined precisely, and real values were created. DSI 's Land Consolidation list is prepared as a new block parcel sequential file; AT 8 main headings are shown in Table 1 and Table 2.
- Thanks to the Çukurova Regional Airport Project, in addition to the benefits of consolidation in the Çicekli, Karsavuran, Ballica, Kargalı and Çağbaşı Districts, which are within the project area, it has provided an important solution to the air transportation problems that occur with the increase in population and to air cargo transportation throughout the country.
- With the implementation of the project, new job opportunities have already been created for the people of the region.
- With this work, everyone has benefited equally from common areas such as roads and canals, and productivity in agricultural lands is increased.
- Hostility between owners, complaints and migration from village to city have been reduced.
- Consolidation of fragmented land parcels, bringing together the fragmented lands of the shareholders, transportation problems arising from deformities have also disappeared simultaneously.
- The economic analysis of the old and new situation of the project region has been made and an academic base has been created for similar projects to be made in the future.

Table 1. Table title showing the old and new status of the parcels (based on registration)

Enterprise Number	TR. Identif. number	Name	Surname	Father name	Blok Number	Parcel Number	Area (m ²)	Share of	Shared Area (m ²)	To editing	
										Unregulated Part (m ²)	Regulated Part (m ²)

Table 2. Table title showing the old and new status of the parcels (based on registration)

Parcel Index	PVC	Downtime Rate	Deduction Amount	Deserving	New Block Index	New Parcel Value No.	Block No.	New Parcel No.	New Parcel Area	Share Ratio in the New Parcel	Area Per Share in New Parcel
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Author contributions

The authors declare that they have contributed equally to the article.

Conflicts of interest

There is no conflict of interest between the authors.

Statement of Research and Publication Ethics

Research and publication ethics were complied with in the study.

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